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The Impact of Intervention Programs for Teenagers at Risk among Middle and High School Students in Southeast Missouri

Bryan Austin

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by

Bryan Austin

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Sherrie Wisdom — 12/9/2022

Dr. Sherrie Wisdom, Committee Member — Date

Robyne Elder — 12/9/2022

Dr. Robyne Elder, Committee Member — Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Bryan Austin

Signature:  Date: 12/09/2022

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Abstract

At-risk students have been noted to be exposed to high cases of early school dropout, late graduation, poor academic performance, and engagement in risky behaviors, such as drug and substance abuse. While research has reported poor transition to future careers and adult life among at-risk students, little is known regarding intervention programs used in Missouri schools to motivate at-risk students. The objective of this study was to investigate intervention programs being used to retain and engage at-risk middle and high school teenagers in Missouri and identify effective intervention programs that might help promote their success in school and subsequent transition into adulthood. A mixed research design was used with relevant data collected using survey questionnaires, NWEA examination scores, and interviews. A battery of four validated survey questionnaires was used in this study. Results from surveys and findings from interview data showed that intervention programs positively influence the engagement of at-risk teenagers in school. School-based intervention programs facilitate cognitive engagement, effort, persistence, liking for school, love for learning, and engagement in extracurricular activities. Moreover, the use of intervention programs significantly increases the educational aspects of students concerning school through positive motivation to accomplish academic performance, know new concepts, and experience positive simulation. Teachers also use intervention programs to address motivation issues, such as self-doubt and negative perceptions about the need for creating positive perceptions about career prospects. Intervention programs help manage negative exposure to risk factors among at-risk students, such as bullying, fighting, and victimization. Findings also showed that intervention programs positively affect the normative motivation of at-risk

students where teaching, coaching, sponsorship, and role modeling help students create a positive career path.

Keywords: At-risk, intervention, academic performance, transition, academic motivation

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Chapter One: Introduction

Recent data from the National Center for Education Statistics (NCES) shows that school dropout rates have increased from 3.6% in the 1990s and have increased by 6.1% in the year 2020 (NCES, 2021). More males (9.6%) than females (5.7%) are likely to drop from high school. High dropout rates from high school translate to increased unemployment across the county (NCES, 2021). For example, the United States Bureau of Labor Statistics (BLS) estimates that as of the year 2020, about 12% of high school dropouts were unemployed (BLS, 2020). Educational researchers and practitioners are in consensus that introducing high-quality academic support programs would reduce dropout rates. As a result of high transition rates from high school to college, there is an enhanced rate of high-income gains of between 0.35% to 3.7% once high school students become adults (Louenco, 2019; Sinclair et al., 2020). This study shows the need to reduce dropout rates due to the potential financial gain of the individual if they stay in school.

According to Wilkins and Bost (2020), if schools could succeed at increasing the current high school student graduation rates to 90%, an additional 221,000 learners would receive diplomas, translating to a strong labor force in the future. However, a quantitative study by Jeff (2018) on school transition rates showed that up to 37% of high school students from low-income families are more likely to drop out of high school, with 28% of those attending college failing to graduate. Considering the high rate of school dropout among high school minority students, a 2020 academic report by the US Department of Education indicated that such school dropouts are more than eight times as likely to engage in criminal activities and serve prison time (Thornberry et al., 2021).

Moreover, high school students from high crime neighborhoods and low-income families are considered to be at risk of an unsuccessful transition to college. In most cases, learners from low-income families are often characterized by starting school with less parental support, having limited language skills, and being exposed to emotional and social trauma that interfere with their academic progress (Cook, 2020; Herman et al., 2017). Lauren (2019) shared that only three in 10 youths from low-income families graduate from a four-year college on time (or within the set deadline from enrolment date), compared with 49% of youths from middle-income families and 62% of youths from high-income families.

Researchers have also reported that high school students whose neighborhoods are situated in high poverty settings are four times more likely to be chronically absent from the classrooms (Herman et al., 2017; Louenco, 2019). Some of the potential reasons for high absenteeism may be attributed to factors, such as unreliable transportation, unstable housing, and inadequate or lack of healthcare access. Thornberry et al. (2021) shared that by grade six, chronic absenteeism becomes a leading indicator that a student may drop out of school. It also suggests school learners in poverty are more likely to lack basic needs, such as healthcare, clothing, food, and shelter. Moreover, 7% of female students from low-income families have a child by age 18, compared to only 2% of females from high-income families. The top US states and districts with the most homeless high school students include Nevada, California, Oregon, Washington, Washington D.C, and Missouri (Thornberry et al., 2021). Each year, approximately 20,000 high school students are estimated to age out of the foster care system in the United States (Cook, 2020).

Underwriting the above considerations is a need to develop student-centered intervention programs in high schools to facilitate the transition of underprivileged students from K-12 settings to colleges, and subsequently into workplaces. The positive outcomes of high student empowerment programs include improved social skills, enhanced behavior, academic achievement, self-esteem, and self-efficacy. High school students who are surrounded by diverse opportunities for growth are less likely to engage in risky behavior. Also, students who have close support are likely to report higher rates of transition from education to the workplace. Research definitively shows that high school students who have sufficient support from their families, schools, and communities develop the assets necessary to succeed in life (Louenco, 2019; Sinclair et al., 2020). The purpose of the current chapter is to present the background to the study, rationale, and motivation for undertaking this research, and identify research questions and the significance of the study.

Background of the Study

Across the United States, many high school students continue to be exposed to multiple risks of poor mental health, drug and substance abuse, academic failure, and early dropout from school (Reglin, 2021). According to Wilkins et al. (2021), high school students at risk for severe behavioral problems are mostly those who lack a stable support system in school and at home. Moreover, students who live in dysfunctional families (such as gang members, serial criminals, and drug abusers) or in households at or below the poverty level are also at a greater risk for behavioral, physical, and mental issues (Litteken & Sale, 2018). A national study undertaken in 2019 by Columbia University's National Center on Addiction and Substance Abuse (CUNCAS) discovered that

substance abuse among adolescents was a leading health problem among high school students (CUNCAS, 2019). Further, the CUNCAS report stressed that nine out of 10 high school students met the criteria for addiction, whether it was the cigarette, drug, or alcohol addiction (CUNCAS, 2019). Further, 75% of the surveyed students revealed that they had used drugs, alcohol, or smoked cigarettes. Additionally, over 64% of the teenagers and youths surveyed indicated that they lived with a drug and substance abuser (CUNCAS, 2019).

Another report by the Centers for Disease Control and Prevention (CDC) showed that students from low-income families and high crime rate neighborhoods report high cases of sexual activities and pregnancies (Szucs et al., 2019). The report noted that 39% of the students below 18 years of age were sexually active. A further 8% had multiple sexual partners, with condom use reported by 27% of the surveyed teenagers (Szucs et al., 2019).

In 2015, 63% of surveyed boys reported engaging in safe sexual practices, compared to 52% in 2018 (Mo et al., 2018). The CDC reiterates that such risky sexual behaviors not only increase the chance of pregnancy but also increase the risk of transmitting and being infected with STDs and HIV/AIDS (Litteken & Sale, 2018). A wide variety of situations and conditions will directly place students at risk for behavioral problems that often lead to making poor decisions. Some of these conditions include a lack of a consistent discipline system at home, poor school attendance/truancy, and living in high-crime and low-income neighborhoods (Louenco, 2019). Having a disability, a chronic mental illness, or a chronic physical illness that parents do not adequately address

with professional treatment increases the risk of behavior problems (Litteken & Sale, 2018; Mo et al., 2018).

Student exposure to potential risk may also be attributed to factors like inadequate community support aimed at assisting teenagers, or lack of access to vocational or community colleges (Mo et al., 2018). Lack of access to education aid, such as scholarships, tuition fee, or higher education facilities located far away may further contribute to poor student transition from high school to college. Lack of college education subsequently hinders young adults from high school entry into the labor market. Litteken and Sale (2018) added that lack of transition to college may result from poor parental involvement or frequent shifts, due to job loss or being evicted, thereby resulting in a detrimental long-term negative impact on students.

The school setting has also been noted to exacerbate potential risk among students. For instance, Matlock (2017) shared that a lack of a relevant curriculum may expose students to inadequate career and job-related skills. As a result, disadvantaged students may lack relevant preparedness to join the job market. For some students, the school environment may be a place of struggle due to issues, such as bullying that might lead to student disengagement, behavioral problems, and even school dropout (Litteken & Sale, 2018). According to Mo et al. (2018), minority students, particularly Latino and African-Americans, face various hurdles to self-sufficiency compared to Asian and white students. In school, racial discrimination triggers violence and bullying, and hinders young adults' employment opportunities after graduating from college (Matlock, 2017).

Louenco (2019) shared that Latinos, Hispanics, or African American students are more likely to live in high-poverty environments where there are inadequate learning

resources, underperforming schools, and less qualified teachers. Moreover, Sinclair et al. (2020) indicated that immigrant students face diverse hurdles in adapting to the local culture, with intense problems like language barriers and a lack of culturally relevant curriculum. Considering these challenges, researchers have attempted to formulate solutions to address challenges that at-risk students, especially those from minority and poor backgrounds, experience (Jeff, 2018; Louenco, 2019; Thornberry et al., 2021). As applied to this study, an at-risk-teenage refers to adolescents and teenagers who are less likely to transition into adulthood successfully (Witherspoon, 2017).

For example, in Brooklyn, NY, local schools introduced student empowerment and mentorship programs. The focus was to provide guidance, counseling, and intense exercise training to engage students and reduce absenteeism (Cawley et al., 2020). After a follow-up period of eight months, students were two times more likely to participate in computer technology, engineering, and science programs. There were improved examination mean scores at the end of the school term compared to baseline exam scores when students joined the programs (Cawley et al., 2020). These insights further show that school intervention programs have a substantial impact on at-risk students' success if developed and implemented successfully. Success, in this case, is defined as the ability to achieve high academic grades, avoid crime, acquire relevant job skills, join the labor market, and become independent (Summers et al., 2017).

High poverty neighborhoods are often characterized by high crime rates, limited resources, and underperforming schools. Schools with fewer resources are more likely to be associated with poor students' academic outcomes. Fewer learning resources are often characterized by higher student-to-teacher ratios, lower spending per student, and lower

overall academic performance (Louenco, 2019; Sinclair et al., 2020). These neighborhoods often lack the resources needed to help students overcome potential risk factors, such as delinquency, drugs, and early sexual activities. These risk factors have been reported to have negative correlations with academic achievement, and positive correlations with problematic behaviors (Wilkins & Bost, 2020).

To assist at-risk students, a growing body of literature, such as the work by Witherspoon (2017) reported that school-based intervention programs are key to mitigating potential negative impacts among the affected learners. Insights from past studies show that effective school intervention programs are central to student engagement both at home, in society, and within the learning environment (Cook, 2020; Herman et al., 2019). In the last two decades, researchers indicate that school-based intervention programs have become central concepts through which to offer close support and guidance to students at risk (Cook, 2020; Yun et al. 2016). Effectively designed and implemented intervention programs contribute to high levels of academic achievement, regular and consistent achievement, school completion, positive behavior, and low dropout rates (Cook, 2020; Yun et al. 2016).

Herman et al. (2019) reported that at-risk students often lack guidance in schools and this exposes them to slow and gradual negative peer pressure resulting in school dropout, poor academic performance, and involvement in offending activities. Lack of engaging and captivating school initiatives is one of the primary problems that catalyze students' decisions to drop from school and engage in risky activities that hinder their successful transition into college and adulthood (Langheim & McCaughan, 2021; Summers et al., 2017). Witherspoon (2017) further reported that appropriate intervention

school programs facilitate positive student engagement, enhance academic performance, and ensure successful transition into college. Wilkins and Bost (2015) also elaborated that relevant school intervention programs cultivate positive behavior among students at risk and encourage them to persist and complete their academic programs on time.

Despite the positive impacts of school-based intervention programs on students' learning outcomes, critics argue that most learning settings lack such initiatives (Langheim & McCaughan, 2021). Lack of intervention programs targeting high school students has been associated with a lack of financial resources (Cook, 2020), lack of coaching and counseling personnel (Yun et al, 2016), and lack of commitment from school administrators (Summers et al., 2017). In the light of these considerations, Witherspoon (2017) advocates the need for attitude change among school administrators, teachers, parents, and education policymakers to promote and implement relevant intervention programs in support of at-risk students. Thornberry et al. (2021) shared that student-anchored intervention programs, such as career counseling and guidance, early mentorship, and outreach programs are central to continued student commitment to learn, attend school, and persist through school completion.

Implementation of relevant intervention programs has been widely correlated with increased student participation in school and a reduction in absenteeism (Basile et al., 2020). As such, intervention programs are important in ensuring that at-risk teenagers overcome underlying challenges and successfully transition into adulthood (Alexander, 2020; Ran et al., 2020). As applies to this study, it may be noted that despite the importance of the intervention programs, one of the main challenges is that relatively limited research exists in Missouri on the intervention strategies schools might use to

improve student engagement and increase participation in high school settings among students considered to be at-risk. The current research sought to investigate this topic and identify effective intervention strategies that are likely to improve student engagement, increase completion of school, and ensure a successful transition into adulthood among at-risk students in Missouri.

Undertaking this study is essential because it will identify strategies schools may use to support and help students who are at risk of early dropout and engagement in delinquent activities. By identifying these factors, high school education policymakers, the community, schools, and parents will be better equipped to adopt and promote intervention strategies to ensure the successful transition of at-risk learners into college and future workplaces. If this goal is to be attained, schools need to develop, enhance, and implement strategies that effectively address risk factors that contribute to the students' disengagement from school and eventual dropout.

Problem Statement

The problem statement that informed the need to undertake this study holds that, despite the high number of high school students who are at-risk in Missouri, there are limited intervention strategies in place in most schools to support these learners. As such, there is a need for further research to fill this knowledge gap by identifying current intervention programs used to retain and engage at-risk middle school students in Missouri, then determine effective intervention programs that might help promote their success both in school and through the subsequent transition into college. The motivation to undertake this study results from my experience as a teacher while working with at-

risk students. As an educator with experience in both middle and high school for more than 10 years, I noticed a rise in the number of students categorized as being at risk.

Each year, I and other teachers have encountered students in classrooms who require additional time, support, and motivation to be successful. In my school, these students have been categorized as at-risk. Yan et al. (2021) shared that there is a need to provide a safe and supportive learning environment, which is an essential approach for any successful learning experience. Implementing student intervention strategies is key to ensuring at-risk learners feel safe, involved, appreciated, and responsible for their behavior and learning. Undertaking these intervention programs aims to eliminate existing student behavior problems, prevent the development of new problems, develop better peer relationships at school, promote a positive school climate, and help at-risk students to have a better future or transition into higher learning institutions (Herman et al., 2017; Louenco, 2019).

In Missouri, there have been different intervention programs, but the available programs were designed as standardized programs and do not cater to the needs of at-risk students. For example, state law encourages districts to implement school-based alcohol and drug referral, and intervention programs for students with substance use disorders. Bystander intervention programs also focus on educating students to become proactive in assisting others by being more than just a bystander. In the classroom, these programs may include reading interventions, math interventions, and behavior interventions. However, these programs are built by mainstream educators and do not take into consideration the special needs and cultural norms of the at-risk students.

Considering the multiethnic diversity of at-risk students, schools need to develop and implement tailored intervention programs to meet the unique needs of these learners. The purpose of this study was to investigate this knowledge gap, by identifying and assessing the effectiveness and the contribution of current programs to at-risk high school students in Southeast Missouri. The choice of this age group was informed by the fact that it is considered a transforming phase between childhood and youth (Basile, 2020). Insights from the past literature studies on the topic show that students who successfully transition to colleges usually attain successful adulthood lifestyles in terms of career development and financial independence (Herman et al., 2019; Jeff, 2018). The challenges that the at-risk students in Missouri encounter are further compounded by the fact that there is a shortage of research on intervention strategies schools should use to increase participation and improve the engagement of at-risk students in the education sector.

Although there has been increased implementation of retention initiatives in most schools in Missouri, there has been limited success when taking into account at-risk students, especially from minority ethnic/racial groups and those from low-income families (Herman et al., 2019). The success of intervention programs also depends on the nature and type of school since it is difficult for some schools to promote interventions more than others, due to factors, such as financial allocation, learning materials, available infrastructure, classroom size, number of students, and hired teachers. Other schools may fail to promote successful interventions, because the students at risk tend to be heterogeneous and spread unevenly across schools. For example, some schools have a higher concentration of at-risk students than others. To address these challenges, there is

a need to identify the best means of supporting and engaging at-risk high school students. The current research set out to explore the gap in the literature as applies to at-risk youths and identify effective school intervention strategies that can work to improve student retention and engagement for at-risk learners.

Research Focus

The purpose statement that informs the need for this study is the need to identify effective intervention strategies that schools in Missouri may use to enhance the engagement of students and increase rates of school completion for students at-risk. First, pre-intervention research will be conducted to explore the effectiveness of the existing strategies. Second, this will be followed by the formulation of intervention programs, and post-intervention assessment to examine the effectiveness of the proposed intervention strategies for at-risk students in Missouri. The research will involve extensive use of interviews and survey questionnaires in schools in the at-risk sector, focusing on parents, teachers, and students in middle to high school. Specific research interest will be anchored on identifying factors that contribute to the successful completion of school and barriers that contribute to early school dropouts or student involvement in risky behaviors, such as violence and drug abuse and work innovatively with parents, teachers, and students to propose new interventions to engage students.

A mixed-method approach will be used, employing both qualitative and quantitative methods, to assess the formulated research aim, research questions, and hypotheses. The use of both quantitative and qualitative methods provided the opportunity to learn the “why” and “how” of school intervention programs among the youths at risk. In the quantitative part of the study, a semi-structured survey questionnaire

will be used to collect relevant information about some of the different intervention programs, which were used and are being used for students at risk in middle through high school in Southeast Missouri. Both research methods will be used to collect relevant information on the failures of the existing intervention strategies, in an effort to promote more effective interventions for the future transition of the at-risk youths.

Research Aim and Objectives

The aim of this study is to investigate intervention programs being used to retain and engage at-risk middle and high school teenagers in Southeast Missouri and identify effective intervention programs that might help promote their success in school and subsequent transition into adulthood. Specific research questions to guide this study include the following:

1. How do the different intervention programs currently used in middle and high schools in Southeast Missouri influence the student's engagement with school?
2. How do the different intervention programs influence educational aspects of students regarding school, such as learning motivation, learning self-efficacy, and a sense of belonging to school?
3. How do the different intervention programs used in middle and high schools in Southeast Missouri influence risk factors, such as discipline and involvement in violence?
4. How do the different intervention programs used in middle and high schools in Southeast Missouri influence future normative motivations, such as occupational aspirations?

The formulated research hypotheses in this study were postulated as follows:

Hypothesis 1: Intervention programs positively facilitate the engagement of at-risk students in school.

Hypothesis 2. Intervention programs significantly improve the educational engagement of students in school.

Hypothesis 3. Intervention programs significantly reduce the exposure to risk factors among at-risk students.

Hypothesis 4: Intervention programs significantly influence the normative motivation of at-risk students.

Significance of the Study

Importantly, undertaking this research will add new insights to the extant literature on school intervention programs in Missouri focused on facilitating at-risk students to effectively transition from school to the workplace. First, the study will identify existing intervention strategies used in schools and their flaws, and propose effective approaches to replace the obsolete strategies in mentoring at-risk youths to become more successful and responsible adults. Second, the study will identify how different intervention programs impact educational aspects of at-risk students regarding school, including motivation to continue learning, reducing early dropouts, attaining learning self-efficacy, and promoting a sense of belonging at their respective schools. Third, the study will help identify the effectiveness of different intervention programs in terms of how they impact risk factors, such as early school dropout, discipline problems, health behaviors, and possible involvement in crime and violence. Finally, the study will aid in understanding how different intervention programs impact future normative

motivations, such as occupational aspirations, career choice, skills development, career growth, and entry into the labor market.

Definition of Terms

At-risk teenagers. At-risk youth in this study refers to middle and high school students who are less likely to transition successfully into adulthood or from school to the workforce in terms of job readiness and skills development (Cook, 2020). These teenagers are more likely to be exposed to violence, the life of crime, drug abuse, and other risk behaviors due to early school dropout and lack of career competence (Herman et al., 2019).

Intervention program. An intervention program is a combination of elements or strategies designed to produce desired behavior changes among at-risk teenagers in Missouri (Jeff, 2018). Interventions may include educational programs, stronger or new learning policies, improving the environment, or a promotional campaign aimed at increasing school retention and reduction in early school dropout rates (Cook, 2020; Yun et al. 2016).

Risk factors. Forces in the immediate environment that influence teenagers and may have a negative impact on their development. The category is usually identified as three prominent factors: poverty, criminal social environment, and non - functional family (Cook, 2020).

Signs of risk. Behaviors of a teenager when combined with risk factors significantly raise the likelihood of injury and negative behavioral outcomes in the teenager's life. The literature largely highlights two prominent phenomena that affect teenagers: school dysfunction (total: disengagement and dropping out of school), and

involvement in crime/delinquency (Herman et al., 2019; Summers et al., 2017; Witherspoon, 2017).

Risk behaviors. Behaviors that are distinguished as having the potential to injure teenagers directly or indirectly and are typically identified with risk factors and signs of risk as previously outlined. Examples of such behaviors are frequent absences from school, frequent escapes from home, early sexual encounters, early use of cigarettes, alcohol, and drugs, joining criminal groups (Summers et al., 2017; Witherspoon, 2017).

Risk outcomes. Risk outcomes are results of exposure to risks, such as early pregnancy, maternity/paternity young, homeless and escapees, involvement in prostitution [including sexual abuse, sexually transmitted diseases], involvement in the use of drugs and alcohol, involvement in criminal activity and delinquency, and dropping out and separation from the educational systems and social community (Michael, 2019).

Successful transition. Academic success and job readiness in addition to being financially independent. It also can refer to the ability to become a positive member of society by avoiding a life of crime (Lauren, 2019).

Chapter Two: Literature Review

The aim of this study was to investigate intervention programs being used to retain and engage at-risk high school teenagers in Southeast Missouri and identify effective intervention programs that might help promote their success in school and subsequent transition into adulthood. Insights from past studies show a scarcity of research on the different intervention programs currently used in high schools in Southeast Missouri that influence the students' engagement to school. Besides, there is a knowledge gap on whether intervention programs in Southeast Missouri schools contribute to students' learning motivation, self-efficacy, and a sense of belonging to the school. Undertaking this study was essential to understanding how different intervention programs used in high schools in Southeast Missouri influence risk factors, such as discipline and involvement in violence. Also, insights from this study would inform how intervention programs used in high schools in Southeast Missouri influence future normative motivations, such as career choice and occupational aspirations.

As such, the objective of this chapter seeks to contribute to the four research questions formulated in Chapter One. One is to examine the literature on how school intervention programs are likely to influence the students' engagement in schools. Two, to explore past studies on how different intervention programs influence the educational aspects of students regarding school motivation, learning efficiency, and feelings of belonging. Three, to understand the various intervention programs used in schools and how they mitigate students from engaging in risk factors, such as crime, drug, and substance abuse. Finally, based on literature studies, the study will identify the potential

impact of different intervention programs on normative motivations, such as students' career choices and job-related decision processes.

Literature Findings on School Intervention Programs and At-Risk Students

In the current section, key literature findings on the impact of school intervention programs on at-risk high school students are outlined and discussed. Listed are the key theoretical frameworks that will be used to understand at-risk students and intervention programs used to facilitate their academic progress. Insights from past literature identified six key themes related to the topic. These themes included: (i) theoretical frameworks; (ii) impact of intervention programs on student engagement; (iii) intervention programs and academic achievement; (iv) intervention programs and future careers; (v) community initiatives; and (vi) knowledge gap.

Theoretical Frameworks

Different theories have been used to understand at-risk students in the education system and during their development stages into adulthood. These theories are important in exploring challenges that at-risk students encounter, and the potential intervention strategies that can be used to prevent and alleviate potential risks. In the current section, important theories that will be used to understand the formulated research questions are discussed. The theories help identify strategies to increase the engagement of at-risk students in Southeast Missouri schools while reducing their potential risk of early dropouts and engagement in criminal activities.

Problem Behavior Theory

Richard Jessor and Shirley Jessor pioneered the problem behavior theory (PBT) (Donovan & Jessor 1985). The theory is premised on a socio-psychological concept that

aims to explain diversity in teenage involvement in socially acknowledged behavioral problems. These social issues have a negative impact on society since they are more likely to result in societal punishments (Donovan, 1996). In response to someone's behavior, a social sanction is a societal response of approval or disapproval. Social obligations enforce a socially acceptable norm of behavior, which is necessary for society to self-regulate and sustain discipline (Cook-Harvey et al., 2020). Marijuana use, alcohol difficulties, juvenile drug abuse, substance use, premature sexual activities, and delinquent behaviors are some of the behavioral problems that may cause adolescent dissent (Jeff, 2018). In this study, the PBT theory may be used to create a conceptual framework for analyzing risk behaviors among high school students at high risk.

According to Lauren (2019), the PBT theory contends that reckless driving, aggressiveness, violence, substance use and abuse, and delinquency are the results of a combination of risk factors (Lauren, 2019). When there are no intervention measures in place, these potential risk factors increase the possibility of high school students engaging in harmful behavior, exacerbating the situation (Litteken & Sale, 2018). As such, the PBT elaborates that by establishing a system of good social connections based on community control, social supervision, and personal awareness, as well as a supportive living environment, school intervention programs would substantially lower the likelihood of students engaging in dangerous behaviors (Mo et al., 2018). Protective factors against risk behaviors also include individual student’s ability to maintain a positive adaptation in a hostile and less supportive school environment.

When dealing with at-risk students, both protective and risk variables are present in the educational environment. However, in most public learning institutions, risk factors

tend to outnumber protective factors. According to the PBT theory, risk behaviors that at-risk students are exposed to tend to have a clustering effect (Lee et al., 2022). In most circumstances, the more risk factors there are and the fewer intervention programs available, the more likely it is for vulnerable students to engage in problem behaviors at school and in the community. Mitchell et al. (2021) stated that a lack of intervention programs in most public schools exposes learners to behavioral and psychological risks, which account for substantial heterogeneity in the transition from adolescence to adulthood in a wide number of studies (Darling-Hammond et al., 2021). In Southeast Missouri, the common predictors of risk behaviors among high school students include vulnerability risk, behavioral protection, and lack of control protection. In the light of these considerations, the focus of this research is to re-examine the PBT's relevance to at-risk high school students and to investigate the role intervention strategies have in mitigating at-risk students from engaging in risk behaviors (Wilkins et al., 2021).

Social Cognitive Theory

The social cognitive theory (SCT) postulates that aspects like personal attributes, individual behavior, and environmental circumstances all intersect to impact a person's behavior. Humans learn to behave through a process of modeling and reinforcement, in which they copy observed behaviors in others that are perceived to have a positive outcome, according to Albert Bandura (Bandura, 1986; Bandura, 2012). As a result, exposure to effective intervention strategies is likely to have an impact on how adolescents behave and engage in their daily lives to achieve life success. Adolescents may be motivated to embrace learning and career programs that lead to satisfying future jobs if positive intervention strategies are in place in the learning environment (Bandura,

1992). Lack of appropriate intervention strategies, on the other hand, may expose students to peer influence, with adolescents who engage in sexual behaviors, violence, or drug use more likely to continue doing so because they associate such risky behaviors with being seen as a grown-up, cool, popular, or tough (Demirel, 2021).

