Table 1

Response to Reviewers

Reviewer	Suggestion	Action Taken
#1	Replace “so” with “how” after the colon	The change was made to the title.
#1	Include the four main types of SEL in Intro/background and significance of research section	I included a brief explanation of the two most widely adopted SEL frameworks (i.e., freestanding pre-K, and universal K-12) on p. 4 paragraph 2.
#1	Move Contextual SEL information section to Intro/background Information section.	I chose not to follow this recommendation, because my background and significance of research section was already too long.
#2	Change title to spell-out social-emotional learning instead of SEL in the title	This correction was made, and the title was changed.
#2	Include a brief description of four main types of SEL in intro/background and significance of research	I included a brief explanation of the two most widely adopted SEL frameworks (i.e., freestanding pre-K, and universal K-12) was included p. 4 paragraph 2. I also re-worded the description on p. 2 paragraph 3 to better explain the two differences early in the proposal.
#2	Change the sentence case in references from (Journal of school psychology) to (Journal of School Psychology)	This correction was made in the reference section.
#3	Proposal length is too long	I attempted to shorten the length of the overall proposal by shortening the sentence (postsecondary education attendance and degree attainment) to (postsecondary degree attainment) throughout many places in the document.

Comparison Study Across Social-Emotional Learning Frameworks, and Their Relation to Postsecondary Education Attendance and Degree Attainment

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Comparison Study Across SEL Frameworks and Their Relation to Postsecondary Education

Background and Significance of Study

In an increasingly diversified world, school is often the first-place students learn to socialize, collaborate, and build relationships with their teachers, and peers from various cultures, and backgrounds. While traditional cognitive skills, also known as “hard skills,” or IQ such as those required to do well in math, science, and reading are important. There is a growing body of evidence that suggest noncognitive skills, or “soft skills” such as those not typically measured by standardized testing (e.g., critical thinking, emotional management, conflict resolution, decision making, and teamwork) rival IQ and are often seen as valuable in the labor market (Heckman and Kautz, 2012). Because emotions can facilitate or impede childrens academic engagement, work ethic, commitment, and life success. (Durlak, et al., 2011). There is a growing consensus that schools are responsible for fostering students' noncognitive development as well as their cognitive skills. Social-emotional learning (hereinafter refered to as SEL) refers to a wide range of skills that focuses on helping students develop the abilities to identify their strengths, manage their emotions, set goals, show empathy, make responsible decisions, build, and maintain healthy relationships (CASEL, 2020). The Collaborative for Academic, Social, and Emotional Learning (hereinafter refered to as CASEL) identifies five competencies of SEL: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (CASEL, 2022). CASEL claims that this SEL framework is key to providing equitable learning environments to promote learning and healthy child development.

Recent research has demonstrated SEL to be effective in helping children in a wide variety of categories. Some of the benefits evidence-based SEL can provide include improving

academic achievement, and school attendance by an 11-point percentile gain (Durlak, et al., 2011). Improving school climate and education throughout students of all ethnicities, cultures, backgrounds, and socioeconomic statuses (Elias, et al., 2008). Reducing negative behavior problems such as aggression, drug use, criminal activity, and instances of conduct disorders for at-risk children (Green, et al., 2020). Teaching students to cope with emotional stress, increase self-esteem, solve problems, and avoid peer pressure to engage in harmful activities such as risky sex (Jones, et al., 2018). Additionally, some SEL programs help students prepare for college, and career readiness, improve mental health, increase earnings, and provide long-term economic gain (Belfield, et al., 2015). However, there are many variations of SEL programs, frameworks, interventions, and implementation methods. The two most widely adopted frameworks include freestanding pre-K, where SEL is taught in preschool to kindergarten, and universal K-12 where students receive targeted age appropriate SEL curricula throughout primary education.

Since the enactment of Every Student Succeeds Act (ESSA) signed into law by President Obama on December 10, 2015, which allowed states the ability to include SEL in school curricula. All 50 states and the District of Columbia have included some form of freestanding pre-K SEL curricula, but few states have adopted universal K-12 SEL curriculum throughout elementary, middle, and high school grade levels (Eklund, et al., 2018). Because so few states have made SEL a part of their curriculum for K-12 students, statistical evidence showing the benefits of SEL have been anecdotal. While researchers have been able to demonstrate SEL's ability to positively impact students across multiple domains, more research is needed to compare across SEL frameworks and establish a connection between SEL and postsecondary education. Therefore, this study will compare across two state SEL frameworks to determine whether freestanding pre-K, or universal K-12 SEL curriculum is associated with higher

postsecondary degree attainment. It is hypothesized that universal K-12 SEL curriculum will demonstrate a significant gain in postsecondary attendance and degree attainment over freestanding pre-K SEL curriculum. This study will add to the previous literature, and make a meaningful contribution by helping policy makers determine whether weaving SEL into K-12 curriculum is the best decision for their states' demographics. As a result, findings from this study stand to directly benefit students and young adults across America for years to come.

Problem Statement

While past SEL research has proven early pre-K SEL intervention frameworks effective in identifying at-risk youth, and predicting later outcomes in education, labor markets, and life (Jones, et al., 2015). And universal K-12 SEL interventions to be highly effective in developing students' ability to manage emotions, develop relationship skills, increase academic achievement, and provide high economic return (CASEL, 2022; Durlak, 2011; Belfield, 2015). The previous research has been limited to exploring the positive effects of various individual SEL frameworks (i.e., freestanding pre-K, and universal K-12, targeted interventions, etc.), but have yet to compare across SEL frameworks, and link SEL to postsecondary degree attainment. While researchers have proven the positive decision-making skills SEL program participants gained during intervention stayed with students for up to 18 years post-intervention (Taylor, et al., 2017). Making the decision to attend college, technical school, or some other form of postsecondary education is one of the best decisions a student can make for themselves, and the economy.

The education derived from postsecondary education have been shown to decrease unemployment, crime, mental health problems, dependence on public assistance programs, and increase earnings, health, quality of life, GDP, and tax revenue (Hout, 2012). However, there is a

lack of evidence connecting SEL and postsecondary degree attainment. Therefore, a gap in research presents itself, and a comparison across SEL frameworks is needed to determine whether freestanding pre-K SEL is as effective in preparing students for college and career readiness as universal K-12 curricula. Thus, this study will focus on making a connection between SEL and postsecondary education, and comparing across pre-K, and universal K-12 SEL frameworks. The population affected by this study will include high school seniors enrolled in public schools throughout the state of Missouri, and Illinois.

