

DEVELOPMENT OF THE STUDENT ENGAGEMENT IN SOCIAL-EMOTIONAL  
LEARNING SKILLS (SE-SELS) SURVEY:  
AN ASSESSMENT TOOL TO MEASURE STUDENTS' USE OF SEL SKILLS

by

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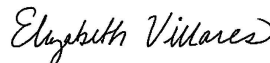
Lilia Farmanara-Kneidel

This dissertation was prepared under the direction of the candidate's dissertation advisor, Dr. Melissa Mariani, Department of Counselor Education, and has been approved by all members of the supervisory committee. It was submitted to the faculty of the College of Education and was accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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## ABSTRACT

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The purpose of this study was to develop and explore the factor structure of the Student Engagement in Social–Emotional Learning Skills (SE-SELS) survey, a newly designed assessment that assesses students’ knowledge and use of five social–emotional learning skills (self-awareness, self-management, social awareness, relationship skills and responsible decision making) aligned with the framework of the Collaborative for Academic, Social, and Emotional Learning. The SE-SELS survey includes 20 items and takes approximately 5 min to complete. Participants were 359 students in Grades 6–8 at one university-affiliated laboratory school serving students in kindergarten through eighth grade. The instrument was explored through exploratory factor analysis, which determined that the strengths of relationships among variables was satisfactory and that the model overall had strong internal reliability ( $\alpha = .90$ ). All items were retained for the final SE-SELS survey ( $.41 \leq \alpha \leq .75$ ). Items linked to the relationship skills component and the self-management component were merged to create a four-factor model, which

was a better fit for the data overall and retained all five components addressed by the SE-SELS survey. There is at present a lack of reliable and valid instruments that measure the effectiveness of interventions and student outcomes related to social–emotional learning. The SE-SELS survey can thus help school counselors and other educators to determine the impact of social–emotional learning interventions and provide baseline and growth data for students. Follow-up studies are needed to support the reliability and validity of the SE-SELS survey.

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## CHAPTER ONE: INTRODUCTION

This chapter presents an overview of this study. It describes the problem studied and the purpose, research questions, hypotheses, limitations, design, and variables of the study. The chapter also defines terms used in the study.

Extensive evidence reported in existing literature indicates that social–emotional development influences students’ academic growth (Barna & Brott, 2018; Bowers et al., 2015; Gresham et al., 2020; Lemberger et al., 2018; Liew, 2011; Linn et al., 2002; Riggs et al., 2006). Specifically, researchers have not only thoroughly researched the impacts of social–emotional learning (SEL) on student success but have found strong evidence for these impacts (Collaborative for Academic, Social, and Emotional Learning [CASEL], 2022b). Evidence-based SEL interventions lead to beneficial results for students, including improvements in social–emotional skills, attitudes about self and school, social behaviors and conduct, emotional distress, and overall academic performance (CASEL, 2022a). Without the proper support systems, students struggle to progress when they meet various challenges, including those related to mental health, which often begin during late childhood and early adolescence (Thomas et al., 2021; World Health Organization, 2017). Many adolescents do not progress in different areas of development because of issues that arise due to their mental health, but various treatments and interventions can improve resilience, increasing the likelihood that such adolescents go on to lead successful lives (Brookman, 2017). However, most affected children and adolescents do not receive proper mental health services (Costello et al., 2014; Sicheloff et

al., 2017; Thomas et al., 2021). This can occur for many reasons, such as failure of school staff or family members to identify problems, inability to pay for services, and lack of transportation to community mental health agencies.

The general stance on mental health has transformed over the past few decades. Rather than viewing mental health as absence of mental disorders, focus has now shifted to mental well-being, a positive state that anyone can reach (Hymel et al., 2017; Weare, 2010). Similarly, SEL has gained recognition as a way to promote positive mental health in educational settings (Hymel et al., 2017; Skald et al., 2012; Wells et al., 2003). SEL is a protective factor: It lessens the influence of stressful life events on a person, increasing that person's ability to circumvent risks or threats (Centers for Disease Control and Prevention, 2018). The most common mental illnesses among adolescents include anxiety, mood, attention, and behavior disorders (Brookman, 2017), which participation in SEL programming can dissipate (Hymel et al., 2017). SEL typically takes the form of preventative classroom lessons; evidence-based programming is preferred. The aim of these programs is to help students manage their emotions, respect the opinions of others, create attainable goals, engage in responsible decision making, and work through relationships (both personal and social) in a healthy manner (Bowers et al., 2018; CASEL, 2019; Gresham et al., 2020; Thomas et al., 2021).

Teaching, modeling, and practice of social–emotional skills through explicit instruction can help students handle daily tasks, interactions, and challenges more effectively. SEL interventions help to promote safe and supportive learning environments and increase social–emotional competencies (Mahoney et al., 2020). In addition, implementing SEL interventions in every classroom makes improving student success

more likely. Researchers have extensively investigated evidence-based SEL programs and found that they promote social–emotional competencies, which produce appealing outcomes for students and other educational stakeholders, including improvements in standardized academic test scores and perceptions of school climate (Durlak et al., 2011; Dusenbury et al., 2015; Jagers et al., 2015; Lawson et al., 2019; Mariani et al., 2015). Continued teaching and practice of SEL competencies allow students to strengthen their inner abilities while slowly diminishing unhealthy responses to stressors, which often reduce academic achievement and social–emotional well-being (Davidson et al., 2018; Greenberg et al., 2003; Gresham et al., 2020; Lawson et al., 2019).

Existing literature suggests that effective SEL programs focus on reinforcing five core competencies, the CASEL Five (Anthony et al., 2020a, 2020b; CASEL, 2020; Doromal et al., 2019; Eklund et al., 2018). These include self-awareness, self-management, social awareness, relationship skills, and responsible decision making (CASEL, 2020). The CASEL Five model has empirical support (Anthony et al., 2020a, 2020b; Doromal et al., 2019) and has strongly influenced the development of SEL policies in all 50 states and internationally (Anthony et al., 2020b; Dusenbury et al., 2015; Eklund et al., 2018). CASEL has acquired a reputation as the chief source of expertise on SEL because of its efforts to sponsor research and promote empirically sound programs to advance SEL in education. Through its collaborative efforts with researchers and educators, CASEL has worked to identify highly effective SEL programs using a rigorous evidence-based review process (Oberle et al., 2016).

School leaders have many reliable and valid data sources (e.g., standardized test scores, grades, and graduation rates) with which to measure and analyze student



achievement (Kanopka et al., 2020), which guides educational decisions at multiple levels regarding school improvement, teacher effectiveness, and individual student planning (Center on Standards and Assessment Implementation, 2018; Wolf, 2007). Many school districts rely on measures of academic achievement to make vital decisions, such as basing retention of students on standardized testing scores (Wright, 2010). However, the same is not true for noncognitive skills, such as those learned through SEL. Many students who need Tier 2 or 3 (small group and individual support) social-emotional interventions receive attention on a reactive rather than proactive basis. Practices and policies for measuring noncognitive skills should have the same level of accountability as those for measuring academic achievement, because the development of the whole child should be central to educational policies throughout the nation.

As mentioned, educators have traditionally focused on how to assess students' intellectual abilities rather than their interpersonal and intrapersonal skills. Although states have added SEL-based language to their learning standards, many have not sufficiently addressed SEL competencies in their curricula, nor have they arranged proper assessment of these competencies (Dusenbury et al., 2015; McKown, 2015; National Research Council, 2012). The recently reauthorized Every Student Succeeds Act (2015) required schools to begin measuring at least one nonacademic indicator that affects student success, such as perception of school climate or level of student engagement in evidence-based interventions offered through a multitiered system of support. School district leaders have spent years experimenting with incorporating new assessment practices into everyday systems for measuring school performance (Gehlbach & Hough, 2018).

Despite the increased interest in, and understanding of, the importance of SEL, very few assessments have appeared that both align with the CASEL framework and are brief enough to be used at the universal school level (Anthony et al., 2020b). Although educational researchers have created numerous SEL-based assessment tools over the last few decades (CASEL, 2020; Elias et al., 1997; Haggerty et al., 2011; Thomas et al., 2021), a limited number of valid and reliable instruments assess all of the CASEL Five (Haggerty et al., 2011; Thomas et al., 2021). Likewise, abundant research supports the effects of SEL on academic achievement (Denham, 2015; Elliott et al., 2015; Jagers et al., 2015; Lawson et al., 2019; McCormick et al., 2015). However, although the consensus among educators and researchers indicates the importance of embedding SEL in students' daily curricula (A. Davis et al., 2018; McKown et al., 2016; Panayiotou et al., 2019), many have remained confused about the most effective and accurate tools for measuring these competencies (Schweig et al., 2018). Extensive evidence supports the central role of noncognitive skills in education, but educational policy makers have continued to overlook the importance of these skills (Garcia, 2016). In addition, despite the widespread attention directed toward SEL, the lack of valid and reliable SEL instruments has left school leaders struggling to sustain interest in SEL skill delivery (Grant et al., 2017; McKown, 2017).

When implementing SEL, school leaders must first collect data to determine the specific needs of their students and then choose the most appropriate evidence-based SEL programs to meet those needs (Gueldner et al., 2020; Stillman et al., 2018). Educators should also use data to provide accountability regarding program effectiveness (Thomas et al., 2021). As mentioned, researchers have identified a lack of proper instrumentation

for assessing students' SEL skills and competencies (Cox et al., 2019; Thomas et al., 2021), which has made accurately assessing students' use of SEL skills and the utility of selected SEL programming difficult. SEL assessment tools should be reliable and valid. They should also focus on the CASEL Five SEL competencies to allow educators to quickly and accurately identify gaps in students' SEL knowledge and skills (Thomas et al., 2021). Existing SEL instruments need continuous evaluation of their reliability and validity when used with a variety of school settings, populations, and SEL programs (McKown, 2017). Although summative assessment is less effective at measuring SEL competencies than their academic counterparts, hundreds of surveys, questionnaires, and other instruments with undetermined validity and reliability have emerged for the purpose of measuring SEL skills and competencies (Coryn et al., 2009; Kyllonen, 2012; Schweig et al., 2018; Soland et al., 2019). Further, the creation by specific organizations of instruments and other tools that only measure the domains important to their particular work has fragmented the development of some of these instruments (Schweig et al., 2018). This is problematic for many reasons, foremost of which is the lack of coordination among separate efforts that share similar goals (Schweig et al., 2018). The Student Engagement in Social–Emotional Learning Skills (SE-SELS) survey investigated in this study measures students' knowledge and use of SEL skills pertaining to all of the CASEL Five competencies. The SE-SELS survey was initially developed for use with the Student Success Skills for Social–Emotional Learning Success (SSS-SEL) classroom program (Brigman & Mariani, 2019), an evidence-based SEL program that teaches and reinforces the CASEL Five. The researcher assumed that, depending on the results of this study, implementers could use the SE-SELS with other evidence-based SEL programs

that target similar constructs.

Findings reported in existing literature indicate the need for SEL measures (Taylor et al., 2018; Thomas et al., 2021); educators have requested additional resources and information regarding how to adequately assess students' SEL competencies. A national survey of 800 principals indicated that approximately 95% were committed to promoting SEL in their schools, and about 99% believed that SEL competencies are teachable (CASEL, 2019). Unfortunately, their understanding of assessment of SEL competencies was much poorer. Only 17% reported being aware of available SEL competency assessments, and 16% said they believed their teachers would know how to use the data collected from these measures (CASEL, 2019). Many instruments do not make psychometric information readily available to potential users (Hough et al., 2017; Schweig et al., 2018; Stecher & Hamilton, 2014). Having a plethora of assessments available is not enough; instead, educators need access to psychometrically sound assessments to guide their informed decisions about what best fits their needs. Researchers have stressed the need to develop additional valid and reliable instruments to assess students' use of SEL skills and competencies (Cox et al., 2019; Thomas et al., 2021), especially instruments that are simple, efficient, accessible, and sound (Schweig et al., 2018). To promote and provide appropriate SEL-based education and support, educators, including school counselors, must have the proper tools.

### **Statement of the Problem**

Existing SEL instruments need reevaluation with the aim of improving their psychometric properties, even as new tools appear (Schweig et al., 2018). Educators, educational researchers, and policy makers have focused on accurately determining

students' academic competencies (Schweig et al., 2018). However, focus has now shifted to include the assessment of SEL competencies and skills (Schweig et al., 2018). Improving access to reliable and valid instruments for SEL assessment allows for more accurate data collection, which in turn promotes better practice (Schweig et al., 2018). For example, a school counselor who delivers an evidence-based program, such as Second Step, might administer to students a valid and reliable assessment tool that corresponds to the constructs taught. A preimplementation survey provides a baseline of students' understanding and behavior prior to program delivery, and a postimplementation survey determines students' performance again after the program ends. A counselor can use this information to note any deficiencies or areas of growth and then plan for any needed supplemental supports. These data can also guide identification of other groups in need of the same intervention. In these ways, school counselors can make informed, data-based decisions and use results from sound measures to determine future directions to take.

The SE-SELS survey, the focus of this psychometric study, is based on the CASEL Five competencies and aligns with concepts and skills taught through various evidence-based SEL programs, including those in the SSS-SEL classroom program (Brigman & Mariani, 2019). If valid and reliable, the SE-SELS survey can provide baseline and growth data on students' SEL knowledge and skill use for assessment of development and growth. Another potential use of the survey is identification of students in need of SEL-focused school counseling interventions, such as the Student Engagement in School Success Skills (SESSS; Carey et al., 2014), which aligns with the Student Success Skills (SSS) curriculum and is a valid and reliable tool for measuring school

success skills (academic, personal–social, and self-management). Suitable SEL measures are necessary for proper assessment of students’ social–emotional development (Zhou & Ee, 2012). Further, when administered as pre- and postsurveys, such an instrument provides essential information to a school counselor about the programs most beneficial to their students. This study added value to the school counseling profession by determining whether a newly developed SEL instrument is valid and reliable and whether adding the instrument to the toolboxes of school counselors can promote their accountability practices.

### **Purpose of This Study**

The aim of this study was to determine the psychometric properties of the SE-SELS survey (Mariani & Farmanara-Kneidel, 2021), a newly developed instrument intended as an assessment tool for measurement of students’ knowledge and use of SEL skills.

### **Research Questions**

The following quantitative research questions guided this study:

1. Is the SE-SELS survey a valid instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL?
2. Is the SE-SELS survey a reliable instrument for measurement of the use of SEL skills based on CASEL Five competencies of SEL?

### **Hypotheses**

Because of the exploratory nature of this study to determine the psychometric properties of the SE-SELS survey, formulating hypotheses was inappropriate (Heppner & Heppner, 2004).

## Definitions

*Accountability*—collection of information and data supporting claimed accomplishments; evaluation of implemented programs and interventions to determine their effectiveness (Edwards, 2018).

*Expert panel*—a group of experts in a particular field invited to provide feedback on an assessment’s item pool and directions regarding the creation of a well-established instrument; use of expert panels increases the “likelihood of content-valid, well-constructed data collection instruments” (L. L. Davis, 1992, p. 194).

*Exploratory factor analysis* (EFA)—a statistical approach used to examine the internal reliability and factor structure of a measure; Tabachnick and Fidell (2000) recommended use of EFA when there are no hypotheses regarding the underlying factor structure of action.

*Evidence-based programs*—programs that demonstrate effectiveness based on research (Zyromski & Mariani, 2016); evaluation of research through a peer-review process by experts within the field indicates that such a program produces expected positive results attributable to the program itself rather than extraneous factors (Cooney et al., 2007).

*Instrument reliability*—the extent to which an instrument produces similar results regardless of the respondents, time, or raters (Bollen, 1989).

*Instrument validity*—the extent to which an instrument measures precisely what its designer intends it to measure and whether the inferences drawn from the instrument are appropriate (Bollen, 1989; Cox et al., 2019).

*Item pool*— the cumulative collection of questions, or items, included in an

instrument used to assess one or more factors (Kalkbrenner, 2021).

*Program evaluation*—measuring the effectiveness of a program through various forms of assessment, including valid and reliable instruments; the procedures used determine the degree to which a comprehensive school counseling program is in place and operating fully and establish the need for school counselors in schools (Gysbers & Henderson, 2006).