Albert Bandura first proposed the social learning theory in 1962. Social learning, according to the theory, is a process that is shaped by observations and experiences, with the observed consequences and experiences of an action shaping learning. According to the social learning theory, new habits are enhanced when an individual witnesses others performing the actions and then learns to mimic them. Direct and vicarious experiences impact learning and direct future behavior, according to Bandura (1997). It will be feasible to observe the repercussions of a lack of intervention methods among Southeast Missouri's at-risk children and explore ways to model better treatments to foster higher interaction between at-risk students and their schools using social learning theory in this study (Bettinger et al., 2018). If social learning theory is applied to high school intervention measures, at-risk children will notice ethical and unethical behavior that will have an impact on their successful transition to adulthood. This supported the observation that both classical conditioning and operant conditioning are behaviorist learning theories. Nonetheless, his social learning theory added two crucial concepts to this research including the following:

- Mediating processes occur between stimuli (school or societal intervention techniques) and responses (students' behavior in response to accessible or absent intervention strategies) (Foster & Brooks-Gunn, 2015).

- Observational learning allows students to pick up habits from their surroundings. If the observed behavior is positive, the students are more likely to succeed in adulthood; but, if the observed processes are negative, the students are more likely to participate in criminal activity, violence, and other risky behaviors (Foster & Brooks-Gunn, 2015).

Ethnic/ Social Identity Theory

Tajfel and Turner (1986) proposed the social identity theory, which states that people have collective identities based on their membership in a group, such as racial/ethnic and gender identities. According to Lauren (2019), belonging to a social group, such as a religious group, occupation, or school is a crucial foundation for the development of a person's identity. Being a member of a group, emotional attachment, and individual values, all contribute to the concept of individual self-development in social psychology. In addition to emotional attachment and values, belonging to a group influences the therapeutic measures used to improve connection (Bettinger et al., 2018). Kurt Lewin made one of the earliest assertions about social identity, emphasizing the importance of a strong feeling of group affiliation in maintaining a sense of well-being. The need of maintaining a good sense of self is emphasized by social identity theory. As a result, when it comes to ethnic identity, this emphasizes the importance of ethnic group membership and affirmation of ethnic group membership(s).

Belonging to a social group, such as a religious group, occupation, and school, occupation, according to the social identity theory, is a crucial foundation for the development of a person's identity. In light of this, it has been suggested that ethnic affirmation should be more prominent among communities that have endured higher

discrimination to retain self-esteem. Family factors, such as the family's cultural values, have also been researched. Specific components of parenting, such as student racial socialization, can also contribute to teenage socialization. Individual activities, such as language usage about ethnic identification, indicate group membership, according to a behavioral component of collective identity (Foster & Brooks-Gunn, 2015). With a few exceptions, ethnic and racial identity development is linked to favorable psychological, psychosocial (e.g., better self-beliefs, less depressed symptoms), academic (e.g., greater school involvement), and health outcomes (e.g., lower risk of risky sexual behavior or drug use) (Bettinger, Liu, Loeb, 2018).

Ethnic identity formation begins in adolescence, but it is defined as a process of building self-character over time as a result of a combination of experiences and actions on the part of the individual, and it includes gaining knowledge and understanding of groups, as well as a sense of belonging to (an) ethnic group (s). Furthermore, given the vastly different histories of various ethnic groups it is important to note that ethnic and racial identity formation looks very different between diverse communities, particularly when comparing minority (e.g., Latino, African Americans) to majority (e.g., whites) group comparisons (Foster & Brooks-Gunn, 2015). The social construction of racial identity could be described as a sense of group or collective identification based on one's belief that he or she shares a common ancestor with a specific racial group. Racial identity is a superficial representation based on appearances, yet it has profound ramifications on how people are treated in society (Harel-Fisch et al., 2012).

Life-Course Theories and School Dropout

The common perception of early school dropout among at-risk students holds that it is the outcome of a long-term process of disengagement and lack of belonging within learning institutions. According to Cook-Harvey et al. (2022), this perspective, as useful as it is, has obscured the understanding of diverse pathways through which school dropout occurs. According to research, some students drop out of school because of events that arise late in their education careers, such as health issues or severe peer victimization, rather than because of long-term difficulties (Bettinger, Liu, Loeb, 2018). Others with a history of early hardships, on the other hand, endure when their situations improve during high school. As a result, an in-depth knowledge of why and when students drop out necessitates taking into account both long-term vulnerabilities as well as immediate disruptive events (Foster & Brooks-Gunn, 2015). The life cycle approach will be utilized in this study to look at an individual's life history, such as how early events in the lives of at-risk students influence future decisions like skill development and career choice.

The life-course hypothesis draws on a variety of disciplines, including biology, developmental psychology, history, and economics. According to Elder (1998), the theory emphasizes the close relationship between human lives and the historical and socioeconomic contexts in which they occur. Life-course theory (LCT) is a developing multidisciplinary framework that seeks to describe the myriad factors that influence people's lives from birth to death by positioning individual and family development within different cultural and historical contexts (Newman, 2008). According to Elder and Giele (2009), the life course theory is based on five fundamental principles: lifespan growth, human agency, historical time and location, decision-making timing, and related

lives. As a concept, a life path is "a collection of socially defined events and roles that an individual enacts across time" (Elder & Giele, 2009, p. 22). These events and tasks do not need to occur in any particular order, but they do contribute to the individual's total experience.

Thus, the term "life course" refers to age-specific social phenomena distinct from the uniform life-cycle stages and life span. The term "life span" refers to the length of one's life and the qualities that are strongly associated with age yet change little across time and space (Bengtson and Allen 1993). The life course perspective has been used on a variety of subjects, including health courses and transformations, health vulnerability, and immigrant occupational health. Further, the theory has also gained prominence in other fields, such as the impact of childhood experiences on students' behavior later in life and physical exercise in late adulthood (Shanahan, 2020). The life course perspective evaluates an individual's history and evaluates, for example, how early events continue to influence subsequent life events and decisions like criminal activity, marriage, divorce, and career choices. Thus, this theory is key to understanding how past events might influence observed behaviors among at-risk high school students in Southeast Missouri.

Resilience and Vulnerability Theory

The hypothesis is utilized to better understand the personalities of at-risk students. Resilience is described as the ability to adjust positively in the face of a stressful or risky scenario. Additionally, it was defined as "the process, capacity, or outcome of adaptive evolution in the face of adversity or threat...good outcomes despite high-risk status, persistent competence in the face of adversity, and recovery from trauma" (Deason et al., 2022, p.142). Resilience can be defined as a set of traits that help people navigate and

negotiate their way to well-being under stress, such as assertiveness, problem-solving skills, self-efficacy, the ability to deal with uncertainty, a positive outlook, empathy for others, the ability to set goals and aspirations, and the avoidance of negative substance abuse, such as alcohol (Yaroson et al., 2021).

According to vulnerability theory, individuals are born defenseless and weak. To survive, people must be wary of natural calamities and worry that social institutions will let them down. Thus, the theory advocates the need for affirmative steps to ensure optimal exploitation of available opportunities. The vulnerability theory's central proposition is that all tragedies originate with human agency. Vulnerability is defined by Oliver-Smith and Button (2005) as a ratio of risk susceptibility. The procedure includes determining the magnitude and severity of potential harm to the functioning and well-being of individuals and social systems (Wisner et al., 2004).

According to McEntire (2004), there are four components to Vulnerability:

- Susceptibility
- Risk
- Resilience
- Resistance

Vulnerability to a crisis is impacted by the immediate surroundings, including the physical and social factors. The social environment encompasses economic, political, and cultural contexts, whereas the physical environment encompasses the natural, built, and technical environments (Foster & Brooks-Gunn, 2015). For example, at-risk students who suffer from mental conditions or merely poor mental health face a number of

vulnerabilities and dangers, including a higher chance of disability and premature death, stigma and prejudice, social exclusion, and destitution (Foster & Brooks-Gunn, 2015).

Common Intervention Programs

The current section presents and discusses some of the common intervention programs used in Missouri in support of at-risk students. The intervention programs include the evidence-based intervention network (EIN), Missouri option program (MOP), Middle school intervention program (MSIP), School alternative program (SAP), The Anabranch program (TAP), and the Substance abuse alternative program (SAAP). Although the list of these intervention programs is not exhaustive, these interventions are commonly cited in the reviewed literature and largely applied across most public and private schools in Missouri.

Evidence-Based Intervention Network

Schools have steadily grown more scientific as a result of the emphasis on national accountability and outcome data. According to Santana López et al. (2019), growing pressure for accountability and acts, such as No Child Left Behind have pressured school administrators to develop and implement intervention programs to meet the needs of culturally diverse students. Teachers require strategies for evaluating and selecting evidence-based educational treatments to address common social and academic behavior difficulties. The Evidence-Based Intervention Network (EBIN) has been developed to provide guidance in the selection and implementation of evidence-based initiatives in the classroom setting for learners at high risk of underperforming and dropping out of school.

Inga et al. (2020) reported that intervention programs like the EBIN provide extensive resources for at-risk students including modeling of career paths, evidence-based anti-drug and anti-social behaviors, and information on the selection of best intervention programs. The intervention programs covered under EBIN have been developed in collaboration between students and faculty from various high schools and colleges (Santana López et al., 2019). Student interventions and assessments are evaluated based on identified risky situations with categories for math, reading, and behavior interventions. Also, the EBIN avails detailed progress monitoring, diagnosis, and screening.

The criterion for EBIN program activities is met by providing students with the opportunity to develop new abilities, nurture current talents, and cope with real-world situations. Following the EBIN programs in classrooms, students also learn about numerous volunteer possibilities and have the opportunity to meet actual volunteers from various volunteer-based groups to help them in their personal development. As such, EBIN ensures that at-risk students are in a position to expand their horizons and exposes them to new and demanding activities. Catalano et al. (2021) reported that short-term school-based EBIN intervention programs help foster competence for at-risk students. Overall, the intervention initiatives have been shown to have a sizable influence on students' confidence. The findings further corroborate Catalano et al. (2021)'s summary of past research and imply that a relatively brief intervention program based on the EBIN framework may have a considerable positive effect on the vocational, academic, cognitive, and social-emotional abilities of at-risk learners.

Findings from past studies demonstrate that the EBIN intervention program is effective at fostering confidence, demonstrating positive outcomes both within and between-student group outcomes. Overall, the intervention program has a moderate effect on student confidence (Cohen's d = 1.56) that is statistically significant (p = 0.000). These findings corroborate Santana López et al (2019).'s findings, demonstrating that participation in the EBIN intervention may have a beneficial effect on overall self-efficacy and self-esteem. Given that self-esteem develops throughout time (López et al., 2019), the available literature evidence suggests that a positive environment impacts favorably on at-risk learners during important developmental stages (Basile, 2020). At-risk students may benefit in the long run from this intervention initiative, where researchers like Yaroson et al. (2021) have discovered a gain in self-esteem has beneficial long-term consequences on affectivity, depression, relationships, and work satisfaction, as well as the overall health of learners.

Missouri Option Program

The Missouri Option Program (MOP) was developed to support at-risk students who are enrolled full-time in public schools (van Loon et al., 2020). The target students include learners who have a high likelihood of dropping out of school or who are lagging in their studies making it difficult to graduate with their cohort group. The focus is to ensure that such students complete school on time and earn a standard high school diploma (van Loon et al., 2020). However, graduation through MOP is not dependent on Carnegie's credit attainment (Oligschlaeger, 2017). Carnegie's credit attainment is a form of credit recovery for high school students. Instead, the MOP is a competency-based program that has been approved by the State Board of Education. The curriculum

is created to help teachers assess students' material mastery through the use of a high school equivalency exam (Oligschlaeger, 2017).

Under the MOP, the HiSET exam is applied as the state-sanctioned exam for students at-risk of dropping from their studies or falling behind in their graduation time. Students who complete the Missouri Option exam and all other program requirements are eligible to acquire a high school diploma (Björklund et al., 2020). According to van Loon et al. (2020), the MOP is an effective strategy for increasing student retention, decreasing dropout rates, and enhancing college and career readiness. Recent research has reported that the MOP program helps improve students' socio-emotional skills in terms of mental wellbeing, having more friends, being sociable, and performing better in school (de Vera, 2017).

Yeckel (2021) reported that over the years, local education agencies that offer the MOP have helped at-risk students remain in school and graduate successfully. Upon distributing of high school diplomas to the affected students, the local education agencies include them in district-approved programs where they are counted as graduates (Oligschlaeger, 2017; Yeckel, 2021). Furthermore, while the students are enrolled in the program, local education agencies can continue to count them in their average daily attendance (ADA) for the purposes of state aid (van Loon et al., 2020). MOP instructors offer ongoing academic or career guidance, as well as supplemental guidance and counseling as needed (Oligschlaeger, 2017). Students have access to all educational services and programs offered by the Local Education Agency (LEA), receive essential academic and life skills instruction, obtain a high school diploma, and are eligible to

participate in commencement ceremonies following successful fulfillment of program requirements.

In line with the MOP guidelines, students are required to attend a minimum of at least 15 hours of academic instruction each week (Harrison, 2017). Additionally, students must be enlisted in other school-supervised instructional activities (i.e., work experience, elective classes, and career education courses) that result in the student being classified as a full-time student by the local education agency (Cornman, 2017; Hirschi, 2019). The integrity of the MOP and locally issued high school diploma should be ensured by local education bodies providing a level and quality of education. When issuing a conventional high school diploma, local education agencies may have additional conditions in addition to what is expected of all students (de Vera, 2017).

Missouri Option students are obligated to enroll for End-of-Course exams (EOCs), which include disciplines, like American Government, Biology, and Algebra I (or Algebra II if a student had previously enrolled for Algebra before high school) (Oligschlaeger, 2017). Additionally, state law requires that all at-risk students take a course on government and its operations and pass mandated tests on civics and the United States and Missouri constitutions (Santana López et al., 2019). Additionally, participants must take half-unit courses in personal finance and health, as well as 30 minutes of CPR instruction and training in the Heimlich maneuver's proper execution (Oligschlaeger, 2017).

Middle School Intervention Program

The Middle School Intervention Program (MSIP) was developed to provide alternative education services to at-risk students in middle school (Aarons, 2019; Bippert,

2019). Under the MSIP program, there is a holistic approach to learning and the focus is on the development of students' interpersonal skills, emotional regulation, and character development (Santana López et al., 2019; Wang, 2021). Instruction delivery is achieved through online learning and project-based assessment. Students engage in a wide range of hands-on and experiential learning activities that align with the Wentzville School District Curriculum and the Missouri Learning Standards (Jennings, 2018). The ultimate goal of the MSIP is to allow students to grow as individuals and learners so that they will be prepared to continue their education and live a happy and productive life after school (Hines, 2016).

According to Bippert (2019), access to MSIP in schools has been reported to provide an ideal setting for promoting students' mental health, emotional growth, and identity development. There is, however, a need for more evidence-based MSIP research where schools provide high-quality intervention programs, as well as an accurate assessment of their overall effectiveness and the effectiveness of specific intervention methods. In their research, Jennings (2018) assessed the impact of MSIP among at-risk students in Arizona. Quantitative research was used where a cluster randomized controlled trial was applied to evaluate the MSIP intervention program. Results from a 12-week intervention program showed that MSIP largely promotes social-emotional skills and positive mental health through a whole-school approach that focuses on the school staff work environment, classroom curriculum, and parent-teacher collaboration methods. The relationship between MSIP and students' achievement was statistically significant ($p = 0.008$). As such, these findings show that MSIP is largely effective in facilitating the mental, emotional, and character development of at-risk students.

The High School Alternative Program

The HSAP is availed to at-risk students in high school with the key focus of addressing individual problems that might hinder their academic success (Ayala, 2018). In Missouri, the students might opt to join the HSAP for a variety of reasons commonly related to challenges that make it difficult to be successful in a traditional school setting (Douglass, 2020). At-risk students get the opportunity to earn high school credit through performance-based learning, online courses, course packets, and project-based instruction (Draper, 2020; Santana López et al., 2019). Moreover, there are a variety of therapeutic programs available for at-risk students who are experiencing toxic stress and emotional learning disorders (Draper, 2020). Students are also taught specific skills and given several different types of support to help them make preparations for life after high school.

Ayala (2018) added that the HSAP initiative is strongly linked to socio-emotional skills and other different positive outcomes. Some of the positive outcomes of undergoing the HSAP include learners acquiring appropriate socio-emotional skills that are essential for mental health, improved academic performance, and developing social skills (Inga et al., 2020). As a result, interventions based on HSAP focus on fostering students' social interaction skills and emotion management as a way of staying engaged in school and completing their academic endeavors (Ayala, 2018). Under the HSAP, Missouri schools with their existing school structures, curricula, regulations, and resources, have been noted as being important venues for the promotion of students' academic and social well-being (Douglass, 2020). Effective HSAP initiatives could

potentially reach a wide number of at-risk learners from various socioeconomic situations helping them to avoid falling into risky behaviors.

State Technical College of Missouri has teamed up to create a mobile training facility. This trailer has been utilized throughout Missouri to provide free training for persons looking for specific employment skills. Computers, electronics, motor controls, industrial maintenance, and HVAC are all covered. The intervention has been successfully used among at-risk students who are through a fresh start and rehabilitation (Bippert, 2019). Missouri Apprenticeships in Manufacturing Programs (MoAMP) has teamed up with schools providing HSAP to offer free grant-funded specialist training to at-risk learners who have completed high school but lack the financial capacity to advance to post-secondary education (Inga et al., 2020). Key skills include Occupational Safety and Health Administration's (OSHA) 10 Card, EPA Section 608, maintenance tech certificate, state tech transcript, and manufacturing technician certificate of completion (Ayala, 2018). Therefore, such intervention programs play a major role in supporting students' academic progress while giving them the opportunity for a successful transition to adulthood.

The Anabranch Program

The Anabranch program is a self-contained, therapeutic program for middle and high school students who struggle in managing their behavioral and emotional health (Catalano et al., 2020). Instructors under the program assist learners with emotional and social challenges using highly individualized interventions (Santana López et al., 2019). Also, the interventions are informed by the level and extent of trauma that each student experiences. Key among the issues addressed include at-risk students exposed to

psychological concerns like panic and anxiety attacks, obsessions and compulsions, irritability, and fear. Also, instructors assist students to get over the guilt, shame, depression, detachment, and emotional numbing of the trauma that they have endured (Inga et al., 2020). Through the Anabranch Program, students learn important social skills and self-regulation behavior needed to be successful in the traditional school environment. In the process, at-risk students are helped and mentored on how to commence careful transitions back to their local schools when, and if, they are ready (Oligschlaeger, 2017). Instead of simply managing bad behaviors in students, the Anabranch initiative takes a whole-child approach when identifying the root of maladaptive behaviors (Inga et al., 2020). Subsequently, the instructors provide students with experiences that challenge their perspective and self-defeating thought processes (Bippert, 2019; Jennings, 2018). The program also supports learners to overcome emotional and behavioral disorders that might contribute to their inability to build or maintain satisfactory interpersonal relationships with teachers and peers.

The Substance Abuse Intervention Program

The Substance Abuse Intervention Program (SAIP) works in partnership with Preferred Family Healthcare. School counselors work with individual students to provide a curriculum that includes substance abuse interventions, prevention, and education. Students found in the possession of or under the influence of drugs or alcohol are allowed to enter the program as an alternative to long-term suspensions (Bippert, 2019; Jennings, 2018). Each student is assessed and given an intervention plan based on their individual needs. The Substance Abuse Intervention Program is also available voluntarily for

parents looking for a resource to help if they suspect their child has a drug or alcohol problem.

Substance abuse prevention programs are largely designed to enhance "protective factors" and to reduce "risk factors." Under the SAIP, protective factors include the ones associated with reduced potential for drug use. By contrast, risk factors include those that make drug use more likely. Past study findings show that at-risk students who begin using illicit substances at an early age increase the likelihood of continued and problematic use in later ages when substance-related crime becomes much more likely. Within the school settings, the SAIP program seeks to identify and address potential risk factors, such as negative peer associations, unrealistic beliefs about the prevalence of illicit drug consumption, inconsistent or abusive parenting, school exclusion, and feelings of low self-worth. Ayala (2018) demonstrated that many of these risk and protective factors apply to other student behaviors, such as youth violence, delinquency, school dropout, risky sexual behaviors, and teen pregnancy.

Responding to these risky behaviors before they become problematic may be difficult for parents and the community. Additionally, Hines (2016) reported that it is important to understand that risk factors do not, in and of themselves, determine drug use and abuse among at-risk students. Research on students who undergo the SAIP initiative shows that multiple risk factors have a cumulative effect – i.e., the more risk factors a student is exposed to, the greater the likelihood that they will engage in delinquent or violent behaviors. These findings echo observations from longitudinal studies where high school students exposed to six or more risk factors are ten times more likely to be violent by age 18 as a child of the same age who is exposed to only one factor (Lauren, 2019).

Within SAIP, counselors seek to address these challenges to ensure productive student behaviors

Impact of Intervention Programs on Student Engagement

Insights from past research show that schools with intervention programs largely contribute to student engagement in school, increase academic performance, and reduce cases of early school dropouts. Darling-Hammond et al. (2021) defined student engagement as the extent of interest, curiosity, attention, passion, and optimism that learners show when being taught or when they are learning. Student engagement extends to the level of individual motivation and commitment that learners show to continue learning and progress to graduation (Darling-Hammond et al., 2021; Stevens et al., 2018). There is growing consensus that schools that have various intervention programs like the WIP and MOP experience improved learning. According to Cook-Harvey et al. (2020), intervention programs contribute to learning as students show signs of being inspired, interested, and inquisitive. By contrast, schools where interventions lack largely experience students who are dispassionate, bored, and disaffected, where all these imply that learners are disengaged (Stevens et al., 2018).

Temizkan et al. (2021) conducted quantitative research to investigate the impact of intervention programs like vocational rehabilitation on student engagement. The researchers used a single-blind, randomized controlled research where the intervention group including students with special learning needs received group-based support and vocational training. The control group received mainstream educational programs for eight weeks (Temizkan et al., 2021). A total of 49 students from four Texas public high schools participated in the study. Results after the intervention period showed that the test

group was largely more engaged in learning than the control group. Initially, disinterested students were more inquisitive and interested in selecting career paths with the examination mean score of the intervention group being higher (M = 78.2, SD = 11.2) than that of the control group (M = 69.7, SD = 12.2), and mean difference being statistically significant, $t(47)13.7$, $p = 0.002$) (Temizkan et al., 2021). These findings, therefore, show that school intervention programs for at-risk students with special needs, such as vocational rehabilitation strongly contribute to student engagement and proactive learning.

Another study conducted by Lee et al (2021) reported similar observations to those by Temizkan et al. (2021). That is, Lee et al (2021) conducted a study among at-risk students in Oregon and Tennessee to assess students' retention, enrollment, and institutional engagement after receiving Promise Scholarship Program. A total of 78 students from low-income families and disadvantaged communities participated in the program (Lee et al, 2021). Findings showed that student school enrollment increased, in addition to high attendance, and graduation rates after the adoption of the Promise scholarship (Lee et al., 2021). These findings align with observations by Temizkan et al. (2021) where students with specific needs tend to be closely involved and engaged within their schools. Lee et al (2021) added that learning tends to improve when schools identified specific needs of their student population and subsequently embrace relevant tailored interventions. In addition, the researchers noted that learning among Tennessee and Oregon students improved since learners received financial support, thereby offsetting future uncertainty related to their inability to continue with their school enrolment (Lee et al, 2021). The findings further show the positive influence that

intervention programs have in facilitating the engagement of at-risk students in their schools and their academic prospects.

Similar findings to Lee et al (2021) and Temizkan et al. (2021) have also been reported by Jenkins et al. (2022). In their research on college students in California, Jenkins et al. (2022) attempted to assess the impact of the Guided Pathways intervention programs on minority students in community colleges. A total of 100 college students participated in the study with the intervention focusing on five areas of practice: (1) learning and teaching; (2) ongoing student advising; (3) academic and remediation support; (4) onboarding of new students; and (5) program design. Findings showed close coordination among educators, school administrators, and students in decision-making and governance processes within the school (Jenkins et al., 2022). Students felt closely involved in designing learning opportunities, career programs, and other civic life in their communities. Students also felt supported and constantly advised in their academic and career life resulting in high student retention and involvement in their learning (Jenkins et al., 2022). These findings further show the impact that intervention programs like Guided Pathways have on student engagement, especially when examining learners from minority communities with a large percentage of high school dropout rates (Jenkins et al., 2022).

Keijzer et al. (2021) investigated the impact of intervention programs on at-risk students in last-resort programs in North Carolina. The high school students were at a high risk of leaving school unqualified and were in urgent need of close support from highly competent and adaptive mentors. Semi-structured interviews were conducted with mentors and students to share their views of specialized programs on school engagement

(Keijzer et al., 2021). Findings from thematic analysis identified three themes related to mentor support, student engagement, and school support systems. Mentor responsibilities to active students within their schools included guiding and inspiring learners and giving them concrete forms of support. Mentor-student relationships should be founded on bonding, equality, and mutual respect (Keijzer et al., 2021). Mentoring characteristics associated with trust, concern, and empathy ensure students are interested, curious, attentive, and optimistic with their academic endeavors. Learners showed a passion for making relevant career choices which extended to a high level of motivation to learn and progress in their education (Keijzer et al., 2021).

A systematic study conducted recently also supports the close connection between school intervention programs and student engagement. Charlton et al. (2021) investigated the impact of creating programs that support a safe and supportive school climate for multiethnic learners in Florida, who are at risk of school dropout and involvement in drug and substance abuse. A total of 18 experimental studies in public schools across Florida were used in the review and examined student and teacher perceptions of the school environment on individual learning engagement (Charlton et al., 2021). Each study was graded on the quality of its techniques as well as the size of its impact on student engagement in their learning. Variations in teacher views of school climate had effect sizes ranging from -0.29 to 1.69, whereas differences in student perceptions had effect values ranging from 0.03 to 1.93 (Charlton et al., 2021). Insights from students and teachers revealed increased student retention and active learning when administrators create social and emotional learning (SEL, and school-wide positive behavioral interventions and supports (SWPBIS).

However, researchers like Charlton et al. (2021), Keijzer et al. (2021), and Temizkan et al. (2021) agree that intervention programs are not solely about students. Instead, intervention programs that focus on student involvement should also include strategies in which adults, instructors, and school administrators could engage with learners more completely in decision-making and governance processes. Cedeño (2021) examined student engagement and interaction in public schools in the northern United States, focusing on states like Indiana, Illinois, Connecticut, Michigan, Wisconsin, Ohio, and New Jersey (Cedeño, 2021). Findings showed that several schools in the northern region have established alternative forms of student engagement, such as student appointments to school boards, student advisory committees, and other formal and informal mechanisms for assisting at-risk students to be involved in their learning (Cedeño, 2021). The most effective intervention programs include student organizing (which engages students in constructive curriculum development, community organizing, and advocacy), school-sponsored volunteer programs, and community service requirements. These interventions contribute to student participation in their learning and potentially contribute to a reduction in learners' involvement in risky activities.