Purpose of the Study

The purpose of this quantitative study is to make a connection between SEL and postsecondary education, and compare across SEL frameworks to determine which framework/curriculum is associated with higher postsecondary degree attainment. The participants in this study will include high school seniors currently enrolled in public schools throughout both Missouri and Illinois. The independent variables in this study will include: (1) Missouri state "Show me Standards" freestanding pre-K SEL curriculum, and (2) Illinois's universal K-12 SEL curriculum. The dependent variable(s) will be: (1) Missouri states' colleges, technical-school, or some other form of postsecondary education's graduation rates from 2105 and 2023; and (2) Illinois's college, technical-school, or other form of postsecondary education's graduation rates from 2015 and 2023; and (3) survey responses from students in Illinois, and Missouri.

Literature Review

This literature review seeks to explore various social-emotional learning (SEL) frameworks to determine which curricula type (i.e., freestanding pre-K, or universal K-12) is associated with higher postsecondary degree attainment. The sources were collected based on

content relating to SEL research and evidence-based student outcomes. The articles in this literature review were gathered by use of searching on Google Scholar. The databases used include Science Direct accessed through the University of Missouri's library database, American Journal of Public Health, American Psychology Association, Society of Research in Child Development (SRCD), and ERIC. The primary keywords used to perform searches include social-emotional learning, academic performance, social policy, and SEL programs; however, most articles were acquired by reviewing relevant references of articles already collected. Some articles were not included because they repeated information already stated by another source or did not directly align with any of the topics included in this literature review. The literature has been organized by topic and/or related concepts. This review begins with background information on the development of social-emotional learning, as well as state adoption of various SEL frameworks, before presenting evidence of both student and economic benefits, SEL can provide.

Contextual SEL Information

The theory of change is used by organizations and government bodies to identify the necessary adjustments that need to be made today to effect long-term societal change in the future. Theory of Change (2012) works by defining long-term goals and then maps backward to identify the required preconditions that will generate long-term social change. "Social and emotional learning (SEL) is the process by which children and adults learn to understand and manage emotions, maintain positive relationship, and make responsible decisions." (CASEL, 2020). The Collaborative for Academic, Social, and Emotional Learning (CASEL) has played a leading role in promoting school based SEL interventions in primary and secondary education.

They have put together a framework that outlines five evidence-based core competencies central to SE learning which include:

> **Self-awareness**. Knowing what one feels, accurately assessing one's interests and strengths, and maintaining a well-grounded sense of self-confidence.
>
> **Self-management**. Regulating one's emotions to handle stress, control impulses, and motivate oneself to persevere in overcoming obstacles, setting, and monitoring progress toward the achievement of personal and academic goals, and expressing emotions appropriately.
>
> **Social awareness**. Being able to take the perspective of and empathize with others, recognizing and appreciating individual and group similarities and differences.
>
> **Relationship skills**. Establishing and maintaining healthy and rewarding relationships based on cooperation and resistance to inappropriate social pressure; preventing, managing, and constructively resolving inter personal conflict; and seeking help when needed.
>
> **Responsible decision-making**. Making decisions based on a consideration of all relevant factors, including applicable ethical standards, safety concerns, and norms; the likely consequences of taking alternative courses of action; and respect for others. (CASEL, 2022)

CASELs framework revolves around education reform and was built on the theory of change. Dukes et al. (2022) assists that CASELs framework relies on the theory of change and

works to enhance students' indicators of self-confidence and well-being by developing student "soft skills" and changing student behavior for increased academic performance and improved life success. A recent study sought to identify student stressors responsible for low self-esteem, poor grades, and student anxiety, and found that low levels of SE competencies were responsible for anxiety and low academic performance. Hyseni (2018) found that developing students' soft skills led to increased self-confidence, reduced anxiety, and improved academic performance. Bridgeland et al. (2013) with Americas widening skill gap, SEL strives to develop the "whole child" and has been hailed the missing piece to the "education puzzle."

Until recently policy makers were limited to standardized cognitive achievement tests to predict and measure student success. But a growing body of evidence suggests social and emotional learning in schools is as important, or more important than cognitive gains in explaining important child development. As Heckman, and Kautz (2012) acknowledges, achievement tests fail to capture the soft skills and personality traits such as effort, motivation, curiosity, empathy, caring, and other traits that are valued in the labor market. Heckman, and Kautz explain that social emotional competencies rivals IQ, and helps students become better, more productive, self-aware, and socially aware citizens outside of the classroom, and prepares them for the years ahead. Policy makers took notice in 2015. Eklund et, al., (2018) since the enactment of Every Student Succeeds Act (ESSA) 2015, which allowed states the flexibility of incorporating SEL into their curriculum. Every state and the District of Columbia has incorporated some form of freestanding preschool through kindergarten (pre-K) SEL standards. However, there are multiple variations of SEL, with various forms of implementation, programs, targeted behaviors, SEL grade bands, and levels which span a great deal in terms of breadth and

depth regarding the positive impact pre-K, and universal K-12 SEL can have on student social, emotional, and academic outcomes.

SEL Frameworks

The field of SEL has recently grown to include multiple frameworks and delivery methods including, but not limited to, in-class room curricula teacher-based delivery, afterschool programs, and school-wide adoption. CASEL (2020), There are four main types of SEL, universal curricula, targeted instruction, broader SEL-based multitiered levels of support (MTSS) which meet students' various needs, and freestanding. CASEL explains some frameworks include universal K-12 delivery using horizontal alignment where SEL is woven into the curricula during elementary, middle school, and high-school; and "skills learned in the classroom are practiced in various settings and become part of daily routine throughout the entire school" (CASEL, 2020). Others use vertical alignment and emotional learning standards are used with benchmarks or "learning standards" to be obtained for each grade level. Others include structured 30 to 45 minute in-class sessions that target specific student behaviors. Lastly, there is freestanding SEL curricula which focuses solely on developing early SE competencies to students in pre-K. CASEL (2012) some programs focus on character development, some on building core competencies, while others target specific behaviors such as aggression, drug use, diversity and inclusion, career, and workforce readiness. However, CASEL shows that as of 2022 only 18 states have adopted some form of universal K-12 curricula, while the other 32 states and the District of Columbia use freestanding SEL in pre-K.