*Psychometric properties*—attributes of an instrument that determine the instrument’s reliability, validity, and norming (Ginty, 2013).

*Social–emotional learning*—a process that is an integral part of education and human development; SEL is the process through which individuals learn and apply the knowledge, mindsets, and skills necessary to recognize and regulate their emotions; set positive, realistic goals; accomplish those goals; feel empathy for others and show that empathy; make responsible decisions; and create and sustain positive, healthy relationships (CASEL, 2020). SEL provides a foundation for students; from this foundation, a student can enhance their ability to succeed academically, personally, and socially.

*Social–emotional learning competencies*—CASEL (2019) focused on five broad, interrelated areas of SEL, the CASEL Five: self-awareness, self-management, social awareness, relationship skills, and responsible decision making. Educators can teach and use these skills with students in various stages of development and from diverse cultural backgrounds to teach students what they should know and do to be productive, successful members of society. The SE-SELS survey assesses how often students use these SEL skills.



## Study Design

This study had a quantitative exploratory design (Creswell, 2014), and the aim of the study was collection of insight and understanding regarding the reliability and validity of the SE-SELS survey for accurate assessment of students' knowledge and use of SEL skills, specifically those related to the CASEL Five: self-awareness, social-awareness, self-management, relationship skills, and responsible decision making. Initial development of the SE-SELS survey was for the purpose of determining the impact of the SSS-SEL classroom program (Brigman & Mariani, 2019), an intervention that explicitly fosters students' use of these competencies; Chapter 2 details a previous pilot study of the SE-SELS survey in an action research study (Mariani et al., 2022). This initial version of the SE-SELS survey was unvalidated and needed revision prior to exploration of its psychometric properties. Therefore, in this study, the researcher first sought to improve the initial instrument in terms of wording used, readability and understanding, and the number of items pertaining to each of the five competency areas. The researcher then sought to determine the revised instrument's factor structure, reliability, and validity by conducting EFA. EFA has an extensive history of use in the social sciences for describing the relationships between items (or variables) and hidden traits (Schmitt & Sass, 2011). If determined to be psychometrically sound, the measure could be used in conjunction with SEL programs and interventions based on the CASEL Five to determine students' knowledge and use of SEL skills. Additional research following this study should confirm the reliability and validity of the SE-SELS survey and determine whether its use for evaluation of students' SEL outcomes is appropriate.

In this study, a convenience sample was recruited through email correspondence

with the principal of a university-affiliated laboratory school for students in kindergarten through Grade 8 (K–8). The modified instrument (see Appendix A) was disseminated to students in Grades 6–8 at the participating school. Voluntary participants who did not provide an Opt-Out Consent Form (see Appendix B) completed the study in one session. Participants were provided with a link to the survey, completed through SurveyMonkey, on district-owned electronic devices (computers, laptops, and tablets). On entering the survey website, participating students reached an introductory screen that explained the study and informed them that they would be answering demographic questions before completing the survey. Completion of both the demographic and SE-SELS surveys took approximately 5 min for each participant. Participants' completed data were collected to determine factor loadings and complete EFA.

### **Variables**

Because of the exploratory nature of the current study, analyses of variables were inappropriate. Further study is needed to identify possible relevant variables (Heppner & Heppner, 2004).

### **Limitations**

Several limitations of this study require consideration. Although development of the items in the original version of the SE-SELS survey depended on an extensive review of the literature, the CASEL framework, and available SEL measures, others provided little input until the expert panel considered the survey. Another limitation was the possibility of responder bias driven by social desirability, because students may have felt that they should answer questions in such a way that they would appear to use SEL skills frequently. Next, although the pool of participants was larger than the minimum size

required (200), as determined by an a priori power analysis, an even larger pool, or one drawing on more schools, could have provided extra support for the integrity of the collected results. Further, because this was an exploratory study, the participants' answers on the SE-SELS survey did not deliver any insightful data. However, because participants were informed that their results were not being used for interpretation, they would likely not have provided intentionally incorrect answers. Next, including a focus group of students to deliver additional feedback about item wording could have helped determine whether there were any misunderstandings concerning the items included on the SE-SELS (Nyumba et al., 2018). In addition, English Language Learners (ELL) were not provided a translated survey or read aloud items, which could have affected how they selected items. Next, the effects of the COVID-19 on students' social-emotional wellbeing pandemic may have influenced how students answered items. A final limitation is that the study sample included only students in Grades 6–8 at one university-affiliated K–8 laboratory school site in South Florida, whereas the target population for the SE-SELS survey is all students in Grades 6–9.

### **Summary**

Findings reported in existing literature indicate the importance of developing reliable and valid assessment tools for determining the effects of SEL programming on students (Anthony et al., 2020a, 2020b; Thomas et al., 2021; Zhou & Ee, 2012). This conclusion is supported by the availability of many tools developed to determine the effectiveness of SEL programming. However, researchers have limited their investigations to valid and reliable instruments that assess the competencies promoted by CASEL, which has become the leading SEL organization in the United States and has

assumed responsibility for developing a framework, providing guidance on practice and policy, and conducting research to determine solid programs (Anthony et al., 2020b).

This study helps to address this gap in existing research by determining the psychometric properties of a new SEL instrument that gauges students' use of SEL skills: specifically, the CASEL Five competencies.

### **Organization of the Study**

This dissertation consists of five chapters. Chapter 1 offered a brief overview of, and introduction to, the study and summarized the problem studied, the purpose of the study, the research questions answered by the study, definitions of terms used throughout the study, the study design, and limitations of the study. Chapter 2 reviews existing literature regarding the history of SEL, the critical role of SEL programming for students' academic and social-emotional needs (especially in the current climate), and the use of valid and reliable instruments as measures of accountability for SEL interventions and supports. In addition, the chapter describes the benefits of measuring the effects of SEL programming through valid and reliable instruments and discusses the role of the school counselor. The chapter concludes with an overview of the SSS curriculum. Chapter 3 discusses the study's procedures, including the treatment, participants, measurements, and data analysis used. Chapter 4 reports the results of administering the survey and answers the research questions by determining psychometric outcomes. Chapter 5 describes the products of the study, reviews its limitations, and addresses the implications of the study and recommendations for future research based on this study's specific findings.

## CHAPTER TWO: LITERATURE REVIEW

This chapter provides a comprehensive review of existing literature on topics relevant to this study: (a) the history of SEL; (b) the CASEL Five; (c) the impacts of SEL on student academics, mental health, and overall wellness; (d) the role of school counselors in implementing and evaluating SEL; (e) the history of SEL measures, including ways to gather data on the effects of SEL programming and the lack of sound SEL programming measures; (f) the SSS curriculum, including the most recent iteration of the program, SSS-SEL; and (g) the SESSS instrument, from which the SE-SELS survey derives.

### **History of SEL**

During the 1960s, Professor James Comer opened the Comer School Development Program at the Yale School of Medicine in the Child Study Center (Goldberg, 1990). His goal was to improve the educational programs used in low-income schools—in particular, those in African American communities in and around New Haven, Connecticut, which had demonstrated poor academic achievement. Two inner-city low-income elementary schools that implemented his program experienced academic and social–emotional developmental gains (Comer & Emmons, 2006). Through the Comer School Development Program, schools shifted focus from reactive to proactive communication with students by focusing on the whole child and assuming that academic achievement and development are inseparably linked (Comer & Emmons, 2006). Schools began forming collaborative-management teams, student support teams composed of

teachers, parents, administrators, and mental health staff members, which made decisions on various social–emotional development issues and their connection to academic achievement (Comer & Emmons, 2006).

Several decades later, the two schools’ academic performance data exceeded the national average, and their behavior and truancy issues had declined, providing additional support for the benefits of SEL for academic achievement and overall growth of students (CASEL, 2021; Comer & Emmons, 2006). Shortly after the publication of evidence supporting the success of these efforts, the New Haven Public Schools superintendent asked schools across the district to focus on social development as part of student learning (Weissberg et al., 1997). The New Haven Social Development program, founded in 1987, included a task force that pioneered SEL strategies across classrooms for kindergarten through Grade 12 (CASEL, 2021; Weissberg et al., 1997). CASEL has led the growing movement to make SEL an integral part of education since its founding in 1994. According to CASEL, standard curricula presented to all students across all grade levels should address SEL within the school setting. The term “social and emotional learning” was adopted and defined in 1997 (CASEL, 2021).

A unique aspect of SEL is the ability to shape the noncognitive skills of adolescents. Noncognitive skills are more flexible than raw intelligence throughout adolescence and even into early adulthood. According to Walsh (2005), neuroscientific findings suggest that this phenomenon relates to relative underdevelopment of the prefrontal cortex at these ages. Focusing on noncognitive skills during adolescence through intervention and remediation can boost noncognitive factors or SEL competencies and skills (Kautz et al., 2014).

## **The CASEL Five**

The CASEL Five make up a theoretical framework developed by the leading experts in social–emotional research and education of CASEL (2022c); the five core competencies are self-awareness, self-management, social awareness, relationship skills, and responsible decision making. CASEL (2022c) described SEL as an integral part of education and human development and defined it as

the process through which all young people and adults acquire and apply the knowledge, skills, and attitudes to develop healthy identities, manage emotions and achieve personal and collective goals, feel and show empathy for others, establish and maintain supportive relationships, and make responsible and caring decisions. (p. 1).

### **Self-Awareness**

Self-awareness skills offer an individual the ability to accurately recognize their emotions and thoughts and their influence on behavior. Self-awareness is also the ability of an individual to accurately distinguish their feelings and ideas with regard to how those feelings and ideas influence their behavior. According to existing literature, accurate evaluation by a person of their strengths and areas in need of improvement helps them develop a well-grounded sense of assurance and approach even the most difficult circumstances with a sense of hope (CASEL, 2022c).

### **Self-Management**

Self-management is the ability of an individual to regulate their emotions, thoughts, and behaviors efficiently in varying situations and circumstances. This regulation includes managing stress, controlling impulsive behaviors, self-motivation,

and setting and working toward personal and academic goals (CASEL, 2022c).

### **Social Awareness**

Social awareness is the ability to empathize with, and look at things from the outlook of, other people, especially those from diverse backgrounds and cultures. Social awareness also includes understanding social and ethical norms for behavior and recognizing family, school, and community resources and supports (CASEL, 2022c).

### **Relationship Skills**

An individual's relationship skills define their ability to create and sustain healthy and fulfilling relationships with individuals and groups from diverse backgrounds. These skills can include being able to communicate thoughts, wants, needs, and so on; listening with intent; and avoiding inappropriate pressure from peers (CASEL, 2022c).

Relationship skills also include being able to productively negotiate with others, even in conflicts, and seeking and offering help when needed (CASEL, 2022b).

### **Responsible Decision Making**

The fifth and final competency of the CASEL Five is responsible decision making, which is an individual's ability to make realistic and respectful decisions about personal behavior and communications with respect to ethical and social standards, safety issues, and truthful assessment of the costs of actions in varying circumstances for the well-being of themselves and others (CASEL, 2022c).

### **Use of the CASEL Five**

The SE-SELS instrument in this study includes all of the CASEL Five competencies. CASEL (2019) emphasized that the CASEL Five competencies can positively impact students' short- and long-term outcomes by improving social skills,



behavioral concerns, emotional distress, academic success, graduation rates, and mental health and reducing criminal behavior and issues with substance abuse (Durlak et al., 2011, 2015; Greenberg et al., 2003; Skald et al., 2012; Zins et al., 2007). These core competencies derived from studies related to developing various social and personal skills along with interventions expected to improve these skills (Durlak et al., 2015; Humphrey, 2013; Oberle et al., 2016; Zins et al., 2007). Unfortunately, most of the studies CASEL focused on when creating the CASEL Five relied on samples of elementary-aged children, leaving out adolescents and young adults (Ross & Tolan, 2018).

For comprehensive school counseling programs to be effective, the tools used to measure their influence on student outcomes must be valid and reliable. Evaluation of programs is most effective if the instruments used to assess those programs are tailored to measurement of the specific factors within each program (Blitz & Schulman, 2016; Rossi et al., 2004). For example, if an SEL program focuses solely on the CASEL Five, it is appropriate to use an instrument that measures all of these five SEL competencies. The CASEL website surprisingly lists only one SEL measure in its assessment guide that measures all CASEL Five competencies (CASEL, 2021). This instrument, the Social Skills Improvement System Social–Emotional Learning Brief Scales—Student Form (SSIS SELb-S), is a student self-report instrument for Grades 3–12. Other tools either include additional constructs or do not include all of the CASEL Five. The SE-SELS survey is one of very few instruments to measure all of the CASEL Five competencies. It also aligns with various evidence-based curricula and is adequate in terms of cost and time.

## **Impact of SEL**

### **Implementation of SEL**

As of January 2019, 15 states required SEL as part of educational curricula, and another 16 encouraged school districts to include it (National Association of State Boards of Education, 2019). By the end of 2019, more than 200 pieces of legislation referencing or connoting SEL had appeared (Shriver & Weissberg, 2020), and SEL had become a required part of health education curricula in 35 states (National Association of State Boards of Education, 2019). An additional two states required it in some situations (National Association of State Boards of Education, 2019). As of March 2020, 18 states had introduced SEL standards for kindergarten through Grade 12, and 26 states had created guidance documents or websites intended to support SEL implementation. As of June 2021, 28 states had bills signed into law, bills introduced but not yet passed, or state administrative requirements related to mental health education (Mental Health America, 2021). However, although demand has continued to grow for measures that track student SEL competencies and skills (Every Student Succeeds Act, 2015; Gehlbach & Hough, 2018), not all forms of SEL assessment available are reliable and valid. Requests for additional SEL instruments have provided educators and educational researchers with many concerns regarding the most effective instruments for accurate measurement of students' SEL competencies and skills.

In contrast, skeptics of SEL have valid arguments to make if the assessments used to determine the impact of SEL on student outcomes are not psychometrically sound. Several prominent educational scholars and leaders have shared concerns regarding the rapid growth of interest in SEL, such as ambiguity surrounding the actual definition of

SEL (Finn & Hess, 2019; Hamilton & Schwartz, 2019; Hess, 2019; McShane, 2019; Starr, 2019). Starr (2019) stated that SEL might end up coming to “mean many things to many people” (p. 70). In other words, views of SEL could vary heavily from one individual to another. In addition, no organization (not even CASEL) technically “owns” the true definition of SEL, meaning a small amount of uncertainty is inevitable (Shriver & Weissberg, 2020). However, although SEL frameworks may differ among school districts or states, the basic principles of SEL have become well-known throughout the country (Shriver & Weissberg, 2020). A feasible SEL framework requires developmental appropriateness and culturally sensitivity; such a framework must also receive validation from empirical support (Blyth et al., 2019; Weissberg, 2019). Although more than 100 SEL frameworks have appeared, each uses its own definition to help readers understand SEL competencies (Berg et al., 2017; Shriver & Weissberg, 2020). As the SEL movement grows, the meaning of SEL will continue to vary according to program, assessment, and school district (Starr, 2019). The complexity of defining, implementing, and assessing SEL thus calls for further research and development efforts to investigate the accurate teaching and measurement of these areas (Shriver & Weissberg, 2020).

Reaching a consensus regarding a unified SEL definition and framework is just one piece of a larger puzzle. Determining which interventions and supports best meet student needs is another integral piece. A national survey of 3,300 high school students revealed that almost 33% described feelings of depression and anxiety after transitioning to distance learning (Center for Promise, 2020). More than 25% also reported a decline in peer connections and disconnection from teachers and their overall school communities (Center for Promise, 2020). In addition to a mental health decline, there was a decline in

overall health and well-being. The same national survey revealed that more than 25% of young people reported sleep disturbances due to anxiety, depression, loss of confidence, or feelings of constant strain (Center for Promise, 2020). The Centers for Disease Control and Prevention (2021) also reported that the number of mental health-related emergency room visits for children and adolescents surged in 2020 relative to 2019. When executed faithfully, SEL programming provides the groundwork for resilience that benefits all school community members, increasing student engagement, social–emotional well-being, and academic achievement, which tends to improve school climate. SEL can add to the various support systems within a school community that recognize young people’s experiences of compounding traumas, including the COVID-19 pandemic, and help young people navigate their likely needs (Cipriano et al., 2020).