Impact of Intervention Programs on Motivation, Self-Efficacy, and Sense of Belonging

Findings from past literature also indicate that school intervention programs have a positive effect on enhancing the motivation of students, their self-efficacy, and a sense of belonging in their learning environment. Wilkin and Bost (2015) conducted qualitative research about dropout prevention programs in North Dakota. A total of 21 teachers from a local district were invited to participate in the study. Findings show that collaboration

between local and state education agencies created student retention programs that enabled at-risk students to complete their studies on time while reducing the risk of dropout (Wilkin & Bost, 2015). The introduction of counseling and mentorship programs ensured students were highly motivated to persist through school (Wilkin & Bost, 2015). There was also increased positive perception about being exposed to a supportive learning culture in school, thereby reducing the risk of absenteeism and early dropout. These findings further show that intervention programs positively influence learners at risk of dropping from school and facilitate their commitment to learning.

Like the study by Wilkin and Bost (2015), a quantitative study conducted by Litteken et al. (2018) sought to examine the long-term effect of Question, Persuade, Refer (QPR) Suicide Prevention Gatekeeper Training Program in Missouri among at-risk students. The researchers attempted to assess how the QPR program enables learners to progress in their academic and learning goals. A total of 234 students participated in the study in an attempt to examine the immediate and long-term follow-up impact of the QPR trainees (Litteken et al., 2018). Researchers examined changes in student self-efficacy, knowledge, and help-giving behaviors among the intervention group. Results showed that QPR intervention had both short-term and long-term significant impact on knowledge ($p = 0.002$) and self-efficacy ($p = 0.021$) among learners with suicide tendencies (Litteken et al., 2018). The effect size ranged from Cohen's d = 0.56 to 1.02, showing a medium to high effect that the QPR intervention had in influencing students' self-efficacy and knowledge. Besides, students positively changed their habits of offering assistance to others in terms of how they engaged with peers, teachers, and family members. Further, students were observed to have improved interpersonal relationships

with others, better communication skills, and expressed optimism in transitioning to subsequent grades (Litteken et al., 2018).

Similar to findings reported by Wilkin and Bost (2015) and Litteken et al. (2018), the positive impact that intervention programs have on student motivation, self-efficacy, and sense of belonging has been reported in recent studies. For example, Matlock (2016) attempted to investigate the impact that the Positive Support Teams (PST) program has on high-risk students from low socio-economic backgrounds in terms of enabling them to improve attendance, graduate, and improve test scores in a rural Missouri high school. Researchers conducted a case study recruiting at-risk students to the intervention programs for five months (Matlock, 2016). At the end of the PST intervention program, researchers analyzed its effect on end-of-course exams, attendance, and graduation rate among students from low-income settings in Missouri (Matlock, 2016). Results showed improved test scores for students who accessed the PST intervention program compared to the control group. Moreover, student attendance increased for at-risk students, although not significantly compared to the control group. Also, there was an increase in the graduation rate, although the change was not statistically significant for students from low-income areas without access to PST (Matlock, 2016). Findings from the 5-month intervention program show that PST positively impacted test scores and did not negatively impact graduation rates or attendance. Thus, this program should be prolonged in the future to have a statistically significant impact on at-risk students in rural Missouri.

Louenco (2019) conducted quantitative research to examine the impact of three different freshman transition programs, freshman academies, mentorship models, and summer bridge models used in Missouri that influence the achievement, attendance, and

discipline among 9th grade students. A key focus was to examine the impact of the intervention programs on English II, Algebra I, discipline, and event attendance. Results from one-way ANOVA showed that the freshman intervention programs significantly ($p = 0.000$) influenced students' attendance, and reduced discipline cases (Louenco, 2019). Researchers observed that 9th-grade students benefited from mentorship programs that were central to enabling them to transition through high school. Moreover, the students who underwent the program had high chances of graduating from high school and significantly reduced cases of dropping from school as they became more motivated to concentrate on their academic progress (Louenco, 2019). These findings further confirm observations by past researchers on the positive influence that intervention programs have on students' motivation and enhanced self-efficacy to pursue their academic goals (Litteken et al., 2018; Matlock, 2016; Wilkin & Bost, 2015).

Over the years, low self-efficacy and a lack of sense of belonging among at-risk students have increased cases of suicide among adolescents. Introducing school-based intervention programs has been noted to be important in reaching at-risk students where gatekeepers closely monitor learners, recognize their challenges, and respond to their potential risks via meaningful focus, such as the provision of suicide prevention initiatives. Systematic research conducted by Mo et al. (2018) set to provide comprehensive insights into the importance of school-based gatekeeper training in enhancing student motivation and self-efficacy. The researchers collected 815 studies from various academic databases including ERIC, PsycINFO, Embase, and Ovid Medline (Mo et al., 2018). Insights from the reviewed studies showed that gate-keeper intervention programs positively contribute to students' positive attitudes, skills, self-

efficacy, and individual likelihood to persist in their academic programs (Mo et al., 2018). Also, gate-keeper programs were likely to increase knowledge among at-risk students about suicide prevention practices resulting in positive behavior change.

Temizkan et al. (2021) conducted quantitative research to investigate the effects of a vocational rehabilitation group intervention on occupational self-competence and motivation of at-risk students. Researchers used a single-blind, randomized controlled design to examine the relationship between the rehabilitation program and students' self-efficacy and motivation (Temizkan et al., 2021). For eight weeks, the intervention group received the group-based intervention in addition to the individualized vocational rehabilitation (IVR), while the control group received only the IVR. The Occupational Self-Assessment (OSA) and the Achievement Motivation Test (OLMT) were used to assess motivation and occupational self-competence (Temizkan et al., 2021). The study involved 49 participants who were randomly assigned to one of two groups: IG ($n = 24$) or the control group ($n = 25$). At baseline, the two groups were comparable in terms of OSA scores, OLMT scores, and demographic characteristics ($p > 0.05$). The intervention group demonstrated substantial gains in all assessments following the intervention (p 0.05), whereas the control group demonstrated significant improvements only in the OLMT sub-tests (p 0.05). These findings show that group-based intervention programs potentially increase students' motivation and occupational self-efficacy.

Björklund et al. (2020) investigated the potential impact that the "Together at School" intervention program has on students' mental health and social-emotional skills. The intervention program uses a whole-school approach and focuses on parent-teacher collaboration, work environment, and classroom curriculum methods. A total of 79

students were randomly assigned to control and intervention groups (Björklund et al., 2020). The outcome measures were assessed based on teacher and parent ratings of children's psychological problems and socio-emotional skills. The measurement scales included the Multisource Assessment of Social Competence Scale and the Strengths and Difficulties Questionnaire (Björklund et al., 2020). The data were collected for six months and a follow-up was done after 18 months after the baseline study. The findings showed improved student development and improved mental and socio-emotional wellbeing.

Increased psychological stress throughout puberty has been linked to a poor increased risk of mental health, early school dropout, and low academic performance. Intervening at this time of development may help to avert these issues. The school setting appears to be particularly conducive to interventions, and numerous school-based stress reduction programs have been created during the last decade. van Loon Amanda et al. (2020) conducted a quantitative study to evaluate the effectiveness of school-based intervention programs in alleviating emotional breakdown and psychological stress among at-risk students. A total of 54 studies were included with 61 independent samples with an effect size of 16, 475 participants. Overall, the findings suggested a moderate influence on psychological stress (van Loon Amanda et al., 2020). However, significant effects were only discovered in a small number of student samples. Psychological stress may be reduced by school-based intervention programs aimed at learners who are at high risk. Practice, policy, and future research recommendations are presented. These findings further indicate the potential impact that intervention programs have on enhancing

emotional wellbeing, self-efficacy, motivation, and a sense of belongingness among students.

Influence on Safety Behavior, Discipline, and Violence

Findings from past studies show the potential positive impact of intervention programs on student behavior, discipline, and involvement in violent activities like bullying and fighting. Schools that implement positive behavior interventions and supports (PBIS) programs tend to show few discipline cases like suspensions and expulsions. Freeman et al. (2019) examined the possible relationship between PBIS implementation and student behavior (suspension, office discipline referrals), academic outcomes (exam scores, grading point average), and attendance (lateness, days absent). A sample of 12,127 students from 15 schools that implement PBIS was recruited into the study (Freeman et al., 2019). Results showed that schools that implement PBIS are likely to record improvements in student outcomes and reduced office discipline referrals (ODRs). Moreover, researchers found that schools that implemented with more fidelity had lower absences, few cases of unexcused lateness, low discipline referrals, and fewer suspension or expulsion cases after controlling demographic and student demographic characteristics like age, grade, and gender (Freeman et al., 2019). Findings of this study add to the existing body of knowledge by looking at common measures of academic accomplishment (e.g., GPA) as opposed to standardized tests, and by looking at student-based outcomes rather than school-based aggregate outcomes. Notably, the current study's findings are limited to high school settings and show expected changes in student-level outcome measures over a broad sample.

School-based intervention programs have been noted to have a positive influence in reducing the risk of student involvement in indiscipline and violence. Witherspoon (2017) explored the influence that school improvement interventions have on at-risk students in the state of Missouri. The focus was on elementary, middle, and high school levels with the research outcome being test scores, graduation rates, retention rates, and school safety (Witherspoon, 2017). A total of 56 schools identified by the state of Missouri as low-performing and at-risk were eligible for the intervention program. Results from the bivariate analysis showed that there was a statistically significant relationship between the school intervention program and students' test scores and school safety in terms of reduced violence and the low number of indiscipline cases (Witherspoon, 2017). However, the intervention did not contribute to a significant change in school grades or early school dropouts, prompting the need for follow-up research and longitudinal studies to examine the long-term impact of the intervention program. By contrast, multivariate regression results showed that English and math scores remained significant after the intervention period. The findings show the potential positive impact of intervention programs not only in promoting discipline and reducing violence but also in facilitating students' test scores.

Like Witherspoon (2017), a study undertaken by Harrison (2017) found that intervention models in Missouri facilitate a positive learning environment for students. In their quantitative study, Harrison (2017) attempted to identify the influence that the Response to Intervention program has on 150 students identified to be at risk at Title I schools. The students were drawn from low-income families, poverty backgrounds, and access to reduced lunch rates or free meals. The Response to Intervention (RTI) has been

widely used to enable students struggling to maintain or obtain better grades in math and reading (Harrison, 2017). The study focused on student discipline resulting from the RTI program and subsequent student engagement in learning. Results from survey responses and school data from the Missouri Department of Elementary and Secondary Education showed reduced incidences of school disciplinary measures and expulsion. Students were more likely to develop social networks and communication with their peers and tutors (Harrison, 2017). Also, there were reduced cases of bullying with most learners likely to attend school due to support from the RTI program. As such, the findings show that school intervention programs positively influence the learning environment and reduce potential discipline problems.

Over the years, the Missouri Personal Responsibility Education Program (PREP) has provided sexual health education programs to students with a focus on reducing risky behaviors that lead to unintended teen pregnancies. Lowrey et al. (2021) conducted quantitative research to examine the influence of PREP on students' discipline related to abstaining from risky sexual behavior and the use of personal protection. The researchers evaluated the effectiveness of the Missouri PREP to modify students' intentions to embrace healthier behaviors. A pre-intervention and post-intervention survey program were conducted (Lowrey et al., 2021). A total of 1335 students were evaluated during the intervention program to understand their safety behaviors like abstention, sex, condom use, and healthier practices. Researchers used *t*-test and lagged logistic regression to account for students' respective intentions after undergoing the PREP intervention program (Lowrey et al., 2021). Results showed that after the intervention program, student scores on attitude, knowledge, and intention rose significantly compared to the

baseline level. Overall commitment to engage in safe behaviors positively changed and reduced students' likelihood to engage in risky sexual activities (Lowrey et al., 2021). The surveyed students reported improvement in intention, attitude, and knowledge about positive behavior and safety initiatives while at school, reducing the possibility of engaging in risky behaviors.

Rohlfing (2020) conducted mixed-method research to explore whether lack of access to Comprehensive School Counseling Programs (CSCP) influences students' social-emotional, personal, and academic growth. To understand the study problem, the researchers used focus groups and survey questionnaires to collect data. A total of 236 teachers from Missouri elementary and high schools participated in the surveys, while 25 teachers participated in five focus group discussions (Rohlfing, 2020). Findings showed that teachers were largely in a consensus that Missouri schools with CSCP were in a position to address the needs of students by facilitating personal growth, academic development, career, and socio-emotional development. Also, CSCP created a secure, positive, and safe learning environment in Missouri schools (Rohlfing, 2020). These findings align with past studies where school intervention programs have been reported to enable at-risk students to improve their safety behavior, expression, and management of emotions in a way that creates positive and rewarding association with their peers and teachers (Harrison, 2017; Lowrey et al., 2021). The CSCP initiative enables at-risk learners to positively face issues and resolve challenges that may hinder their healthy development (Rohlfing, 2020).

Over the years, researchers, practitioners, and policymakers have questioned how schools may develop relevant skills for at-risk students to meet their varied challenges.

Researchers advocate that such problems may be addressed by adequately supporting at-risk students in schools and creating high expectations (Harrison, 2017; Witherspoon, 2017). In Missouri, key programs focused on meeting the needs of at-risk students include the Missouri Preschool Program whose grant priority is to serve a large number of disadvantaged learners (Allin, 2020). In their quantitative study, Allin (2020) conducted a causal-comparative study to compare school behavior, discipline, and safety readiness among learners in the Missouri Preschool Program. The comparison was made between students who do not participate in the Missouri Preschool Program and those who are enrolled in the program (Allin, 2020). The outcome measure was evaluated using the Developmental Indicators for the Assessment of Learning Fourth Edition (DIAL-4) focusing on five domains of school readiness. A two-tailed analysis was conducted on collected data with results showing that the mean score of students who participated in the Missouri Preschool Program was higher than learners who did not take part in the intervention program. At-risk learners who participated in the program showed improved language performance, socio-emotional development, self-help, discipline, and avoidance of risk behaviors (Allin, 2020). The findings align with mounting evidence from past studies that intervention programs in Missouri have a positive influence in reducing at-risk student involvement in risky activities, improving personal wellbeing, enhancing behavior, and facilitating academic performance (Harrison, 2017; Lowrey et al., 2021; Rohlfing, 2020).

The challenges resulting from the growing burden, prevalence, and unmet service needs of at-risk students may potentially expose them to mental health problems resulting in self-harm and involvement of students in risky behaviors (Rohlfing, 2020;

Witherspoon, 2017). In efforts to address these challenges, stakeholders and scholars of the Missouri Prevention Center (MPC) have widely used implementation and prevention measures to create, evaluate, implement, and disseminate practices to facilitate students' mental health based on real-world contexts (Herman et al., 2019). In their qualitative research, Herman et al. (2019) set out to describe the multidisciplinary contributions of MPC on enhancing the behavioral, emotional, and social wellbeing of at-risk students. Findings show that the MPC initiative helps students improve their socio-contextual wellbeing and enhance individual behavior towards risk-avoidance. There was improved mental health for at-risk students in school, at home, and community (Herman et al., 2019). The findings further show the positive influence that school intervention programs in Missouri have on enhancing student wellbeing, especially in alleviating mental and emotional behavior and discipline problems that might result from risk exposure.

Intervention Programs Influence Career Choice

A key focus of most school intervention programs is to facilitate future normative motivations, such as informing students' occupational aspirations. That is, at-risk students in schools with intervention programs are likely to feel a positive attitude in terms of being motivated to reach their career goals. Findings show that more than 13% of school students are at risk of dropping out of school due to poor academic attainment, making it difficult to transition to college and future workplaces. A study conducted by Ivzori et al. (2020) sought to describe the creation, evaluation, and implementation of the Successful Pathways to Employment for Youth at Risk (SUPER) program to improve student transition from school to participate in adult employment and responsibilities (Ivzori et al., 2020). Findings showed that schools appraise the academic performance of

at-risk students but lack educational programs to prepare learners to transition to adult life and career choice. The introduction of the SUPER initiatives helps students acquire a range of skills and knowledge needed to transition into adulthood and make relevant career choices (Ivzori et al., 2020). After being enrolled in the program, at-risk students were proactive in identifying career choices, displayed knowledge about future workplaces, demonstrated adult responsibilities, and self-advocacy skills related to career choice. The study findings show the positive contribution of career intervention programs in connecting at-risk students with workplace internship opportunities to ready them for adult responsibilities and future career transition.

At-risk learners continue to experience uncertainty in career progression due to poor academic outcomes, mainly students from high-poverty neighborhoods and low-income families. According to Falco and Steen (2018), for at-risk students to be more college and career ready, there is a need for intervention programs to be effective. Schools that lack career readiness interventions need to formulate similar approaches in efforts to recognize contributions and value of career development initiatives in schools, while implementing most essential programs, strategies, and research initiatives on students' career choice and development of related knowledge (Darling-Hammond et al., 2021; Falco & Steen, 2018). Integrative research by Falco and Steen (2018) explored the influence intervention programs have on at-risk students and noted that such programs facilitate students' interest in future career choice, inform individual commitment to academic achievement, school retention, and persistency to transition to college (Falco & Steen, 2018). The schools that lack career mentorship and counseling are less likely to

have students who are committed to professional growth, while likely to experience low graduation and transition rates among at-risk students from high school to college.

Career tailored education programs in the United States have increasingly supported the need to ensure students are readied with 21st century workplace skills. However, existing projects have been noted to be less effective in helping at-risk students develop the holistic and noncognitive skill sets needed for an entrepreneurial mindset. Rodriguez and Lieber (2020) conducted a quasi-experimental study to assess the relationship between entrepreneurial mindset development and students in Entrepreneurship Education Intervention programs. Two matched groups were used to measure entrepreneurial mindset focusing on at-risk students from underserved communities at the beginning and the end of the school year. The study further examined the impact of the Entrepreneurship Education Intervention program on students' career readiness (Rodriguez & Lieber, 2020). Results showed students enrolled in entrepreneurship classes recorded a statistically significant increase in entrepreneurial attitude, particularly in communication and teamwork, problem-solving, critical thinking, and opportunity recognition. Furthermore, there was a link between gaining an entrepreneurial mentality and future professional success perceptions (Rodriguez & Lieber, 2020). Findings from this study set the path for future in-depth research into the relationship between job-focused non cognitive and education skills, and it implies that entrepreneurial education helps build academic and behavioral skills that are important for career success.

Like studies undertaken by Falco and Steen (2018), Ivzori et al. (2020), and Rodriguez and Lieber (2020) a recent study by Stevens et al. (2018) observed growing

concerns among at-risk students to access relevant career opportunities. Due to limited opportunities, there are concerns that at-risk students are likely to fail or drop out before attaining their degrees potentially exposing them to social, economic, and occupation disadvantages. The at-risk learners who are academically underprepared are estimated to be six times more likely to experience challenges accessing job opportunities. Stevens et al. (2018) examined the effects of school intervention programs on time management, planning, and organization (TMPO) skills among at-risk students. Surveys were used to collect data where online surveys were completed regarding executive functioning, inattention symptoms, planning and management skills, and impairment (Stevens et al., 2018). Intervention students received three lectures with take-home assessments focused on examining their TMPO skills (Stevens et al., 2018). Results showed that learners in the TMPO intervention group recorded significant improvement compared to the control group regarding inattention, impairment, and executive functioning (Stevens et al., 2018). The students in the intervention group showed positive adjustment to school and were ready to engage in activities to support their academic and future professional prospects.

In the last decade, many states have attempted to use Schools of Choice programs (Griffin & Birkenstock, 2022). These initiatives give at-risk students more options for enrolling, ranging from allowing them to choose which school within their local district they want to attend to enabling non-resident learners to enroll in other school districts different from their own (Inga et al., 2020; Stevens et al., 2018). Providing more educational possibilities to learners from low-income cities has allowed a large number of students, especially at-risk learners, to continue their education in districts with a wider range of educational options (Lee et al., 2022). These improved services have been noted

to have a positive impact on job literacy and career preparedness among at-risk students (Griffin & Birkenstock, 2022; Wilkins et al., 2021). Students and their families frequently rely on schools for career readiness assistance. Even though most K-12 schools continue to explore career exploration, it frequently slips to the bottom of the priority list due to the limited resources and time available to staff, counselors, and teachers (Wilkins et al., 2021). At-risk students, on the other hand, are disproportionately harmed when counselors fail to address career planning needs after completing high school because they lack access to relevant intervention programs and career awareness resources to help learners know how to navigate their future.

According to Ivzori et al. (2020), intervention programs may substantially contribute to the promotion of career literacy opportunities. Specifically, after high school, career and vocational counseling may no longer be considered a separate service provided to students (Galvan & Negete, 2017). Schools with intervention programs are positioned to provide timely knowledge about career choices for at-risk students who may be on the verge of dropping out of high school (Charlton et al., 2020). Career exploration, a process of individual learning, increasing self-awareness about prospective vocations, and forming strategies for reaching future career aspirations, has been recognized as a time when students gain the most from career guidance and counseling opportunities (Draper, 2020). Counselors play a critical role in developing job literacy among at-risk students. At-risk kids can be better prepared for the future by taking advantage of existing school choice programs, engaging early in career exploration activities, building soft skills and job skills, and gaining real-world experience through internships and apprenticeships (Cornman, 2017). Assisting at-risk learners in identifying

and developing their abilities may aid them in their quest to break the present cycle of poverty.

Availing career mentorship and guidance in schools has also been noted to be essential in enabling at-risk learners to explore their self-awareness. Many at-risk adolescents possess skills that are not typically identified and nurtured at an early age (van Loon Amanda et al., 2021). Parents may be unable or lack relevant insights to recognize or cultivate their children's abilities due to a lack of time. Schools should use and provide meaningful job exploration activities to help students discover their abilities and interests (Yeckel, 2021). An important step in helping at-risk kids become self-aware is to use career exploration tools and evaluations to assist them in engaging and discovering in talks about their future (Wang, 2021). Temizkan et al. (2021) further reported that availing career guidance opportunities to at-risk students is essential in enabling such learners to increase their employability skills. Not only do at-risk adolescents generally lack academic and career abilities, but they also lack key interpersonal skills.

A growing body of literature shows that soft skills are increasingly being recognized as important predictors of long-term life outcomes, including health and social behaviors as well as labor market outcomes (Mitchell et al., 2021; Stevens et al., 2018). Some of the common examples of soft skills include critical thinking, teamwork, communication, and creativity. These process abilities are equally as crucial, if not more important, than the end product in a worldwide communal society where innovation is the norm (Szucs et al., 2020). Supporting career readiness among high school students who are at-risk and face major life and academic obstacles needs innovative solutions. The

innovative strategies need to be formulated in a manner that assists students to see their future positively, capitalizing on their talents, and developing dispositions that encourage positive career paths (Rohlfing, 2020). As such it becomes essential for student development professionals who create and implement new career initiatives for underserved learners to gain a deeper evidence-based understanding of the factors that influence positive college and career pathways (Temizkan et al., 2021). Subsequently, these leaders should then incorporate relevant student, parent, teacher, and stakeholder perspectives into the proposed career design and delivery for at-risk students.

Despite the positive impact of career awareness creation and support intervention programs, schools may be considering the need to offer internship or apprenticeship programs to at-risk students. Critics argue that school-based intervention programs may not be the optimal choice for every at-risk student (Griffin & Birkenstock, 2022). Importantly, there is a strong possibility that at-risk learners gain from exposure to a variety of educational opportunities, including military programs and trade school initiatives (Lee et al., 2022). One approach to accomplish this is to ensure intervention programs offer at-risk students real-world experience through apprenticeship or internship programs that are specifically targeted to at-risk learners (Lowrey et al., 2021). Numerous apprenticeship programs for at-risk adolescents exist throughout the United States, including the True Star Foundation program, which gives employment opportunities for at-risk students to learn 21st-century professional development, communication skills, and job skills (Jenkins et al., 2021). The program has adopted an innovative solution to uplifting the livelihoods of at-risk learners by providing on-the-job

training for students interested in creating, producing, and working in the media business and other career sectors.

Literature Knowledge Gap

The findings obtained from past studies show that different intervention programs have been used in various schools across the United States. The basis of most intervention programs center on facilitating student retention and participation through financial support or assessing psychological wellbeing. Findings reveal that multiple financial, resource, emotional, and psychological intervention programs have a positive outcome in ensuring learners remain in school and develop positive perceptions about their learning (Aarons, p2019; Bippert, 2019). However, the intervention programs vary in their focus and implementation depending on each school, implying that there is no uniform framework of specific intervention programs used in multiple schools.

For example, some schools use the Evidence-Based Intervention Network to guide students who are at high risk of underperforming and dropping from school (Inga et al., 2020; Santana López et al., 2019). The criterion for EBIN program activities is met by providing students with the opportunity to develop new abilities, nurture current talents, and cope with real-world situations (Catalano et al., 2021; Yaroson et al., 2021). Moreover, the Missouri Option Program only focuses on supporting at-risk students who are likely to drop out of school or who are lagging in their studies making it difficult to graduate with their cohort group (Oligschlaeger, 2017; van Loon et al., 2020). However, these intervention programs have not been assessed regarding their influence on learning motivation, learning self-efficacy, and a sense of belongingness.

Additional intervention programs like the Middle School Intervention Program, High School Alternative Program, Substance Abuse Intervention Program and The Anabranch Program are limited to facilitating students' psychological wellbeing and offering alternative education services (Aarons, 2019; Bippert, 2019). Under existing intervention programs, there is a lack of a comprehensive approach to meeting diverse student needs including normative motivation, discipline and violence reduction, self-motivation, and student engagement (Santana López et al., 2019; Wang, 2021). Lack of integrated intervention programs in most schools necessitates the need for this study to fill the gap in knowledge by identifying effective programs that are comprehensive in meeting the diverse and dynamic needs of at-risk students across Missouri.

Conclusion

The current chapter has presented past literature findings on the topic, focusing on intervention programs and their influence on at-risk students. The chapter detailed the search strategy used to identify relevant resources for this review with a key focus on academic databases and search terms that were used. Subsequent sections then identified key themes from the literature on intervention programs including common theoretical frameworks used in past studies. In this research, the important theoretical frameworks that have been used to understand how intervention programs influence student wellbeing include problem behavior theory, social cognitive theory, social/ethnic identity theory, life-course theories, and vulnerability/resilience theory. Further findings from past studies show that common intervention programs used in various schools include evidence-based intervention networks, Missouri option programs, middle school intervention programs,

high school alternative programs, Anabranch program, and substance abuse intervention programs.

Chapter Three: Methodology

The purpose of this study was to investigate intervention programs being used to retain and engage at-risk middle and high school teenagers in Southeast Missouri and identify effective initiatives that might help promote the success of at-risk students in school and facilitate their subsequent transition into adulthood. In the current methodology chapter, the methods and strategies that were used to examine the research purpose are discussed. Specifically, the chapter identified study participants, data collection instruments, design, and procedure. Data analysis procedures are also discussed, in addition to validity and potential ethical issues emerging from the current study.