Though there is no one-size fits all SEL program or delivery method, CASEL does have recommendations for proper implementation. CASEL (2021) maintains that the implementation of high-quality SEL programs requires teacher training, and professional development. SEL

programs also work best when administered using SAFE practices. Durlak et al., (2011) explains that students achieve the best possible outcomes when SEL is implemented using SAFE practices, or:

> Sequenced - using connected and coordinated set of activites. Active - uses dynamic, varied forms of learning that engages students. Focused - The curriculum has at least one component devoted to development of SE skills. Explicit - The material is based on a theoretical model of SEL, and targets specific SE skills rather than positive development in general. (p. 4)

While there are many SEL delivery methods, various forms of implementation, and a wide array of programs for educators to choose from to meet their districts' demographics. Evidence-based SEL programs appear to provide a wide variety of multifaceted benefits to students.

SEL Benefits to Students

Recent studies have found SEL fosters an equitable learning environment for students of all social identities, socioeconomic statuses, cultural values, and backgrounds. Elias et al., (2008) studied populations of marginalized/urban minority students in low-income areas. The results demonstrated significant improvement in student academic performance when schools systematically incorporate ways to develop childrens SE competence and teacher's supportiveness. Green et al., (2020) SPARK pre-teen program was studied on disadvantaged middle school students to target certain negative behaviors. Researchers found students who received the SEL curriculum demonstrated significantly larger improvements in knowledge of curriculum content across all five outcomes including improved: communication, decision-making, and problem-solving skills; emotional regulation; and resilience when compared to

students in the controls. SEL has also proven useful in identifying, and targeting at-risk youth, future academic success as early as kindergarten. Jones et al., (2015) found statistically significant associations between social-emotional skills in kindergarten which allowed them to identify at-risk students, and accuratly predict later-life success in education, employment, criminal activity, and mental health. Aside from providing education equity, and predicting student success, recent research has demonstrated universal SEL provides students with comprehensive long-term benefits.

Evidence-based social-emotional learning program participants have exhibited enhanced academic performance, and improved quality of life. Corcoran et al. (2018) performed a systematic meta-analysis that went back 50 years, and found SEL positively impacted student academic performance in math, science, and reading. SEL research has also demonstrated use of SEL skills to predict future academic success, progress toward graduation, and improved life outcomes. Durlak et al. (2011*)* performed a meta-analysis of 213 school-based programs involving 270, 034 students that span from kindergarten through 12th grade, and found SEL participants had an 11 percent gain in achievement. Durlak further finds Students were also less likely to be high school dropouts, have an STD diagnosis, get arrested, or have a clinical mental health disorder. Research also suggest SEL has long lasting positive impacts on lowering aggression, student indicators of wellbeing, and the positive skills learned in SEL interventions stayed with students well into adulthood.

Research has also demonstrated efficacy of schoolwide programs promote social, and character development along with improved negative problem behavior in elementary-middle school children. Nickerson et al. (2019) found SEL intervention was effective in reducing bullying, student victimization, and increased student attendance. Recent research also suggests

the positive effects of SEL intervention stays with the students and becomes their learned behavior. Taylor et al. (2017) conducted a meta-analysis reviewing eighty-two universal social-emotional learning programs used by 97,406 K-12 students. Researchers found enhanced social emotional skills, attitudes, and indicators of well-being in those who participated in universal SEL interventions compared to those who did not. Researchers conducted follow-up six months to 18 years later, and found SEL intervention participants maintained significant positive effects including greater academic performance, fewer conduct problems and fewer instances of drug use. Aside from promoting positive youth development and having long lasting positive effects for students, high quality evidence based SEL intervention has the potential to increase economic output and long-term economic gain.

Long-Term Economic Gain

Researchers recently applied economic measure of Cost-Benefit Analysis (BAC) to SEL and found the economic benefits to society far outweigh taxpayer costs associated with implementing SEL programs in schools. Klapp et al. (2017) conducted a study on targeted interventions to reduce student drug use and found a significant reduction in drug use among students resulting in a BAC of 14:1. Meaning for every dollar taxpayers' invested in SEL, society stands to gain a $14 return from reducing youth addiction patterns, and substance abuse users lost productivity. Given recent research that has demonstrated SEL programs are effective at improving student academics, graduation rates, raising tax revenue through higher student earnings and decreasing mental health disorders, aggression, reducing crime, drug use, and reducing the need for future reliance on public assistance programs. Belfield et al. (2015) applied a benefit-cost analysis using shadow pricing and ingredients method to six widely used SEL programs to determine whether the monetary value of SEL outcomes exceeded the costs

associated with implementing such programs. Researchers found that for every dollar invested in SEL programs, taxpayers stand to gain an $11 return on investment (ROI).

Conclusion

After reviewing the literature pertaining to SEL background, various SEL frameworks, positive student, and economic benefits SEL can provide. It is still unclear which SEL framework (i.e., freestanding pre-K, or universal K-12) is associated with higher postsecondary education attendance and degree attainment. Postsecondary education is strongly associated with reduced unemployment, chance of incarceration, better health, increased earnings, and decreased chance of dependance on public assistance. Research has demonstrated universal SEL curricula benefits children of all cultures and backgrounds by providing education equity, reducing negative behavior, boosting academic performance, and providing students with lifelong skills to become successful adults, which in turn, provides long-term benefits to the economy. Given the sizable number of SEL frameworks designed to work in different contexts and meet multiple purposes, it is still unknown which SEL framework is associated with higher postsecondary degree attainment. Researchers have failed to compare across state SEL frameworks and make the connection between SEL and postsecondary education. Therefore, this study aims to determine whether freestanding pre-K, or targeted universal K-12 SEL curricula is associated with higher postsecondary attendance and degree attainment.

Methodology

The literature provides that there are multiple SEL frameworks and SEL program participants have demonstrated significantly improved social and emotional skills, attitudes, behavior, and academic performance that reflected an 11-percentile-point gain in achievement.