### **Effects of SEL Programming on Adolescents**

Adolescence is a tumultuous period for most people. Students enter middle school during their transition from childhood to adolescence (ages 10 to 13 years) and experience marked changes in their physical, emotional, and psychological development (Knight et al., 2019). Learning how to keep up with the associated new demands and unfamiliar and intense emotions (both positive and negative) can challenge students. Further complicating matters, most adolescents think they are “mature enough” and can handle things without adult help. The onset of puberty—which indicates the start of adolescence—triggers changes in brain structure and hormone activity that can make even relatively minor social troubles, such as peer rejection, extremely painful and hard to deal with (Knight et al., 2019). With so many unknowns surrounding them, it is no surprise that middle school students struggle in their daily lives as they attempt to explore

new social–emotional environments while also developing skills for independent thinking and decision making (Knight et al., 2019).

As discussed earlier, SEL can promote academic success and improve mental health (Greenberg et al., 2017). SEL encourages protective factors that work as a buffer against mental health risk factors (CASEL, 2021). Many educational researchers have even argued that the significant constructs of SEL (social connectedness, motivation, and emotional well-being) are higher priorities than academic achievement (Gehlbach & Hough, 2018).

A variety of school-based universal prevention programs have appeared that target SEL with the aim of helping to prevent problematic behavior and promote adolescents' mental health and well-being (Reicher & Maticsek-Jauk, 2017). The best SEL interventions seem to include support and reinforcement for desired behaviors (Kauffman et al., 2009; Neth et al., 2019). SEL programs that teach students strategies to deal with external and internal symptoms and improve their ability to plan and exert self-control have also proved highly effective (Neth et al., 2019). Many researchers have found that schools incorporating SEL programming have lower rates of student depression than other schools (Corrieri et al., 2014; Durlak et al., 2011; Taylor et al., 2017). Reicher and Maticsek-Jauk (2017) found that an SEL intervention had a more potent effect on student mental health during early and middle adolescence than late adolescence. Valosek et al. (2019) examined the effects of an SEL program on middle school students' emotional and behavioral coping skills. The treatment group demonstrated significant improvements in social–emotional competencies relative to the control group ( $p < .001$ ; effect sizes were 0.78 and 1.32, respectively). High-risk

adolescents in the treatment group also exhibited a reduction in negative emotional symptoms ( $p < .073$ ; effect size  $-.70$ ; Valosek et al., 2019). In addition, Coelho and Sousa (2017) conducted a pre–post study of the effects of a universal, school-based SEL program implemented in two middle schools and noted substantial gains among participants in three out of five social–emotional competencies. Female students exhibited more significant gains in social awareness and greater decreases in social isolation and social anxiety than male students (Coelho & Sousa, 2017). Determining differences among students of a similar age or grade, gender, ethnic and cultural background, and need status is essential to tailoring SEL interventions to produce the quickest and most significant impacts as well as to developing, refining, and testing corresponding SEL assessments aligned with interventions.

### **Role of the School Counselor**

Accountability is helpful for school counseling programs for three significant reasons:

1. Accountability requires monitoring the progress made by students through a program (group counseling, individual counseling, classroom guidance, etc.).
2. Accountability requires assessment and evaluation of such a program and its effectiveness (American School Counselor Association [ASCA], 2019b).
3. Measures of accountability help improve the efficiency of school counseling programs and improve student achievement by targeting the academic, career, and social–emotional domains (Edwards, 2018).

Unfortunately, the increased demands on school counselors (time constraints, fear of poor results, and lack of training in research and evaluation) have led many counselors to

struggle to effectively evaluate their programs (Astramovich et al., 2005; Patel et al., 2013; Zyromski et al., 2018). School counselors who cannot provide data to support the impact of their efforts generally find themselves assigned to non-counseling-related duties (Blake, 2020; Carey et al., 2014).

The first step of selecting an appropriate SEL curriculum requires a school counselor to determine the challenges and needs associated with their student population (Cook Sandifer & Gibson, 2020; Rowell & Hong, 2013). As “keepers of school culture” (Atkins & Oglesby, 2018, p. 55), school counselors promote positive, safe, and trusting environments within their schools, which manifest as high levels of student engagement, healthy relationships among students and staff, and high attendance (Atkins & Oglesby, 2018; Cook Sandifer & Gibson, 2020). School counselors, as change agents, can support teachers and administrators by explaining the benefits of SEL programming, providing preventative programming to all students, offering intensive services (group and individual counseling) to those in need, considering stakeholders’ needs through program evaluation and data-based decision making, and continuously assessing classroom and school culture.

School counselors should use valid and reliable instruments to collect data regarding areas of concern and accurately help students foster their abilities, interests, and skills. Sound instrumentation helps school counselors make informed decisions about program planning. School counselors, educational researchers, leaders, and higher education professionals need valid and reliable instruments to accurately assess interventions and supports provided (Cleveland & Hartline, 2017; Elam et al., 2019; Kiper-Riechel et al., 2020; Zyromski & Dimmitt, 2019). Having access to a range of

brief, user-friendly, yet psychometrically sound measures is critical for school counselors, especially those counselors who encounter significant time and resource constraints.

School counselors play an essential role in facilitating student development by addressing the needs of students (ASCA, 2019a). School counselors can make a substantial impact when they incorporate SEL programs that teach preventative strategies known to offset risk factors before they even appear (ASCA, 2017). According to Knight et al. (2019), “the presence of risk factors for negative social and emotional health outcomes in childhood has been shown to increase the likelihood of problem behaviors during adolescence and young adulthood” (p. 214). Because preventative programming occurs at the classroom level, school counselors can work smarter, not harder, using their time and resources better. Adolescents offered engaging and meaningful lessons, such as those taught in the SSS program (Brigman & Webb, 2010), encounter multiple opportunities to learn, share, set goals, attain those goals, and celebrate their successes, which are all SEL-based concepts.

Further findings reported in existing literature indicate that students in middle and early high school provided with continuous SEL classroom programming are more likely to experience consistent growth in their self-regulation and interpersonal skills than students without access to such programming (Taylor et al., 2018). Additional benefits reported in existing literature suggest that students begin to shift from a fixed mindset to a growth mindset and develop a group identity that results from more robust relationships with peers and adults (Burnette et al., 2020; Darling-Hammond & Cook-Harvey, 2018).

### **History of SEL Measures**



IQ and other achievement tests, though almost universal in the United States, cannot effectively capture noncognitive skills, such as those learned through SEL, including personality traits, character, motivations, and preferences, which affect individuals' everyday lives and possible future endeavors (Kautz et al., 2014). Noncognitive skills, or soft skills, the targets of SEL, have high value in the labor market, education, and many other domains (Kautz et al., 2014). Having strong noncognitive skills can be more important than possessing solid cognitive skills (Kautz et al., 2014).

Relatively few researchers have so far investigated how noncognitive factors affect students' overall well-being. Although the definition of SEL appeared decades ago, educators have been waiting for pertinent SEL-related information and resources (CASEL, 2021). Factors contributing to this delay include gaps in finding, developing, and testing proper instrumentation. Interest in the field has more recently been growing faster than researchers have been able to keep up with (CASEL, 2021). Therefore, the lack of reliable and valid instruments for assessing the effectiveness of SEL interventions and students' SEL-related outcomes has remained (CASEL, 2021). Educators, researchers, and SEL experts have had to remain flexible and open to investigating field-building and groundbreaking methods to determine the best ways to accurately measure SEL competencies and skills (Duckworth & Yeager, 2015; Melnick et al., 2017). Creating competency assessments for SEL and developing evidence-based SEL programs has thus remained an emerging field; researchers have begun a multitude of investigations, but much work still remains. Inconsistencies in terminology have further complicated matters (Melnick et al., 2017; Taylor et al., 2018). Although continuously updated assessment guides have appeared that identify available measures, few SEL

assessments have undergone the validation process characteristic of most large-scale academic assessments (Taylor et al., 2018). In addition, the developers of most SEL assessments did not explicitly design them to compare schools. Further, the research needed to determine whether available SEL assessments have the precision necessary to make such comparisons is scarce (Abrahams et al., 2019; Duckworth & Yeager, 2015; Melnick et al., 2017; Taylor et al., 2018).

Taylor et al. (2018) cautioned that the assessment of students' SEL competencies is strengths based, not diagnostic, aGrant

n approach that separates SEL from similar disciplines. In SEL, students' strengths and assets are the focus of attention, along with positive development and preventative problem solving. Although mental health takes a diagnostic approach, SEL emphasizes the advancement of students' competencies and skills. SEL competency assessments are thus inappropriate for diagnostic use as a means of screening for behavioral or emotional concerns (J. J. Taylor et al., 2018).

Kautz et al. (2014) said that evidence supporting the effectiveness of SEL interventions was substantial for children but much scarcer for adolescents. They reported that "many evaluations of early programs measure a diverse set of outcomes and have follow-ups lasting more than 20 years" (Kautz et al., 2014, p. 3). Follow-ups analyzing the effectiveness of SEL programming for adolescents are usually much briefer than those for children and produce far fewer outcomes (Kautz et al., 2014). States can support and the attention provided to SEL by including measures of students' social-emotional development as part of their accountability and improvement systems (Grant et al., 2017). More longitudinal studies tracking students' progress in the use of SEL skills over time

would also provide benefit. Unfortunately, few researchers have investigated making assessment methods more comprehensive and developmentally informed (Haggerty et al., 2011; Ross & Tolan, 2018). Further, understanding the effects of SEL programming on adolescents is important because most researchers working in this area have focused on elementary-aged children (Durlak et al., 2011; Ross & Tolan, 2018). Findings reported in existing literature indicate a lack of development and study of measures that support SEL implementation for middle and high school students (Denham & Brown, 2010; Faika Ülvey & Efdal Ozkul, 2018; Ross & Tolan, 2018; Xie et al., 2019). In this study, the researcher focused on the development, refinement, and validation of an SEL-based assessment tool specifically for use with the middle school to early high school students.

### **Creating Reliable and Valid SEL Measures**

Those developing SEL assessment tools initially focused on determining areas of deficit, screening for susceptibilities with a remedial approach (Abrahams et al., 2019). Assessment measures such as the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1994) included more items related to difficulties than to strengths. However, measurement tools such as the SDQ and the Child Behavior Check List (Achenbach, 1991) received use for evaluation of the effects of social–emotional skill interventions employed in educational settings (Abrahams et al., 2019; Halle & Darling-Churchill, 2016). Researchers found that some of these consistently used measures of social–emotional skills lacked reliability and validity (Brackett et al., 2006). For example, Brackett et al. (2006) found no relationship between self-reporting measures, including the SDQ and the Mayer-Salovey-Caruso Emotional Intelligence Test (Mayer, 2002), and emotional intelligence. In addition, very few researchers have found convergent validity

between the scale scores of the SDQ and similar instruments in nonclinical populations of children and adolescents (Abrahams et al., 2019; Koskelainen et al., 2000; Muris et al., 2004). Other researchers have found low internal consistency in the test scores of some subscales of the SDQ, mainly because of complications with adaptive or positive items (Muris et al., 2004). Fortunately, developers of instruments have shifted toward a preventative approach. A well-defined framework of social–emotional skills and validated instruments to measure them could promote adaptive functioning and prevent deficits in children and adolescents (Abrahams et al., 2019). These concerns and the shift in focus have led researchers to explore various methods related to introducing alternative assessment methods to understand students’ social–emotional competencies (Abrahams et al., 2019).

The National Practitioner Advisory Group on Using Data to Inspire SEL Practice (NPAG), formed in partnership with CASEL, addresses issues and challenges surrounding SEL assessments (NPAG, 2019). One such issue lies in creating SEL measures that are complex but psychometrically valid and reliable. Even the most experienced educational researchers have described achieving this balance as extremely difficult (Nolan & Maroney, 2019). Despite their best efforts to assess SEL practices and competencies, school leaders across the country have continued to lack the research and resources needed to determine whether their programming is effective (Nolan & Maroney, 2019). The combined efforts of CASEL and NPAG uncovered three tasks necessary for the development of reliable and valid SEL assessment tools: (a) assessing competencies focused on strengths and equitable practices; (b) building an adult capacity to assess SEL, interpret such an assessment, and use the resulting data; and (c)

determining how to improve data collection continuously (NPAG, 2019).

Instruments for measuring the use of SEL skills and competencies require sensitivity to continuity and change (Jones et al., 2018; NPAG, 2019). These characteristics are likely to fluctuate based on adolescent experiences, external factors, and typical periods of change (internal factors) that occur throughout physical, mental, and emotional development (Denham, 2015; NPAG, 2019). Using summative assessments to assess students' SEL competencies is problematic because the individuality of every person prevents their easy comparison against a single standard or benchmark (Denham, 2015; Jones et al., 2018; NPAG, 2019). However, CASEL (2018) recommended the evaluation of instruments and SEL programs through summative assessment. Summative assessments can be appropriate and effective if conditions are met. The competencies targeted through an SEL program should match exactly those assessed (CASEL, 2018). Another critical issue in both assessment selection and evaluation design is the sensitivity of measurements. SEL instruments should be capable of detecting improvements when they occur. If so, any evaluation conducted should be capable of producing data analyzable on a schedule that matches the timeline assumed for any improvements (CASEL, 2018).

Researchers have been continuously providing educators with information about the relationship connecting SEL with well-being and positive life outcomes (CASEL, 2021; Gehlbach & Hough, 2018; Greenberg et al., 2017; Kauffman et al., 2009; Knight et al., 2019; Neth et al., 2019; Reicher & Matischek-Jauk, 2017). However, adequately assessing SEL competencies of students has associated conceptual and methodological challenges (Abrahams et al., 2019). To determine which measures are most likely to

accurately assess social–emotional well-being both in and out of school, CASEL (2018) recommended considering the following criteria: the intended population, monitoring of changes over time, practicality of administration, and psychometric data (reliability and validity). When determining whether an instrument is appropriate for its intended population, investigators should examine whether the measure is acceptable for administration to all students or just targeted groups and whether it’s designed purpose is evaluation of a specific SEL program or of SEL competencies in general (CASEL, 2018).

To monitor changes over time, investigators should determine whether an instrument is sensitive to change, whether it can monitor program-level outcomes (if it is attached to a program), and whether it can assess population-level change, depending on the target population (Boateng et al., 2018). Instrument developers should take care when assessing the soundness of a measure to test with a sample representative of the target population for the instrument. When deciding whether administration of a particular instrument is practical, investigators should determine whether the format of the questions, the answer key, and the scoring functions are appropriate for the intended audiences—both those completing the instrument and those scoring it (Boateng et al., 2018). Using an expert panel, practitioners in the field, and a pilot study may help alleviate this concern.

### **SEL Instruments and the CASEL Five**

Panorama Education, commonly referred to as simply “Panorama,” is an assessment platform used by several schools throughout the United States to measure SEL competencies (Panorama Education, 2016). Panorama offers 22 measures to determine students’ perceptions of teaching and learning at the classroom or school levels

(Panorama Education, 2016). Although the organization prides itself on aligning well with CASEL’s SEL framework, the items on their assessment tools derive from “the most compelling theories and the most persuasive data” (Panorama Education, 2016, p. 2). The assessment tools provided through Panorama focus on three domains: motivation, social relationships, and self-regulation (Panorama Education, 2016). These domains do not entirely match those of the CASEL Five (self-awareness, self-management, social awareness, relationship skills, and responsible decision making). From among the tools, implementers in schools can choose from various SEL measures based on their needs. Although these SEL measures have available reliability and validity data, the samples used to determine reliability and validity were for formative purposes only (Panorama Education, 2016). The actual evaluation results escaped consideration.

Providing schools with such a broad range of assessments can be unproductive, particularly for schools in need of additional support and guidance regarding how to determine the best tools to measure their specific SEL programs. The most recent update of Panorama was in 2020 (Panorama Education, 2020). All organizations providing SEL measures (including Panorama Education) should continue studying the validity and reliability of their measures with additional school districts and populations diverse in terms of size, grade level, socioeconomic status, and ethnicity and race. Budget constraints have plagued many schools and districts, so cost is an additional factor in need of consideration. The Panorama platform ranges in price from \$500–\$3,000 per school, depending on the programs chosen (Hess, 2020), which may be infeasible for some schools and districts.