Research Philosophy

Pragmatic philosophy formed the basis of the research tradition in this study. The research tradition in this study was founded on pragmatic philosophy. Instead of getting caught up in philosophical discussions about truth and reality, pragmatic philosophy recommends using a method that is best suited to answer the research problem or topics under study, according to Sloan and Quan-Haase (2017). Pragmatists accept the notion that each research method has potential shortcomings, and that it is often beneficial to use multiple methodologies to gain a thorough grasp of the topic under investigation (Bryman, 2017). As a result, pragmatism does not confine itself to a single philosophy when it comes to assumptions about the nature of reality or how a researcher knows the universe, in terms of epistemology and ontology (Cohen et al., 2018). Instead, the reality is actively generated as humans interact with one another in the environment, indicating that knowledge is always evolving as a result of human experiences (Sloan & Quan-

Haase, 2017). Specifically, the axiology of this study was aimed to comprehend the phenomenon under investigation, taking into account both objective and subjective viewpoints.

According to Creswell (2019), pragmatic researchers may employ multiple data gathering approaches at the same time or one after the other. Pragmatic researchers, for example, might start with focus group conversations and then use the collected knowledge to create a survey to test participants' opinions based on a large sample and subsequently conduct a statistical analysis. The quantitative component of the current study was initially utilized as a fact-finding exercise about intervention programs in specific Southeast Missouri schools/districts, after which it was used to set up the qualitative research using semi-structured interviews. According to Creswell et al. (2017), pragmatic philosophy encourages the use of a combination of methodologies, which allows for triangulation.

In this study, the necessity to utilize a methodological approach that works well in answering the problem under study motivated the usage of pragmatism philosophy. The goal was to find effective intervention options that Missouri schools may utilize to improve student engagement and raise school completion rates for at-risk adolescents. As a result, pragmatism allowed the researcher to concentrate on the research questions and the implications of the study's findings instead of the techniques (Bryman, 2017). Pragmatism, according to Creswell (2020), allows a researcher to be flexible while enquiring about a problem utilizing formal and/or informal vocabulary. Because pragmatism opposes any one metaphysical idea, such as truth or reality, a researcher might analyze the study topic in a variety of ways, taking into consideration the

possibility of single or numerous realities that can be empirically evaluated (David & Carole, 2019).

Thus, understanding the factors that contribute to successful school completion and the barriers that contribute to early school dropouts or student involvement in risky behaviors, such as violence and drug abuse was critical in this study, as was working innovatively with parents, teachers, and students to propose new interventions to engage students. A major part of how these students view the world is their belief in objective reality and in the fact that knowledge is derived through experience. The reality of school intervention and at-risk students, in particular, is rooted in the environment and can only be encountered via human experience. That is, pragmatic philosophy maintains that reality and knowledge are socially constituted in the world. Thus, to comprehend the impact of intervention programs, it is necessary to examine the issue through the eyes of teachers and students who have lived it. As such, the study's epistemological stance was that participants' responses should be seen as a direct representation of their concrete social reality and world experience (Bryman, 2016; Creswell, 2017).

Research Approach

A research approach may be deductive, inductive, or abductive. Deductive, inductive, or abductive approaches to study are all possible. The deductive approach is concerned with verifying theory, whereas the inductive approach is concerned with developing theory from collected evidence (Creswell, 2017). The abductive approach begins with puzzles or surprising facts and then commits the remainder of the investigation to explain the observed mysteries. A deductive approach begins with a theory, whereas an inductive approach begins with research questions. Deductive

approaches are most frequently connected with quantitative research, whereas inductive approaches are more closely related to qualitative research (Bryman, 2016). The inductive approach was utilized in this study to gain a better understanding of the research problem concerning the effect of intervention programs on the performance of at-risk students. The inductive technique enables researchers to begin with an open mind and no preconceived notions about what will be discovered. The objective is to develop a new theory from the evidence. Following data analysis, the researcher investigates existing ideas to contextualize their new theory within the discipline.

Research Method and Design

To collect appropriate data to address the established research questions, an explanatory mixed-method design was adopted. The mixed research methodologies were chosen following the pragmatic research philosophy, which states that a researcher should choose a methodological approach that helps them to investigate their study problem most effectively (Kaushik & Walsh, 2019). The focus of the explanatory design was on developing a two-phase mixed methods design with the overall objective of building on pre-survey and pre-interview findings and then comparing student performance before and after the intervention program using examination test scores, as well as post-survey and post-interview data. According to Klave and Brinkmann (2019), explanatory design is well-suited for situations in which a researcher needs qualitative information to explain statistical trends, startling survey findings, or outlier outcomes.

In this study, an explanatory design was conducted in two phases. In the first step, the focus was to collect student performance before participating in the intervention program. Through this approach, the focus was to capture baseline trends, such as school

dropout rates among at-risk students, graduation rates, belongingness, and motivation to pursue their academic programs. In the second step, the focus was to undertake a post-survey and post-interview analysis to examine whether there is a statistically significant mean difference between students who participated in the intervention program and those who did not participate in the intervention program.

The advantages of an explanatory mixed-method design influenced the decision to utilize it. For instance, explanatory design is a two-phase process that facilitates the implementation and collection of pertinent data one step at a time (Hennick et al., 2018). As such, this strategy can be carried out by a single researcher, and a research team is not required to produce the same results (Mat et al., 2020). Additionally, the final findings are straightforward because the report may be written in two phases, allowing for a clear delineation of findings for the intended audience. Additionally, the research methodology enables in-depth data collecting and analysis of findings, allowing for a better understanding of previously undiscovered problems and the formulation of viable hypotheses for future research.

Target Population

The current study targeted middle and high school students, with a specific focus on secondary school grades 6, 7, 10, and 11. The study also targeted teachers who teach students in grades 6, 7, 10, and 11. The study was limited to public school settings only in the United States, located in Southeast Missouri. There are approximately 3,000 elementary and secondary schools in Missouri (MoDESE, n.d.). As of the year 2021, there were about 2,424 traditional public schools, 30 magnet schools, 72 charter schools, and 491 private schools. The focus of this study was limited to 2,424 traditional public

schools. Out of these schools, there are an estimated 981 rural public schools, 464 town public schools, 552 suburban public schools, and 427 urban public schools. The specific focus of this study was limited to suburban public schools due to their proximity to the researcher.

However, since it was difficult to recruit all the 552 suburban public schools for the study, only four schools were taken into consideration in the current research. According to statistics from the Show-Me Institute (SMI), the estimated number of students at-risk in these suburban schools ranges between 3.4% and 5.1%, with their rate of graduation ranging from 61% to 69% compared to the average district rate of 83% (SIM, 2022). Also, the graduation rate is low compared to 89.9% of learners who are not considered to be at-risk (SIM, 2022). Moreover, an estimated 85% of these at-risk students who constitute graduation rates of 61to 69% are less likely to transition to formal job markets (SIM, 2022). As such, undertaking this study was important in order to examine intervention programs being used to retain and engage them in middle and high school settings across Missouri, while identifying effective intervention programs that might help promote their success in school and subsequent transition into the job market.

Participant Sampling

For the survey questionnaires, the study participants included students drawn from secondary grades 6, 7, 10 and 11. For the interview questions, the focus was on teachers who deliver instructions in these grades. All the students were drawn from the Missouri Department of Elementary and Secondary Education (MoDESE, n.d.). From each of the four grades (i.e., Grades 6, 7, 10, and 11), the total number of students in each classroom ranged between 20 to 24 learners. Purposive sampling was used to recruit

participants for the study focusing on two public schools that offer intervention programs and two schools that do not offer the intervention program. The use of purposive sampling ensured the recruitment of schools with relevant predetermined inclusion and exclusion criteria. The inclusion criteria focused on: (1) schools offering or not offering intervention programs; (2) schools enrolling students who have been identified to be at-risk; and (3) at-risk students who reside in Missouri.

In this study, all students were randomly selected based on their grade level and the school's willingness to participate in the intervention program. Two schools did not offer intervention programs to at-risk students (control group), while two other schools offered intervention programs for at-risk students (intervention group). G*Power analysis was used to identify an ideal sample size to participate in the study (Ghauri et al., 2020). Assuming a target population size of 200 students from each school at a 95% confidence level and a 5% margin of error, the ideal sample size for this study from each of the four schools was between 84 and 98 students.

Table 1

Students from Grades 6, 7, 10, and 11 Who Participated in the Study (n = 360)

Grades	Provide intervention programs		No Intervention Program	
	School A	School B	School C	School D
Grade 6	22	20	22	26
Grade 7	20	24	20	24
Grade 10	24	20	22	26
Grade 11	24	20	24	22
Total	90	84	88	98

Table 1 presents the total sample size as 360 students.

During the first school term, 2021-2022, there was no intervention program in any of the four schools. In the sixth school term 2021-2022 the teachers remained the same for all grades, with the addition of intervention programs in two schools only. The intervention program lasted six weeks during the school term. Therefore, the only difference between both school terms was the addition of a six-week intervention program in two schools (intervention sample, n = 174) while two schools did not receive similar intervention programs (control sample, n =186). A total of 174 students received an intervention program that lasted six weeks during a school term. The remaining 186 students did not receive any intervention during the six weeks but continued to receive mainstream instruction similar to the first school term.

For the interviews, teachers from across the four schools were recruited for the study. There were 12 teachers from all the schools representing all Grades 6, 7, 10, and 11 who participated in the intervention program. The inclusion and exclusion criteria were limited to teachers from the four schools, teaching grades 6, 7, 10, or 11, who have resided in Southeast Missouri or worked with and have knowledge about at-risk students. The choice of a sample size of 12 teachers was considered enough for the study to help achieve data saturation on the topic. Creswell (2017) recommended sample size of between 8 and 20 participants to be enough for a qualitative study. That is, the 12 teachers from the four schools could offer an in-depth assessment of the study problem to identify key themes with no additional themes likely to be identified even with the addition of more teachers to the study.

Participant Recruitment

The recruitment of participants into the study was informed by predetermined inclusion and exclusion criteria. Specifically, the inclusion criteria that were considered when selecting participants focused on the following: (1) students identified as being at-risk; (2) students in grades 6, 7, 10, and 11; and (3) secondary schools in Southeast Missouri. Moreover, all the participants, including teachers and students, must have been residing in Missouri at the time when the study was taking place. To recruit participants to the study, site authorization from the school district superintendent was sought requesting permission to conduct research in four schools (see Appendix A). A request letter for the intervention program was also sent to school principals or administrators to conduct the intervention program (see Appendix B).

Further, parental consent and assent letters were sent to parents and students for approval to participate in the study (see Appendices C and D). Students approved to participate in the study were shortlisted, contacted via school principals or teachers, and randomly recruited into intervention or control groups in their respective grades within their schools. All participants were assured of their privacy, safety, and data confidentiality throughout the study. Participants were also informed during recruitment that their participation was voluntary and anyone could drop out of the study at any time without any negative consequences.

Intervention Program

Before the start of the intervention program, data from the school term was collected to ensure a foundation of student NWEA MAP scores in grades 6, 7, 10, and 11 could be established. NWEA is the most trusted and innovative assessment for measuring achievement and growth in K–12 math, reading, language usage, and science. It provides

teachers with accurate, and actionable evidence to help target instruction for each student or group of students regardless of how far above or below they are from their grade level. There were four classes for each school and each of them was divided into two schools implementing intervention programs and the other two schools not offering any intervention programs. NWEA MAP assessments were provided to all students in the fall of the academic year with a follow-up exam administered in the spring. Such an approach was intended to provide growth data that could be compared with the initial data from the first school term. During the intervention program, students in the intervention group received close support, frequent discussions, hands-on activities, and small-size instruction to enhance their engagement. By contrast, students in the control group received traditional teacher-led instruction lectures.

Teachers in the intervention group also gave students plenty of feedback, continually monitored their progress, clarified objectives, and ensured students could rephrase learned lessons to motivate learning. The intervention group also received peer models, teachers capitalized on students' interests, encouraged learners to try, and allowed students to make their own choices to promote self-efficacy and a sense of belonging. Students were also taught about bullying and why they should not engage in indiscipline, in addition to receiving mentorship about subject choices based on their abilities, and receiving career counseling about future job opportunities.

Instrumentation

A battery of survey questionnaires (see Appendices E-I) and semi-structured interview questions (see Appendix J) were the primary instruments used to collect data in this research. The surveys and interviews were further supported by data obtained from

students' exam or test scores before, during, and 1 month after the intervention program had been completed. The current section details the instrumentation used during the study. The application of these instruments in answering the research questions and research hypothesis is further detailed below.

Survey Questionnaires

A set of four validated survey questionnaires were used in this study. Hypothesis 1 was tested using the Student Engagement in Schools Questionnaire (SESQ). The questionnaire aligns with Null Hypothesis 1 that was formulated to examine the following: *Intervention programs do not affect the engagement of at-risk teenagers in school*. The SESQ questionnaire (see Appendix E) was developed through collaboration from 19 countries (Lam & Jimerson, 2008). The SESQ consists of 33 survey items validated from existing research, thereby ensuring content validity. Specifically, the SESQ survey measures five components: (1) cognitive engagement; (2) effort and persistence; (3) liking for school; (4) liking for learning; and (5) extracurricular activities. Some of the survey questions include "I am very interested in learning," "I like what I am learning in school," and "I enjoy learning new things in class." Students respond to the survey items using a 5-point Likert-type scale of 1 to 5 (1 = Never; 2= Rarely; 3 = Sometimes; 4= Often; 5= Always). Past reliability tests show that the Cronbach's coefficient alpha for the SESQ survey is 0.77 which is above the established benchmark of 0.70, thereby showing the survey instrument has acceptable internal consistency.

Hypothesis 2 was answered using the Academic Motivation Scale (AMS) and Morgan-Jinks Student Efficacy Scale (MJS-ES). Null Hypothesis 2 was focused on examining the following: *Intervention programs will not increase the educational aspects*

of students concerning school. First, the AMS scale contains 28 survey items concerning why students choose to go to school. The survey measures three variables: (1) intrinsic motivation (e.g., motivation to accomplish, know things, and experience simulation); (2) extrinsic motivation; and (3) apathy. Students rate the items on a 5-point Likert scale ranging from 1-to 5 (1 = Strongly Disagree, 5= Strongly Agree). Higher grade levels in school show greater intrinsic motivation, extrinsic motivation, and apathy. Past research shows the external validity for the AMS scale is reliable with high internal reliability of 0.81) and test-retest reliability of 0.79.

Second, MJS-ES includes a 30-item inventory with a 5-point Likert rating (1 - Really Disagree; 2 - Kind of Disagree; 3 – Not Sure; 4 - Kind of Agree; and 5 - Really Agree). The scale has been field-tested and reported to have an overall reliability coefficient of 0.82 (Jinks & Morgan, 1999). Some of the survey items include "I could get the best grades in class if I tried enough" and "Most of my classmates like to do math because it is easy." The MJS-ES was used to capture insights into students' perceptions of their academic self-efficacy after undergoing the intervention program.

Hypothesis 3 was tested using the Illinois bully scale. Null Hypothesis 3 was developed to examine the following: *Intervention programs do not affect the exposure to risk factors among at-risk students*. The scale is a research-validated tool used to measure bullying victimization through direct surveys (Olweus & Limber 2010). The scale consists of 18 items designed to measure three outcomes: (1) bullying, (2) fighting; and (3) victimization. Bullying perpetration focuses on questions like. "I spread rumors about other students" and "I teased other students," fighting includes survey items like, "I got in a physical fight" and "I hit back when someone hit me first," while victimization includes

"Other students called me names" and "Other students picked on me." Survey items are scored on a 5-point Likert scale (1= Never to 5 = Always). Higher fighting, victimization, and bullying indicate higher rates of perpetration of student indiscipline. The validity of the sample has high internal consistency with an alpha value of 0.80, thereby relevant in collecting data for this study.

Null Hypothesis 4 was created to examine the following: *Intervention programs do not affect the normative motivation of at-risk students*. The Career and Psychosocial Mentoring Functions Questionnaire (CPMFQ) was used to test null hypothesis 4. The questionnaire measures normative influence among students including teaching, coaching, exposure/visibility, sponsorship, assigning challenging tasks, role modeling, acceptance/ confirmation, friendship, and counseling. A total of 20 survey items are used and scored on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The survey questions include "My mentor discussed career paths with me" and "my mentor established a climate which encouraged independence". The internal consistency of the survey item has a reliability of 0.74 and test-retest reliability of 0.71.

Semi-Structured Interview Questions

Semi-structured interviews were also conducted to collect in-depth expert information from teachers and school leaders concerning the intervention program. A set of 10 interview questions (see Appendix J) was used to collect relevant data about the topic. Interview Question 1 asked teachers and administrators to share their demographic information including education level, current job, and the grade they teach at their school. Interview Questions 2 and 3 were created to understand RQ1: *how do the different intervention programs currently used in middle and high schools in Missouri*

influence the student's engagement with school? Teachers were asked to share whether there are any intervention programs in their schools. Also, teachers were asked to share their views about existing school programs and how they influence at-risk students to become more engaged within their learning environment. That is, the focus was to understand how teachers perceive available support systems in their schools to be supportive of at-risk students and act as a tool to make them feel closely tied with their school.

Interview Questions 4 through 6 were created to help answer RQ2: *How do the different intervention programs influence educational aspects of students regarding school, such as learning motivation, learning self-efficacy, and a sense of belonging to school*? Teachers were asked to share their views about how available support systems are likely to inform students' choice of subjects, career decisions, and commitment to remain focused on their academics to achieve set goals. Teachers were further asked to share their experience with intervention programs and their possible influence in enhancing students' self-efficacy and belongingness.

Interview Questions 7 and 8 were created to help answer RQ3: *How do the different intervention programs used in middle and high schools in Missouri influence risk factors, such as discipline and involvement in violence*? Educators were asked to share their experience on how intervention programs may influence at-risk learners to avoid engaging in indiscipline behaviors. Also, teachers were encouraged to share their views on how the intervention program may potentially help at-risk students not to engage in crime, offending, or engaging in provocative acts bullying other learners.

Finally, Interview Questions 9 and 10 were created to help answer RQ4: *How do the different intervention programs used in middle and high schools in Missouri influence future normative motivations, such as occupational aspirations*? During the interview sessions, teachers were asked for their views on how the intervention program would likely inform the transition of at-risk students to colleges. Moreover, teachers elaborated on how intervention programs are likely to help at-risk students transition into future workplaces through subject selection, career choices, and improved academic performance.

Examination Test Scores

In addition to surveys and interviews, additional data used in this study included students' test scores based on the Missouri Assessment Program (MAP). The MAP focuses on measuring how well students acquire the knowledge and skills described in Missouri's Learning Standards (MLS). The MAP tool was used to assess the performance of students from grades 6, 7, 10, and 11 concerning their English, mathematics, and science scores and compared to current scores utilizing both co-teaching and standard practices of instructors. The MAP presented a valuable tool as it measures the performance of every student, whether they are within, above, or below expected performance standards. The assessments yield information on academic achievement at the student, class, school, district, and state levels.

Through the MAP tool and NWEA MAP, it is possible to demonstrate how each student grows over time, before, during, and after the intervention program. Each question on the NWEA MAP assessment is calibrated to an equal-interval RIT (Rasch UnIT) scale to ensure longitudinal growth is tracked. The RIT serves as a measurement

scale developed to simplify the interpretation of test scores. NWEA MAP offers specialized reports that turn the raw data into insights that help determine the effectiveness of teaching, learning, or specific programs and strategies for helping at-risk students. The data on NWEA MAP scores were collected before, during, and after the intervention programs. Analysis of variance (ANOVA) tests was performed to check whether there were any meaningful differences in students' NWEA MAP mean scores before and after the intervention program.

Data Collection Procedure

All primary data were collected using surveys, interviews, and NWEA MAP test scores. The data were compiled and coded using pseudonyms. The data were kept confidential and stored in a password-protected personal computer to ensure that the privacy of participants was protected and that the data were secure. First, surveys were used to collect student views about various issues including their engagement in school, academic motivation, self-efficacy, bullying, and the effect of mentorship on study subjects and future career choices. The four survey instruments were administered before and after the intervention program that lasted six weeks. The pre-intervention and post-intervention surveys sought to examine whether student perceptions about their motivation, self-efficacy, bullying, and future career choices changed after being enrolled in the intervention program when comparing the intervention and control groups. After filling out the pre-intervention and post-intervention surveys, students submitted them for final analysis.

Second, interview data were collected using semi-structured interview questions. Participants included teachers and administrators from the four schools in grades 6, 7, 10,

and 11. Interview questions were used as a guide where every interviewee was asked the same question during the interview session. A total of 12 teachers participated in the interviews to share expert opinions about the intervention program. Interview sessions lasted between 25 minutes and 40 minutes. Participants were informed that their responses would be recorded during the interview sessions. After completing the interviews, each participant was respectively thanked for their participation. Participants were informed that a copy of their responses could be provided during member checking to ensure the authenticity of the final transcripts. Final transcripts were recorded in a Microsoft Word document and were used in thematic analysis to identify the main themes emerging from participant responses concerning the study problem and research questions.

Finally, the exam test scores were collected from the NWEA MAP program. The data were recorded before, during, and after the intervention program. The pre-intervention NWEA MAP scores were used as the baseline for all students before taking part in the intervention program. The test schools during the intervention were used to determine potential mean score changes between students in the control and test groups. Scores after the intervention were used to compare the possible impact of the intervention program on students' academic performance by comparing mean differences during the baseline period and after the intervention. The test score data were further used to supplement information collected using interviews and surveys.

Data Analysis

Data from surveys, NWEA MAP scores, and interviews were analyzed qualitatively and quantitatively. Quantitative data were used to analyze data from surveys

and test scores. Descriptive statistics were used to analyze student demographic data including age, gender, and current grade. Key information on frequencies, percentages, means and standard deviation was collected using descriptive statistics. Further, inferential statistics were used to test hypotheses using *t*-tests and ANOVA analysis. Correlations were used to examine whether there is a possible association between the intervention programs and students' test performances. Pearson's correlation was used with an alpha significant level set at 0.05, where p-values ≥ 0.05 were considered statistically significant.

Data from the interviews were analyzed qualitatively to identify the main themes from teachers' responses. The six-step thematic analysis process proposed by Braun and Clarke was used to identify relevant themes through an inductive approach (Braun & Clarke, 2019). The six-step process includes the following: "familiarization, coding, generating themes, reviewing themes, defining and naming themes, and writing up findings" (Braun & Clarke, 2019). Through open coding, the first step focuses on becoming familiar with all the interview responses and highlighting keywords relevant to the topic. Open coding is then used to identify key phrases and terms related to the study problems. In step three, piles of similar codes were grouped to form initial themes. In subsequent steps, the themes were further reviewed, defined, and named before writing the final findings.

Potential Ethical Issues

There were important ethical considerations to take into account considering the recruitment of human subjects for this study. Some potential ethical issues pertain to issues of IRB approval, confidentiality, informed consent, and participant privacy. IRB

approval was sought from the institution before commencing the current research. Creswell and Poth (2018) reported that IRB approval ensures participants are protected from potential physical, emotional, and psychological harm throughout the research. Once the participants had been recruited into the study, they were informed that the research process was voluntary and the information shared free from any manipulation. Further, the participants were also informed about their right to drop out from the study at any time with no consequences, and not to respond to questions they were not comfortable with within the survey questionnaire. Moreover, the participants were assured of their privacy and confidentiality regarding the information and data they shared. The collected data were stored anonymously to safeguard against revealing the true identity of the participants, while data were also stored and backed up in a password-protected computer.

Chapter Four: Results and Findings

The purpose of this study was to investigate intervention programs being used to retain and engage at-risk middle and high school teenagers in Southeast Missouri and identify effective initiatives that might help promote the success of at-risk students in school while facilitating their subsequent transition into adulthood. Mixed-method research was conducted to explore and answer the identified research problem. The focus of this results and findings chapter is to detail insights obtained from survey questionnaires, interview questions, and NWEA examination test scores. The chapter first presents the demographic characteristics of the participants who participated in the study. Then, the pre-intervention survey responses from the at-risk students are presented to show their views on academic engagement, motivation, behavior, and career behaviors before taking part in the intervention program. Subsequent sections then detail the NWEA examination scores both before and after the intervention program. Moreover, the post-intervention survey results are also presented to assess at-risk student progress after taking part in the intervention program. The chapter also presents interview findings from teachers' responses to get expert opinions about the intervention program and its influence on at-risk students in Missouri.

Participant Demographics

Table 2 shows the demographic characteristics of the at-risk students who participated in the surveys and the intervention program. In terms of gender, 58.1% of the students were male students while 41.9% were female students. The age of the participants ranged from 11 to 18 years, with most students (27.5%) falling within the 15 to 16 age brackets. Another 26.9% were in the 17 to 18 age bracket, 23.1% in the 13 to

14 age bracket, and 22.5% in the 11 to 12 age bracket. In addition, 25.0% of students were drawn from School A, 23.3% from School B, 24.4% from School C, and 27.2% from School D.

Table 2

Demographic Characteristics of Students Who Participated in the Surveys (n= 360)

Student Demographics	Frequency	Percentage (%)	M(SD)
Age (years)			
11-12	81	22.5	
13-14	83	23.1	90(9.31)
15-16	99	27.5	
17-18	97	26.9	
Gender			
Male	209	58.1	180(41.01)
Female	151	41.9	
School			
A	90	25.0	
B	84	23.3	90(5.89)
C	88	24.4	
D	98	27.2	
Ethnicity			
White	54	15.0	
African America	98	27.2	
Hispanic	84	23.3	72(19.36)
Mixed	91	25.3	
Other (e.g. Asians, Indians)	33	9.2	
Grade			
Grade 7	90	25.0	
Grade 8	88	24.4	90(1.63)
Grade 10	92	25.6	
Grade 11	90	25.0	

Table 2 also shows that in terms of ethnicity, most students (27.2%) were African American, with 23.3% being Hispanic/Latino, 25.3% being mixed, 15.0% white, and 9.2% from other ethnic minorities including Asians, Indians, and Native Americas. Lastly, in terms of their grade, 25.6% were from Grade 10, 25.0% from Grade 7, 25.0% from Grade 11, and 24.4% from Grade 8. The insights from the demographic

characteristics show that the students were drawn from diverse backgrounds and were largely representative of the high school students in Southeast Missouri.

Potential Risk Factors Students Are Exposed to in School and at Home

Students were asked to share personal views about factors likely to have a negative effect on their academic motivation. The students gave their responses on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The 10 survey items were driven from the reviewed literature focused on common issues that largely define at-risk high school students in Missouri (NCES, 2021; Louenco, 2019; Sinclair et al., 2020). Table 3 presents potential risk issues that students are exposed to both in school and at home. Results show that, except for items 6 and 8, the remaining factors were significant risk issues expressed by students. In the eight statistically significant risk factors, the mean of students who responded with *Strongly Agree* was higher than the mean of students who responded with *Strongly Disagree*. For example, the mean of students who responded Strongly Agree with the statement *I experience emotional or behavioral problems* was higher (M = 2.93, SD = 0.68) than the mean of students who answered *Strongly Disagree* (M = 1.33, SD = 33). The mean difference was statistically significant, $t(358) = 8.12$, $p = .007$).