(Durlak, 2011). Researchers have calculated through use of benefit-cost analysis and shadow pricing that developing student social-emotional competencies in childhood enhances long-term well-being that could result in high economic returns (Belfield, 2015). However, researchers have not yet compared across SEL frameworks. Since the enactment of ESSA in 2015, all states and the District of Columbia have incorporated some form of free-standing pre-K SEL curricula, but only a handful of states have adopted universal K-12 SEL curricula (Eklund et al., 2018). However, more research is needed to compare across state SEL frameworks to determine which SEL framework is associated with higher postsecondary degree attainment.

Researchers are still unaware of which skill is most important to which children, at which age, and have yet to apply a solid real-life economic measure. College and postsecondary education have been shown to decrease unemployment rates, crime rates, mental health problems, dependence on public service programs, and increase earnings, health, quality of life, and economic output (Hout, 2012). However, no research has been done to link SEL curricula to postsecondary degree attainment. Therefore, there is a gap in research, and a comparison across SEL frameworks is needed to determine whether freestanding pre-K SEL is as effective in preparing students for college and career readiness as universal K-12 curricula. This study will aim to determine which SEL framework is associated with higher attendance in college, technical school, or some other form of postsecondary education, and degree attainment. Knowing which curricula is more effective in postsecondary degree attainment will aid policymakers in making the best decision for their states' demographics.

Method

This study will utilize a quantitative cross-sectional nonequivalent quasi-experimental approach following a postpositivist philosophical assumption. A quasi-experimental approach

was selected as the most appropriate choice as it allows for deductively testing hypotheses to establish a cause-and-effect relationship between variables. Quasi-experimental approach was chosen over an experimental approach because this study will examine students in their natural pre-existing school setting. I will not need to design the intervention but will study pre-existing SEL frameworks and what effect, if any, they have on students' outcomes regarding higher education after high school graduation. Also, due to the study's school setting randomization of treatment was not possible, or necessary; however, the student survey samples will be randomized which is further discussed below. This study will utilize a quantitative cross-sectional quasi-experimental survey design to compare across two states who utilize two different SEL frameworks by collecting a survey sample from high school senior students throughout both Missouri state, and Illinois at the end of the school year in 2023. I will also collect historical data pertaining to each states annual graduation rates in: (1) two-year; (2) four-year; (3) graduate-level; (4) technical-school; and (5) other forms of postsecondary education. This will be done to determine whether there is a significant difference in degree attainment between time 1 (2015) and time 2 (2023) as to verify reliable survey results, and inform whether universal K-12 SEL curricula made a significant difference in postsecondary education attendance and graduation rates.

Research Questions

1. Does a relationship between universal K-12 SEL curriculum and postsecondary education attendance, and degree attainment exist?
2. Do students attending schools with universal K-12 SEL curriculum plan to attend college or some other form of postsecondary education more so, than students who received freestanding pre-K SEL curriculum?

3. What difference, if any, is there in secondary education attendance and graduation rates in Missouri and Illinois from 2015 to 2023?

Hypothesis

Hypothesis #1 – Survey results will reveal Illinois's universal K-12 SEL curriculum results in significantly higher number of students planning to attend college or some other form of postsecondary education. Hypothesis #2 - Illinois will have a significant difference in postsecondary degree attainment from 2015-2023. Hypothesis #3 - Missouri's freestanding preschool through kindergarten SEL curriculum will result in significantly less students making the decision to attend postsecondary education and obtain a degree. Hypothesis # 4 – A relationship between universal K-12 SEL curriculum, and postsecondary degree attainment exists. The reason I made these predictions is that people learn when they are ready to, and different subject become clear at various ages. Students that have been exposed to SEL curriculum woven throughout elementary, middle, and high school are given more time to comprehend and practice SE skills and competencies taught. Universal K-12 SEL curriculum is administered using SAFE practices from teachers that have had proper SEL training and development. Universal K-12 SEL also provides students with targeted interventions that deliver developmentally age-appropriate skills such as making better decisions, and career readiness at an age that makes sense such as 9^{th}- 12^{th} grade. Whereas SEL that is administered during preschool and kindergarten, from untrained teachers with inadequate implementation methods, is likely forgotten soon after the first grade.

Variables

The independent variables will be the SEL curriculum which include: (1) freestanding pre-K SEL curriculum given to students in Missouri, and (2) universal K-12 SEL curriculum given to students in Illinois. The dependent variables will be: (1) student responses to survey questions from either state, and (2) the difference in postsecondary education graduation rates at the time either SEL framework was first implemented between time 1 (2015), and eight years after SEL implementation time 2 (2023).

Samples

Pending IRB approval, this study will seek to collect a survey sample from high school senior students attending all public schools (rural, suburban, and inner-city) across Illinois and Missouri as to increase accuracy. Students of all ethnicities, cultures, backgrounds, and genders will be allowed to participate as to eliminate selection bias and increase validity. The states were selected based on SEL curriculum/framework type. They were also chosen because they share similar demographics and a similar number of students attending high school in the 12^{th} grade. Samples from private high schools will be excluded from the survey because private schools are not funded or administered by government, and therefore have their own curriculum standards (Cook, 2021). This study will only sample senior students attending public high schools across the state of Missouri and Illinois.

Missouri state has a total population of 6,184,843. (US Census Bureau, 2020). The most recent American Community Service (ACS) reveals the racial composition of Missouri is 86.16% white, Black, or African American 11.49%, two or more races 2.63%, Asian 1,98%, other 1.17%, Native American 0.44%, Native Hawaiian or Pacific Islander 0.13%. (2020). According to Missouri State Board of Education, Missouri's "Show Me State Standards"

includes freestanding SEL curriculum to students from preschool to kindergarten. Missouri has 179,529 high school seniors spread across 794 public schools, where 53.21% of students qualify for free or reduced lunch, with an average student-to-teacher ratio of 14:1. To have a 95% confidence level with a 1.96% z-score, Survey Monkeys' sample-size calculator states that this study will need to collect samples from at least four students from each public school for a total sample size of 3,176. (2022).