Haggerty et al. (2011) compiled a list of 12 SEL assessment tools for middle

school students that align with CASEL's (2019) SEL framework. Unfortunately, some of these assessment measures lacked specific psychometric data or were still undergoing psychometric analysis. In addition, not every assessment measure included all of the CASEL Five competencies—some included as few as three, and only three included all five, one of which was for teachers and staff rather than children and adolescents. Haggerty et al. realized that every SEL instrument analyzed relied on its own definitions of social–emotional constructs, though each claimed to follow the CASEL SEL framework (Haggerty et al., 2011). SEL measures can arise from several frameworks, which increases the likelihood that a measure has a variety of theoretical underpinnings (Haggerty et al., 2011). The taxonomy used differed from one assessment tool to another, meaning Haggerty et al. allowed instrument developers to define constructs themselves for their individual assessments. Such lack of uniformity can lead to issues with validity and reliability.

The Social–Emotional Learning Scale is an instrument that outlines all areas covered within the CASEL Five framework. This instrument measures various areas of SEL for Grades 6–12. Both educators and educational researchers have explored the connection between social–emotional competencies and anticipated academic outcomes (Arslan, 2015; Thomas et al., 2021; Totan, 2015). The Social–Emotional Learning Scale can also determine whether an SEL curriculum improves development of adaptive interpersonal and intrapersonal functioning (Moreira et al., 2014) and can predict students' social–emotional skills (Sara & Hasanoglu, 2015). The original instrument included 20 items. Readability analysis of the Social–Emotional Learning Scale yielded an acceptable level of internal consistency ( $\alpha = .88$ ). However, Thomas et al. (2021)



determined the original five-factor model to be inappropriate because they found the factor solution difficult to construe, and the factors they obtained had very little connection to the main SEL frameworks. They considered factor loadings above .33 to indicate meaningful association with a latent construct. EFA analysis provided evidence to support only a 16-item, one-factor solution (Thomas et al., 2021). Although the Social–Emotional Learning Scale supports the assessment of social–emotional competencies, few researchers have thoroughly examined the instrument’s psychometric properties (Thomas et al., 2021).

Drawing on a conglomerate of school districts throughout California, educational researchers attempted to determine the validity and reliability of SEL student-report surveys (Gehlbach & Hough, 2018). These school districts’ SEL survey included items intended to measure four SEL constructs: self-management (nine items), social awareness (eight items), growth mindset (four items), and self-efficacy (four items). Students in Grades 3–12 rated themselves using these 25 items with 5-point Likert scales. The SEL measures became less reliable with fewer items (Gehlbach & Hough, 2018; West et al., 2018), but the researchers did not provide a recommended range.

### **Considerations for Measures of SEL Competencies**

Numerous factors require consideration when measuring students’ SEL competencies, which has many benefits for both schools and students. Developers of SEL assessments should keep the role of equity and cultural factors (such as cultural bias) in mind along with other related matters that can impact SEL (Grant et al., 2017). Developers should also write SEL assessments so that they are easy to understand, regardless of whether they contribute to high-stakes decision making. Grant et al. (2017)

reviewed a number of SEL assessments. They reported that many were not designed for decision-making purposes or to guide improvement of planning and intervention efforts (Grant et al., 2017). An additional consideration is that educators should select instruments that will help them recognize signs of normal and abnormal development in students, especially during adolescence, and how changes in development play a role in students' SEL competencies (Grant et al., 2017).

Assessment developers and researchers should prioritize improvement of existing measurements to assess students' SEL competencies (Grant et al., 2017). They should also collaborate with potential users (students, school counselors, experts in the field, etc.), who can offer feedback to help ensure the resulting tools meet the needs of students (Grant et al., 2017). These assessments should be of high quality, be easy to access and understand, meet various populations' specific needs, and not cause problems for schools or school districts with respect to cost or time (Grant et al., 2017).

### **Available and Sound SEL Instruments**

The researcher chose two instruments for review because each of the instruments covered all of the CASEL Five competencies. The SSIS SELb-S is a student self-report rating scale that assesses the five student SEL competencies discussed by CASEL (2019): self-awareness, self-management, social awareness, relationship skills, and responsible decision making. These SEL competencies match those of the SE-SELS survey. The Developmental Assets Profile (DAP) is a student self-report rating scale that measures children and adolescents' SEL competencies in relation to their lives, personally and socially, within the wider contexts of family, school, and community (Haggerty et al., 2011).

## **SSIS SELb-S**

The SSIS SELb-S (Anthony et al., 2020b) is a norm-referenced self-report instrument developed to efficiently assess students' SEL competencies. Although its age range is much broader than that of the SE-SELS survey (Grades 3–12), it was one of the only SEL instruments available intended to measure all five areas of SEL competency discussed by CASEL (2019). In its original form, the instrument takes 10–12 min to complete because it includes 46 items. The brief form reduces the time needed to complete the instrument to only 5 minutes. Reliability evidence for the SSIS SELb-S meets standard thresholds for low-stakes decision making (Salvia et al., 2017), and available validity evidence provides initial support for the intended uses of the SSIS SELb-S scores (Anthony et al., 2020b). Reliability was .70 across every SEL construct for the subscales making up the SSIS SELb-S. Cronbach's alpha was .91 for the scale and ranged from .67 to .72 (*Mdn* = .69) across the subscales (Anthony et al., 2020b). The test–retest reliability coefficients were .87 for the scale and ranged from .64 to .83 (*Mdn* = .71) across the subscales. Interscale correlations were .55–.65, indicating moderate validity (Anthony et al., 2020b). Comparing these findings with the results of EFA of the SE-SELS survey suggests that the SSIS SELb-S and the SE-SELS survey have similar overall internal reliability: Cronbach's alpha for the SE-SELS survey was .90 (compared with .91 for the SSIS SELb-S). The SSIS SELb-S had higher reliability coefficients across all subscales than those of the SE-SELS survey, which ranged from .41 to .75.

## **DAP**

The DAP is a social–emotional assessment tool built from the developmental

assets framework (Collaborative for Search Institute, 2005) to help schools, and other organizations serving young people, address hard-to-observe issues that students struggle with. According to those who have studied it, the DAP is a reliable and valid assessment tool for measuring students' strengths, supports, and social-emotional factors essential for success. It includes measurements covering all areas of the CASEL Five and is suitable for students aged 11–18 years (Grades 6–12). Although the DAP is relatively long (58 questions using 4-point Likert scales), it takes approximately 10 min to complete. Internal and test-retest reliability for the DAP is good. The findings of a study independently judging two middle schools to differentiate the kinds of positive experiences afforded to students indicated that those from schools in areas of high socioeconomic status scored significantly higher on every scale of the DAP than those from areas of low socioeconomic status ( $p < .001$ ). This suggests that the DAP is sensitive to differences between groups independently judged to differ in their level of developmental assets (Collaborative for Search Institute, 2005; Haggerty et al., 2011). Comparison of the Attitudes and Behaviors Scale (also developed by the Collaborative for Search Institute) and the DAP with respect to convergent and divergent validity revealed a strong correlation between the overall scores and corresponding subscales of these instruments (Collaborative for Search Institute, 2005; Haggerty et al., 2011). Scales (2011) studied more than 1,300 students in Grades 6–12, aiming to determine the validity and reliability of the DAP. All alphas were .80 or above, and all test-retest coefficients were .60 or above, providing evidence for good alpha and stability reliabilities. Scales also reported evidence for convergent validity because the categories of the DAP linked well with a longer survey covering individual assets. Based on results of EFA of the SE-

SELS survey, the DAP and the SE-SELS have different internal reliabilities overall: For the SE-SELS survey,  $\alpha = .90$  (Haggerty et al., 2011). The DAP also had higher reliability coefficients across all subscales than those of the SE-SELS survey, which ranged from .41 to .75 (Haggerty et al., 2011).

## **Discussion**

Using reliable and valid instruments to evaluate outcomes of a curriculum can help to determine the effectiveness of that curriculum (J. J. Taylor et al., 2018). These data are also important to track and monitor because implementers of SEL programming can report them to educational stakeholders to illustrate progress made through implementation of this programming (J. J. Taylor et al., 2018). However, in this study, the SE-SELS survey was administered only once because the intent was to validate the instrument. This recently developed instrument lacked psychometric data regarding its reliability and validity; the researcher sought to provide some of these data after administering the survey to students in Grades 6–8 and analyzing the results.

### **Instrument Development Through EFA**

EFA is the most common way of testing an instrument's internal structure to determine its measurement constructs (Bandalos & Finney, 2019; Kalkbrenner, 2021; Mvududu & Sink, 2013). Because EFA is exploratory in nature, the analysis separates latent factors that clarify the correlations among a group of items (Kalkbrenner, 2021; Mvududu & Sink, 2013). Tuan et al. (2005) explored the factor analysis of their six-subscale questionnaire intended to measure students' incentive to learn. Their results included confirmation of construct validity through factor analysis, although each individual item on the questionnaire held a factor loading above .40 on only one of the

six subscales (Tuan et al., 2005). In a well-designed instrument that includes multiple subscales, the responses to an item in a specific subscale should show patterns that more comparable to response patterns of other items in that same subscale than to response patterns of items in other unrelated subscales (Taber, 2018; Tuan et al., 2005). Edwin and Bahr (2021) developed a measure to determine competency levels related to school counselors practicing using multitiered systems of support through a multicultural competency lens. Their EFA indicated a five-factor structure, based on Floyd and Widaman's (1995) recommendation to interpret of factor loadings of .30 or higher as meaningful (Edwin & Bahr, 2021). According to Osborne et al. (2008), item loadings above .30 are acceptable. With respect to cutoff scores, Child (2006) reported that any item with a loading below .20 should be removed, and Field (2013) recommended removing any factor with a loading less than .30. Guadagnoli and Velicer (1988) considered loadings greater than .40 to be stable.

### **SSS Curriculum—A School Counselor-Led Curriculum**

The SSS curriculum consists of a series of school counselor-led evidence-based programs for students in prekindergarten through college. Supporting both classroom (Tier 1) and small group (Tier 2) settings, SSS has many options for school counselors, administrators, and school district leaders to choose from to meet their students' diverse needs. The SSS classroom program (Brigman & Webb, 2010) draws on what experts have identified as the top learning and wellness strategies tied to academic, social, and emotional success. SSS engages students using a “tell, show, do” model in which school counselors using a structured, manualized approach to teach students critical cognitive, social, and self-management skills. When classroom teachers and other staff members

continuously cue, coach, and support these skills, students become self-sufficient change agents in their own lives. Several researchers have conducted empirical investigations of SSS and have supported its positive impact across a wide variety of outcomes, including academics (standardized test scores, grades, and graduation rates), personal and social competencies (prosocial skills, connectedness, wellness factors, and emotion regulation), and behavior (reduction in bullying behaviors and behavior problems and improvement in attendance; Brigman & Campbell, 2003; Lemberger et al., 2015; Lemberger & Clemens, 2012; Mariani et al., 2015; Miranda et al., 2007; Villares et al., 2012; Webb et al., 2019; Wirth & Villares, 2015; Zyromski et al., 2017).

### **SSS-SEL**

The SSS-SEL classroom program (Brigman & Mariani, 2019) is one of the newest iterations of the SSS series. The program teaches students skills related to the CASEL Five competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision making (CASEL, 2019). Teaching, practice, and reinforcement of these five competencies occurs through class discussions and activities, including a goal-setting and progress-monitoring tool (the SEL Super Five Goal Chart) and a tool for responsible decision making (the PACT Model, the name of which derives from the sequence of problem, acceptable options, consequences, and take action). The SSS-SEL classroom program targets students in middle and early high school (Grades 6–9). Delivery of the program requires five 45-min classroom lessons spaced 1 week apart; the program includes several concepts and skills from the original SSS classroom program. An additional booster lesson 1 month later reminds students of the skills they learned in the program. During SSS-SEL program implementation,

students can participate in evidence-based interactive activities that help them improve their SEL skills: These include learning new SEL concepts; determining the difference between emotional and intellectual intelligence; practicing healthy, optimistic thinking; creating and promoting a safe, supportive learning environment; and practicing and reporting back on use of SEL skills after careful self-reflection. Mariani (2019) developed an initial version of the SE-SELS survey, the Student Success Skills for Social–Emotional Learning Pre/Post Survey (SSS-SEL Pre/Post Survey), to assess students’ use of skills explicitly taught and practiced in SSS-SEL.

### **SESSS Survey**

The need for valid and reliable instruments that effectively gauge students’ use of academic and social–emotional skills has become critical (Grant et al., 2017; Haggerty et al., 2011; McKown, 2017; Schweig et al., 2018; Thomas et al., 2021). One such instrument, developed to align with and measure students’ use of skills taught in the SSS program, is the SESSS survey (Carey et al., 2014). The SESSS is easy to administer, has 33 items, and takes less than 15 min to complete. Six of the 33 items help control for response set (Brigman et al., 2015). Items on the SESSS include “I try to encourage a classmate who was having a hard time doing something” and “I imagine myself being successful in reaching a goal.” The intended use of the survey is as a self-report instrument to assess students’ use of skills and strategies determined to be most important for long-term academic success (Villares et al., 2014). Implementers can use this tool as a pre- and postsurvey, both before SSS classroom delivery and again after the five weekly lessons conclude. Though the SESSS survey aligns with the SSS curriculum, implementers can also use it to measure the effect of other programs targeting student



success. Abundant research supports this instrument's reliability and validity (Brigman et al., 2015; Carey et al., 2014; Villares et al., 2014; Webb et al., 2019).

Carey et al. (2014) described the item development and EFA of the SESSS; 27 self-report items using 4-point Likert scales asked students to indicate how frequently they used particular strategies within the previous 2 weeks. Scale anchors ranged from *I didn't do this at all* to *I did this three or more times* (Carey et al., 2014). However, this format was less than favorable if negatively stated items were retained, so Carey et al. added six additional items to help control the response set; these items covered three strategies students were unlikely to use and three they were likely to use, none of which the SSS program explicitly covered. The researchers administered the new 33-item instrument to 262 students in Grades 4–8, but evaluation of reliability depended on the overall alpha coefficient for the original 27-item scale only, because the function of the additional six items was to help control the response set. The overall alpha coefficient for the 27-item scale was .91, with coefficients for different grades ranging from .87 to .95 (Carey et al., 2014); this showed promise because coefficients of .70 or higher indicate relatively high reliability (Taber, 2018). Correlation coefficients between items and the total scale ranged from .34 to .63; scores on the total scale were spread normally ( $M = 65.83$ ;  $SD = 15.44$ ), meaning the scale had high reliability (Carey et al., 2014).

Carey et al. (2014) analyzed the SESSS instrument using three-, four-, and five-factor models to determine through factor correlation whether the domains measured were related. This way, the evaluation did not have to rely on multivariate normal data (Carey et al., 2014). The four-factor model explained 45% of the variability in the intercorrelation matrix, with all four factors producing at least three item loadings of .5 or

greater (Carey et al., 2014). This indicated that all four factors were stable (Fabrigar et al., 1999). The four-factor solution also offered the greatest model of scale dimensionality because of its clean factor structure and the interpretability of the four factors as Self-Management of Learning, Application of Learning Strategies, Support of Classmates' Learning, and Self-Regulation of Arousal (Carey et al., 2014). These factors align with the main aspects of the SSS program: cognitive, social, and self-management. The overall results of the EFA suggested that the SESSS is a useful self-report instrument for measuring students' use of strategies and skills associated with academic learning and success (Carey et al., 2014).