Table 3

Student Responses to Various Risk Issues they have Experienced While in School and at Home (n = 360)

No.	Risk Factors	Strongly Agree		Strongly Disagree		p-value
		M	SD	M	SD	
1	Often, I experience emotional or behavioral problems	2.93	0.68	1.33	0.33	.007
2	I am mostly absent from school	2.77	0.53	1.63	0.66	.000
3	I mostly record low academic performance	3.02	0.71	1.55	0.79	.000
4	I do not have much interest in academics	3.05	0.87	1.76	0.39	.002
5	I feel disconnected from the school environment	3.04	0.57	1.50	0.45	.002
6	I am often expelled due to discipline issues	1.98	0.65	2.33	0.56	.056
7	I have used drugs and other substances regularly	2.95	0.51	1.72	0.32	.000
8	I have been on the wrong side of the law with police	2.09	0.73	2.31	0.35	.074
9	I am sexually active and currently	2.88	0.75	1.56	0.34	.001
10	I have thought about dropping from school severally	2.85	0.76	1.48	0.84	.000

In line with Table 3, the mean of students who responded *Strongly Agree* to the statement *I am mostly absent from school* was higher (M = 2.77, SD = 0.53) than the mean of students who answered *Strongly Disagree* (M = 1.63, SD = 0.66). The mean difference was statistically significant, $t(358) = 11.14$, $p = .000$). Moreover, the mean of students who responded *Strongly Agree* to the statement *I mostly record low academic performance* was higher (M = 3.02, SD = 0.71) than the mean of students who answered *Strongly Disagree* (M = 1.55, SD = 0.79). The mean difference was statistically significant, $t(358) = 6.91$, $p = .000$). The obtained findings show that the common risk factors students are exposed to at home and in school include the following: emotional or behavioral problems, absenteeism, low academic performance, lack of interest in

academics, disconnection from the school environment, drug and substance abuse, early sexual activities, and early dropout from school.

However, students are less likely to be expelled from school due to indiscipline or due to juvenile delinquency (e.g., peer pressure, and violence at home). For example, most students noted that they Strongly Disagree with the following statement: *I have been on the wrong side of the law with police*. The mean of students who strongly disagreed was higher (M = 2.31, SD = 0.35) than the mean of students who stated Strongly Agree (M = 2.09, SD = 0.73), but the mean difference was not statistically significant, $t(358) = 1.92$, $p = .074$. Similarly, most students noted they Strongly Disagree with the statement that *I am often suspended due to discipline issues*. The mean of students who stated they Strongly Disagree was higher (M= 2.33, SD= 0.56), than the mean of students who stated they Strongly Agree (M = 1.98, SD = 0.65). The mean difference was not statistically significant, $t(358) = 1.82$, $p = .056$. Therefore, despite some students having reported having been suspended from school due to discipline issues or encountered legal officers due to juvenile offending, the mean differences were not statistically significant.

Pre-Intervention Interview Responses

The current section presents survey responses from 360 students regarding their engagement in school, academic motivation, self-efficacy, discipline behavior, and career mentorship. The surveys were conducted to capture students' views before taking part in the 6-week intervention program. Normality tests are first presented for the four survey items (i.e., AMS, MJS-S, SESQ, and CPMFQ) to determine if a data set was well-

modeled by a normal distribution. The subsequent subsection then presents key findings from the survey responses.

Normality Test

A normality test was performed to ensure the participants' responses to the five survey questionnaire tools were drawn from a normally distributed population. According to Ghasemi and Zaharias (2012), inferential statistics, such as *t*-tests and ANOVA are anchored on the assumption of a normally distributed sample population. Violating the assumption might contribute to biased and unreliable results. Hair et al. (2017) reported that parametric tests, such as *t*-tests, analysis of variance (ANOVA), correlation, and regression should be based on normally distributed data. Data from the 360 survey responses were used in the normality tests based on the Kolmogorov-Smirnova and Shapiro-Wilk tests.

Table 4 shows the obtained results for the participant responses to AMS, MJS-S, SESQ, IBS, and CPMFQ survey instruments. Results show that across the Sig. column, the *p*-values are greater than the Alpha significant value of 0.05 ($p > 0.05$). Therefore, since the *p*-value is larger than the alpha significance level of 0.05, it may be concluded that the survey response data for AMS, MJS-S, SESQ, and CPMFQ survey instruments were normally distributed since it does not significantly deviate from a normal distribution.

Table 4

Kolmogorov-Smirnova and Shapiro-Wilk Normality Test by Gender for AMS, MJS-S, SESQ, and CPMFQ Survey Instruments (n = 360)

Tests of Normality							
		Kolmogorov-Smirnova			Shapiro-Wilk		
	Gender	Statistic	df	Sig.	Statistic	df	Sig.
AMS	Male	.184	7	.200	.913	4	.451
	Female	.234	10	.130	.832	14	.443
MJS-S	Male	.256	7	.183	.885	4	.241
	Female	.140	10	.200	.961	14	.853
SESQ	Male	.208	7	.200	.884	4	.254
	Female	.114	10	.200	.952	14	.761
IBS	Male	.234	7	.183	.885	4	.446
	Female	.256	10	.200	.961	14	.247
CPMFQ	Male	.251	7	.183	.842	4	.278
	Female	.147	10	.200	.851	14	.689

Additional normality tests showed that the skewness of the survey responses for the AMS, MJS-S, SESQ, IBS, and CPMFQ Survey Instruments were 0.46, -0.33, -0.38, and -0.04, respectively. The obtained Skewness values range between -0.5 and 0.5 indicating that the mathematics mean score data for grades 2 through 5 was symmetrically distributed (Hair et al., 2017). By contrast, the Kurtosis AMS, MJS-S, SESQ, IBS, and CPMFQ Survey Instruments data were 0.53, -0.62, 1.19, and -1.05 respectively. These results imply that the Kurtosis fell within -1 and +1 indicating the distribution of data is flat but considered normal, thereby meeting the assumptions for T-test and ANOVA analyses (Hair et al., 2017).

Participants Survey Responses

Students were asked to share their views about the level of engagement in school. The Student Engagement in Schools Questionnaire (SESQ) was used to collect views from the students. The SESQ tool consisted of 33 survey statements focused on measuring five main constructs: the liking for learning; liking for school; effort &

persistence; extracurricular activities; and Cognitive engagement. Table 4 presents *t*-test results for students' responses to the five main constructs from the SESQ survey on their engagement in school. Results show that across the five constructs, the mean difference between students who responded with Strongly Agree or Strongly Disagree was not statistically significant. That is, there was no statistically significant difference in students' perceptions about school engagement in terms of their liking for learning, liking for school, the level of effort and persistence they commit, participation in extracurricular activities, and cognitive engagement (i.e., willingness and ability to take on the learning tasks).

Table 5

T-Test Results for Students' Responses About their Level of Engagement in School (n = 360)

No	Student Engagement at School	Strongly Agree		Strongly Disagree		p-value
		M	SD	M	SD	
1	Affective engagement (liking for learning)	2.21	0.77	2.20	0.82	0.182
2	Affective engagement (liking for school)	2.32	0.55	2.16	0.56	0.310
3	Behavioral engagement (effort & persistence)	2.17	0.55	2.16	0.88	0.166
4	Behavioral engagement (extracurricular activities)	2.38	0.74	2.18	0.78	0.566
5	Cognitive engagement	2.16	0.54	2.18	0.70	0.175

The students also shared their views about individual academic motivation. The 28-item Academic Motivation Scale (AMS) was used to examine the levels of student motivation towards their academic work. Table 6 shows *t*-test results for students' responses about their academic motivation based on seven constructs. Results showed that there was no statistically significant mean difference in students' perception of their

academic motivation across the seven constructs. The mean differences between students who responded with *Strongly Agree* and *Strongly Disagree* were not statistically different. Students' interests to discover new information, commitment to accomplish academic goals, feeling pressured by parents or teachers to perform, or individual persistence to complete academic objectives were not significantly different based on the AMS scale.

Table 6

T-Test Results for Students' Responses About their Level of Motivation Towards Academic Wok in School (n = 360)

No	Student Academic Motivation	Strongly Agree		Strongly Disagree		p-value
		M	SD	M	SD	
1	Interest to know	2.42	0.47	2.05	0.88	0.119
2	Commitment to academic accomplishment	2.05	0.59	2.26	0.52	0.094
3	Commitment to experience stimulation	1.91	0.59	1.77	0.40	0.115
4	Feeling the need to accomplish (identified)	1.89	0.57	1.64	0.69	0.074
5	Feeling pressure to perform (introjected)	2.44	0.40	1.60	0.47	0.127
6	External regulation	2.19	0.51	1.99	0.77	0.113
7	Persistence towards academic goals (amotivation)	2.15	0.58	1.66	0.45	0.073

Students further shared their views about individual efficacy beliefs that might relate to school success. The 34-item Morgan-Jinks Student Efficacy Scale (MJS-ES) was used to collect students' responses. The MJS-ES captures four key constructs related to students' self-efficacy beliefs including the following: students' innate talent or ability, students' perceptions of the role of their effort in completing tasks, socio-cultural or contextual factors, and students' perceptions about task difficulty. Table 7 presents the

obtained *t*-test results indicating that student responses to the survey items were not statistically significant between those who answered *Really Agree* and *Really Disagree* with the survey statements.

Table 7

T-Test Results for Students' Responses About their Level of Self-Efficacy Beliefs (n = 360)

No	Student Self-Efficacy Beliefs	Really Agree		Really Disagree		p-value
		Mean	SD	Mean	SD	
1	Students' innate talent or ability	1.75	0.62	2.18	0.77	0.100
2	The individual role of their effort in completing tasks	2.64	0.56	2.26	0.67	0.093
3	Socio-cultural, or contextual factors	2.59	0.60	2.85	0.67	0.127
4	Student perceptions about task difficulty	2.23	0.85	1.56	0.77	0.070

Students further shared their views about school discipline instances like bullying, fighting, and victimization. The 17-item Illinois bully scale (IBS) instrument was used to collect relevant information from the students. Table 8 presents *t*-test results for students' responses about their school discipline. Findings show there were no statistically significant differences among students regarding their involvement in various discipline issues like bullying, fighting, and victimization. The *p*-values for the students' responses about *Strongly Agree* and *Strongly Disagree* were not statistically significant.

Table 8

T-Test Results for Students' Responses About their School Discipline (n = 360)

No	School Discipline	Strongly Agree		Strongly Disagree		p-value
		Mean	SD	Mean	SD	
1	Involvement in bullying other students	2.88	0.66	1.78	0.89	0.074
2	Involvement in fighting with other students	2.60	0.49	1.86	0.60	0.067
3	Victimization by other students	1.59	0.55	2.15	0.59	0.051

Lastly, students shared their views about career mentorship with their teachers and counselors. The 26-item Mentorship Quality Experience survey (MQES) was used to collect students' perceptions about career mentorship. Table 9 presents the *t*-Test results for students' responses about their career mentorship in line with nine survey constructs including teaching, coaching, exposure/visibility, sponsorship, assigning challenging tasks, role modeling, acceptance/ confirmation, friendship, and counseling. Results show that there were no statistically significant differences in the means of students' responses about the level of support they received towards career mentorship. The *p*-values of all survey constructs were larger than the alpha significance level of 0.05, further indicating the mean difference among students who responded to the MQES survey items with *Strongly Agree* and *Strongly Disagree* was not statistically significant.

Table 9

T-Test Results for Students' Responses About their Career Mentorship (n = 360)

No	Career Mentorship	Strongly Agree		Strongly Disagree		p-value
		Mean	SD	Mean	SD	
1	Teaching	2.86	0.39	2.69	0.71	0.065
2	Coaching	2.27	0.33	2.61	0.93	0.089
3	Exposure/visibility	2.47	0.59	2.63	0.70	0.061
4	Sponsorship	2.99	0.44	2.53	0.96	0.060
5	Assigning challenging tasks	2.88	0.52	2.55	0.56	0.056
6	Role Modeling	2.73	0.48	2.65	0.97	0.067
7	Acceptance/ confirmation	2.67	0.37	2.77	0.85	0.069
8	Friendship	2.35	0.48	2.67	0.62	0.097
9	Counseling	2.43	0.56	2.41	0.69	0.247

NWEA Examination Scores by School

Before participation in the intervention program, students' records were reviewed and grade point averages for the preceding semester were recorded on demographic information sheets. The information was collected when students filled survey items 31-

34 on the Morgan-Jinks Student Efficacy Scale (MJS-ES). The examination scores included student grades in math, language, and science. To ensure anonymity, cover sheets containing only students' names were attached to the questionnaires to ensure the accuracy in recording results per student but were then removed by participants before submission. The received survey responses did not have the names of students ensuring it was not possible to identify the grades of specific individual students. Students were informed that all the responses were voluntary and confidential to ensure their privacy. Scores from the previous school term were compared with NWEA scores after the intervention program to examine whether at-risk students become more motivated in their academic performance.

Table 10 presents descriptive statistics of pre-intervention and post-intervention NWEA exam scores for students from School A. On average, Grades 7, 8, and 10 showed statistically significant improvement in their exam score after undergoing the intervention program. However, the mean score for Grade 11 was not statistically significant when comparing the mean score before intervention (M= 198.0, SD = 9.78) and the mean score after intervention (M= 201.8, SD = 6.39), $t(258) = 1.25$, $p = 0.063$). By contrast, the NWEA mean score for Grade 7 was statistically significant after the intervention program. The NWEA mean score after intervention was higher (M = 199.8, SD = 7.83) than the score before the intervention program (M = 181.5, SD = 13.65). The mean difference was statistically significant, $t(358) = 11.85$, $p = 0.001$ with a medium effect size of d= 0.69. Jacob Cohen classified effect sizes as small (d = 0.2), medium (d = 0.5), and large (d ≥ 0.8) (Cohen, 1988).

Table 10

T-Test Results for Pre-Intervention and Post-Intervention NWEA Exam Scores for Students from School A

No.	Grades	Scores Before Intervention		Scores After Intervention		t-test	Effect size (*d*)	p-value
		Mean	SD	Mean	SD			
1	Grade 7	181.5	13.65	199.8	7.83	11.85	.69	0.001
2	Grade 8	182.0	12.78	203.0	5.11	7.24	.53	0.000
3	Grade 10	195.0	11.24	207.3	7.14	9.61	.57	0.001
4	Grade 11	198.0	9.78	201.8	6.39	1.25	.11	0.063

In line with Table 10, results also show that the NWEA mean score for Grade 8 was statistically significant after the intervention program. The NWEA mean score after intervention was higher (M = 203.0, SD = 5.11) than the NWEA score before the intervention program (M = 182.0, SD = 12.78). The mean difference was statistically significant, $t(358) = 7.24$, $p = 0.000$ with a medium effect size of d= 0.53. Also, results showed that the NWEA mean score for Grade 10 was statistically significant after the intervention program. The NWEA mean score after intervention was higher (M = 207.3, SD = 7.14) than the NWEA score before the intervention program (M = 195.0, SD = 11.24). The mean difference was statistically significant, $t(358) = 9.61$, $p = 0.000$ with a medium effect size of d= 0.57. These findings show that in School A, taking part in the intervention program had a significant impact on the improvement of students' NWEA scores, especially for Grades 7, 8, and 10.

Table 11 presents the *t*-test results for pre-intervention and post-intervention NWEA exam scores for students from School B. Results show that the NWEA mean difference for all four grades was statistically significant. For example, the NWEA mean score for Grade 7 was higher (M = 213.0, SD = 8.52) after intervention than the NWEA

score before the intervention program (*M* = 200.5, *SD* = 9.60). The mean difference was statistically significant, *t*(358) = 8.52, *p* = 0.000 with a medium effect size of *d*= 0.54. The largest effect sizes were recorded for Grade 11 (*d* = 0.84), Grade 8 (*d* = 0.83), and Grade 10 (*d* = 0.76). The findings show that taking part in the intervention program has a significant positive effect on the NWEA scores for students across all four school grades.

Table 11

T-Test Results for Pre-Intervention and Post-Intervention NWEA Exam Scores for Students from School B

No.	Grades	Before Intervention		After Intervention		t-test	Effect size (*d*)	p-value
		Mean	SD	Mean	SD			
1	Grade 7	200.5	9.60	213.0	9.86	8.52	0.54	0.000
2	Grade 8	200.1	12.72	212.2	8.54	13.07	0.83	0.001
3	Grade 10	206.5	10.11	212.7	6.70	9.00	0.76	0.000
4	Grade 11	202.4	10.95	211.6	6.35	5.73	0.84	0.000

Table 12 presents the *t*-test results for pre-intervention and post-intervention NWEA exam scores for students from School C. Results show that the students' NWEA scores before and after the intervention did not change significantly. The students in School C did not take part in any intervention program. Data analysis shows that the NWEA mean score for Grades 8, 10, and 11 increased at the end of the school term compared to the previous school term. However, the observed NWEA mean difference was not statistically significant ($p \geq 0.05$). For example, the NWEA mean score for Grade 8 in School C was higher (*M* = 198.1, *SD* = 9.90) at the end of the school term compared to the NWEA score during the previous school term (*M* = 190.5, *SD* = 8.50). Nonetheless, the mean difference was not statistically significant, *t*(358) = 2.86, *p* =

0.075 with a small effect size of d= 0.25. For Grade 7, the NWEA mean score declined and was lower (M= 190.5, SD = 11.73) than the NWEA mean score of the previous school term (M = 195.8, SD = 10.77). The mean difference was not statistically significant, $t(358) = 5.32$, $p = 0.118$ with a small effect size of d= 0.19. These findings show that students who did not take part in the intervention programs were less likely to have improved NWEA mean scores, possibly due to a lack of academic motivation (as further presented in the Post-intervention survey results in the next section).

Table 12

T-Test Results for Pre-Intervention and Post-Intervention NWEA Exam Scores for Students from School C

No.	Grades	Before Intervention		After Intervention		t-test	Effect size (d)	p-value
		Mean	SD	Mean	SD			
1	Grade 7	195.8	10.77	190.5	11.73	5.32	0.19	0.118
2	Grade 8	190.5	8.50	198.1	9.90	2.86	0.25	0.075
3	Grade 10	191.4	10.38	195.4	12.86	17.04	0.17	0.053
4	Grade 11	195.0	9.88	198.5	10.24	9.63	0.25	0.066

Table 13 shows the t-test results for pre-intervention and post-intervention NWEA exam scores for students from School D. Results show that the NWEA mean scores for all four grades at the end of the school term was larger than the NWEA mean scores in the previous school term. However, the mean difference between the two school terms was not statistically significant. For example, the NWEA mean score for Grade 10 in School D was higher (M = 196.5, SD = 10.47) at the end of the school term compared to the NWEA score during the previous school term (M = 190.3, SD = 12.39). The mean difference, however, was not statistically significant, $t(358) = 8.89$, $p = 0.061$, with a small effect size of d= 0.29. Similarly, the NWEA mean score for Grade 11 was high

during the end of the term (*M*= 196.0, *SD* = 11.46) than the NWEA mean score of the previous school term (*M* = 193.1, *SD* = 12.75). The mean difference was not statistically significant, *t*(358) = 5.64, *p* = 0.031 with a small effect size of *d*= 0.18. The obtained results show students who did not take part in the intervention programs did not have statistically improved NWEA mean scores at the end of the school term.

Table 13

T-Test Results for Pre-Intervention and Post-Intervention NWEA Exam Scores for Students from School D

No.	Grades	Before Intervention		After Intervention		t-test	Effect size (*d*)	p-value
		Mean	SD	Mean	SD			
1	Grade 7	189.9	13.65	194.0	10.75	6.23	0.15	0.083
2	Grade 8	190.3	12.39	196.5	10.47	8.89	0.29	0.088
3	Grade 10	195.6	11.46	201.0	12.52	5.89	0.20	0.061
4	Grade 11	193.1	12.75	196.0	11.46	5.64	0.18	0.031

NWEA Examination Scores by Subjects

The current section presents NWEA exam mean scores by subjects. Three subjects have been taken into consideration including math, language, and sciences. Subsequent sections detail the obtained examination scores focusing on *t*-test results for the NWEA examination to mean scores from Schools A, B, C, and D.

NWEA Examination Scores for School A

Table 14 shows the *t*-test results of pre-intervention and post-intervention NWEA exam scores for math in School A. Results show a statistically significant increase in NWEA mean scores for all four grades post-intervention. For example, the math means score post-intervention for Grade 7 was higher (M = 209.2, SD = 18.3) than the math

means score pre-intervention. The mean difference for Grade 7 was statistically significant, t(358) = 6.92, $p = 0.000$. Similar observations were also observed for Grades 8 (M = 200.5, SD = 13.3), Grade 10 (M = 198.9, SD = 12.8), and Grade 11 (M = 206.0, SD = 16.6) where the post-intervention math mean scores were higher than the pre-intervention math mean scores, with the scores being statistically significant ($p < 0.05$).

Table 14

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Math in School A

Grades	Pre-Intervention		Post-Intervention		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	187.6	14.7	209.2	18.3	6.92	0.000
Grade 8	186.2	12.5	200.5	13.3	2.53	0.000
Grade 10	190.8	13.0	198.9	12.8	6.54	0.000
Grade 11	193.0	14.1	206.0	16.6	3.47	0.020

Table 15 shows the *t*-test results of pre-intervention and post-intervention NWEA exam scores for language in School A. Insights show that the mean difference for all grades was statistically significant. In Grade 7, the post-intervention mean score for language was higher ($M = 209.2$, $SD = 12.06$) than the pre-intervention mean score ($M = 187.6$, $SD = 12.70$). The NWEA mean difference for language was statistically significant, $t(358) = 4.96$, $p = 0.001$. In Grade 8, the post-intervention mean score for language was higher ($M = 200.5$, $SD = 12.41$) than the pre-intervention mean score ($M = 186.2$, $SD = 12.02$). The NWEA mean difference for language was statistically significant, $t(358) = 6.15$, $p = 0.001$. Similar observations were made for Grade 10, where the post-intervention mean score for language was higher ($M = 198.9$, $SD = 12.06$) than the pre-intervention mean score ($M = 187.6$, $SD = 12.70$). The observed NWEA mean difference was statistically significant, $t(358) = 4.87$, $p = 0.001$. Results from

Grade 11 also showed that the post-intervention mean score for language was higher (M = 206.0, SD = 12.96) than the pre-intervention mean score (M = 195.0, SD = 11.54). The mean difference for language was statistically significant, $t(358) = 4.86$, $p = 0.000$.

Table 15

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Language in School A

Grades	Pre-Intervention		Post-Intervention		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	187.6	12.70	209.2	12.06	4.96	0.001
Grade 8	186.2	12.02	200.5	12.41	6.15	0.001
Grade 10	192.8	12.66	198.9	10.19	4.87	0.001
Grade 11	195.0	11.54	206.0	12.96	6.86	0.000

Table 16 shows the *t*-test results of pre-intervention and post-intervention NWEA exam scores for science subjects in School A. Results show that the mean difference for Grades 7, 8, and 11 was statistically significant, while that of Grade 10 was not statistically significant. For Grade 7, the post-intervention mean score for science was higher (M = 211.3, SD = 14.11) than the pre-intervention mean score (M = 181.6, SD = 7.83). The NWEA mean difference for science was statistically significant, $t(358) = 4.32$, $p = 0.004$. In Grade 8, the post-intervention mean score for science was higher (M = 206.8, SD = 15.24) than the pre-intervention mean score (M = 191.2, SD = 8.43). The NWEA mean difference for science was statistically significant, $t(358) = 5.23$, $p = 0.006$. In Grade 10, the post-intervention mean score for science was higher (M = 201.7, SD = 12.06) than the pre-intervention mean score (M = 195.2, SD = 10.68). However, the NWEA mean difference was not statistically significant, $t(358) = 6.55$, $p = 0.076$.

Table 16

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Sciences in School A

Grades	Pre-Intervention		Post-Intervention		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	181.6	7.83	211.3	14.11	4.32	0.004
Grade 8	191.2	8.43	206.8	15.24	5.23	0.006
Grade 10	195.2	10.68	201.7	14.36	6.55	0.076
Grade 11	189.3	11.20	210.2	15.09	6.17	0.002

NWEA Examination Scores for School B

The current section presents obtained NWEA results for School B based on math, language, and science subjects. Table 17 shows that T-test results of pre-intervention and post-intervention NWEA exam scores for math in School B. Results show that the NWEA mean score for all grades increased post-intervention compared to pre-intervention. However, the mean differences were not statistically significant for Grades 7, 8, and 10. In Grade 11, the mean difference post-intervention was higher (M = 208.4, SD = 13.2) than the mean for pre-intervention math scores (M = 200.2, SD = 9.2), and was statistically significant $t(358) = 7.75$, $p = 0.000$).

Table 17

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Math in School B

Grades	Pre-Intervention		Post-Intervention		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	199.0	10.2	202.3	11.7	1.03	0.061
Grade 8	200.9	9.5	205.5	12.4	1.75	0.103
Grade 10	196.7	10.6	201.9	11.2	1.60	0.098
Grade 11	200.2	9.2	208.4	13.2	7.75	0.000

Table 18 shows *t*-test results of pre-intervention and post-intervention NWEA scores for language in School B. Results show that the NWEA mean scores for Grades 8 and 11 were statistically significant ($p < 0.05$), while the NWEA scores for Grades 7 and 10 were not statistically significant ($p > 0.05$). However, in all four grades across School B, the language mean scores were large post-intervention compared to the pre-intervention period. In Grade 7, the Language mean score post-intervention was larger ($M = 197.4$, $SD = 13.01$) than the mean score recorded during the previous semester ($M = 193.2$, $SD = 16.72$), but the mean difference was not statistically significant, $t(358) = 4.84$, $p = 0.075$. In Grade 8, the mean difference post-intervention was larger (M= 188.5, SD = 12.24) than the mean score of the previous school term ($M = 181.7$, $SD = 16.56$), with the mean difference between the two school terms being statistically significant, $t(358) = 8.29$, $p = 0.000$).

Table 18

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Language in School B

Grades	Pre-Intervention		Post-Intervention		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	193.2	16.72	197.4	13.01	4.84	0.075
Grade 8	181.7	16.56	188.5	12.24	8.29	0.000
Grade 10	187.0	14.89	195.8	12.93	4.91	0.081
Grade 11	183.5	16.72	196.3	11.63	6.13	0.000

Table 19 shows the *t*-test results for NWEA exam scores in science for school B. The post-intervention mean scores for all the grades were statistically significant compared to the pre-intervention NWEA mean scores. Also, the post-intervention NWEA mean scores were larger than the pre-intervention means scores showing improvement in student performance after undergoing the six-week intervention program. In elaboration,

post-intervention NWEA mean scores for Grade 7 were larger (M = 197.9, SD = 11.9) than the pre-intervention mean scores (M = 189.9, SD = 12.1) with the mean difference being statistically significant, $t(358) = 9.2$, $p = 0.000$. Similar observations were evident from other grades where the science mean score of students who took part in the study was higher compared to the mean score from the previous school term.