The state of Illinois has a total population of 12,518,071. (US Census Bureau, 2020). The most recent ACS reveals the State of Illinois's racial composition is made up of 71.53% white, Black, or African American 14.20%, other race 5.93%, Asian 5.47%, two or more races 2.57%, Native American 0.26%, and Native Hawaiian or Pacific Islander 0.04%. (2020). According to the Illinois State Board of Education, Illinois has 148,033 high school seniors spread across 1,018 public schools. Illinois public schools have an average student-to-teacher ratio of 14.9:1; where 47% of the students qualify for free and reduced lunch. To have a 95% confidence level with a 1.96% margin of error, Survey Monkeys' sample-size calculator states that this study will need to collect samples from at least three students from each public school for a total of 3,054 students. (2022).

Data Collection

Pending IRB, approval, researchers will recruit students by creating flyers that describes the survey, asks for parental permission, and provides URL to the survey. Researchers will make enough flyers for every student and send the flyers to every high school for teachers to pass out to seniors to take home to their parents five months before graduation. Questions will revolve around whether students have plans to attend college, trade-school, technical school, or some other form of postsecondary education after graduation. The survey responses will include a

mixture of dichotomous true/false responses, and scaled numerical responses for each question, for example:

- On a scale from 1-5 with one being extremely poor, and 5 being excellent. How likely are you to attend college, trade-school, or some other form of postsecondary education after high school graduation? Please select (1, 2, 3, 4,or 5)
- I feel good about my future (true/false). (Please see Appendix C).

All schools will be coded by number/alphabetical order. Missouri will be labeled state "M" and Illinois will be labeled state "I." Each school will have a number that coincides with the school's name in alphabetical order for the total number of schools in each state (e.g., school M-1, M-2, M-3… through M-794 for Missouri, and school I-1, I-2, I-3… through I-1,018 for Illinois). After students take the survey, the results will be recorded and stored within my database with students' survey results from Missouri being labeled "M-SR," and survey results from Illinois labeled "I-SR." An algorithm will be set up to keep track of how many students from each school take the survey. The algorithm will place a green mark by each school that has had at least 3-4 students take the survey, and a red mark will be placed by schools who have less than. If by the end of the first month, the school still needs more students to take the survey, another round of flyers will be sent out to that school for teachers to pass out during the last month before graduation to recruit more students. This method for recruitment was chosen for blinding to eliminate student selection bias from myself, teachers, and school administrators, and ensure complete student randomization/identity protection. (Please see Appendix D).

In parallel, pending IRB approval, I will also collect data from each states' postsecondary education attendance and graduation rates from 2015 and 2023. I plan to do this by contacting

the State Board of Education and obtaining permission to access their records. This will be done to provide historical data and inform whether the survey data collected is reliable, and to see if there is a difference in secondary education graduation rates after either state introduced either form of SEL curriculum. I will collect data pertaining to graduation rates in: (1) two-year; (2) four-year; (3) graduate-level; (4) technical /trade school; and (5) all other forms of postsecondary education for both Missouri, and Illinois. I will perform a statistical test to determine whether there is a significant difference in postsecondary education graduation rates between time 1 (2015) when SEL was first introduced, and time 2 (2023) eight years after SEL implementation.

Ethical Considerations

Before proceeding with this study, I will first need to obtain IRB approval. I will also need to gain permission from both Missouri and Illinois State Board of Education to research their states SEL curriculum, and postsecondary graduation rates. Due to the nature of this study, I will need to obtain formal FERPA training before collecting any student survey answers and records from all colleges, universities, and other postsecondary institutions. Student names and other identification such as email, parent names, will all be wiped from the data. This study will involve surveying and studying minor human subjects, so the utmost care must be taken to protect their identity and confidential/private information. I will not have access to student names, or any identifying information. The survey questions will only ask about participants' plans, if any, of attending college or some other form of postsecondary education. No other information will be collected or stored, the only identifying information will be student responses, the name of the school attended, and postsecondary graduation rates. After contacting students,' I will obtain informed consent from survey participants who are 18 years or older, along with minor assent, and parental permission for participants that are under 18 years of age.

The survey will include a question before the survey to ensure parents/students are willing to take the survey, and a statement that shows they may opt-out or quit the survey at any time.

Threats to Validity

One threat to validity may come from a senior student dropping the flyer and having another student in another grade pick it up and decide to take the survey. Another threat to validity might include students providing false answers or not taking the survey seriously. I will attempt to prevent this by allowing the students to take the survey from home, where they are in their private home environment. There is also, the chance that students from both states will make the decision to attend college even if they have zero SE competencies or transferred into either state from another state/country. To combat this threat, researchers will perform a series of quantitative statistical tests to ensure confidence that the results did not occur by chance.

Data Analysis

For this study, I will collect student survey responses from both Missouri and Illinois in aggregate. Responses will be coded, summarized, analyzed, and compared. Student survey responses collected from Missouri will be labeled Missouri – Survey Response (M-SR), and student survey responses from Illinois will be labeled Illinois- Survey Response (I-SR). The dataset relating to Missouri's postsecondary graduation rates will also be collected in aggregate and labeled Missouri Graduation Rates (MGR-2015) for time 1 (2015), and (MGR-2023) for time 2 (2023) graduation rates. The dataset relating to Illinois's postsecondary graduation rates will be collected in aggregate and labeled Illinois Graduation Rates (IGR-2015) for time 1 (2015), and (IGR-2023) for time 2 (2023). Both datasets pertaining to state postsecondary degree attainment in: (1) two-year; (2) four-year; (3) graduate; (4) Technical school; and (5) all other

forms of postsecondary education will be collected, recorded, summarized, and analyzed by use of quantitative statistical analysis. I will confirm both populations follow a normal distribution, and apply quantitative statistical analysis by performing a series of statistical test which include:

1.) A two-sample independent t-test to compare the mean of M-SR and I-SR to determine whether the mean from both populations is significantly different. If the p-value is less than the alpha or ($p = <.05$) the null hypothesis will be rejected.

2.) A matched/paired sample t-test for both (MGR-2015 / MGR-2023), and (IGR-2015 / IGR-2023) to determine whether there is a statistically significant difference in attendance, and degree attainment between time 1 (2015) when SEL curricula was first implemented; and time 2 (2023) eight years after SEL curricula implementation. If the p-value is inferior or equal to ($p = < .05$), then I will be able to validate the survey results, reject the null hypothesis, and conclude universal K-12 SEL curricula was the cause for the difference between time 1 and time 2 graduation rates.