Brigman et al. (2017) performed confirmatory factor analysis (CFA) of SESSS data collected from 3,985 fifth-grade students enrolled in two large school districts in Florida. The researchers divided the total sample at random into two subsamples: Subsample A included 1,992 students, and Subsample B included 1,993 students (Brigman et al., 2015). CFA revealed that although a four-factor model fit the data well, the scales associated with the factors of Self-Management of Learning and Application of Learning Strategies were linked too strongly to allow discrimination ( $r = .90$ ; Brigman et al., 2015). Brigman et al. combined the items linked to these two factors into one factor, resulting in a new three-factor model that better fit the data overall. These three subscales were the Self-Direction of Learning subscale (19 items), the Support of Classmates' Learning subscale (six items), and the Self-Regulation of Arousal subscale (two items; Brigman et al., 2015).

Villares et al. (2014) examined the convergent and divergent validity of the SESSS survey using the results of completion of the SESSS by 4,342 fifth-grade students

in two large school districts in Florida. The alpha coefficients were .89 for the Self-Direction of Learning factor, .79 for the Support of Classmates' Learning factor, and .68 for the Self-Regulation of Arousal factor. The alpha coefficient for the overall scale was .90, indicating good internal consistency (Villares et al., 2014). However, when Villares et al. (2014) attempted to create SESSS subscales based on the items that loaded most strongly on each of the three underlying factors, they discovered that all three subscales correlated very strongly with subscale in comparable instruments, such as those in the Motivated Strategies for Learning Questionnaire. Participants completed this questionnaire (among several other instruments) as part of the study to determine whether the SESSS subscales corresponded to discriminable dimensions. However, the results did not produce any concrete support for differences between the three SESSS subscales (Villares et al., 2014).

Importantly, the SESSS later formed the basis of a randomized controlled trial of the SSS program to determine whether the program increases students' academic achievement as measured by standardized test scores and socioemotional variables associated with academic achievement (Brigman et al., 2015; Carey et al., 2014; Villares et al., 2014; Webb et al., 2019). Results of that study revealed that the SESSS had good internal consistency, with an overall alpha coefficient ranging from .87 for fifth grade to .95 for seventh grade (Carey et al., 2014). For the total scale, Webb et al. (2019) reported a mean score of 65.83 ( $SD = 15.44$ ). These results indicate that the scores were spread normally, because the low standard deviation suggests that the scores clustered around the mean; this clustering in turn indicates that the scale was reliable (Bland & Altman, 1996).

Findings reported in existing research, including results of EFA and CFA (Brigman et al., 2015; Carey et al., 2014; Villares et al., 2014; Webb et al., 2019), indicate that the SESSS is a reliable instrument for detecting students in need of intervention and assessing student academic and behavioral growth and directly aligns with the skills and strategies taught in the SSS program. However, the SESSS is unsuitable for use with SEL programs such as the SSS-SEL classroom program (Brigman & Mariani, 2019) because this instrument focuses on academic, cognitive, and memory-boosting concepts and skills. Thus, in this study, the researcher sought to develop an instrument for assessing students' SEL-based knowledge and skills, a more appropriate tool for use with the SSS-SEL classroom program and other programs that align with the CASEL Five.

### **SE-SELS Survey**

In this study, the researcher sought to establish the psychometric soundness of a revised version of the SE-SELS survey. According to Boateng et al. (2018), instrument developers need to determine whether their measure's particular setup is appropriate for its intended audience. Although development of the SE-SELS survey targeted students in middle school to early high school, a sixth-grade student may express their social-emotional competencies differently from a ninth-grade student. The design of the instrument thus took into account the need to gauge developmental differences in students at a variety of ages and levels of competency. However, experts have recommended assessing adolescent competencies in terms of individual growth rather than by comparison against norms of social-emotional competencies derived from limited samples (Nolan & Maroney, 2019; NPAG, 2019).

The SE-SELS survey has a construction (format, verbiage, and scoring) similar to that of the SESSS, but it aligns with the CASEL Five competencies taught in the SSS-SEL program. The SE-SELS survey adheres to the same format as the SESSS instrument, asking students to respond using Likert scales with anchors ranging from *never* to *always* to items about how often they engage in certain behaviors, feel certain ways, and have certain experiences. In this study, the researcher sought results similar to those obtained for the SESSS with EFA. Follow up work should then involve applying CFA to the SE-SELS survey.

The motivation for development of the SE-SELS survey was the limited number of instruments available that measure all competencies of the CASEL Five. The developers of the instrument viewed measuring all five competencies as important because CASEL has become the leading organization in the realm of SEL (Anthony et al., 2020b). For a survey to be useful to school counselors and other educators, it must be psychometrically sound. Such an instrument is suitable for use with a variety of programs and interventions. The developers of the SE-SELS survey also kept both cost and time in mind. Fit and practical features can be key to determining the most appropriate measure for a particular school and population.

Mariani et al. (2022) used a first draft of the SE-SELS survey in an action research study of seventh-grade students to determine the effects of the SSS-SEL classroom program (Brigman & Mariani, 2019) on student engagement in SEL skills. Participants completed the original version of the SE-SELS survey, the SSS-SEL Pre/Post Survey (Mariani, 2019; see Appendix C) before implementation of the SSS-SEL classroom program and again after completion of the five lessons. In the action research

study, 70 students (85%) from the original sample ( $N = 82$ ) participated in the program in its entirety (Mariani et al., 2022) and contributed pre- and postintervention data.

Although students did not exhibit improvements across all five SEL competencies, they did report new knowledge and skills in some key areas, including (a) knowing their strengths and confidently sharing them (22.2% *often* and 17.8% *always*), (b) recognizing their own struggles (26.1% *sometimes* and 34.8% *often*), (c) taking time to think about and weigh options (40% *sometimes* and 22.2% *often*), and (d) noticing and trying the strategies of classmates (35.6% *sometimes*, 17.8% *often*, and 8.9% *always*; Mariani et al., 2022). However, the original version of the survey had not undergone psychometric stability testing before students completed it. The school counselor who administered the survey said that students struggled to understand some of the items, and the counselor suggested further clarification of the language used.

The intended application of the SE-SELS survey is assessment of the CASEL Five competencies for the purposes of determining students' SEL knowledge and skill use and assisting counselors and educators with planning for needed programming, interventions, and supports. In addition, for this study, further development of the SE-SELS instrument took both cost and time into consideration because such practical matters affect decisions regarding the appropriateness of a measure for a particular school and population. The SE-SELS survey is easy to administer and both time and cost effective. At the time of writing, educators and school counselors could obtain the SE-SELS survey at no further cost when they purchased the SSS-SEL program and manual. The developers of the program and instrument have been continually seeking research partners, practitioners, counselor educators, school counseling students, and teachers to

continue to test and gather data on the program and instrument.

### **Summary**

This chapter discussed the history of SEL, the CASEL Five, and the impacts of SEL on student academics, mental health, and overall wellness. Discussion continued with the role of school counselors in implementing and evaluating SEL, the history of SEL measures, and overviews of both the SSS and SSS-SEL curricula. The chapter also reviewed the instrument used in this study, the SE-SELS survey. Chapter 3 discusses the population, participants, inclusion and exclusion criteria, sample, sample procedures, treatment, measurements, and data analysis used in this study.

## CHAPTER THREE: METHODOLOGY

This chapter begins with descriptions of the population and sample used in this study. Discussion continues with the instrumentation used, including the newly revised SE-SELS survey and the procedures for instrument design, creation of a rigorous scale, initial item pool development, scoring, and expert panel feedback used to determine the final instrument. The chapter then explains the study procedures and data collection procedures, including administration of the measure, the demographic survey, and the design and administration of the survey. The research questions and a summary of the analysis used to answer those questions follow. The chapter concludes with discussion of the limitations of the study and the data analysis used.

### **Population**

The leaders of the participating school, a university-affiliated educational research school serving students in K–8, invited all students in Grades 6–8 to take part in the study. The SE-SELS survey is intended for use with students in Grades 6–9, but the population included no ninth-grade students. Admission to the school was via a lottery system. The school had to maintain a student population representative of statewide racial and economic demographics because enrollment was not based on neighborhood residence. The school admitted new students annually (or by semester) based on available openings. The school had a total of 504 students in Grades 6–8 during the 2021–2022 school year. Table 1 provides a demographic breakdown for the participating school during the school year of the study, 2021–2022.



**Table 1***Demographic Breakdown for the Participating School in the 2021–2022 School Year*

Category	<i>f</i>	%
<b>Grade</b>		
6	174	34.5
7	171	34.0
8	159	31.5
Total	504	100.0
<b>Gender</b>		
Male	244	48.4
Female	260	51.6
Total	455	100.0
<b>Ethnicity</b>		
African American	95	19.0
American Indian or Alaskan Native	3	0.006
Asian	10	2.0
Hispanic	172	34.0
Multiracial	29	6.0
Native Hawaiian or Pacific Islander	1	0.002
White	194	38.5
Total	504	100.0

**Description of the Sample**

The researcher ran an a priori power analysis to determine the minimum number of participants required to perform the EFA, which was 200 (Brace et al., 2016). To be included in the study, a student had to (a) be in Grades 6–9, the demographic group the SE-SELS survey targets; (b) not provide an Opt-Out Consent Form (see Appendix B); and (c) provide assent before beginning the survey. Because the participating school enrolled only K–8 students, the sample included no ninth-grade students. Chapter 4

describes the sample in detail.

### **Instrumentation: The SE-SELS Survey**

The original version of the SE-SELS survey lacked reliability and validity, which motivated this psychometric study. The instrument underwent several changes. Mariani and Farmanara-Kneidel (2021) modified the first draft of the survey, the SSS-SEL Pre/Post Survey (Mariani, 2019), to create the SE-SELS survey. The number of questions increased from 15 to 20, the wording of specific questions changed, and all reverse-scored items were removed. The updated SE-SELS survey was then sent to a three-person expert panel for feedback, because such use of experts can alleviate issues surrounding the formatting of questions and the corresponding answer key of an instrument (Boateng et al., 2018). The expert panel recommended modifications to the instrument, discussed later in this chapter.

### **Procedures for Instrument Design**

#### **Creating a Rigorous Scale**

Creating a rigorous scale involves three phases: item development, scale development, and scale evaluation (Boateng et al., 2018; Hinkin, 1995). First, a scale developer identifies competency areas through item development and then creates items within the scale. Second, as part of scale development, the developer pretests the questions and determines the appropriate population before administering the scale to an appropriate sample (Boateng et al., 2018). The next step is item reduction analysis, which guarantees the inclusion of only practical and reliable items (Boateng et al., 2018; Thurstone, 1947). This process helps determine the items most and least relevant to the various competencies measured (Boateng et al., 2018). Third, through scale evaluation,

the developer tests the instrument for multiple forms of reliability (e.g., test–retest) and validity (e.g., content and convergent; Boateng et al., 2018).

Establishing an instrument’s scientific soundness (or psychometric data) includes answering several important questions. For example, does the measure have good reliability? Is there solid evidence of validity? When applicable, has instrument evaluation relied on a representative sample? An instrument with “good” reliability should provide consistent answers or responses across various situations and groups for which there is no expectation of variation.

### **Initial Item Pool Development**

After Mariani et al.’s (2022) action research study, Mariani and Farmanara-Kneidel (2021) modified the SSS-SEL Pre/Post Survey (Mariani, 2019) to create the SE-SELS survey. The number of questions increased from 15 to 20, wording of specific questions changed, and all reverse-scored items were removed. Items continued to use 5-point Likert scales with the anchors *never*, *rarely*, *sometimes*, *often*, and *always*. Sample items include “I try to listen to what others say so I can understand their feelings” and “I can tell when someone is having a difficult or bad day.” Construction of the actual item pool followed extensive review of the literature on SEL competencies and content analysis of existing measures of similar concepts. Each original item included depended on existing criteria and conceptualizations of the CASEL Five SEL competencies (CASEL, 2020) discussed thoroughly in Chapter 2. The updated SE-SELS survey was sent to a three-person expert panel for feedback, because using experts this way could alleviate issues regarding the formatting of questions and the answer key (Boateng et al., 2018).

## **Scoring**

The 20 SE-SELS items were balanced across the CASEL Five competencies (CASEL, 2020): social awareness (Items 1, 6, 13, and 17), self-awareness (Items 3, 9, 14, and 18), relationship skills (Items 2, 5, 8, and 19), responsible decision making (Items 7, 10, 12, and 16), and self-management (Items 4, 11, 15, and 20). In terms of scoring, *never*, the first anchor, was scored as 1, with the scores increasing by 1 for each anchor in sequence up to *always*, which was scored as 5. Regardless of whether a respondent complete the instrument using paper and pencil or electronically, the higher the total score, the higher the likelihood that that respondent engaged readily in the use of SEL skills.

## **Expert Panel**

Members of a preliminary three-member professional expert panel consisting of counselor educators were invited to provide suggestions and feedback about the final item pool for the preanalysis of the SE-SELS survey. To join the initial expert panel, a person needed a minimum of 10 years of experience in the counseling field; a doctoral-level degree in counseling; experience creating, implementing, and assessing evidence-based SEL practices; and expertise in instrument development, refinement, and evaluation. Panel members were consulted individually via email (see Appendix D) and asked to review the survey's directions, items, and wording and offer suggestions and feedback for improvement. The 20-item SE-SELS survey was shared electronically with each panel member, and they were asked to provide feedback within 4 weeks. Panel members offered their feedback using tracked changes and comments in Microsoft Word.

One expert panel member recommended listing the measured constructs along

with the items to make sure the items aligned appropriately. This member also suggested establishing cutoff criterion scores for retaining items. Initially, the expert panel was made up of two members; however, a third member was later added to provide additional feedback.

Based on the expert panel's recommendations, some changes were made to the SE-SELS. Double-barreled items were removed; for example, "I can tell when I'm having a good or a bad day" was changed to "I know when I am feeling down/in a bad mood." Many survey items were adjusted to include more explicit wording. For example, the original survey included this item: "In times of stress, I know how to use strategies/techniques to calm myself down and feel back in control." One member of the expert panel suggested this was not clear enough because it was not apparent whether these techniques were positive or healthy. This item was changed to "When I am stressed, I use healthy coping strategies/techniques to stay calm and control." The term "effectively" was also removed from the sentence "I keep my emotions under control and manage them effectively" based on expert panel feedback in recognition of the fact that everyone defines the term differently. For example, a counselor may work with a student who believes self-harm, such as cutting, is an effective way to manage their emotions because it allows them to feel in control.

### **Revised SE-SELS Survey**

Feedback and comments provided by each expert panel member were incorporated into a single version of the SE-SELS survey to determine what changes were needed for the final version, which would be disseminated to participants. Items that received endorsement by consensus from all panel members were retained. Additional

survey items were created to balance the number of items for each of the five constructs. Four items were required for each construct, for a total of 20 items. The original SE-SELS survey only had two items related to relationship skills but seven related to self-awareness, making the survey unbalanced. In the revision, two items were added for relationship skills, and three were removed for self-awareness. The other three constructs, social-awareness, self-management, and responsible decision making, each had four items, which was acceptable. As mentioned above, the wording of some items changed to avoid confusion. For example, Item 18 was originally as follows: “I listen to music because it helps me relieve stress and improve my mood.” This was changed to “I use positive coping strategies/techniques to help me relieve stress/improve my mood.” The construct for this item (self-management) does not require the use of music, in particular, to relieve stress or improve mood, so altering the language improved the likelihood that participants would answer it as intended. The directions for the survey were also amended to make clear the broadness of its applicability, because it is suitable for use with many evidence-based SEL programs, such as Ripple Effects, the SSS programs, and the Social Skills Improvement System Classroom Intervention Program, all of which target SEL skills and attitudes.

### **Scale Outcome**

Because the feedback provided by the expert panel led to changes to the original version of the survey (see Appendix E), readability analysis of the items using the Lexile Framework for Reading system (Meta-Metrics, 2012) was conducted on the revised survey. Results indicated that nothing in the revised survey exceeded a fifth grade reading level. A Flesch–Kincaid reading ease test and Flesch–Kincaid grade level test (Flesch,

1948; Solnyshkina et al., 2017) confirmed the interpretability and readability of the updated scale items and instructions. The Flesch–Kincaid reading ease test rates a text with a score; the higher the score, the easier the text is to understand (Flesch, 1948). The revised survey has a reading ease score of 73.5, which is appropriate for online text and suggests the reading level of an 11–15-year-old. The Flesch–Kincaid grade level of the revised survey is 6.6, meaning a sixth-grade student could understand the document, which matches the lowest grade level of the target population (Flesch, 1948; Solnyshkina et al., 2017). Before formal data collection ensued, the Microsoft Word version of the SE-SELS instrument was converted into an electronic SurveyMonkey survey.