Table 19

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Science in School B

Grades	Pre-Intervention		Post-Intervention		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	189.9	12.1	197.9	11.9	9.2	0.000
Grade 8	188.8	9.4	206.2	10.7	8.4	0.000
Grade 10	199.7	12.7	206.8	12.2	7.0	0.000
Grade 11	202.1	14.2	196.4	12.3	9.3	0.001

NWEA Examination Scores for School C

Table 20 shows the NWEA mean scores for students in School C concerning the mathematics subject. Results show that the NWEA mean scores for the current school term were lower for Grades 7, 8, and 11 compared to the previous school term. The NWEA mean score slightly increased for Grade 10 students ($M = 194.7$, SD = 12.8) during the current school term compared to past school term ($M = 191.2$, $SD = 12.9$). In Grades 7, 8, and 11, students' performance dropped as shown in the lower means across the current school term column. For example, the mean score of Grade 7 students in the *Current School Term* was lower (M = 194.7, $SD = 11.3$) than the mean in the Previous School Term ($M = 197.2$, $SD = 14.1$). The mean difference was not statistically significant, $t(358) = -3.1$, $p = 0.073$. Similar trends were observed in the mean scores from Grades 8 (M = 189.3, SD = 12.2) and Grade 11 (M = 193.2, SD = 11.1) where the

means of the *Current School Term* were lower than the means of the *Previous School Term*; with the mean, differences not statistically significant, $p = 0.156$ and 0.068, respectively.

Table 20

T-Test Results of Previous School Term and Current School Term for Math NWEA Scores in School C

Grades	Previous School Term		Current School Term		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	197.2	14.1	194.7	11.3	-3.1	0.073
Grade 8	198.8	14.3	189.3	12.2	-7.7	0.156
Grade 10	191.2	12.9	194.7	12.8	11.1	0.297
Grade 11	196.1	16.7	193.2	11.1	1.7	0.068

Table 21 *t*-test results of the previous school term and current school term for language NWEA Scores in School C. Results show that there was an increase in the language mean scores for Grade 7, but a decrease in language scores for Grades 8, 10, and 11. The NWEA mean score for Grade 7 during the *Current School Term* was slightly higher (M = 198.3, SD = 14.8) compared to the mean score during the *Previous School Term* (M = 196.9, SD = 16.0). However, the mean difference was not statistically significant, $t(358) = 1.62$, $p = 0.168$. The mean score for Grades 8, 10, and 11 during the *Current School Term* was lower than that of the Previous School Term. Grade 8 mean score was lower (M = 188.0, SD = 13.6) than (M = 193.6, SD = 17.7), while Grade 10 was (M = 199.1, SD = 12.0), and Grade 11 was (M = 194.1, SD = 12.9). The findings show that students in School C who were not enrolled in the intervention program did not show significant improvement in their NWEA means scores in language subjects.

Table 21

T-Test Results of Previous School Term and Current School Term for Language NWEA Scores in School C

Grades	Previous School Term		Current School Term		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	196.9	16.0	198.3	14.8	1.62	0.168
Grade 8	193.6	17.7	188.0	13.6	-4.80	0.060
Grade 10	199.8	15.8	199.1	12.0	1.47	0.062
Grade 11	200.8	16.5	194.1	12.9	0.77	0.071

Table 22 shows the *t*-test results of students' mean scores for science discipline. Results show that the NWEA mean the difference between the *Previous School Term* and the *Current School Term* for Grades 7, 10, and 11 was not statistically significant. Only the NWEA mean score for Grade 8 was statistically significant with the score in the *Current School Term* being higher (M = 193.0, SD = 16.2) than the score of the *Previous School Term* (M = 178.4, SD = 12.4). The mean for Grades 7, 10, and 11 during the *Current School Term* were all less than the mean scores of the *Previous School Term*. In Grade 7, the NWEA mean score was larger (186.7, SD = 16.2) than the mean of the Previous School term (M = 183.3, SD = 15.8), but the mean difference was not significant, $t(358) = 5.78$, $p = 0.056$.

Table 22

T-Test Results of Previous School Term and Current School Term for Science NWEA Scores in School C

Grades	Previous School Term		Current School Term		t-test	p-value
	M	SD	M	SD		
Grade 7	183.3	15.8	186.7	16.7	5.78	0.056
Grade 8	178.4	12.4	193.0	16.2	4.08	0.007
Grade 10	190.4	13.1	191.4	16.1	3.91	0.091
Grade 11	182.6	11.3	186.9	16.3	5.28	0.078

In line with Table 22, results show that the NWEA mean score for Grade 10 was slightly higher (M = 191.4, SD = 16.1) during the *Current School Term* than the *Previous School Term* (M = 190.4, SD = 13.1). However, the mean difference was not statistically significant, $t(358) = 3.91$, $p = 0.091$. Moreover, the NWEA mean score for Grade 11 was higher (M = 186.9, SD = 16.3) during the *Current School Term* than in the *Previous School Term* (M = 182.6, SD = 11.3). However, the mean scores for both Grade 10 and Grade 11 were not statistically significant, indicating that at-risk students who were not included in the intervention program did not significantly improve in their science mean scores.

NWEA Examination Scores for School D

The current section presents NWEA results for School D in math, language, and science subjects. Table 23 presents the *t*-test results of pre-intervention and post-intervention NWEA exam scores for math in School D. Results show that compared to the previous school term, only Grade 8 recorded a significant mean difference. The mean score for Grade 7 during the *Current School Term* was less ($M = 197.9$, $SD = 10.8$) than the mean score of the *Previous School Term* ($M = 200.9$, $SD = 10.1$). The mean difference was not statistically significant, $t(358) = -1.75$, $p = 0.093$. The mean score for Grade 10 during the *Current School Term* was lager ($M = 203.5$, $SD = 13.0$) than the mean score of the *Previous School Term* ($M = 198.4$, $SD = 14.1$). However, the mean difference was not statistically significant, $t(358) = 1.11$, $p = 0.081$. In Grade 11, the mean score during the *Current School Term* was larger ($M = 198.4$, $SD = 14.1$) than the mean score of the *Previous School Term* ($M = 195.1$, $SD = 10.8$). However, the mean difference was not statistically significant, $t(358) = 1.72$, $p = 0.057$. In Grade 8, the mean

score was statistically significant t (358) = 4.66, $p = 0.003$, with the mean score of the *Current School Term* being larger ($M = 201.6$, $SD = 13.0$) than that of the previous school term ($M = 193.3$, $SD = 11.3$).

Table 23

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Math in School D

Grades	Previous School Term		Current School Term		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	200.9	10.1	197.9	10.8	-1.75	0.093
Grade 8	193.3	11.3	201.6	13.0	4.66	0.003
Grade 10	198.4	14.1	203.5	13.0	1.11	0.081
Grade 11	195.1	14.2	198.4	10.8	1.72	0.057

Table 24 *t*-test results of pre-intervention and post-intervention NWEA exam scores for language in School D. Results show that compared to the *Previous School Term*, the mean score for the *Current School Term* increased in all four grades. However, the mean difference was not statistically significant. In Grade 7, the language means score during the *Current School Term* was larger ($M = 193.9$, $SD = 15.21$) than the mean score of the *Previous School Term* ($M = 190.6$, $SD = 10.8$). However, the mean score difference between the two school terms was not statistically significant, $t(358) = 1.90$, $p = 0.159$. Similar observations were made in Grade 8, with the language mean score during the *Current School Term* being larger ($M = 200.2$, $SD = 11.11$) than the mean score of the *Previous School Term* ($M = 198.8$, $SD = 12.19$). The mean score difference between the two school terms, however, was not statistically significant, $t(358) = 1.93$, $p = 0.153$. In Grade 10, the language means score during the *Current School Term* was larger ($M = 189.1$, $SD = 13.97$) than the mean score of the *Previous School Term* ($M = 186.7$, $SD = 12.74$). The mean score difference for Grade 10 was not statistically

significant, $t(358) = 1.66$, $p = 0.178$. For Grade 11, despite the mean score increasing (M =197.8, SD = 16.02) compared to previous school term (M = 194.8, SD =13.41), the mean difference was not significant, $t(358) = 1.74$, $p = 0.157$. The findings show a slight improvement in language means scores among students who did not participate in the intervention program. However, the improvement in language means scores were not statistically significant.

Table 24

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Language in School D

Grades	Previous School Term		Current School Term		t-test	p-value
	Mean	SD	Mean	SD		
7	190.6	14.78	193.9	15.21	1.90	0.159
8	198.8	12.19	200.2	11.11	1.93	0.153
10	186.7	12.74	189.1	13.97	1.66	0.178
11	194.8	13.41	197.8	16.02	1.74	0.157

Table 25 presents *t*-test results of pre-intervention and post-intervention NWEA exam scores for science discipline in School D. Results show that the science means scores for Grades 7 and 10 improved in the *Current School Term* compared to the *Previous School Term*. By contrast, the mean scores for Grades 8 and 11 declined in the *Current School Term* compared to the *Previous School Term.* In the four grades, however, the change in science mean scores was not statistically significant. In grade 7, the science means score during the Current School Term was higher (M = 190.6, SD = 13.67) than the mean score of the previous school Term (M = 186.6, SD = 13.46). The mean difference was not statistically significant, $t(358) = 1.58$, $p = 0.131$. The science means score for Grade 10 was also high during the *Current School Term* (M = 180.3, SD = 14.75) than the mean score from the *Previous School Term* (M = 179.1, SD = 13.98).

The mean difference was not statistically significant, $t(358) = 0.75$, $p = 0.146$. Grades 8 and 11 recorded a decline in their science mean scores. In Grade 8, the mean score high during the *Current School Term* was higher (M = 192.4, SD = 14.72) than the mean score from the *Previous School Term* (M = 193.5, SD = 16.31). The mean difference was not statistically significant, $t(358) = -0.72$, $p = 0.151$. Similar observation for Grade 11 showed an insignificant decline in the science means scores between the two school terms.

Table 25

T-Test Results of Pre-Intervention and Post-Intervention NWEA Exam Scores for Sciences in School D

Grades	Previous School Term		Current School Term		t-test	p-value
	Mean	SD	Mean	SD		
Grade 7	186.6	13.46	190.6	13.67	1.58	0.131
Grade 8	193.5	16.31	192.4	14.72	-0.72	0.151
Grade 10	179.1	13.98	180.3	14.75	0.75	0.146
Grade 11	191.3	12.58	189.8	11.62	-2.78	0.145

NWEA Mean Scores for Intervention and Control Groups

Table 26 presents *t*-test results comparing the math mean scores of the Intervention and Control groups from Schools A, B, C, and D after the intervention program. Schools A and B were in the intervention group while schools C and D were in the control group. Results show that across the four grades, the math means score for the intervention group was higher than the mean scores of the control groups. In Grade 7, the summed mean score from Schools A and B was higher ($M = 201.1$, $SD = 16.04$) than the summed mean score from Schools C and D ($M = 194.7$, $SD = 13.28$). The mean differences between students in the intervention and in the control groups was statistically significant, $t(358) = 9.16$, $p = 0.000$ with a medium effect size (d = 0.640). In Grade 8,

the math mean score for the intervention group was higher (M = 209.8, SD = 17.81) than the mean score for the control group (M = 198.4, SD = 15.29). The mean difference was significant, $t(358) = 6.93$, $p = 0.000$ with a medium effect size (d = 0.519). The findings from Grades 7 and 8 showed that students who participated in the intervention program had improved math mean scores than those in the control groups. The mean difference was statistically significant with a medium effect size.

Table 26

T-Test Results for the Summed Math Mean Scores of the Intervention Groups and Control Groups After Intervention Program

		Intervention Group		Control Group			Effect size (d)	p-value
No.	Grades	Mean	SD	Mean	SD	t-test		
1	Grade 7	201.1	16.04	194.7	13.28	9.16	0.640	0.000
2	Grade 8	209.8	17.81	197.4	15.29	6.93	0.519	0.000
3	Grade 10	207.2	11.24	199.6	13.44	10.57	0.633	0.000
4	Grade 11	205.5	15.26	191.9	17.26	8.47	0.516	0.003

In Grade 10, the summed math mean score for the intervention group was higher (M = 207.2, SD = 11.24) than the summed mean score for the control group (M = 199.6, SD = 13.44). The mean differences between Grade 10 students from the intervention and the control groups was statistically significant, $t(358) = 10.57$, $p = 0.000$ with a medium effect size (d = 0.633). In Grade 10, the math mean score for the intervention group was higher (M = 205.5, SD = 15.26) than the summed mean score for the control group (M = 191.9, SD = 17.26). The mean differences between students in the intervention and the control groups was statistically significant, $t(358) = 8.47$, $p = 0.003$ with a medium effect size (d = 0.516). In elaboration, the findings show that at-risk students who participated in the intervention programs were observed to have significant improvement in their academic outcomes than those who did not take part in the intervention programs.

Table 27 presents the language mean score results for the control and the intervention groups. The language mean scores for the students in the intervention group were larger than the mean scores of the learners in the control group. Across all grades, the mean score between the two groups was statistically significant. In Grade 7, the mean score for the intervention group was larger (M = 198.2, SD = 14.73) than the language mean score of the control group (M = 191.6, SD = 15.66). The mean difference was statistically significant, $t(358) = 9.66$, $p = 0.013$.

Table 27

T-Test Results for the Language Mean Scores of the Intervention Groups and Control Groups After Intervention Program

		Intervention Group		Control Group			Effect size (d)	p-value
No.	Grades	Mean	SD	Mean	SD	t-test		
1	Grade 7	198.2	14.73	191.6	15.93	9.66	0.616	0.013
2	Grade 8	205.1	15.96	196.6	11.71	8.31	0.520	0.000
3	Grade 10	204.8	12.61	192.4	15.26	8.61	0.479	0.035
	Grade 11	207.1	16.48	199.3	13.58	7.96	0.471	0.009

In line with Table 27, results for Grade 8 showed a larger language mean score for the intervention group (M = 205.1, SD = 15.96) than the language mean score of the control group (M = 196.6, SD = 11.71). The mean difference was statistically significant, $t(358) = 8.31$, $p = 0.000$. The significant mean difference between the intervention and the control groups was also evident for Grade 10 (M = 204.8, SD = 12.61, $p = 0.035$) and for Grade 11 (M = 207.1, SD = 16.48, $p = 0.009$). These findings show that students who participated in the intervention program showed improved mean scores in their language courses than those who did not receive any intervention programs focusing to motivate at-risk learners.

Table 28 presents the sciences mean score results for the control and the intervention groups. Results show that the mean scores of the intervention group were

larger than the mean of the control groups. The mean difference was statistically significant for Grades 8, 9, and 10. By contrast, the mean score for Grade 7 was not significant despite the intervention groups recording higher scores (M = 198.8, SD = 12.8) than that of the control group (M = 195.3, SD = 13.6), $t(358) = 7.38$, $p = 0.108$. Results for Grade 8 shows that at-risk students in the intervention group had a higher mean score (M = 202.3, SD = 15.4) than peers in the control group (M = 190.0, SD =11.7). The mean difference between the two Grade 8 students was statistically significant, $t(358) = 5.34$, $p = 0.001$. Similar trends were recorded for Grade 10 (M = 201.7, SD = 15.8, $p = 0.019$) and Grade 11 (M = 204.0, SD = 13.4, $p = 0.000$) where the mean difference between the two groups were statistically significant.

Table 28

T-Test Results for the Science Mean Scores of the Intervention Groups and Control Groups After Intervention Program

		Intervention Group		Control Group			Effect size (*d*)	p-value
No.	Grades	Mean	SD	Mean	SD	t-test		
1	Grade 7	198.8	12.8	195.3	13.6	7.38	0.557	0.108
2	Grade 8	202.3	15.4	190.0	11.7	5.34	0.518	0.001
3	Grade 10	201.7	15.8	196.8	11.1	10.13	0.581	0.019
4	Grade 11	204.0	13.4	199.8	15.9	9.87	0.693	0.000

Post-Intervention Survey Results

The current section presents post-intervention survey results based on student responses about the intervention program. Normality tests showed that the skewness of the survey responses for the AMS, MJS-S, SESQ, IBS, and CPMFQ Survey Instruments were 0.51, -0.31, -0.29, and -0.11, respectively. The obtained Skewness values range between -0.37 and 0.44 indicating the data were symmetrically distributed (Hair et al., 2017). The Kurtosis for AMS, MJS-S, SESQ, IBS, and CPMFQ Survey Instruments data

were 0.57, -0.61, 1.01, and -0.99 respectively. These results show that the data met the assumptions for *T*-test and ANOVA analyses (Hair et al., 2017).

The SESQ survey was used to collect views from the students after the intervention program. Table 29 shows student responses about their level of engagement in school after undergoing the intervention program. Results show significant differences among student responses across the five constructs. The means of students across in the Intervention Group were larger than the means of students in the Control Group. The mean differences are statistically significant ($p < 0.05$). These findings show that taking part in the intervention program significantly resulted in learners liking learning, liking their school, putting more effort into learning, engaging in extracurricular activities, and developing cognitive engagement.

Table 29

T-Test Results for Students' Responses About their Level of Engagement in School (n = 360)

No	Student Engagement at School	Intervention Group		Control Group		p-value
		M	SD	M	SD	
1	Affective engagement (liking for learning)	2.94	0.96	2.46	0.88	0.000
2	Affective engagement (liking for school)	3.14	0.83	2.29	0.90	0.002
3	Behavioral engagement (effort & persistence)	2.90	1.00	2.25	0.85	0.000
4	Behavioral engagement (extracurricular activities)	2.97	0.82	2.49	0.97	0.000
5	Cognitive engagement	2.97	0.90	2.40	0.82	0.001

Students also shared their views about the influence the intervention program had on their academic motivation. Table 30 shows results for students' responses about their level of motivation toward academic work in school. Findings from the 28-item AMS scale show that learners who received support and intervention were more motivated than

those who did not receive any intervention. Results show the means for students in the intervention group were larger and statistically significant than the means of students in the Control group. That is, students in the intervention group were more interested to learn and know new things (M = 2.49, SD = 0.87), remained committed to accomplish academic goals (M = 2.52, SD = 0.69), more stimulated to learn (M = 3.03, SD = 0.74), and felt the need to accomplish academic goals (M = 2.95, SD = 0.68). The mean differences were statistically significant as the *p*-values are less than the alpha significance level of 0.05.

Table 30

T-Test Results for Students' Responses About their Level of Motivation Towards Academic Work in School (n = 360)

No	Student Academic Motivation	Intervention Group		Control Group		p-value
		M	SD	M	SD	
1	Interest to know	2.49	0.87	2.10	0.79	0.000
2	Commitment to academic accomplishment	2.52	0.69	2.23	0.78	0.000
3	Commitment to experience stimulation	3.03	0.74	2.13	0.86	0.000
4	Feeling the need to accomplish (Identified)	2.95	0.68	2.20	0.77	0.001
5	Feeling pressure to perform (Introjected)	2.69	0.83	2.28	0.80	0.001
6	External regulation	2.49	0.87	2.10	0.79	0.001
7	Persistence toward academic goals	2.52	0.69	2.23	0.78	0.000

Students further shared their views about individual efficacy beliefs that might relate to school success. The MJS-ES scale was used to collect students' responses. Table 31 presents the obtained *t*-test results indicating that student responses to the survey items were statistically significant between the learners who took part in the intervention group and the control groups. Results show taking part in the intervention group enhances students' innate abilities (M = 2.75, SD = 0.62, p =0.000), personal commitment to

complete academic tasks (M= 2.94. SD = 0.56, p =0.007), enhanced social-cultural values (M= 2.99, SD = 0.60, p =0.000), and positive change in student perceptions about tasks difficult (M =3.13, SD = 0.85, p =0.000). The mean differences between the Intervention Groups and the Control Groups were statistically significant ($p < 0.001$).

Table 31

T-Test Results for Students' Responses About their Level of Self-Efficacy Beliefs (n = 360)

No	Student Self-Efficacy Beliefs	Intervention Group		Control Group		p-value
		M	SD	M	SD	
1	Students' innate talent or ability	2.75	0.62	2.18	0.77	0.000
2	Individual effort in completing tasks	2.94	0.56	2.26	0.67	0.000
3	Socio-cultural, or contextual factors	2.99	0.60	2.85	0.67	0.007
4	Student perceptions about task difficulty	3.13	0.85	1.56	0.77	0.000

In addition, students shared incidents of school discipline, such as bullying, fighting, and victimization. The Illinois bully scale (IBS), which consists of 17 items, was utilized to collect pertinent information from students. Table 32 presents *t*-Test results for students' responses about their school discipline. Results show statistically significant differences in the perception of the Intervention Group and Control Group towards involvement in various discipline issues like bullying, fighting, and victimization. The *p*-values for the students in the Intervention Group are less than that of the students in the Control Group. That is, students who participated in the intervention program are less likely to be engaged in bullying (M = 1.88, SD = 0.66, p = 0.000), fighting (M = 1.59, SD = 0.49, p= 0.000), and less likely to victimize others (M = 1.59, SD = 0.55, p = 0.001).

Table 32

T-Test Results for Students' Responses About their School Discipline (n = 360)

No	School Discipline	Intervention Group		Control Group		p-value
		M	SD	M	SD	
1	Involvement in bullying other students	1.88	0.66	2.78	0.89	0.000
2	Involvement in fighting with other students	1.60	0.49	2.86	0.60	0.000
3	Victimization by other students	1.59	0.55	2.35	0.59	0.001

Students shared their views about career mentorship with their teachers and counselors. The 26-item MQES tool was used to collect students' perceptions about career mentorship. Table 33 presents the *t*-Test results for students' responses about their career mentorship in line with 9 MQES survey constructs. Results show statistically significant mean differences between the Intervention Group and the Control Group regarding career mentorship. Students in the Intervention Group feel more supported in obtaining career-related information than students in the Control Group. The *p*-values across the nine survey constructs are smaller than the alpha significance level of 0.05.

Table 33

T-Test Results for Students' Responses About their Career Mentorship (n = 360)

No	Career Mentorship	Intervention Group		Control Group		p-value
		M	SD	M	SD	
1	Teaching	2.86	0.39	2.69	0.71	0.065
2	Coaching	2.27	0.33	2.61	0.93	0.089
3	Exposure/visibility	2.47	0.59	2.63	0.70	0.061
4	Sponsorship	2.99	0.44	2.53	0.96	0.060
5	Assigning challenging tasks	2.88	0.52	2.55	0.56	0.056
6	Role Modeling	2.73	0.48	2.65	0.97	0.067
7	Acceptance/ Confirmation	2.67	0.37	2.77	0.85	0.069
8	Friendship	2.35	0.48	2.67	0.62	0.097
9	Counseling	2.43	0.56	2.41	0.69	0.247

Hypothesis Testing

The current section presents results for the hypothesis testing based on the collected survey responses. Hypothesis 1 was formulated to test the following: *Intervention programs positively facilitate the engagement of at-risk students in school.* Table 34 displays the analysis of students' perceptions of intervention programs and facilitation of engagement in schools using the ANOVA. Results show there were statistically significant differences, $F_{(2,358)} = 3.738$, $p = .000 < .05$, in students' perceptions on intervention programs and school engagement. The null hypothesis was rejected. These findings suggest that at least one of the variables in the five constructs of the Academic Motivation Scale (AMS) influenced student engagement differently. Thus, a Post-Hoc test must be conducted to determine which group(s) was (were) different.

Table 34

Student Perceptions of Intervention Program and School Engagement Using the ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.913	2	.957	3.738	.000
Within Groups	27.539	360	.197		
Total	29.452	358			

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Table 35 displays Tukey's Homogeneous subsets procedure. The ANOVA revealed differences within groups, hence Tukey's Homogeneous Subsets was conducted to determine where the differences existed. As shown in Table 35 the mean score for liking for learning (M = 3.31), liking for school (M = 3.38), effort and persistence (M = 3.86), and extracurricular activities (M = 3.61) were significantly higher than the mean score of cognitive engagement (M = 2.77). The findings suggest that intervention programs enhance affective engagement and behavioral engagement among at-risk students.

Table 35

Tukey's Homogeneous Subsets of Students' Perception by School Engagement (n = 360)

Student engagement	N	Subset for alpha = 0.05	
		1	2
Affective engagement (liking for learning)	77		3.31
Affective engagement (liking for school)	93		3.38
Behavioral engagement (effort & persistence)	88		3.86
Behavioral engagement (extracurricular activities)	63		3.61
Cognitive Engagement	39	2.77	
Sig.		0.89	1.00

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 27.221.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Hypothesis 2 was formulated to test the following: *Intervention programs significantly improve the educational engagement of students regarding school*. Table 36 displays the analysis of students' perceptions of intervention programs and education using ANOVA. Results show there were statistically significant differences, $F_{(2,358)} = 4.563$, $p = .000 < .05$, in students' perceptions on intervention programs and educational engagement. The null hypothesis was rejected. These findings suggest that at least one of the variables in the seven constructs of the AMS-HS scale influenced student engagement differently. Thus, a Post-Hoc test must be conducted to determine which constructs(s) were (were) different.

Table 36

Student Perception of Intervention Programs and Educational Engagement Using the ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.632	2	.836	4.563	.000
Within Groups	24.291	360	.172		
Total	21.734	358			

Table 37 displays Tukey's Homogeneous subsets procedure. The ANOVA revealed differences within groups, hence Tukey's Homogeneous Subsets was conducted to determine where the differences existed. Table 37 shows that the mean scores for amotivation, intrinsic motivation, and extrinsic motivation were significantly higher than the mean score for Extrinsic motivation - introjected (M = 2.61). The findings suggest that intervention programs enhance affective engagement and educational engagement among at-risk students.

Table 37

Tukey's Homogeneous Subsets of Students' Perception by School Engagement (n = 360)

Educational engagement	N	Subset for alpha = 0.05	
		1	2
Intrinsic motivation - to know	69		3.87
Intrinsic motivation - toward accomplishment	64		3.78
Intrinsic motivation - to experience stimulation	61		3.66
Extrinsic motivation - identified	63		3.81
Extrinsic motivation - introjected	49	2.61	
Extrinsic motivation - external regulation	31		3.55
Amotivation	23		3.41
Sig.		0.89	1.00

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 27.221.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Hypothesis 3 was formulated to test the following: *Intervention programs significantly reduce the exposure to risk factors among at-risk students.* Table 38 displays the analysis of students' perceptions of intervention programs and exposure to risk using ANOVA. Results show there were statistically significant differences, $F_{(2,358)} = 4.323$, $p = .000 < .05$, in students' perceptions of intervention programs and exposure to risk factors. The null hypothesis was rejected. These findings suggest that at least one of the three constructs of the Illinois bullying scale influenced student engagement differently. Thus, a Post-Hoc test must be conducted to determine which constructs(s) were (were) different.

Table 38

Student Perception of Intervention Programs and Normative Motivation Using the ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.728	2	.836	4.323	.000
Within Groups	26.233	360	.172		
Total	25.246	358			

Table 39 displays Tukey's Homogeneous subsets procedure. Table 39 shows that the mean score for bullying (M = 3.62) and fighting (3.77) were significantly higher than the mean score for victimization (M = 2.99). The findings suggest that intervention programs reduce at-risk student exposure to indiscipline cases like physical violence and bullying.