Results will be analyzed and compared through non-statistical examination to determine whether a relationship between universal K-12 SEL curriculum, and postsecondary degree attainment exist. This will be determined by the significance of difference between time 1 and time 2 for both states, and by student survey response results. If there is a significantly higher difference between time 1 and time 2 in Illinois postsecondary graduation rates, and if more students from Illinois have plans to attend college, than in Missouri. Then, it can be said that universal K-12 SEL is associated with higher postsecondary education attendance and degree attainment. (Please see Figure 1-2 below).

Figure #1

Survey Response Collection

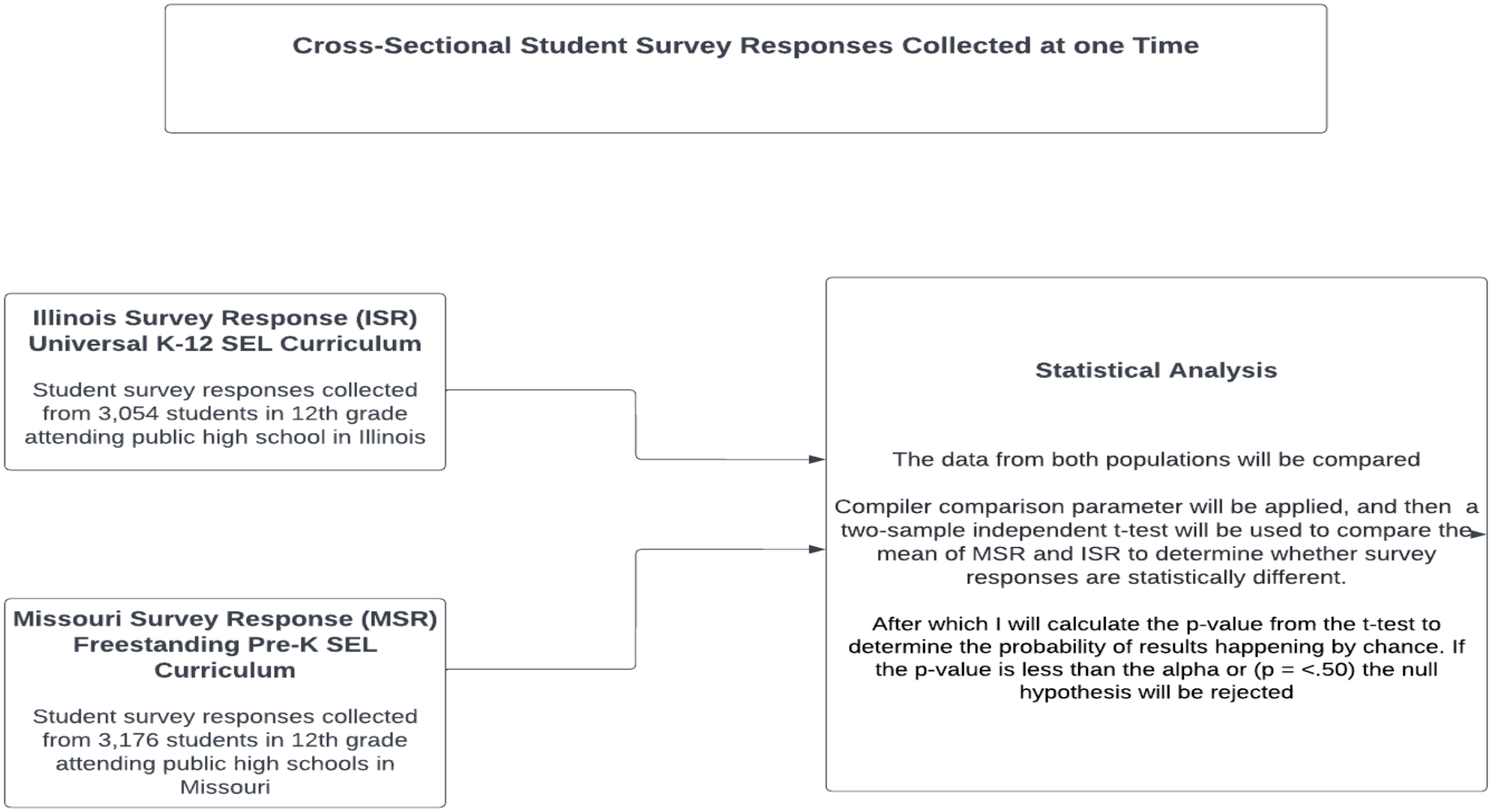
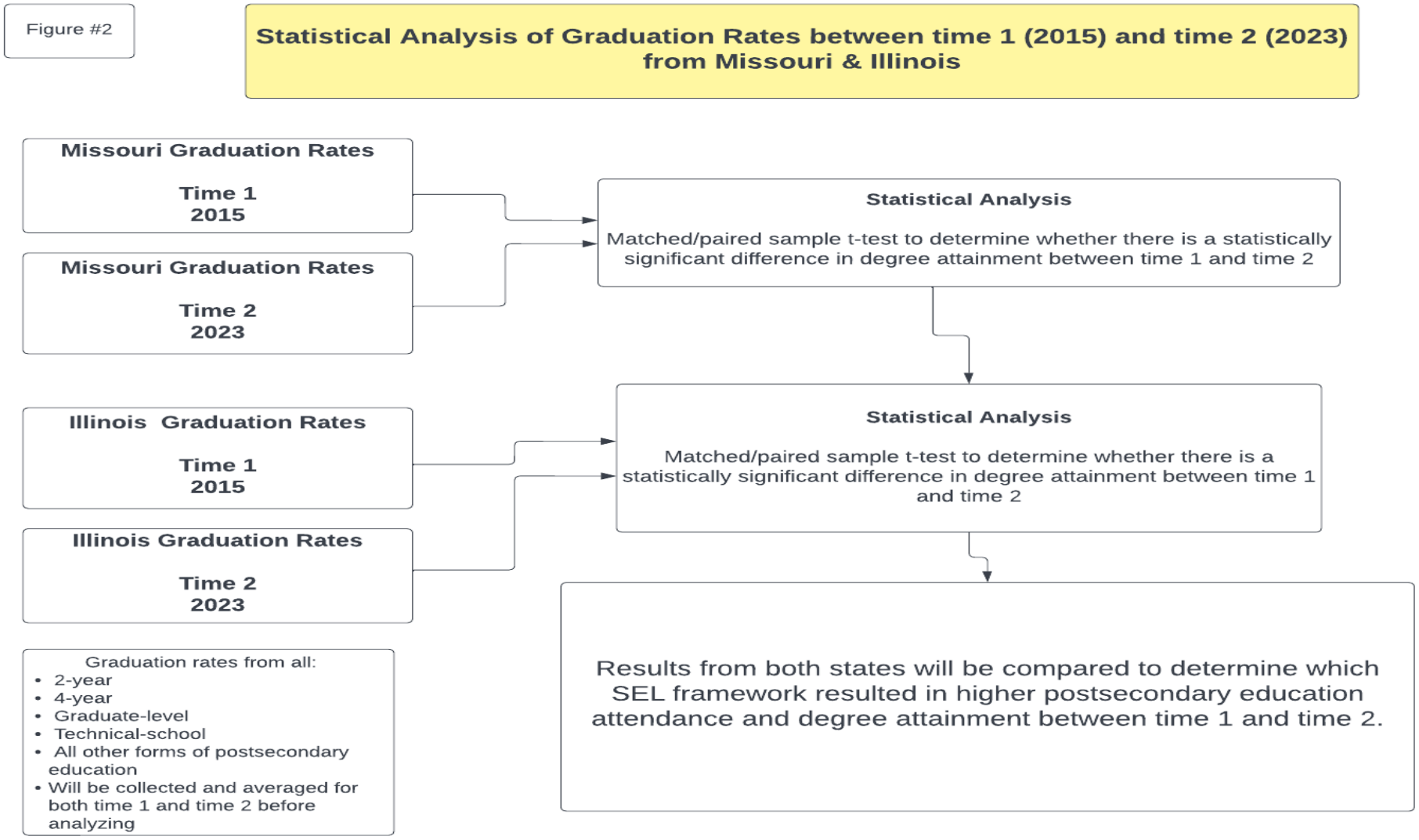