### **Study Procedures**

First, the researcher obtained all approvals required to conduct the study through the Florida Atlantic University Institutional Review Board. The board’s approval letter appears in Appendix F. The participating school in this study was a university-affiliated K–8 laboratory school located in South Florida. The researcher contacted the principal about participating in the research and explained the nature of the project, time requirements, process, and benefits. The principal agreed to have all students in Grades 6–8 participate by completing an approved version of the SE-SELS survey; the principal subsequently provided a letter of cooperation (see Appendix G).

Upon receiving the principal’s approval, the researcher was put in touch with the chair of the school counseling department to further discuss the study. Details of dissemination of the instrument to students using district-owned electronic devices (computers, laptops, and tablets) in classrooms were discussed. The chair agreed to have two of her school counselors assist with the administration process. Students were

provided with paper copies of the Opt-Out Consent Form (see Appendix B) approximately 2 weeks before the study began. Parents and guardians thus had time to sign and return the forms if they did not want their children to participate. Because the participating school was a university laboratory and research school, students regularly participated in research projects. School leaders communicate this to parents as an expectation when accepting children into the school.

The study took place over a two-week period, with participating students completing the instrument by grade level. The school counselors went into every sixth-, seventh-, and eighth-grade classroom and provided the electronic SE-SELS survey link for students to enter into the web browsers on their electronic devices. Fidelity of intervention was stressed to the school counselors, who (along with the classroom teacher) actively monitored students as they completed the survey by walking around the room and answering questions. When students were finished, they raised their hands so that a school counselor could confirm they had completed all survey steps. Once the counselor confirmed completion, students could exit the web browser displaying the survey. Absent students were asked to complete the study on their return.

### **Data Collection Procedures**

#### **Administration of Measure**

To begin the survey, each participant logged on to a school district-owned device (a computer, laptop, or tablet) and typed in the survey link provided on the whiteboard. Before beginning the SE-SELS survey, the participant was provided with an introductory statement explaining the survey and asking them to indicate whether they agreed to participate by clicking “yes” or “no.” Participants who clicked “no” were not requested to



continue with the survey. The introductory statement included information regarding the voluntary nature of participation and the right to terminate participation at any time along with a brief description of the study. This introduction also assured the participant about the anonymity of the data collected and provided detailed information about how the data would be stored (see Appendix H). After reading the introductory statement and clicking “yes,” a participant could click a forward navigational arrow advancing them to the next screen, where they could take a short demographic survey (see Appendix I). After answering the demographic survey questions, the participant was again asked to click a forward navigational arrow, which directed them to a screen with the SE-SELS survey (see Appendix A).

After answering every question, the final screen thanked the student for their participation and asked them to raise their hand and wait for further instructions from their school counselor. Completing both the demographic survey and the SE-SELS survey took approximately 5 min. To minimize the possibility of repeat participation, the school counselor and classroom teacher closely observed students as they worked; they walked around the room and kept track of those who had completed the study and who still needed to complete it.

At no time during the study did the researcher or the researcher’s coinvestigator engage in any form of contact with participants. No names or identifying numbers were requested or recorded during the survey, and responses were saved without personally identifiable information. The data were digitally secured and stored on a password-protected account accessible only to the researcher and coinvestigator.

### **Demographic Survey**

Each participant completed a brief demographic questionnaire before completing the SE-SELS survey (see Appendix I). The demographic survey includes questions that inquire about participant age, sex/gender, grade level, and race/ethnicity. The sole purpose of asking these questions was to capture of the demographic makeup of the sample.

### **Design and Administration**

The intended purpose of the SE-SELS survey is to gauge students' knowledge of SEL skills and use of those skills. The targets of the survey are students in middle school to early high school (Grades 6–9). Although the SE-SELS survey is intended for use both before and after an intervention, for this study the participants completed the survey only once because the aim was to support validation of the instrument. Electronic administration of the instrument took an estimated 5 min for each participant. Before EFA, the instrument included 20 items, each using a 5-point Likert scale with anchors ranging from *never* to *always*. Each of the 20 items fell under one of the CASEL Five competencies (CASEL, 2020): social awareness (Items 1, 6, 13, and 17), self-awareness (Items 3, 9, 14, and 18), relationship skills (Items 2, 5, 8, and 19), responsible decision making (Items 7, 10, 12, and 16), and self-management (Items 4, 11, 15, and 20). However, the survey did not list the category of each item; instead, items from different categories were dispersed throughout the survey. For a thorough examination of the existing literature supporting the assessment of these constructs, see Chapter 2. Appendix A contains the instrument as it appeared before EFA analysis. Following initial development and data collection, the factor structure of the SE-SELS survey was analyzed through EFA, and results of this appear in Chapter 4. Chapter 5 discusses the

results.

## **Research Questions and Hypotheses**

### **Research Questions**

Two quantitative research questions guided this study and its analyses:

1. Is the SE-SELS survey a valid instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL?
2. Is the SE-SELS survey a reliable instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL?

The research questions were explored by means of EFA. The expert panel item pool analysis and the review of related literature established content validity (Connell et al., 2018; Heppner & Heppner, 2004). Calculation of Cronbach's alpha and item-total correlations provided measures of reliability (Cronbach, 1951) to determine the internal consistency of the overall scale (Tabachnick et al., 2007). It is critical to calculate Cronbach's alpha coefficients to determine internal consistency reliability for any instruments using Likert-type scales (Gliem & Gliem, 2003).

### **Hypotheses**

Because of the exploratory nature of this study to determine the psychometric properties of the SE-SELS survey, formulating hypotheses was inappropriate (Heppner & Heppner, 2004).

### **Methodological Limitations**

Several limitations of the pre-analysis design of the SE-SELS survey and the administration of the instrument require consideration. Although development of the items included in the original version of the SE-SELS survey depended on an extensive

review of the literature, the CASEL framework, and available SEL measures, others provided little input until the expert panel considered the survey. However, including additional members on the expert panel or using a focus group made up of students may have further improved the quality of the instrument. Another limitation was the possibility of social-desirability bias because participants may have felt it best to answer the questions in such a way that they would appear to engage in SEL skills frequently. However, because the researcher did not have contact with participants, the likelihood of this was reduced. In addition, ELL students were not provided a translated survey which could have affected how they chose items. In addition, the effects of the COVID-19 pandemic on students' social-emotional welfare may have influenced how students responded to items.

With regard to the data collection process, a limitation was the number of schools (only one) that participated in this study, minimizing generalizability of the findings. The district containing the participating school had approximately 70% of its students on free or reduced-price lunch during the 2020–2021 school year, but the participating school itself had only 47% of its students in Grades 6–8 on free or reduced-price lunch in the same school year, well below the school district's rate. To reduce the effect of this limitation, the SE-SELS survey should be administered to diverse samples of randomly selected participants across various settings.

Because the participating school was a K–8 school, ninth-grade students were excluded from the study. The SE-SELS survey is for students in Grades 6–9, so an intended target group, ninth-grade students, was missing from the data. Further, because this was an exploratory study, participants only completed the instrument once and did

not receive an interpretation of their answers, so completing the survey did not offer students any valuable or insightful information. Likewise, neither school counselors nor the principal received students' responses, so they could not use information from the survey to learn more about their students' needs.

### **Data Analysis**

EFA is an essential component of determining the validity of an instrument and is suited to the early phases of instrument development (Knekta et al., 2019). Without evidence of validity, an instrument is inappropriate for use. However, educational researchers have often skipped collection of evidence of validity or not reported that evidence (Knekta et al., 2019). Certain variables that researchers may want to gauge are not directly apparent, such as students' feelings and perceptions. To make inferences about unobservable variables, researchers gather responses to specific survey items (creating a set of data) to assess constructs (Knekta et al., 2019). EFA allows exploration of possible patterns within a data set. Those patterns clarify how constructs relate to one another, which can lead to the development of new theories (Knekta et al., 2019). For this study, EFA was appropriate because the SE-SELS survey was a newly designed instrument in the early stages of validation.

According to Taber (2018), "the use of factor analysis to confirm that items primarily load upon the expected factor suggests that the greatest degree of alignment should be between items within the specific factors" (p. 1286). In addition, researchers have long used factor analysis not only in assessment development but to measure test-score validity (Hoyt et al., 2006; Kahn, 2006; Worthington & Whittaker, 2006). Determining whether a factor is meaningful depends on the meaningfulness of the

variables, which means that “if meaningless variables are analyzed, meaningless factors will emerge” (Kahn, 2006, p. 686). In short, if variables have little or no correlation, finding common factors is nearly impossible (Kahn, 2006; Nunnally & Bernstein, 1994). Variables without adequate reliability will not likely form meaningful factors (Gorsuch, 1983; Kahn, 2006; Nunnally & Bernstein, 1994).

The question of how to determine factors to retain has remained unsettled (Kahn, 2006). It is therefore important to emphasize that factor analysts should use several criteria and include differing numbers of factors as part of EFA (Fabrigar et al., 1999; Kahn, 2006; Tinsley & Tinsley, 1987). A factor with only one or two associated items may lack the definition needed to support its retention. In addition, developers who find some items associated with several factors may find it hard to determine what makes each factor unique, which may support removal of factors (Kahn, 2006).

Based on existing research (Child, 2006; Edwin & Bahr, 2021; Field, 2013; Osborne et al., 2008; Taber, 2018; Tuan et al., 2005), all four factors were retained in the final SE-SELS survey, for which alpha values ranged from .41 to .75. The value of alpha for the overall SE-SELS survey (.90) was greater than that for its subscales, which was likely due to single-item reliabilities generally appearing very low (Taber, 2018; Tuan et al., 2005). Meaningless factors are unlikely to appear during EFA unless variables are meaningless to begin with (Kahn, 2006). Variables without satisfactory reliability are therefore unlikely to yield substantial factors (Gorsuch, 1983; Kahn, 2006; Nunnally & Bernstein, 1994).

### **Summary**

The aim of this inductive quantitative study was to determine the psychometric

properties of a newly developed SEL pre- and postintervention assessment tool for measurement of students' use of SEL skills. The SE-SELS survey was administered to voluntary participants in Grades 6–8 at one school in South Florida. Participant selection was nonrandom; all students in these grades were invited to participate. Development of the item pool for the instrument depended on an extensive review of the literature, the CASEL framework, available SEL measures, and feedback from an expert panel, all of which helped to establish content validity. Participants were recruited after the researcher received permission from the school's principal to administer the survey. Potential participants were given the Opt-Out Consent Form (see Appendix B), and parents and legal guardians had 2 weeks to ask the school counselor, the researcher, or the researcher's coinvestigator any questions they had about the study. Participating students took the survey digitally through SurveyMonkey on district-owned electronic devices (computers, laptops, and tablets). Participation was voluntary, and participants were informed that they could withdraw from the study at any time. Proper procedures for password-protected digital storage of the data were followed to protect the anonymity of participants. EFA determined the construct validity and possible factor loading of survey items. Methodological limitations included the use of a convenience sample, digital provision of the instrument, and the number of participants.

## CHAPTER FOUR: RESULTS

This study involved the development and exploration of the SE-SELS survey, an assessment tool created to measure adolescents' knowledge and use of SEL skills. The study led to collection of item development and exploratory psychometric data. This chapter outlines the results of the study, beginning with the demographics of the sample. A review of the research questions follows. The chapter describes the analysis of the data gathered using EFA, measures of reliability, and a review of the scale reliabilities. The chapter concludes with a review of the four-factor structure.

### **Participants**

A sample of 359 students provided data for the EFA because this was the number of students who responded to all 20 items on the SE-SELS survey. The sample exceeded the minimum number of participants (200) determined by a priori power analysis (Brace et al., 2016).

Before they proceeded to the SE-SELS survey, participating students were asked to answer several demographic questions about their grade level, gender, ethnicity, and age. Of 504 eligible students in Grades 6–8, 497 completed the survey; however, not all participants responded to every demographic survey question. Therefore, the number of responses varied among the items. Table 2 displays a demographic breakdown of the study sample ( $n = 359$ ) and reveals that respondents were evenly distributed across Grades 6–8. Although the survey targets students in Grades 6–9, the participating school included only students in Grades 6–8.



**Table 2**

## Demographic Breakdown of Participating Students

Demographic	<i>n</i>	%
<b>Grade</b>		
6	154	34.1
7	148	32.7
8	150	33.2
Subtotal	452	100.0
Missing	45	
Total	497	
<b>Gender</b>		
Male	192	42.2
Female	229	50.3
Non-binary	6	1.3
I'd rather not say	28	6.2
Subtotal	455	100.0
Missing	42	
Total	497	
<b>Ethnicity</b>		
African American	75	16.4
American Indian or Alaskan Native	5	1.1
Asian	10	2.2
Hispanic	99	21.7
Multiracial	46	10.1
Native Hawaiian or Pacific Islander	2	0.4
Other	44	9.6
White	140	30.7
I'd rather not say	35	7.7
Subtotal	456	100.0
Missing	41	
Total	497	

The mean age of respondents was 12.21 years ( $SD = 0.94$ ). The sample was demographically representative of the school's population (see Table 1 in Chapter 3). The demographic makeup of the sample matched that of the school, where the three largest ethnic groups for Grades 6–8 were White (38%), Hispanic (36%), and African American (23%) students.

### **Research Questions**

The following research questions guided this quantitative psychometric study:

1. Is the SE-SELS survey a valid instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL?
2. Is the SE-SELS survey a reliable instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL?

### **Data Analyses**

#### **Descriptive Statistics**

Table 3 presents the descriptive statistics for each scale item across the five components of the SE-SELS survey, which correspond to CASEL Five competencies: self-awareness, social awareness, self-management, relationship skills, and responsible decision making. The scale scores ranged from 0 (*never*) to 4 (*always*). Table 3 indicates that the average response scores were consistent across the five components, with most participants reporting between *sometimes* and *often* on most items. Variability was consistent across items and components. The standard deviations ranged between 0.88 and 1.08. However, there were two outlier items, those with the lowest (1.89) and highest (3.45) means. One outlier item, from the relationship skills component, had the lowest mean and highest standard deviation ( $M = 1.89$ ,  $SD = 1.24$ ); this the item was “When a

friend is not treating me kindly, I tell them how they are making me feel.” The other outlier item was from the social awareness component and had highest mean and lowest standard deviation ( $M = 3.45$ ,  $SD = 0.79$ ). This item was “I respect others who are different from me.”

## **EFA**

Using IBM SPSS Statistics for Windows (Version 27.0), the researcher conducted EFA of the data obtained from the participants. Principal factors extraction with varimax rotation was performed for the 20 scale items of the SE-SELS survey. Data from the 359 students who responded to all 20 items were used for this analysis. The scree plot in Figure 1 indicates that four well-defined and internally consistent factors were extracted, as all four factors had an eigenvalue greater than one (6.91, 1.67, 1.37, and 1.06) which explained 34.5%, 42.87%, 49.8%, and 55.02% of the total variance, respectively. The factor loadings, which range from .41 to .75, provided more detail about which items loaded on each of the four factors. Factor 1 consists mostly self-management and relationship skills items related to managing emotions, taking initiative, and developing positive relationships. Factor 2 consists of social awareness items, including concepts related to looking at others’ perspectives and demonstrating understanding and compassion. Factor 3 includes mainly self-awareness items related to an individual identifying their own personal identity and having a growth mindset. Factor 4 relates to decision-making skills, including making rational judgments and being solution oriented at challenging times.

## **Measures of Reliability**

Table 4 displays the internal reliabilities (Cronbach’s alpha values) for the SE-

SELS survey both overall and for each component. The components varied in terms of their internal reliabilities.