Table 39

Tukey's Homogeneous Subsets of Students' Perception by Normative Motivation (n = 360)

Risk factors	N	Subset for alpha = 0.05	
		1	2
Bullying	69		3.62
Fighting	64		3.77
Victimization	61	2.99	3.66
Sig.		0.87	1.00

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 27.221.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Hypothesis 4 was formulated to test the following: *Intervention programs significantly influence the normative motivation of at-risk students.* Table 40 displays the analysis of students' perceptions of intervention programs and normative motivation

using ANOVA. Results show there were statistically significant differences, $F_{(2,358)} = 3.656$, $p = .001 < .05$, in students' perceptions of intervention programs and normative motivation. The null hypothesis was rejected. These findings suggest that at least one of the variables in the nine constructs of the Mentorship Quality Experience survey (MQES) tool influenced student engagement differently. Thus, a Post-Hoc test must be conducted to determine which group(s) was (were) different.

Table 40

Student Perceptions of Intervention Program and Normative Motivation Using the ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.522	2	.733	3.656	.001
Within Groups	31.782	360	.206		
Total	38.452	358			

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Table 41 displays Tukey's Homogeneous subsets procedure. The ANOVA revealed differences within groups, hence Tukey's Homogeneous Subsets was conducted to determine where the differences existed. Table 41 shows that the mean scores for teaching, coaching, sponsorship, role modeling, acceptance/confirmation, friendship, and counseling have statistically significant means ($p < 0.05$) compared to exposure/visibility ($M = 2.31$) and assigning challenging tasks ($M= 2.74$). The findings suggest that intervention programs enhance norms among at-risk students in readying them for future career choice identification and selection.

Table 41

Tukey's Homogeneous Subsets of Students' Perception by Normative Motivation (n = 360)

Normative motivation	N	Subset for alpha = 0.05	
		1	2
Teaching	57		3.62
Coaching	56		3.89
Exposure/Visibility	35	2.31	
Sponsorship	44		3.71
Assigning challenging tasks	35	2.74	
Role Modeling	31		3.62
Acceptance/ Confirmation	23		3.81
Friendship	45		
Counseling	34		3.89
Sig.		0.89	1.00

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 27.221.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Interview Findings

The current section presents interview findings drawn from 16 teachers from the four schools. The findings are presented thematically to highlight the main themes that emerged from the teachers' responses. Insights from participant responses are presented to answer the formulated research questions. A total of 10 themes were identified from the thematic analysis process and they are used in the subsequent sections to answer the formulated research questions.

RQ1: Student Engagement in School

Research Question 1 was developed to understand the following: *How do the different intervention programs currently used in middle and high schools in Missouri*

influence the student's engagement with school? Findings showed that teachers perceived that intervention programs facilitate student engagement in the classroom through five processes. These five processes include the following: improved cognitive engagement, participation in extracurricular activities, persistency in learning, liking for their school, and positive learning attitude. These findings are further elaborated in the subsequent subsections.

Theme 1: Positive Attitude Towards Learning

Seven teachers perceived that the introduction of intervention programs helps create a positive attitude towards learning among at-risk students. The participants included Teachers 1, 4, 6, 8, 11, 14, and 16. For example, Teacher 1 perceived that "So basically, I worked with learners who come from poor backgrounds and low-income households. I've observed that using interventions like buddy student, substance abuse counseling, and weekly academic check-in helps them develop a liking towards academic work because of peer support and constant feedback I give them." Teacher 4 perceived that: Having interventions have helped a lot… like the one I have taken part in recently in this school… has been key… see, uh, we have before/after school meetings and lunch bunch make them remain committed to long coming back to school every day… at least they feel appreciated and supported by everyone. (Teacher 4)

Teacher 6 shared that "I have noted that since using school intervention programs like phone calls to parents, home visits, and close classroom observations, learners are curious to learn and ask questions." Teacher 8 added that "interventions like learning accommodations and preventive problem solving have greatly created close student and teacher engagement in the classroom… everyone wants to learn something new and they

long to attend group discussions." Teacher 11 perceived that: I have appreciated the fact that close coordination and collaboration with every student create a positive engagement. My learners are very much interested in knowing new concepts, even the ones who are shy would approach me… through strategies like student goal setting and enrollment in a positive activity like teamwork and plays… every learner feels included and loved and this has created an atmosphere of positive attitude and engagement for all my students, especially low achievers, towards academic work. (Teacher 11)

The positive influence that intervention program has on students' attitudes toward learning was also noted by Teachers 14 and 16. Teacher 14 elaborated that "I always coordinate with school mentors and counselors who offer close academic and career guidance to learners, and with homework clubs and match with role models, students always show a strong liking for their school work, which is quite encouraging for me that intervention programs could have such a big impact on my students." Teacher 16 was of the view that "as I said before, these learners are in their developmental stage and they need close support… lack of attention affects their emotional and psychological wellbeing and I appreciate that intervention programs like peer counseling, role models, mentors, and behavior contracts help them stay focused in their studies." These findings show that intervention programs, when developed and implemented appropriately, could potentially enhance students' positive attitudes towards academic learning activities.

Theme 2: Increased Liking for School

Five teachers felt that the introduction of intervention programs in their schools increased student liking of their schools. Teachers 3, 7, 9, 12, and 15 perceived that learners felt a strong sense of belongingness in their schools and are eager to come to

school daily. Teacher 3 perceived that "sure it does help my students and I have seen a reduction is learners who complain of being bullied or unwilling to come to school… they always look happy in the morning and give warm greetings and also long to engage with their peers." Teacher 7 felt that "when I use intervention programs, I find my students create a positive learning atmosphere, and cases of indiscipline are hardly recorded since everyone follows the rules. Teacher 9 perceived that: The interventions I use like class passes, talk ticket, and self-monitoring creates a sense of responsibility among learners… students know I have high expectations for them, as well as the school and society… are of this they have to put in more effort to win, and this win cannot come by if they do not show special love to their peers, teachers, and school administrators. (Teacher 9)

Teacher 12 elaborated that "over the years my school has been using evidence-based interventions including group interventions, holistic approaches, and parent training. I can say these interventions have been nothing but successful for learners. A strong tie exists between the school and students, and there is a sense of community feeling among teachers, leaders, student, families, and their guardians." Teacher 15 alluded that "actually it's true that in Missouri measures like the option programs have improved attendance and reduced late graduations. You know, most of these students in high school are on the verge of dropping and even not moving to college so, the Options Program reduces this risk as counselors encourage students to persist and complete their studies with credit and relevant job skills." These findings further show that the intervention programs help students develop a liking for their school, try hard to succeed,

and remain proud to be in their school thereby reducing cases of dropout or delayed graduation.

Theme 3: Improved Individual Effort and Academic Persistence

Teachers 2, 5, 8, 9, 11, and 13 perceived that intervention programs potentially influence students' commitment to individual persistence and commitment towards their academics. Teacher 2 alluded that "my school has used some active interventions for literacy and math, such as Lexia PowerUp, Reading Horizons Elevate, and Accelerated Math. My students always show active participation in class activities as these interventions create a strong touch and active engagement for every learner." Teacher 5 perceived that, "programs like Bridges and Voyager Math has largely defined how I engage my students, and they help create individual interest and attention among students and improves learning throughout the various lessons." Teacher 8 perceived that: Yeah, well the intervention supplements the day-to-day curriculum plans. Even learners who might be hesitant to benefit from mainstream lessons get a reprieve through additional engagement tailored to meet personal plans. As a said before, I have learned that interventions like matching students with a role model/mentor or grouping students in small group SEL lessons (social skills) help them remain active in class by showing individual effort to excel… these interventions help create high expectations and learners know failure is not an option, so, everyone gets to give their best while in school. (Teacher 8)

Teacher 9 perceived that "intervention has been important in helping students just do what is needed of them in school, learners learn to remain active and committed always without giving up; in this school, we have weekly academic check-in programs

that keep them going." Teacher 11 elaborated that "every student is helped to be attentive and how to be more productive. The intervention I use Missouri Multi-Tiered Systems of Support to identify and provide differing levels of support for my students through evidence-based academic and/or behavioral curricula and interventions, which help the learner stay focused in school." Teacher 13 perceived that: Sure yeah! Interventions span from classrooms to real-life experience and I ensure through Response to Intervention, I identify and provide direct support, intervention, and academic services, especially to learners at risk of not completing their studies, or who want to give up in life may be due to family background or behavior problems. (Teacher 13)

As such, the use of intervention programs in Missouri appears to positively influence students to remain committed to learning. Teachers and schools appear to use various intervention programs to build strong engagement with learners. In the process, individual effort and academic persistence remain key outcomes of successful interventions mainly among at-risk students.

Theme 4: Participation in Extracurricular Activities

Teachers 1, 3, 6, 9, 10, and 16 shared that interventions have been important in helping students develop active participation and social engagement with their peers outside the classroom. Teacher 1 perceived that "social intervention programs like school clubs have helped most learners stay active in the school. Students considered low achievers and more likely to drop out of schools are mostly helped explore their hobbies and talents via academic clubs, hobby clubs, and performing arts." Teacher 3 added that "learners get to create a positive behavior towards various talent search activities and enrollment to sports, honor societies, and student publications that make them love the

school more." Teacher 6 perceived that: My students are active participants in various school activities, such as sports day and school picnics. The activities help them learn about life outside the classrooms and the physical education teachers and coaches help create strong athletes for the school and district. Such interventions help them break the classroom monotony and create a unity of purpose among learners resulting in increased interest to learn and remain committed to their academic objectives. (Teacher 6) Teacher 9 perceived that "sports and Parents' Day also add an important culture of unity and engagement in my school's helping foster a strong student community." Teacher 10 elaborated that "most of my students and especially the ones considered at risk are very active in sports and professional clubs… they get to build a strong peer teamwork that propels them to remain in school." Teacher 16 noted that through service clubs, student government, and sports clubs, there is always commitment among students to be very active in all learning goals. A strong and productive classroom emerges when students share common objectives when socializing." These findings show that teachers have a positive perception of intervention programs and students' social behavior improvement through participation in extracurricular activities.

Theme 5: Development of Students' Cognitive Abilities

Teachers 2, 4, 8, 10, 13, and 16 perceived that the adoption of the intervention programs in their schools contributes to improvement in students' cognitive abilities. Teacher 2 perceived that "I use the middle school intervention program for my students aimed at providing close support to learners who need assistance with math, English, or literacy skills. In my teaching career, this intervention program has been key to ensuring students remain interested in learning and completing their classwork." Teacher 4

elaborated that “students always show personal effort to complete homework and genuine interest in participating in classroom discussion sessions when interventions are used.” Teacher 8 perceived that: I use the middle school intervention to assess the students to identify specific areas of deficient skills. I then instruct students in these specific areas and on specific class objectives. My approach has been important in ensuring interventions help develop students’ cognitive engagement in terms of their willingness to take part in the learning tasks at hand. Interventions help ensure learners make effort to invest in working on the tasks, and how long they persist in the learning process… but the process is time-consuming when preparing lessons, and some students may not fully engage especially when experiencing attention deficit. (Teacher 8)

Teacher 10 perceived that “I find the intervention particularly useful in changing student behaviors, such as listening attentively, attending lessons, turning in work on time, and taking part in discussions.” Teacher 13 added that “years of experience and use of active interventions have been central to enabling learners to become better school citizens in terms of following rules and guidelines, actively taking part in finishing their assigned work, and playing active learning roles and being responsible for their academic goals.” Teacher 16 perceived that: The use of new interventions like peer tutors, schedule/class change, or behavior contracts has enabled students to take a proactive approach to learning. Every learner likes coming to school, enjoys new classroom sessions, and takes up an active role in completing learning tasks. So, you see the engagement learners display may be largely understood in terms of internal states, such as their level of enthusiasm, curiosity, optimism, motivation, or interest in learning and engaging in academic work. (Teacher 16)

RQ2: Influence of Intervention Programs on Students' Academic Motivation

Research Question 2 was created to help explore the following: *How do the different intervention programs influence educational aspects of students regarding school, such as learning motivation, learning self-efficacy, and a sense of belonging to school*? Findings from the interview responses showed that implementing intervention programs influences learners to be more motivated in their academic activities in three ways intrinsic, extrinsic, and amotivation. These findings are further elaborated in the subsequent subsections.

Theme 6: Intrinsic Student Motivation

Teachers 1, 2, 4, 6, 8, 10, and 13 perceived that intervention programs facilitate student motivation by creating intrinsic values. Teacher 1 perceived that "in my daily classroom sessions, I have come to appreciate that when I offer close support to learners and also use active participation and feedback, they get a sense of gratification while learning new ideas." Teacher 2 added that "yes sure, the intervention does convince learners about the discoveries and understanding issues or solving problems they previously feared as difficult or impossible. Teacher 4 perceived that: Unique. I would say something like all different types of student support. Interventions create a sense of close support and give students experience in broadening their knowledge about subjects that appeal to them. Learners are helped to appreciate the fact that their studies allow them to continue to learn about many things that interest them now and that could help them in their future careers. (Teacher 4)

Teacher 6 added that "I find learners happy when they are enrolled in different interventions that make them feel a sense of accomplishment when they surpass their

previous problem-solving abilities. Teacher 8 further noted that “interventions like math and literacy support have helped make learners feel better equipped to solve challenging academic tasks.” Teacher 10 added that “my students admit that when they are supported, they are in a position to experience personal satisfaction in their quest for excellence in academic objectives.” Teacher 13 perceived that: Students are stimulated all the time to come to school. Career guidance, counseling, and role models all work to ensure students like coming to school, with learning settings made to be fun like working and playing with peers. The curriculum and lesson plans also serve to ensure students enjoy all aspects of learning and discovery. (Teacher 13).

Theme 7: Extrinsic Student Motivation

Teachers 1, 3, 5, 8, 11, 15, and 16 perceived that intervention programs serve to promote extrinsic motivation among students towards their academic endeavors. Teacher 1 perceived that “I have used interventions to encourage students about their future… most are glad because they now know that high-school education will help them better prepare for the career they have chosen.” Teacher 3 perceived that “I always encourage students and make them aware of the fact that current learning will enable them to join the job market in a field they like, and this keeps them committed and engaged when learning.” Teacher 5 perceived that: You are right that's what I meant, in that close support and guidance is more than active intervention with relevant insights… every learner in my class gets to know about education and learning. Important that it is the major avenue that will help them make a better choice regarding their career orientation. So, interventions also help model learners along career paths and mentors have been effective in preparing students within this school towards this end. (Teacher 5)

Teacher 8 was of the view that "when used extensively with real-life examples of successful leaders, academic and lifetime interventions help motivate learners and remain aware that high school education will improve their competence as workers and help them become productive members of society." Teacher 11 perceived that "through interventions like the check-in check-out, plans and homework clubs, students are challenged to prove they can complete their high school diploma and transition to college. The move creates high expectations and motivates students to keep focused on their studies. Teacher 15 perceived that: Take for example encouraging learners to do their best… in the end, they are motivated by the need to understand that when they succeed in school, they feel important. My students are slowly led to consider the fact that education is perceived to help them become more intelligent and work better jobs. I always see motivated learners working to prove themselves in their studies as opposed to engaging in indiscipline activities or even avoiding executing their daily tasks. (Teacher 15)

Teachers 2, 6, and 9 also felt that intervention programs help learners accept possible external influences likely to demand their success in school. Teacher 2 noted that "curriculum programs inform students that they need at least a high-school degree to find a high-paying job later on." Teacher 6 was of the view that "pressure to secure a prestigious job and have a productive life motivates learners to keep working to excel in their studies." Teacher 9 also elaborated that "you see students know working hard will have their desired and rewarding careers, I ensure that they get access to needed career advice to motivate them in staying focused in their schoolwork." The findings show that

intervention programs serve to facilitate extrinsic motivation among learners thereby ensuring student commitment to persist in their studies.

Theme 8: Addressing Student Amotivation

Teachers 5, 8, 12, and 15 perceived that intervention programs help students address personal doubts about the need to participate in school. Teacher 5 elaborated that "when my students are engaged in teamwork, I work to assure them about the importance of participating in learning… you know lack of motivation, such as a feeling about wasting time could make students less committed in coming to school or persisting in studies." Teacher 8 added that: Close engagement and collaboration with learners are key to dispelling most rumors students are exposed to. In some cases, you have to ensure students know valid reasons to keep coming to school so they don't wonder why they are required to study. It is a way to keep them in check and motivated to keep learning to avoid school dropouts when they lose a sense of why school even matters in the first place. (Teacher 8)

Teacher 12 perceived that "interventions allow me to cast out doubts among students about their future and what they need to know not only in school but also in life. When I talk to students some appear to lack the frank commitment to learning, and others even care less about school… but through active intervention, you get to turn the tide and how they create a new perspective and approach to life, thereby helping them remain focused in their studies." Teacher 15 perceived that "active moral and career support has been key to helping learners understand why they are in school, and this helps address individual downturns they have concerning education and the need to be in school." The findings show a possible influence that intervention programs have in creating self-

efficacy among students and motivating them to remain focused by eliminating their doubts and disbelief about the need for school and academic success.

RQ3: Intervention Programs and Student Discipline

Research Question 3 was created to identify the following: *How do the different intervention programs used in middle and high schools in Missouri influence risk factors, such as discipline and involvement in violence*? Findings from the interview responses showed that teachers believed intervention programs help reduce indiscipline cases and the reduction of physical violence. The next theme presents teacher perceptions about how school interventions help them address indiscipline cases.

Theme 8: Interventions Reduce Indiscipline Cases

Teachers 1, 5, 7, 9, 10, and 16 identified that intervention programs help them in achieving a secure learning environment. Teacher 1 perceived that "my class has clear rules and guidelines on discipline, and everyone desists from bullying and fighting." Teacher 5 perceived that "From the earliest ages, students in this school participate in activities that boost social-emotional learning. As a teacher, I find ways to help them understand and appreciate their identity as well as others. In the creative clubs, such as arts, I help students by using drama, literature, and the visual arts as a vehicle for conversation to help students understand the negative impact of indiscipline and violent behaviors." Teacher 7 observed that: There is always continued learning and teaching learners to remain empathic with others… To do this I teach them about empathy and kindness, two skills that educators in my school use to build a safe culture free of bullying and fighting among students. I usually identify work with children early on so

that learners know who they are and who everybody else is and what their place is in the school. (Teacher 7)

Teacher 9 perceived that "I use interventions like Peer Learning groups, Buddy Student, and enrollment in positive activities to foster a sense of community in my classroom. I have found the approach lowers bullying incidents and facilitates healing for targeted students." Teacher 10 added that "Peer Tutor and 2x10 Relationship Building have been important interventions for me in making learners feel connected to peers and building strong friendships. I also teach my students to speak up when they witness indiscipline and other bullying behaviors, and to take a stand against it." Teacher 16 also shared that: Discipline and a safe learning environment serve to enable positive learning and reduce cases of student sick leaves or other forms of absenteeism. In the classroom, I start by creating a safe place for students to express themselves and feel heard. The use of interventions helps me to cultivate students' abilities to advocate on behalf of themselves as well as others. Outside of the classroom, I help them know how to facilitate opportunities for positive reinforcement by helping them get involved in afterschool activities that align with their hobbies and interests. (Teacher 16)

RQ4: Intervention Programs and Students' Occupational Aspirations

Research question 4 was created to identify the following: *How do the different intervention programs used in middle and high schools in Missouri influence future normative motivations, such as occupational aspirations*? Findings showed that the use of intervention programs contributes to better student awareness about career prospects. Teachers 3, 5, 7, 9, 11, 13, 14, and 16 report that interventions contribute to

student support in terms of teaching, coaching, exposure, role modeling, and career counseling.

Theme 9: Interventions Influence Normative Motivations

Teachers 1, 4, 6, 9, 12, 14, and 15 perceived that role modeling, mentors, career workshops, and counseling programs help create normative behaviors that facilitate learners to focus on future careers. Teacher 1 perceived that "during career culture weeks and occupational guidance sessions, learners learn how to set instrumental goals on how they perceive themselves in future workplaces. Such an approach helps them to focus on fun-loving and feeling good about their studies as an avenue to their desired careers." Teacher 4 perceived that "career guidance programs help me assist students on behaving appropriately, and to conforming to social norms and rules that are needed in future workplaces." Teacher 6 perceived that: I find intervention programs key to creating and sustaining short-term gratification and focus among my students. Close guidance creates a sense of urgency among students to engage in what is right in their studies to meet the desired long-term goals. In this case, everyone is happy to work and achieve their goals because the interventions used like mentors and role models keep them glued to their desires. (Teacher 6)

Teacher 9 perceived that "as a teacher and career mentor, I have to show positive values that give a model worthy of respect and to mold students to emulate them. I always put on a positive self-image for my students to ensure learners act following what ought to be done to achieve set career goals." Teacher 12 perceived that "intervention programs help create normative practices. As a teacher I ensure learners understand the need to helps others with a task to make them happy, express willingness to give and

share with others, strive to become useful for others, and behave appropriately because of teachers and parents as strong moral and ethical foundations in their careers." Teacher 14 perceived that "I feel a constant urge to provide support and encouragement to ensure they are in a position to assume more responsibility and develop needed career competence." Teacher 15 observed that

> When we are holding career sessions, learners get to be taught about how they need to navigate their academics to reach their career goals. In this case, the focus is to establish a climate that encourages independence and ensures students can talk openly about their anxieties, fears, and uncertainty that might distract them from becoming productive in their studies. Thus, I become more productive in ensuring students explore their weaknesses and strengths and how to address potential problems in their studies.

Theme 10: Interventions Influence Career Preparedness

Teachers 2, 3, 5, 8, 10, 13, 15, and 16 perceived that intervention programs have largely enabled them to provide support to students in selecting and pursuing their career paths. Teacher 2 perceived that "The students' interests in extracurricular activities also shed light on what they find enjoyable... for me, lessons on a musical instrument or participation in a band are indicators of an interest in the arts and possibly other collaborative forms of creative expression." Teacher 3 perceived that "through career support, I help my students understand how to accomplish their future work needs, by suggesting specific strategies on how to achieve short and long-range academic goals." Teacher 5 perceived that: In most cases, I use the student's academic strengths and interests as a reliable indicator of their preferred activities. A student who enjoys math

may want to pursue a career in science or engineering; a student who succeeds in physical education may want to pursue a career as a fitness trainer or a sports coach, and a student who is interested in the shop may want to work with his or her hands. Competences within specific subject areas are very illuminating. Someone who excels at writing lengthy historical papers could perhaps apply their skills in a sector that demands a significant amount of study and analysis. The information is used during career guidance to chart the future career path of students. (Teacher 5)

Teacher 8 perceived that "mentorship and training are primary in ensuring I provide learners with constant help and support about challenging assignments, and how to address them and how to apply knowledge in their areas of strength to identify suitable career paths." Teacher 10 perceived that "the use of close monitoring and support has been important for me and my colleagues in terms of assisting students to develop an academic reputation aligned with their career dreams." Teacher 13 elaborated that: Intervention programs give me an avenue to explore and understand my students' social skills and study habits. It is easier to ask and question whether a student enjoys being in class, or does he/she merely put up with it? Is he/she frequently tardy or do they miss classes? It is possible to determine, based on these behaviors, whether a student is well-suited for a job that requires them to sit at a desk for the entirety of the workday, whether they would prefer to work from home, whether they would prefer to travel to a different environment, or whether they want a job that requires them to be more physically active. In the process, one gives students suitable career paths to consider as they engage in their academic work. (Teacher 13)

Teacher 15 perceived that “the use of interventions like career paths and opportunities for future enterprises makes it easier to share insights about holding positions that can influence others within the organization. You know, a teacher is well positioned to encourage students to take courses that develop their competence in suitable career goals.” Teacher 6 noted that “it is always easy to help learners prepare for positions of greater responsibility by providing information about teamwork, group sessions, managing roles, and coordinating individuals for future leadership experiences. There is always a need to display a positive attitude which serves to provide a model worthy of emulation by students.” These findings show the growing importance of intervention programs in enabling students to identify their future careers.

Summary

The purpose of the current chapter was to present survey results, interview responses, and exam scores to understand the impact of intervention programs on student motivation. Findings from the collected data show that intervention programs used in middle and high schools in Southeast Missouri influence the student’s engagement with school. Schools that use intervention programs are likely to show higher levels of student engagement and active participation than schools that lack similar programs. Adoption of intervention programs enhances student commitment to learning via improved motivation, and self-efficacy, and creates a sense of belonging to the school. Students who participate in intervention programs are less likely to engage in indiscipline cases in school and are more likely to have high school completion rates and timely graduation. Importantly, teachers use intervention programs to expose students to different career opportunities, in addition to offering role models, mentors, and counselors who help them

identify suitable subjects needed to achieve future careers. Importantly, at-risk students acquire essential lessons on persistency and commitment to academic goals thereby helping reduce potential cases of school dropouts.

Chapter Five: Discussion, Conclusion, and Recommendations

The purpose of this study was to investigate intervention programs being used to retain and engage at-risk high school students in Southeast Missouri and identify effective intervention programs that might help promote their success in school and subsequent transition into adulthood. In the current chapter, the focus is to present a summary of key findings obtained from the surveys, interviews, and test scores and compare it with past research on the topic. Implications for intervention practice and positive social change in schools to support at-risk students are also presented. Potential limitations of the current study are also discussed before providing recommendations for future research.

Discussion of Key Findings

A preliminary analysis of responses shared by students observed that most surveyed learners are exposed to various risks. These risks have both emotional and behavioral impacts on students in terms of increased cases of absenteeism from school, low academic achievement, and declined individual interest in academics. In addition, most students expressed that those emotional risks increase the potential cases of being disconnected from the school environment, and this results in potential cases of drug and substance abuse, in addition to engaging in early sexual activities. In other cases, there was an increased likelihood that some students were exposed to emotional and behavioral risks and contemplated dropping from school. These survey responses give a summary of the increased concern that at-risk students in Southeast Missouri are exposed to a myriad of challenges that could affect their personal, academic, and future career progression. The findings echo observations from past literature concerning hurdles at-risk students in

Missouri are exposed to (Allin, 2020; Litteken & Sale, 2018; Mo et al., 2018), prompting the need for this study to identify intervention programs schools have in place to assist learners.

Before implementing the intervention program, a pre-intervention survey was conducted on all students in the selected schools. Five key findings were observed from the initial responses shared by students. First, regarding students' attitudes toward school engagement, there was no statistically significant difference in their opinions of learning, liking school, putting forth effort and perseverance, participating in extracurricular activities, and cognitive engagement (i.e., willingness and ability to take on the learning tasks). Second, there was no significant difference between students' perceptions of their academic motivation in terms of interest to discover new information, commitment to achieve academic goals, feeling obligated to perform in their studies, and persistence to complete school. These findings show that without any intervention programs, both at-risk students and those not at-risk do not show any substantial variations in their attitudes and perceptions towards learning (Bippert, 2019).

Third, survey findings showed students’ self-efficacy was low in terms of innate talent or ability, perceptions of their role in completing tasks, and how they perceive task difficulty. Fourth, when focusing on school disciplines, such as bullying, fighting, and victimization, pre-survey responses showed no statistically significant differences among students regarding their involvement in various discipline issues. Fifth, students shared their views about career mentorship and the findings showed that there were no statistically significant differences in the means of students’ responses about the level of support they received towards career mentorship. That is, students were not likely to

record differences in their exposure to coaching, sponsorship, being assigned to challenging tasks, role modeling, and career counseling. According to Aarons (2019) schools that lack specific intervention programs are less likely to record any variations in how learners perceive teacher support, indiscipline, and individual competency towards school tasks. In light of these considerations, there was a need to understand whether adopting and implementing intervention programs could influence student motivation towards positive learning outcomes while reducing exposure to various risks.