Figure #2

Missouri and Illinois Postsecondary Graduation Rates



Timeline

Pending IRB, approval on January 15th, 2023, I will send the first round of flyers to all public schools in both Missouri and Illinois for teachers to distribute to all high school seniors. If by the end of the first month, the school still needs more students to take the survey, researchers will send a second set of flyers to the school starting March 15th, 2023, and possibly, a third on April 15th, 2023. After June 15, 2023, surveys will be closed. After which all data from each state will be aggregated and analyzed. The data will be coded, summarized, analyzed, and stored. On July 15, 2023, all data will be analyzed by use of quantitative statistical analysis to compare and determine the results of survey responses for each state.

Throughout 2023 I will also collect data from each states Board of Education pertaining to their states graduation rates in: (1) two-year; (2) four-year; (3) Graduate; (4) technical or trade school; and (5) other postsecondary education from 2015 and 2023. The study will collect these datasets until March 5, 2024, to allow enough time to collect all student graduation rates for 2023. After which data will be collected in aggregate for each state and analyzed through quantitative statistical analysis to gain the results, and test the hypothesis to determine whether universal K-12 SEL curriculum is associated with higher postsecondary degree attainment. The study will be finalized and come to an end on April 20, 2024.

Summary

Social-emotional learning provides students with the ability to identify their strengths, manage their emotions, build, and maintain healthy relationships, show empathy, set goals, and make responsible decisions (CASEL, 2020). Since the enactment of Every Student Succeeds Act in 2015. All 50 states and the District of Columbia have included some form of freestanding pre-K SEL curriculum, but only 18 states have adopted universal K-12 SEL curricula. While

multiple studies in the literature review documented numerous student and economic benefits that various individual pre-K, or K-12 SEL programs provide. A link between SEL and postsecondary degree attainment has not been made. Obtaining a degree has been shown to decrease unemployment, crime, reliance on public assistance programs, mental health problems, and increase earnings, health, quality of life, GDP, and tax revenue (Hout, 2012). However, the previous research has failed to compare across SEL frameworks, and has failed to link SEL curriculum to postsecondary education, and degree attainment. This study aims to compare across Missouri state "Show me Standards" freestanding pre-K, and Illinois universal K-12 SEL curricula/frameworks.

The purpose of this study is to fill the gap in research by determining which SEL framework is associated with higher postsecondary degree attainment. This study will utilize a quantitative cross-sectional nonequivalent quasi-experimental approach following a postpositivist philisophical assumption. Quantitative closed-ended surveys will be sent to high school seniors currently attending public school in both Missouri and Illinois. This study hypothesizes that Illinois universal K-12 SEL curricula with result in significantly higher number of students planning to attend college; and that Illinois will show a significant increase in degree attainment from 2015 to 2023, while Missouri will not. Survey responses will be collected and analyzed through use of two-sample independent t-test to determine whether a higher number of students plan to attend postsecondary education after graduation. In parallel, Missouri and Illinois's graduation rates from all: (1) two-year; (2) four-year; (3) graduate; (4) technical school; and (5) all other forms of postsecondary education, will be collected for both 2015, and 2023. A matched/paired sample t-test will be performed to determine whether a statistically significant difference in graduation rates between the time 1 (2015), and time 2 (2023). The results of this

study will provide state policymakers with quantifiable evidence to aid in choosing the best SEL framework for their state's demographics.

References

Annual Statistical Report. (2019). Illinois State Board of Education; ISBE. https://www.isbe.net/Pages/Annual-Statistical-Report.aspx

Belfield, C., Bowden, A. B., Klapp, A., Levin, H., Shand, R., & Zander, S. (2015). The economic value of social and emotional learning. *Journal of Benefit-Cost Analysis*, 6(3), 508-544 https://doi.org/10.1017/bca.2015.55

Bridgeland, J., Bruce, M., & Hariharan, A. (2013). The missing piece: A national teacher survey on how social and emotional learning can empower children and transform schools. A Report for CASEL. *Civic Enterprises*.