**Table 3**

*Descriptive Statistics for Responses to Scale Items*

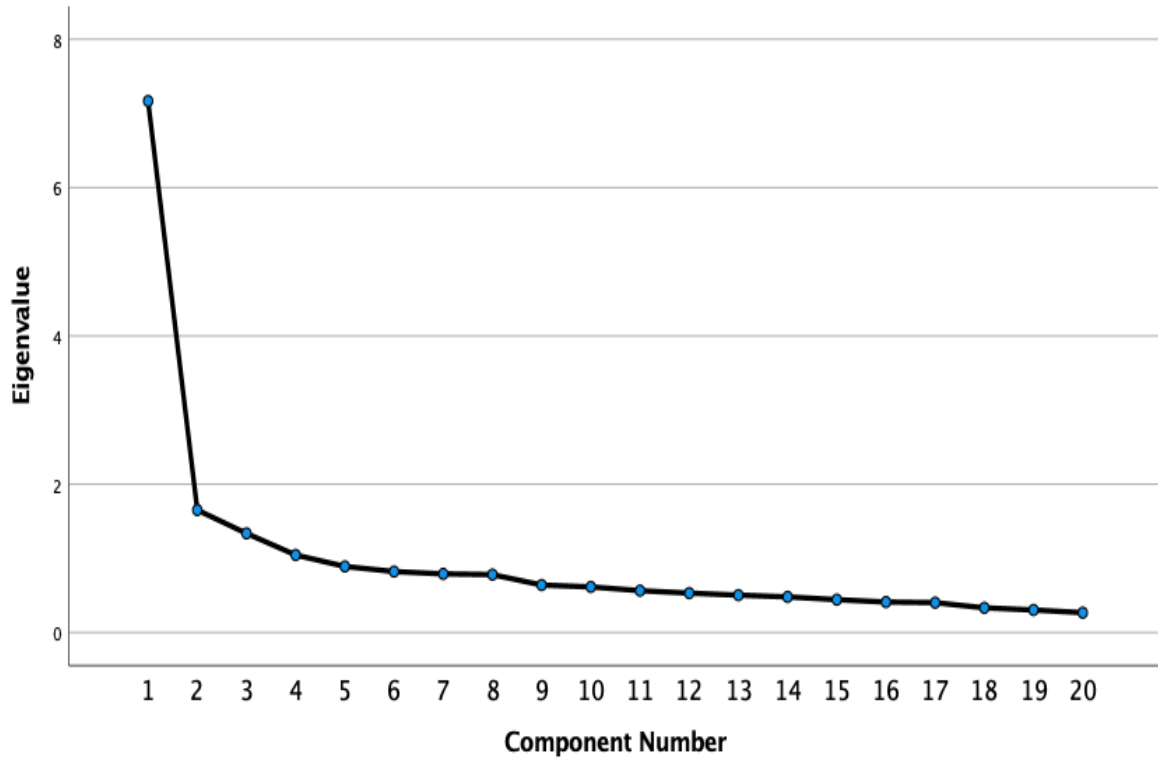
Scale item	<i>n</i>	<i>M</i>	<i>SD</i>
<b>Self-management</b>			
I know how to manage my emotions in a healthy way.	417	2.44	1.01
I use positive coping strategies/techniques to help me relieve stress/improve my mood.	412	2.25	1.07
I do a good job at keeping my emotions under control.	415	2.47	1.03
When I am stressed, I use healthy coping strategies/techniques to stay calm and in control.	419	2.19	1.11
<b>Relationship skills</b>			
I know how to deal with conflicts/arguments in a respectful way.	420	2.49	0.94
When a friend is not treating me kindly, I tell them how they are making me feel.	420	1.89	1.24
I can identify more than one person in my life who supports me.	413	3.13	0.97
I can keep calm when feeling pressured by others.	419	2.29	1.04
<b>Self-awareness</b>			
I know what my strengths are.	418	2.74	1.08
I can easily recognize my different moods/feelings.	419	2.73	1.05
I know when I am feeling down/in a bad mood.	417	3.06	0.93
I am aware of the things I'm not good at or struggle with.	419	2.94	0.92
<b>Social awareness</b>			
I try to look at situations from another person's point of view rather than just seeing things from my side	420	2.39	0.97
I respect others who are different from me.	415	3.45	0.79
I can tell when someone is having a difficult or bad day.	417	2.79	0.90
I try to listen to what others say so I can understand their feelings.	418	2.96	0.91
<b>Responsible decision-making</b>			
When I notice a friend is struggling in school, I do something to let them know I care.	418	2.89	0.98
When I need to make a difficult decision, I take my time to think and weigh my options.	417	2.59	1.00
When I see a classmate/peer use a helpful strategy to do better/improve, I try it myself.	417	2.22	1.08

When it comes to making decisions, I do what feels right in the moment.	417	2.68	0.88
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*Note.* For each scale item, the minimum was 0, and the maximum was 4.

**Figure 1**

*Scree Plot*



*Note.* As the line begins to level off, the number of factors in each component becomes clear.

**Table 4**

*Scale Reliabilities for the Survey*

Component	Reliability		
	Description	Cronbach's $\alpha$	No. items
Overall	High	.90	20
Responsible decision making	Slightly low	.68	4

Component	Reliability		
	Description	Cronbach's $\alpha$	No. items
Self-management	Relatively high	.81	4
Relationship skills	Satisfactory	.60	4
Self-awareness	Relatively high	.74	4
Social awareness	Moderate	.65	4

The self-management component had the strongest internal reliability ( $\alpha = .81$ ), and the relationship skills component had the weakest ( $\alpha = .60$ ). The overall survey had strong internal reliability ( $\alpha = .90$ ), so all components were included (Taber, 2018).

According to Taber (2018), a Cronbach's alpha value of .70–.77 is relatively high, and this occurred for two of the components, self-management ( $\alpha = .81$ ) and self-awareness ( $\alpha = .74$ ). Social awareness had moderate reliability (.61–.65), as indicated by a Cronbach's alpha of .65. The responsible decision-making component had a slightly low reliability (.64–.68), as indicated by a Cronbach's alpha of .68. And relationship skills had satisfactory reliability (.58–.97), as indicated by a Cronbach's alpha of .60. However, no clear consensus has emerged in the social sciences regarding how to label reliability levels (Taber, 2018). For example, “item communalities are considered ‘high’ if they are all .80 or greater—but this is unlikely to occur in real data. More common magnitudes in the social sciences are low to moderate communalities of .40 to .70” (A. B. Costello & Osborne, 2005, p. 4). Thus, the Cronbach's alpha for each of the five components of the SE-SELS survey was considered acceptable.

#### **SE-SELS Four Factor Structure**

Although the SE-SELS survey derived from five core SEL competencies, only four reliably distant factors emerged from analysis. Table 5 displays the items clustered

to fit the most appropriate factors. The researcher labeled the four factors Self-Management and Relationship Skills (SM/RS), Social Awareness (SoA), Self-Awareness (SA), and Responsible Decision Making (DM) to incorporate all five competencies of the CASEL Five in the four factors discovered following EFA.

**Table 5**

*Factor Loadings: Varimax Rotation*

Item	Factor loading			
	1	2	3	4
<b>Factor 1: Self-Management and Relationship Skills (SM/RS)</b>				
I know how to manage my emotions in a healthy way.	.75		.21	.30
I do a good job at keeping my emotions under control.	.75	.29	.19	.14
I can keep calm when feeling pressured by others.	.74	.16	.17	
I know what my strengths are.	.50		.48	.24
I know how to deal with conflicts/arguments in a respectful way.	.49	.40		.33
<b>Factor 2: Social Awareness (SoA)</b>				
I respect others who are different from me.		.69	.20	
When I notice a friend is struggling in school, I do something to let them know I care.		.66	.19	.32
I try to listen to what others say so I can understand their feelings.	.25	.65	.28	.17
I try to look at situations from another person’s point of view rather than just seeing things from my side.	.17	.62		.14
I can tell when someone is having a difficult or bad day.	.13	.53	.41	
<b>Factor 3: Self-Awareness (SA)</b>				
I am aware of the things I’m not good at or struggle with.		.17	.74	.14
I know when I am feeling down/in a bad mood.	.12	.18	.73	.14
I can easily recognize my different moods/feelings.	.43	.13	.66	.11
I can identify more than one person in my life who supports me.	.18	.21	.44	.37
When it comes to making decisions, I do what feels right in the moment.		.36	.41	.28
<b>Factor 4: Responsible Decision Making (DM)</b>				
When a friend is not treating me kindly, I tell them how they are making me feel.			.26	.68

Item	Factor loading			
	1	2	3	4
I use positive coping strategies/techniques to help me relieve stress/improve my mood.	.39		.22	.68
When I am stressed, I use healthy coping strategies/techniques to stay calm and in control.	.46		.12	.66
When I see a classmate/peer use a helpful strategy to do better/improve, I try it myself.	.30	.32		.63
When I need to make a difficult decision, I take my time to think and weigh my options.	.27	.33	.27	.42

### **Summary**

This study involved exploration of the structure of the SE-SELS survey, an assessment tool for the measurement of students' knowledge and use of SEL skills. Completion of an online version of the survey by 359 students in Grades 6–8 at a K–8 university-affiliated laboratory school in South Florida provided item development and exploratory psychometric data. Although the data provided preliminary evidence of construct validity and reliability, they did not indicate the existence of significant relationships between the factors and CASEL Five competencies.



## CHAPTER FIVE: DISCUSSION

The purpose of this study was to develop and test the psychometric properties of the SE-SELS survey, an assessment tool for measuring students' knowledge and use of SEL skills. This chapter discusses the results reported in Chapter 4 and includes an evaluation of the research questions that takes into consideration the factor structure and integrity of the EFA outcome. The discussion continues with study limitations, both methodological and procedural. The chapter concludes with implications of the study and recommendations for future research.

### **Evaluation of the Research Questions**

The following research questions guided this quantitative study:

1. Is the SE-SELS survey a valid instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL?
2. Is the SE-SELS survey a reliable instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL?

Answering the research questions involved investigating the factor structure of the SE-SELS survey to determine the integrity of the constructs of SEL and the CASEL Five competencies. Thorough investigation of these constructs included extensive review of the literature and an expert panel review. Assessments of the suitability of the SE-SELS survey for factor analysis determined that, based on the strengths of the relationships among the variables and the overall model based on the data collected, EFA was appropriate.

## Factor Structure

Research Question 1 asked whether the SE-SELS survey is a valid instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL. Factor analysis of participant responses to the SE-SELS survey yielded a 20-item, four-factor solution in answer to this question. Each of the four factors is represented by at least three items in the 20-item instrument. For example, the first factor, SM/RS, includes items that touch on ways students control their behavior ( $0.49 \leq \alpha \leq 0.75$ ). Although some items had less than desirable alpha values, lower values of alpha do not automatically indicate an unsatisfactory instrument (Griethuijsen et al., 2014; Plummer & Tanis Ozcelik, 2015; Taber, 2018). Based on the literature, the researcher felt it was appropriate to retain all 20 survey items (Child, 2006; Edwin & Bahr, 2021; Field, 2013; Floyd & Widaman, 1995; Griethuijsen et al., 2014; Osborne et al., 2008; Plummer & Tanis Ozcelik, 2015; Taber, 2018). The results of EFA analysis in this study are similar to those of analyses conducted to establish categorization of the CASEL model through not just instrumentation but also intervention implementation (Ross & Tolan, 2018). For example, Ross and Tolan (2018) attempted to empirically test the measurement efficacy of CASEL's theoretical framework and found that relationship skills did not appear "as a unitary dimension but as comprised of two subscales, creating relationships and relationship quality" (p. 1183). In this study, the relationship skills component had a reliability of .60 and was combined with the self-management component to keep all of the CASEL Five competencies in the SE-SELS survey because EFA yielded only four factors overall. Based on these data, merging the relationship skills component with a similar component, such self-management, may strengthen the instrument. Without

additional research to further determine validity, however, the component should remain. Further exploration with additional testing, such as CFA, could determine whether these findings point to differences among adolescents regarding peer relationships or the developmental relevance of influences (Ross & Tolan, 2018; Siegel, 2013).

The question of how to identify factors to retain has remained unsettled (Kahn, 2006). It is thus imperative to emphasize that factor analysts should use several criteria and include differing numbers of factors as part of exploratory analysis and study (Fabrigar et al., 1999; Kahn, 2006; Tinsley & Tinsley, 1987). A factor with only one or two associated items may lack the definition required to support its retention. In addition, association of some items with several factors can prevent determination of what makes each factor unique, which may support removal of factors (Kahn, 2006).

The two instruments reviewed for comparison with the SE-SELS survey have differing comparability results. The internal reliabilities determined for the SE-SELS survey are similar to those reported for the SSIS SELb-S (Anthony et al., 2020b). The SSIS-SELb-S has an overall alpha coefficient of .91, and that of the SE-SELS survey is .90. However, across all components, the SSIS SELb-S has higher reliability coefficients (.67–.72) than those of the SE-SELS survey (.41–.75). The second instrument for comparison, the DAP (Haggerty et al., 2011), has higher reliability coefficients across all scales than those of the SE-SELS survey. The overall alpha coefficient for the DAP is .97, and the mean alpha coefficient is .81 for the eight asset category subscales (Collaborative for Search Institute, 2005). The alpha coefficients of the DAP subscales range from .59 to .90, with only one (Constructive Use of Time) measuring .59. The DAP subscale with the next highest alpha coefficient is Empowerment ( $\alpha = .77$ ). Additional

psychometric testing is needed to determine whether all items should remain on the SE-SELS survey.

### **Likert Scales**

The decision to create an SEL-based assessment tool with items assessed using Likert scales, rather than forced choices, permitted each respondent to answer in accordance with their degree of agreement (Taherdoost, 2019). For the SE-SELS survey, the various degrees of agreement (responses ranging from *never* to *always*) provide useful information regarding the frequency of use and knowledge of SEL skills. For example, Item 2 on the SE-SELS survey is “I know how to deal with conflicts/arguments in a respectful way.” A respondent can then select from five options—*never*, *rarely*, *sometimes*, *often*, and *always*—to indicate how often they feel they can do this. Likert scales are appropriate for studies in social and behavioral sciences aimed at understanding individuals “perceptions, attitudes, emotions, opinions, personalities, and descriptions of people’s environment” (Adeniran, 2019, p. 1). By using a Likert scale, each respondent can provide information about how readily they think about a concept or engage in a particular behavior.

### **Integrity of the EFA Outcome**

Research Question 2 asked whether the SE-SELS survey is a reliable instrument for measurement of the use of SEL skills based on the CASEL Five competencies of SEL. Calculation of Cronbach’s alpha and item-total correlations answered this question (Cronbach, 1951). The need for SEL as a necessary foundation of student success continues to grow, but there is a lack of reliable and valid assessment tools that measure all of the CASEL Five competencies (Grant et al., 2017; Haggerty et al., 2011; McKown,

2017; Schweig et al., 2018; Thomas et al., 2021). In a well-designed instrument, the response patterns of an item intended to be part of a particular scale should be more similar to response patterns of the other items on that scale than the items on the other scales that are intended to be associated with a different construct or aspect. (Taber, 2018, p. 1279)

This EFA results indicated that this is true for the SE-SELS survey. After modifying the SE-SELS survey based on the EFA to use four components rather than five, the researcher reanalyzed the reliabilities of the survey. The overall scale had strong internal reliability, indicated by a Cronbach's alpha of .90, and all factors were retained in the final SE-SELS survey with Cronbach's alpha values that ranged from .41 to .75.

Typically, when an instrument's Cronbach's alpha is .70 or higher, the instrument is reliable (Taber, 2018), suggesting that the answer to Research Question 2 is that the SE-SELS survey is reliable. In justification of this cutoff score, the consensus throughout existing literature is that factor loadings of .30 are meaningful, and researchers should accept them (Edwin & Bahr, 2021; Field, 2013; Osborne et al., 2008). Child (2006) explained that researchers should remove any item with a loading below .20, and Guadagnoli and Velicer (1988) considered scores greater than .40 stable. The overall value of alpha was higher than the values of alpha for the individual components of the SE-SELS survey, but single-item reliabilities are normally very low (Taber, 2018; Tuan et al., 2005). Based on existing literature, the analysis in this study revealed that the SE-SELS survey is a psychometrically sound instrument appropriate for use by researchers in future analyses.