Research Question 1 was created to help understand the following: *How do the different intervention programs currently used in middle and high schools in Missouri influence the student's engagement with school*? Findings from the surveys and interviews showed that various intervention programs help enhance student engagement in Southeast Missouri schools. Specifically, findings showed that schools that use intervention programs contribute to improved cognitive engagement, interest to participate in extracurricular activities, individual persistence in learning, growth to like their schools, and positive learning attitude. These findings echo observations from past studies where Missouri schools that use intervention programs are more likely to report learners who show strong interest and liking for learning (Cook, 2020; Cornman, 2017; Harrison, 2017).

Analysis of Hypothesis 1 confirmed that intervention programs positively facilitate the engagement of at-risk students in school. Specifically, students' perceptions of intervention programs and school engagement were attributed to the increased liking for learning, liking for school, effort and persistence, and improved extracurricular activities. Thus, the obtained findings suggest that intervention programs enhance

affective engagement and behavioral engagement among at-risk students. These findings were also reported by teachers who noted that intervention programs have various impacts on student engagement in school in terms of (1) creating a positive attitude, (2) liking for school, (3) enhanced student effort towards learning, (4) taking part in extracurricular activities, and (5) students' cognitive development. However, teachers showed that despite the positive influence of intervention programs, schools lack a universal strategy for implementing their interventions.

Various intervention programs used in different schools include buddy student, substance abuse counseling, weekly academic, before/after school meetings and lunch bunch, phone calls to parents, home visits, and close classroom observations. Additional intervention programs include the use of learning accommodations and preventing problems, student goal setting and enrollment, close academic and career guidance, peer counseling, and recruiting role models. Teachers also shared that they use intervention programs, such as mentors, behavior contracts, Lexia PowerUp, Reading Horizons Elevate, and Accelerated Math. When students are exposed to these intervention programs, they are more likely to develop a positive attitude toward learning, especially learners who come from poor backgrounds and low-income households (Herman, 2019).

In the illustration, teachers perceived that intervention programs, like before/after school meetings and lunch bunch influence learners to remain committed to coming back to school daily. Through interventions, like home visits and close classroom observations, students become more curious to learn and ask questions. Moreover, the use of learning accommodations, like extended timing and scheduling improves the quality of student and teacher engagement in the classroom. Through strategies, such as student goal setting

and enrollment, students can show positive outcomes, such as teamwork, since they feel included and loved, thereby creating an atmosphere of positive attitude and engagement for all students, especially low academic achievers.

These findings may be explained by the problem behavior theory, where Lauren (2019) observed that student engagement in risky activities, such as aggressiveness, violence, and substance abuse results from a lack of support programs against exposure risk (Lauren, 2019). That is, schools that lack intervention measures are likely to report negative behavior among students who might feel unsupported by positive life experiences (Litteken & Sale, 2018). As a result, school intervention programs would significantly reduce the likelihood of students engaging in risky behaviors by creating a system of good social connections, based on teacher support and guidance (Mo et al., 2018). Protective factors against risky behaviors include an individual student's capacity to retain a good adaptation despite being exposed to a school environment that is more antagonistic and provides less support.

Availing intervention programs also increases students' liking for school. For example, the use of intervention programs that discourage bullying and violence increases students' sense of belongingness in their schools and makes them eager to come to school daily. Past findings show that the use of intervention programs enables teachers and students to create a positive learning atmosphere, thereby reducing potential cases of indiscipline (Jeff, 2018; Louenco, 2019). In the illustration, some teachers noted that the use of interventions focused on self-monitoring, class passes, and talk tickets create a sense of responsibility among students who have to embrace a positive culture of creating a conducive learning environment and meeting set learning expectations. Results from

NWEA exams further support these claims since students who took part in intervention programs showed statistically significant improvement in their exam means scores compared to the control groups.

Participation in intervention programs further contributed to improved student commitment toward academic persistence. For example, the use of intervention programs, such as *Lexia PowerUp, Reading Horizons Elevate,* and *Accelerated Math* resulted in active student participation in classroom activities. In addition, intervention programs, such as Bridges and Voyager Math positively influenced student engagement and helped create learner interest and attention towards academic tasks. Herman et al. (2019) reported that academic support interventions help slow learners and shy students to benefit from additional engagement tailored to their plans. Such interventions help teachers to create high expectations for their students (Hirschi, 2019). Through various interventions, therefore, teachers expressed that students are in a position to engage in various activities while remaining active and committed to set learning goals.

Student engagement was also observed in terms of increased interest in taking part in extracurricular activities and being active in terms of social engagement with their peers outside the classroom. The use of social intervention programs, such as school clubs helps students stay active in the school, since teachers help at-risk learners who are considered low achievers and more likely to drop out of school, to explore their hobbies and talents via academic clubs, hobby clubs, and performing arts (Jeff, 2018). Louenco (2019) reported that extracurricular activities help students to remain hooked in school by accessing talent search activities and enrollment in sports that make them love their schools. These findings show that teachers have a positive perception of intervention

programs and students' social behavior improvement through participation in extracurricular activities.

Research Question 2 was developed to help the researcher understand the following: *How do the different intervention programs influence educational aspects of students regarding school, such as learning motivation, learning self-efficacy, and a sense of belonging to school*? Based on the insights drawn from the survey responses and interview data, it became evident that schools that implement intervention programs positively influence students. Specifically, students became positively motivated in their academic activities through intrinsic, extrinsic, and amotivation processes. Results of Hypothesis 2 also confirmed that i*ntervention programs significantly improve the educational engagement of students in school*. However, the mean scores for amotivation, intrinsic motivation, and extrinsic motivation were significantly higher than the mean score for extrinsic motivation (introjected).

These findings show that students who are exposed to intervention programs increase their intrinsic motivation in terms of individual interest to know what they are learning, commitment to academic accomplishment and positive stimulation to stay in school. By contrast, students report intrinsic motivation in terms of how they identify with their schools, self-regulation, and amotivation. In elaboration, the findings show intervention programs may positively contribute to students' cognitive abilities since, they remain interested in learning and completing their classwork. Some teachers shared that motivated at-risk students always show personal effort to complete homework and that these learners express genuine interest in participating in classroom discussion sessions. Lowrey et al. (2021) reported that targeted at-risk students in Southeast Missouri helped

teachers change student behaviors and, in the process, cultivated the culture of listening attentively, attending lessons, turning in work on time, and taking part in group discussions.

Teachers also reported that intervention programs had a positive influence on student motivation in terms of facilitating a sense of gratification, while helping at-risk learners acquire new curriculum concepts. The use of interventions was also noted to help convince learners about the discoveries in solving problems they previously feared as difficult or impossible. In line with the social cognitive theory (SCT) student personal attributes, individual behavior, and environmental circumstances all intersect to impact a person's behavior. Students who are exposed to positive modeling and reinforcement are likely to embrace desired behaviors (Bandura, 1986; Bandura, 2012). In this study, teachers noted that exposure to effective intervention strategies creates a positive influence on how at-risk students behave and engage in school settings.

Teachers also noted that intervention programs promote extrinsic motivation among at-risk students in Southeast Missouri towards their academic endeavors. For example, the use of career counseling and mentorship programs helps teachers to encourage students about their future. That is, succeeding in high school could enable them to access their desired future careers. Yun et al. (20162) observed that at-risk students in Southeast Missouri may be motivated to embrace learning and career programs that lead to satisfying future jobs, if teachers implement positive intervention strategies in their curriculum. However, the lack of such intervention programs could expose at-risk students to peer influence resulting in engagement in risky practices, such as violence or drug abuse (Demirel, 2021). To overcome this challenge, teachers felt

obliged to encourage students and make them aware of the fact that successful academic outcomes could empower them to join the job market in a field they admire, and this keeps them committed to learning.

Implementing intervention programs further motivated students to focus on learning by addressing amotivation issues. That is, through interventions, teachers assist at-risk learners' approaches and address their doubts about the need to participate in school. For example, students who lack a sense of belonging in school may develop negative perceptions about the importance of going or remaining in school (Witherspoon, 2017; Yeckel, 2021). To overcome the challenge, teachers implement interventions to mentor and orient learners regarding the importance of participating in school, thereby enabling students to become more committed to persist in their studies. Some teachers felt that the use of interventions gives them a chance to cast out doubts among at-risk learners about their future and what they need to know to become successful in life. Thus, intervention programs help teachers address amotivation issues that at-risk students have towards learning, thereby helping learners remain committed to completing school.

Research Question 3 was formulated to identify the following: *How do the different intervention programs used in middle and high schools in Southeast Missouri influence risk factors, such as discipline and involvement in violence*? Based on the survey and interview responses most teachers believed intervention programs reduce indiscipline cases, such as bullying and physical violence. Hypothesis 3 confirmed that schools that use intervention programs significantly experience reduced cases of indiscipline among at-risk students, including victimization, fighting, and bullying. Teachers felt that intervention programs help them in creating secure learning

environments, considering that they can set clear rules and guidelines on discipline, and this ensures students are discouraged from bullying and fighting their peers.

The use of intervention programs ensures that students participate in activities that boost social-emotional learning. Witherspoon (2017) reported that intervention programs could help students appreciate their identity, while valuing the cultural and ethnic identities of their peers, or individual diversities that often result in acts of verbal, physical, and emotional bullying. For example, teachers reported that the use of drama, literature and the visual arts has been a potential conduit for creating a positive school culture and conversation to help students understand the negative impact of indiscipline and violent behaviors. The interview responses further showed that the use of interventions, such as *Peer Learning groups*, *Buddy students*, and *enrollment in positive activities*, positively fosters a sense of community among students. In addition, the use of interventions like the *Peer Tutor* and *Relationship Building* helps make students connected to peers, thereby building strong friendships that help reduce indiscipline cases.

The positive influence of the intervention programs on reducing cases of indiscipline may be understood in the light of the social identity theory. The social identity theory, put forth by Tajfel and Turner in 1986, asserts that individuals have collective identities based on their membership in a group, such as racial/ethnic, and gender identities. According to Lauren (2019), membership in a social group is an essential building block for the formation of an individual's identity. In school settings, creating a sense of mutual identity for all students positively influences and informs a sense of belonging and group membership, emotional attachment, and personal beliefs.

As a result, students who have a feeling of belonging to their school settings bounded by common rules, expectations, and guidelines, are more likely to develop bonds of emotional attachment and common values (Bettinger et al., 2018) that largely discourage negative activities, such as physical and emotional harassment among learners perceived as weak. Teachers felt that using interventions creates a strong social identity that results in a positive sense of self that culminates in a positive learning environment.

Research Question 4 was designed to help the researcher understand the following: *How do the different intervention programs used in middle and high schools in Southeast Missouri influence future normative motivations, such as occupational aspirations*? Insights from the interview and survey responses showed that the use of intervention programs contributes to better student awareness about future career prospects and informs student transition to colleges. Hypothesis 4 was confirmed, revealing that intervention programs positively and significantly influence the normative motivation of at-risk students. The normative motivation is related to individual awareness about the subjects required to pursue future career choices. Survey responses showed that students' career choices were influenced when schools had intervention programs focusing on teaching, coaching, role modeling, sponsoring, and counseling about future careers. Assigning students challenging tasks, creating a friendly atmosphere, and accepting learners' needs further helped students develop positive attitudes about transitioning from high school to college, and look forward to future careers.

Interview responses from teachers showed that school interventions impact normative motivations, especially when role modeling, mentorship, career workshops,

and counseling programs are used. For instance, some schools have career culture weeks and occupational guidance workshops to help at-risk students set instrumental goals on how to perceive themselves in future workplaces. The use of career orientation helps students to focus on feeling positive about their studies, as an avenue to their desired careers (Rohlfing, 2020). Insights by Nelson (2019) echo observations from other scholars where career guidance programs have been noted to assist students perceived to be at risk of conforming to social norms and rules that are needed in future workplaces.

Findings further found that school interventions influence career preparedness since the approach helps provide support to students in selecting and pursuing their career paths. Career-focused interventions help learners remain committed to bridging the link between academic and extracurricular activities and how they facilitate students to their anticipated careers. Michel (2019) also added that intervention programs enable educators to offer career support to help at-risk students understand how to achieve their future career needs through mentors, role models, and counselors by suggesting specific strategies focused on achieving academic goals and career objectives (Matlock, 2017). These findings further indicate the growing importance of intervention programs in enabling students to identify their future careers.

Implications for Practice

The findings of this study have potential implications for positive change in the education sector in efforts to support at-risk students. The implications for positive social change may be achieved at the levels of students, teachers, school administrators, and education policymakers. At the level of students, there is a need for more awareness creation about intervention programs and access to close support and assistance from

teachers, school administrators, and parents. Students who feel neglected, less included, or cared for are more likely to dislike their school, and teachers, and might show less commitment to learning. Families may collaborate with schools to identify issues students experience to identify suitable interventions that learners need to be enrolled in to meet their unique needs. Schools may consider creating a conducive learning environment that generates interest and enthusiasm among learners to keep coming to school. Relevant discipline and moral values, a culture of peer engagement, and collaboration might help at-risk students feel included, thereby reducing the possibility of engaging in risky behaviors, such as bullying, and drug and substance abuse.

At the level of teachers, there is a need for (1) teacher training on the importance of using and implementing intervention programs in their classrooms; (2) There is a need to create self-efficacy and relevant competency among teachers as coaches, career mentors, counselors, and role models since they are more in contact with students than professional counselors or career advisors who interact with students occasionally; and (3) Teachers need to be allocated more resources, support, and time needed to develop relevant lessons focused on implementing various interventions for at-risk learners. Lack of adequate time may limit teachers from adopting and implementing intervention programs as most focus on completing approved curriculum from the Department of Education.

At the level of school administrators, there is a need for school leaders, such as principals to put in place structures that promote the implementation of intervention programs. These structures include teacher training, workshops, seminars, retreats, and other professional development opportunities. Leaders also need to support teachers to be innovative and autonomous when implementing intervention programs to meet the needs

of individual learners. Encouraging reforms in time management, longer lesson plans, and resource allocation could help teachers further adopt and implement relevant intervention programs to support at-risk students.

At the level of education policymakers, the intervention program needs to be included in the formal curriculum as opposed to being implemented as optional practice. Further, reforms may be needed to develop a uniform intervention program across schools in Missouri considering that intervention programs often differ by school. As such, this makes it difficult to implement relevant interventions as teachers lack a common criterion upon which to determine factors to consider when delivering interventions to at-risk students.

Limitations

There are potential limitations in this study that might affect the obtained results. First, the study was limited to elementary and high schools located in rural Southeast Missouri. Insights shared by teachers and students from these schools may differ from views shared in other schools across Missouri. Also, schools may use different intervention programs making it difficult to establish universal strategies that are used in all schools to help at-risk students. As such, it may be difficult to generalize the obtained results in this study to other schools across the state or the United States. Second, the data used in this study were drawn from student survey responses and exam scores. The views of teachers regarding the intervention programs were not captured during the surveys.

Third, the use of interview responses from teachers could potentially result in social desirability bias. In this study, social-desirability bias relates to the tendency of teachers to answer interview questions in a manner that will be viewed favorably by the

researcher. As a result, it could be possible that teachers might have over-reported "good outcomes" or under-reported "negative experiences", or undesirable outcomes of the intervention programs used in their schools. Fourth, the duration of the intervention programs and data collection lasted four months. There was no subsequent follow-up research to explore the long-term impact of the intervention program on students' motivation. Therefore, it may be difficult to determine areas of the intervention program that are most successful and with long-term impact on students' motivation, and the areas that require future improvements.

Recommendations for Future Research

The identified limitations from the current study inform potential recommendations for future research. First, future research needs to recruit a large sample size that is representative of all elementary and high schools across Missouri. The use of a representative sample could be key to collecting sufficient data to formulate a universal framework on key considerations considered in various intervention programs used in Missouri schools to support at-risk students. As a result, insights collected from a large sample size could make it possible to generalize findings to other schools in Missouri and across the United States. Second, there is a need for future researchers to collect survey data from teachers across Missouri regarding intervention programs. The survey responses could help corroborate responses shared by students regarding the influence of intervention programs on learner motivation.

Third, in addition to interview responses from teachers, future research may improve the collected data by triangulating the sources of information. In this respect, survey questionnaires, focus group discussions, field observations, and archive data may

be used to collect additional insights from teachers in various schools. Diverse sources of data could ensure the internal consistency of the data and help create an effective conceptual or theoretical framework of key factors to consider when formulating an effective intervention program for at-risk students in Missouri schools.

Fourth, future researchers may improve on the current findings by conducting follow-up studies about the intervention programs. Insights from longitudinal studies may help identify causality between intervention programs and student motivation. Results could also help determine the long-term impact that intervention programs have on students at risk throughout their elementary and high school years as opposed to limiting its effects on student motivation to a single school term.

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Appendices

Appendix A: IRB Approval

_____

Date

Form – **Approval of Prospectus by Dissertation Chair / Committee**

Student: _____ _____ _____

Last Name First Name Student Number

_____

Student Email

_____

_

Dissertation Working Title (APA recommends 12-word maximum; LU requests < 20)

Chair/ Committee Comments:

_____

_____

_____

_____

_____

_____

☐ I approve of this student's prospectus.

_____ _____

Committee Chair Signature Email

☐ I approve of this student's prospectus.

_____ _____

Committee Member Signature Email

☐ I approve of this student's prospectus.

_____ _____

Committee Member Signature Email

Return to SOE-Office of Graduate Studies (swisdom@lindenwood.edu; office email and location pending)

Submit a copy of the approved student prospectus to SOE-Office of Graduate Studies (swisdom@lindenwood.edu; office email and location pending)

Appendix B: Request Letters

Dear Prospective School,

Per Lindenwood University I need your written permission to use your school as a research site for my dissertation. Please feel free to reply back to this email and state that it is okay that I can use your school or if it is not and I can use that as my documentation. Thank you!

Sincerely,
Bryan Austin

Appendix C: Interview Questions

1. Please share your background about yourself, education level, current job, and the grade you teach at your school.

RQ1. How do the different intervention programs currently used in middle and high schools in Missouri influence the student's engagement to school?

2. Please describe the intervention programs in your school if any?
3. How does the intervention program influence student engagement within the school?

RQ2. How do the different intervention programs influence educational aspects of students regarding school, such as learning motivation, learning self-efficacy, and a sense of belonging to school?

4. How would you describe the influence of intervention programs on student choice of subjects, career choices, and commitment to learn and achieve these goals?
5. What is your experience with intervention program and their contribution to students' motivation for learning self-efficacy?
6. What is your experience with intervention program and their contribution to students' self-efficacy and feeling that they belong to the school?

RQ3. How do the different intervention programs used in middle and high schools in Missouri influence risk factors, such as discipline and involvement in violence?

7. How does the intervention program prevent students from engaging in indiscipline behaviors?
8. Please share your views on how the intervention program helps at-risk students not to engage in other violence acts like bullying?

RQ4. How do the different intervention programs used in middle and high schools in Missouri influence future normative motivations, such as occupational aspirations?

9. What is your view of how the intervention program would likely inform student transition to colleges?
10. Please explain how the intervention program is likely to help at-risk students transition into future workplaces?

Appendix D: Survey Questionnaires

Invitation: Thank you for your interest in this study. The aim of this study is to investigate at-risk high school students in Missouri, and the effectiveness of intervention programs being used currently to retain and engage them in school under the Every Student Succeeds Act (ESSA) Program. The study will then identify effective intervention programs that might help promote their success in school and subsequent transition into adulthood. Your participation will be kept confidential and private. There is no personal information that will be collected from you to maintain your privacy and safety. The insights you will share through this survey will be used for academic purposes only. Participation is voluntary and you are free to drop from the study at any time, you can also skip any questions which you do not feel comfortable answering, with no consequences whatsoever.

Table D1

Student Engagement in Schools Questionnaire

No.	Items	1	2	3	4	5
1	I am very interested in learning					
2	I think what we are learning in school is interesting					
3	I like what I am learning in school					
4	I enjoy learning new things in class					
5	I think learning is boring					
6	I like my school.					
7	I am proud to be at this school					
8	Most mornings, I look forward to going to school					
9	I am happy to be at this school					
10	I try hard to do well in school					
11	In class, I work as hard as I can					
12	When I'm in class, I participate in class activities					
13	I pay attention in class					
14	When I'm in class, I just act like I'm working					
15	In school, I do just enough to get by					
16	When I'm in class, my mind wanders					
17	If I have trouble understanding a problem, I go over it again until I understand it					
18	When I run into a difficult homework problem, I keep working at it until I think I've solved it					

19	I am an active participant of school activities, such as sport day and school picnic
20	I volunteer to help with school activities, such as sport day and parent day
21	I take an active role in extracurricular activities in my school
22	When I study, I try to understand the material better by relating it to things I already know
23	When I study, I figure out how the information might be useful in the real world
24	When learning new information, I try to put the ideas in my own words
25	When I study, I try to connect what I am learning with my own experiences
26	I make up my own examples to help me understand the important concepts I learn from school
27	When learning things for school, I try to see how they fit together with other things I already know
28	When learning things for school, I often try to associate them with what I learned in other classes about the same or similar things
29	I try to see the similarities and differences between things I am learning for school and things I know already
30	I try to understand how the things I learn in school fit together with each other
31	I try to match what I already know with things I am trying to learn for school
32	I try to think through topics and decide what I'm supposed to learn from them, rather than studying topics by just reading them over
33	When studying, I try to combine different pieces of information from course material in new ways

Table D2

Academic Motivation Scale

No.	Items	1	2	3	4	5
1	Because I need at least a high-school degree in order to find a high-paying job later on.					
2	Because I experience pleasure and satisfaction while learning new things.					
3	Because I think that a high-school education will help me better prepare for the career I have chosen.					
4	Because I really like going to school.					
5	Honestly, I don't know; I really feel that I am wasting my time in school.					
6	For the pleasure I experience while surpassing myself in my studies.					
7	To prove to myself that I am capable of completing my high-school degree.					
8	In order to obtain a more prestigious job later on.					
9	For the pleasure I experience when I discover new things never seen before.					
10	Because eventually it will enable me to enter the job market in a field that I like.					
11	Because for me, school is fun.					
12	I once had good reasons for going to school; however, now I wonder whether I should continue.					
13	For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.					
14	Because of the fact that when I succeed in school I feel important.					
15	Because I want to have "the good life" later on.					
16	For the pleasure that I experience in broadening my knowledge about subjects which appeal to me.					
17	Because this will help me make a better choice regarding my career orientation.					
18	For the pleasure that I experience when I am taken by discussions with interesting teachers.					
19	I can't see why I go to school and frankly, I couldn't care less.					
20	For the satisfaction I feel when I am in the process of accomplishing difficult academic activities.					
21	To show myself that I am an intelligent person.					
22	In order to have a better salary later on.					
23	Because my studies allow me to continue to learn about many things that interest me.					
24	Because I believe that my high school education will improve my competence as a worker.					
25	For the "high" feeling that I experience while reading about various interesting subjects.					
26	I don't know; I can't understand what I am doing in school.					
27	Because high school allows me to experience a personal satisfaction in my quest for excellence in my studies.					
28	Because I want to show myself that I can succeed in my studies.					

Table D3

Morgan-Jinks Student Efficacy Scale

No.	Items	1	2	3	4	5
1	I work hard in school.					
2	I could get the best grades in class if I tried enough.					
3	Most of my classmates like to do math because it is easy.					
4	I would get better grades if my teacher liked me better					
5	Most of my classmates work harder on their homework than I do.					
6	I am a good science student.					
7	I will graduate from high school.					
8	I go to a good school.					
9	I always get good grades when I try hard.					
10	Sometimes I think an assignment is easy when the other kids in class think it is hard					
11	I am a good social studies student.					
12	Adults who have good jobs probably were good students when they were kids					
13	When I am old enough, I will go to college.					
14	I am one of the best students in my class					
15	No one cares if I do well in school					
16	My teacher thinks I am smart					
17	It is important to go to high school					
18	I am a good math student					
19	My classmates usually get better grades than I do					
20	What I learn in school is not important					
21	I usually understand my homework assignments					
22	I usually do not get good grades in math because it is too hard					
23	It does not matter if I do well in school					
24	Kids who get better grades than I do get more help from the teacher than I do					
25	I am a good reading student					
26	It is not hard for me to get good grades in school					
27	I am smart					
28	I will quit school as soon as I can					
29	Teachers like kids even if they do not always make good grades					
30	When the teacher asks a question I usually know the answer even if the other kids don't					
	Please circle the grade you got on your last report card	A	B	C	D	F
31	What grade in math did you get on your last report card?	A	B	C	D	F
32	What grade in social studies did you get on your last report card?	A	B	C	D	F
33	What grade in science did you get on your last report card?	A	B	C	D	F
34	What grade in reading did you get on your last report card?	A	B	C	D	F

Table D4

Illinois bullying scale

	Items	1	2	3	4	5
1	I spread rumors about other students.					
2	I excluded other students from my clique of friends.					
3	In a group I teased other students.					
4	I teased other students					
5	I helped harass other students					
6	I encouraged people to fight					
7	I started (instigated) arguments or conflicts					
8	I was mean to someone when I was angry					
9	I got in a physical fight.					
10	I hit back when someone hit me first.					
11	I got into a physical fight because I was angry.					
12	I threatened to hurt or hit another student					
13	I fought students I could easily beat.					
14	Other students made fun of me.					
15	Other students called me names					
16	Other students picked on me					
17	I got hit and pushed by other students					

Table D5

Mentorship Quality Experience survey

No	Items	1	2	3	4	5
1	Your mentor helped you understand how to accomplish the work objectives of a new position					
2	Your mentor suggested specific strategies on how to achieve short and long-range career objectives					
3	Your mentor provided you with ongoing performance feedback about challenging assignments.					
4	Your mentor discussed career paths with you.					
5	Your mentor helped you develop a professional reputation					
6	Your mentor supported your advancement in the organization through mutual association.					
7	Your mentor shared insights about how administrators held power and influence within the organization.					
8	Your mentor encouraged you to take courses, seminars and workshops to develop your competence in administration.					
9	Your mentor helped prepare you for positions of greater responsibility by providing leadership experiences.					
10	Your mentor displayed a positive attitude which provided a model worthy of emulation.					
11	Your mentor exhibited positive values which provided a model worthy of respect					
12	Your mentor helped mold your leadership style					
13	Your mentor promoted in you a positive self-image as an emerging administrator					
14	Your mentor provided support and encouragement as you assumed more responsibility and developed competence.					
15	Your mentor established a climate which encouraged independence					
16	Your mentor established a trust level which encouraged you to talk openly about anxieties, fears, and ambivalence that distracted from the productive organizational work.					
17	Your mentor was a person whom you could enjoy informal exchanges about work and non-work experiences.					
18	Your mentor served as your sounding board for self-exploration					
19	Your mentor accepted and supported you as you attempted to resolve personal concerns					
20	Your mentor served as a confidant with whom you could share doubts and concerns without risking exposure to others in the organization.					