CASEL. (2022). SEL Policy at the State Level. CASEL. https:///casel.org/systematic-implementation/sel-policy-at-the-state-level/

CASEL'S SEL Framework. (2020, October 1). CASEL. https://casel.org/casel-sel-framwork-11-2020/

CASEL. (2012). Effective social and emotional learning programs. https://static.squarespace.com/static/513f79f9e4b05ce7b70e9673/t/526a220de4b00a92c90436ba/1382687245993/2013-casel-guide.pdf

Center for Theory of Change. (2011). What is theory of change? | Theory of Change Community. Theory of Change Community. https://www.thoeryofchange.org/what-is-theory-of-change/

Cook, J. (2021). How are public and private schools funded? *Study.com.* https://study.com/learn/lesson/public-private-school-funding.html

Corcoran, R. P., Cheung, A. C., Kim, E., & Xie, C. (2018). Effective universal school-based social and emotional learning programs for improving academic achievement: A systematic review and meta-analysis of 50 years of research. *Educational Research Review*, *25*, 56-72. https://doi.org/10.1016/j.edurev.2017.12.001

Dukes, D., Walle, E., Samson, A. (Eds.). (2022). Developing emotional intelligence in social and emotional learning. *The Oxford Handbook of Emotional Development*, 463. Oxford University Press.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child development*, *82*(1), 405-432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Elias, M. J., & Haynes, N. M. (2008). Social competence, social support, and academic achievement in minority, low-income, urban elementary school children. *School psychology quarterly*, *23*(4), 474. https://doi.org/10.1037/1045-3830.23.4.474

Eklund, K., Kilpatrick, K. D., Kilgus, S. P., & Haider, A. (2018). Children, research, and public policy. *School Psychology Review*, *47*(3), 316-326. https://doi.org/10.17105/SPR-2017.0116.V47-3

Green, A. L., Ferrante, S., Boaz, T. L., Kutash, K., & Wheeldon-Reece, B. (2021). Social and emotional learning during early adolescence: Effectiveness of a classroom based SEL program for middle school students. *Psychology in the Schools*, *58*(6), 1056-1069. https://doi.org/10.1002/pits.22487

Heckman, J. J., & Kautz, T. (2012). Hard evidence on soft skills. *Labour Economics*, *19* (4), 451–464. https://doi.org/10.1016/j.labeco.2012.05.014

Hout, M. (2012). Social and economic returns to college education in the united states. Annual review of sociology, 38, 379-400. https://doi.org/10.1146/annurev.soc.012809.102503

Hyseni Duraku, Z., & Hoxha, L. (2018). Self-esteem, study skills, self-concept, social support, psychological distress, and coping mechanism effects on test anxiety and academic performance. *Health Psychology Open*, *5*(2), https://doi.org/10.1177/2055102918799963

Jones, D. E., Greenberg, M., & Crowley, M. (2015).Early social-emotional functioning and public health: The relationship between kindergarten social competence and future wellness. *American Journal of Public Health*, *105*(11), 2283-2290. https://doi.org/10.2105/AJPH.2015.302630

Nickerson, A. B., Fredrick, S. S., Allen, K. P., & Jenkins, L. N. (2019). Social emotional learning (SEL) practices in schools: Effects on perceptions of bullying victimization. *Journal of School Psychology*, *73*, 74-88. https://doi.org/10.1016/j.jsp.2019.03.002

QuickFacts: Illinois. (2020). Census Bureau QuickFacts; United States Census Bureau. https://www.census.gov/quickfacts/IL

QuickFacts: Missouri. (2020). Census Bureau QuickFacts; United States Census Bureau. https://www.census.gov/quickfacts/MO

SurveyMonkey. (2018). *Sample Size Calculator: Understanding Sample Sizes | SurveyMonkey*. SurveyMonkey. https://www.surveymonkey.com/mp/sample-size-calculator/

SEL Policy at the State Level. (2022). CASEL. https://casel.org/systemic-implementation/sel-policy-at-the-state-level/

Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child development*, *88*(4), 1156-1171. https://doi.org/10.1111/cdev.12864

Appendix C

Student Survey Questions

1.) Which state do you currently attend high school in? (Missouri and/or Illinois)

2.) Which high school do you currently attend? (drop-down menu)

3.) What grade are you currently in?

4.) I plan to graduate this year (True/False)

5.) On a scale from 1-5 with 1 being not at all and 5 being extremely well. Do you feel your school helped you prepare for your future? Please select (1,2,3,4, or 5)

6.) On a scale from 1-5 with 1 being extremely poor, and 5 being excellent. How likely are you to attend college, trade-school, or some other form of postsecondary education after high school graduation? Please select (1, 2, 3, 4,or 5)

7.) I know which career fields align with my personal likes and interests (true/false)

8.) I plan to attend college or trade school after graduation (True/False)

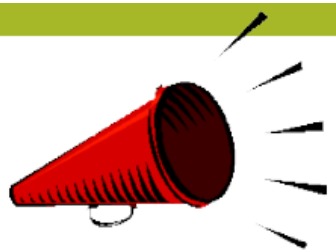
9.) with 1 being right after graduation and 5 being five years after high school graduation, how soon do you plan to enroll in college or trade school after you graduate? Please select (1,2,3,4, or 5)

10.) I know the degree or certifications I need to obtain to achieve my future career goals (True/False)

11.) I feel good about my future (True/False)

Appendix D

Student Recruitment Flyer



E-Participants Needed

for a Short Online Survey for research investigating how effective your school's curriculum was in helping prepare you for your future

An independent research team from Missouri is conducting a research study on social-emotional learning (SEL) curriculum, and whether you plan to attend college, technical-school or some other form of postsecondary education after you graduate

Who do we need?

- High school seniors between the ages of 17 and 19 preparing to graduate high school
- Speak English as your first language
- 3-5 Minutes of your time
- Parental permission if you are under 18

Dates and times are flexible for participants as the survey will be taken online from your home computer or phone. No information or researcher contact is needed. You may take the survey anytime day/night, however survey will be closed on June 15, 2023.

If you are interested, please visit https://www.social-emotional-learning-research.com or scan the QR code located in the top right corner from your phone

CONTACT FOR MORE INFORMATION:

(417) 718-5265

aapqgy@umsystem.edu

Social-Emotional Learning