### **Limitations**

This study, like most studies, was not without limitations. First, responder bias driven by social desirability was a possibility because students may have felt it best to answer the questions on the instrument in such a way that they would appear to frequently use SEL skills. However, participants were informed that the results were meant to determine the validity of the instrument and that their responses would be anonymous, which reduces the likelihood that this bias was present. Second, although the pool of participants was larger than the minimum size required based on a priori power analysis (200), including more participants could have provided extra support for the integrity of the results. Also, because participants could skip items on the survey, the sample size differed from item to item. Third, the instrument targets students in Grades 6–9, but the sample in this study included only students in Grades 6–8. Future studies should include all relevant grade levels. Fourth, the school district had approximately 70% of students on free or reduced-price lunch, but the participating K–8 school had 47% of students in Grades 6–8 on free or reduced-price lunch, well below the school district rate. The SE-SELS survey should thus be administered to samples of randomly selected participants across a multitude of settings.

### **Methodological and Procedural Limitations**

#### **Instrument Design**

Although EFA revealed the SE-SELS to be a psychometrically sound instrument appropriate for future use, the factor structures within three of the four components fell below the expected loading of .50 or higher (Dash & Paul, 2021). Under the SM/RS factor, one item loaded at .49. Under the SA factor, two items loaded at .44 and .41, and under the DM factor, one item loaded at .42. An item belongs to a factor when it has a

loading of .50 or higher, so the researcher reviewed each item with a factor loading of .49 or lower to determine whether that item belonged with a different factor based on the overall factor loadings (Dash & Paul, 2021). The SM/RS factor was formed from two existing components of the survey based on the factor loadings of their items. Based on the range of factor loadings across all four factors (.41–.75), the researcher deemed it acceptable to keep each item with its existing factor. The strengths of factor loadings depend on the relationships assumed between factors, differences between the assumed meanings of the latent and observed variables, and the wording of items. The researcher could have avoided uncertainty about the appropriate factors for items by including a focus group of students to provide detailed feedback about item wording and clear up any confusion regarding items; doing so may have further improved the quality of the survey (Nyumba et al., 2018).

### **Challenges to Validity**

When assessing limitations of external validity in this study, the researcher determined that the study did not support the establishment of ecological validity. Although the participating school had a diverse population, students attending a different school may have produced different results, even if the school was within the same school district as the participating school. The participating school district included 31% White students, 31% African American students, and 31.8% Hispanic/Latino students, proportions different from those of the participating school. Male and female students made up 52% and 48%, respectively, of the district population, but at the participating school there were slightly more female students than male students. In addition, ESOL students were not provided a translated survey or read aloud items, which could have

influenced how they responded to survey items. In addition, the effects of the COVID-19 pandemic on students' social-emotional wellbeing may have affected how students answered items. Also, the SE-SELS survey targets students in Grades 6–9. However, for convenience, the sample in this study included only participants from one K–8 school. Responses from ninth-grade students were thus neither gathered nor included in EFA. The results may have differed if students from this grade level had participated. These drawbacks of using a convenience sample deserve consideration.

Next, although variability was consistent across items and components and standard deviation ranged from 0.88 to 1.08, one outlier had a high standard deviation. A high standard deviation indicates that data are less reliable because the distribution of responses is more widely spread (Traub, 1994). This was the case for one item from the relationship skills component: “When a friend is not treating me kindly, I tell them how they are making me feel.” This item yielded the lowest mean and highest standard deviation ( $M = 1.89$ ,  $SD = 1.24$ ). The factor loading for this item was .68, and because an item belongs to a factor when it has a loading of .50 or higher (Dash & Paul, 2021), this item remained in the survey. Perhaps participants did not completely understand the question. To determine the future status of this item, researchers should administer the SE-SELS survey at additional schools to diverse groups of students in Grades 6–9, which would reveal whether this standard deviation fluctuates or remains at the same level.

### **Implications**

As research support for SEL grows, educators must have the means to properly assess adolescents' knowledge and use of skills related to the CASEL Five competencies (CASEL, 2019). School counselors are SEL leaders in their schools (ASCA, 2017) and



are well positioned to identify the social–emotional needs of their students (Mariani et al., 2022). School counselors are typically responsible for covering SEL as part of comprehensive school counseling programs that encourage student resilience and success (ASCA, 2017), two areas that align with competencies in the CASEL framework. Consequently, having sound, reliable SEL assessment tools on hand can make data-driven decision making and selection of appropriate interventions more realistic for school counseling professionals. As educational standards continue to change, school counselors must provide measures of accountability to demonstrate their effectiveness (Edwards, 2018). Demonstrating their effectiveness includes accurately evaluating the impact of their programs and services. A common method of collecting data for program evaluation is to have students complete pre -and postintervention assessments. Counselors can then share results with a variety of stakeholders to help them understand the role of the school counselor in supporting student success (Edwards, 2018).

As a reliable and valid assessment tool, the SE-SELS survey can determine a baseline for students’ knowledge and skills pertaining to social–emotional wellness. The survey can also measure students’ growth after delivery of evidence-based SEL interventions and programs. However, future research should test the reliability and validity of this instrument when used to assess various SEL-based programs that align with the CASEL Five, such as the SSS-SEL classroom program. The SE-SELS survey is an easy-to-administer, reliable, and valid tool for school counselors to use as part of program accountability.

### **Recommendations for Future Research**

Although EFA and measures of reliability yielded four components, the SE-SELS

survey needs further psychometric analysis. Although Cronbach's alpha helps researchers understand scale reliability, it does not indicate whether scales are unidimensional (Taber, 2018). Thus, CFA of the SE-SELS survey is highly recommended to either confirm or reject the factor structure determined in this study. A CFA determines whether measures of a construct are reliable or consistent with the nature of that construct and allows analysis of an instrument's level of construct validity (Thompson, 2004). Future researchers should conduct convergent and divergent validity studies to further validate the survey. Additional studies would also improve the SE-SELS survey's psychometric integrity. By gathering these data, researchers can determine whether the SE-SELS survey is robust or discrete when compared with other SEL surveys that measure similar constructs (skill use and knowledge). In addition, by running a CFA, researchers can determine whether the four-factor model would remain or become a five-factor model. Educators and counselors can then weigh the SE-SELS against other like instruments that may take longer, are more inconvenient to administer and retrieve, and are more expensive. Future studies should also include assisting ELL students, whether by including a translated version of the survey or reading aloud the items and clarifying any questions they may have. Finally, to further increase the validity of the SE-SELS, researchers should administer the surveys to large, diverse samples (including populations of lower socioeconomic status and ninth-grade students).

### **Summary**

The purpose of the SE-SELS survey is measurement of the knowledge and use of SEL competencies and skills among students in Grades 6–9. An extensive analysis of the literature, an expert panel review, and EFA led to creation of a 20-item instrument

representing the CASEL Five competencies in a four-factor model. The original five-factor model became a four-factor model, which better fit the overall data. Two of the CASEL Five competencies were blended into one factor following the four-factor outcome of EFA. Measures of reliability indicated that the SE-SELS survey is a psychometrically sound instrument appropriate for future analyses to confirm its model factor structure and assess various facets of its validity. To draw conclusions regarding the meaning of SE-SELS survey scores and the impact of students' knowledge and use of SEL skills on their long-term success, implementers should pair the SE-SELS survey with evidence-based SEL classroom programs, such as the SSS-SEL, as a pre-post measure to gauge growth and development.

## APPENDICES

APPENDIX A

SE-SELS SURVEY (AFTER EXPERT PANEL FEEDBACK)

**Student Engagement in School Emotional Learning Skills Survey**

Directions. Below is a list of things some students do to help themselves feel happier, healthier, and more connected to others. Please circle one answer for each question to indicate how often you do each of these things. No one does all of these things all of the time. There are no right or wrong answers, and your answers will not be graded.

1. I try to look at situations from another person's point of view rather than just seeing things from my side.

Never     Rarely     Sometimes     Often     Always

2. I know how to deal with conflicts/arguments in a respectful way.

Never     Rarely     Sometimes     Often     Always

3. I know what my strengths are.

Never     Rarely     Sometimes     Often     Always

4. I know how to manage my emotions in a healthy way.

Never     Rarely     Sometimes     Often     Always

5. When a friend is not treating me kindly, I tell them how they're making me feel.

Never     Rarely     Sometimes     Often     Always

6. I respect others who are different from me.

Never     Rarely     Sometimes     Often     Always

7. When I notice a friend is struggling in school, I do something to let them know I care.

Never     Rarely     Sometimes     Often     Always

8. I can identify more than one person in my life who supports me.

Never     Rarely     Sometimes     Often     Always

9. I can easily recognize my different moods/feelings.

Never     Rarely     Sometimes     Often     Always

10. When I need to make a difficult decision, I take my time to think and weigh my options.

- Never     Rarely     Sometimes     Often     Always

11. I use positive coping strategies/techniques to help me relieve stress/improve my mood.

- Never     Rarely     Sometimes     Often     Always

12. When I see a classmate/peer use a helpful strategy to do better/improve, I try it myself.

- Never     Rarely     Sometimes     Often     Always

13. I can tell when someone is having a difficult or bad day.

- Never     Rarely     Sometimes     Often     Always

14. I know when I am feeling down/in a bad mood.

- Never     Rarely     Sometimes     Often     Always

15. I do a good job at keeping my emotions under control.

- Never     Rarely     Sometimes     Often     Always

16. When it comes to making decisions, I do what feels right in the moment.

- Never     Rarely     Sometimes     Often     Always

17. I try to listen to what others say so I can understand their feelings.

- Never     Rarely     Sometimes     Often     Always

18. I am aware of the things I'm not good at or struggle with.

- Never     Rarely     Sometimes     Often     Always

19. I can keep calm when feeling pressured by others.

- Never     Rarely     Sometimes     Often     Always

20. When I am stressed, I use healthy coping strategies/techniques to stay calm and in control.

- Never     Rarely     Sometimes     Often     Always

APPENDIX B

OPT-OUT CONSENT FORM

**PARENT/GUARDIAN OPT-OUT FORM**

**Title of Research Study:** Development of the Student Engagement in Social-Emotional Learning Skills (SE-SELS) Survey: An Assessment Tool to Measure Students’ Use of SEL Skills

Palm Pointe Educational Research School at Tradition is a developmental research school. Part of the schools’ missions aims to support research conducted by FAU researchers and other universities, public schools, the private sector, as well as school-wide action research projects.

The purpose of this study is to validate the Student Engagement in Social-Emotional Learning Skills (SE-SELS) survey, which was created to measure students’ use of social-emotional learning (SEL) skills. The SE-SELS survey can be used to gauge how frequently students report engaging in behaviors surrounding the Collaborative for Academic, Social and Emotional Learning’s (CASEL) five core competency areas: self-awareness, social awareness, self-management, relationship skills and responsible decision-making.

Students in grades 6-8 at Palm Pointe Educational Research School will complete the SE-SELS survey **one time over a two-week period beginning October 25, 2021. The 20-item survey will be provided to them electronically by their school counselor and should take no more than five to seven minutes to complete.** There is minimal risk associated with your child participating in this study.

If you have any questions, please feel free to contact your child’s school counselor at Palm Pointe or the Primary/Co Investigators (Dr. Melissa Mariani, mmarian5@fau.edu and Lilia Farmanara-Kneidel, lfarmanara2019@fau.edu). Students will be asked if they understand what they are being asked to do and be able to ask questions before providing verbal assent.

As always, the decision to allow your child to participate in these research projects or not is up to you and will not affect your child’s grades or standing within the school.

If you would **not** like your child to participate in the study, please complete the bottom portion of this form and return it to your child’s school counselor no later than October 22, 2021. **You do not need to return this form if you would like your child to participate.**

- - - - -  
- - -

**PARENT/GUARDIAN OPT-OUT FORM**

Child’s name (please print) \_\_\_\_\_ Grade \_\_\_\_\_

I have read this form and do **not** grant permission for my child to participate in this study.



Parent/legal guardian signature \_\_\_\_\_ Date

\_\_\_\_\_

**You do not need to return this form if you would like your child to participate.**

## APPENDIX C

### SSS-SEL PRE-POST SURVEY (15 QUESTIONS)

Student ID number (no names please): \_\_\_\_\_ Date: \_\_\_\_\_

#### SSS for SEL Success Pre-Post Survey

**Directions:** Below is a list of things that some students do to help themselves feel happier, healthier, and more connected. No one does all these things. Please indicate how often you do each of these things. Please do your best to be as accurate as possible. There are no right or wrong answers. Your answers will not be graded and will not be shared with your parents or teachers. The school counselor uses this information to plan for future lessons and programs.

1. I can tell when I'm having a good or a bad day because I easily recognize my different moods and feelings.

Never                  Rarely                  Sometimes                  Often                  Always

2. I know my own strengths and can confidently share what those are with others.

Never                  Rarely                  Sometimes                  Often                  Always

3. I recognize my own struggles, the things I'm not so good at or have difficulty with.

Never                  Rarely                  Sometimes                  Often                  Always

4. I manage my emotions well and keep my emotions under control and manage them effectively.

Never                  Rarely                  Sometimes                  Often                  Always

5. I respect others who are different from me and try and see where they are coming from.

Never                  Rarely                  Sometimes                  Often                  Always

6. I can identify a few people in my life who give me positive social support (family, friends, teachers, counselor).

Never                  Rarely                  Sometimes                  Often                  Always

7. I know how to deal with conflicts/arguments in a productive and respectful way.

Never                  Rarely                  Sometimes                  Often                  Always

8. When I have to make a difficult decision, I take my time to think and weigh all options.

Never                  Rarely                  Sometimes                  Often                  Always

9. When it comes to decision-making, I'm pretty impulsive and I just do what feels right in the moment.

Never                  Rarely                  Sometimes                  Often                  Always

10. In times of stress, I have two or three useful strategies/techniques that I use to calm myself down and get back in control.

Never                  Rarely                  Sometimes                  Often                  Always

11. I notice a strategy that a classmate is using to do better or improve and I try it myself.

Never                  Rarely                  Sometimes                  Often                  Always

12. I'm able to notice when another person is having a bad day and do something to let them know I care.

Never                  Rarely                  Sometimes                  Often                  Always

13. I listen to music because it helps me relieve stress and/or improves my energy.

Never                  Rarely                  Sometimes                  Often                  Always

14. When I'm in a conflict with another person, I listen to their side (perspective) and try and understand where they are coming from.

Never                  Rarely                  Sometimes                  Often                  Always

15. I try hard to listen to what another person is saying so that I will really understand them.

Never                  Rarely                  Sometimes                  Often                  Always

APPENDIX D

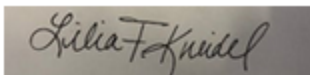
EXPERT PANEL LETTER

Dear Dr. [REDACTED]

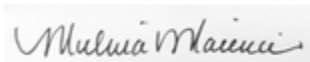
The purpose of this letter is to seek your expertise and assistance in providing feedback on a newly developed instrument, the Student Engagement in Social-Emotional Learning Skills (SE-SELS) survey, which was recently developed to assess students' use of social-emotional learning (SEL) skills centered around the five CASEL competencies: self-awareness, social awareness, self-management, relationship skills and responsible decision-making. The survey aligns as well with a new iteration of the Student Success Skills (SSS) curriculum, SSS for SEL Success ([SSS-SEL]; Brigman & Mariani, 2019). The SE-SELS survey can be administered to students in grades 6-9 and contains 20 items (in its current form) for students to respond to using a Likert scale ranging from "Never" to "Always." It should take 5-7 minutes to complete. The instrument can be provided in both paper-pencil and electronic formats.

My dissertation study will seek to validate the SE-SELS and determine its psychometric properties. Attached you will find the most recent version of the SE-SELS. Please review the directions, items, and verbiage used and offer any suggestions/feedback for improving the survey by Friday, October 1st, 2021. This can be done using track change comments which can be shared with both Dr. Mariani and I via email. We have secured two FAU lab school sites to administer the instrument this fall, however, if you have any other interested schools please let me know. Your time and assistance are greatly appreciated!

Sincerely,



Lilia Farmanara-Kneidel - Doctoral Student



Melissa Mariani - Associate Professor/Doctoral Program Coordinator  
Department of Counselor Education | Florida Atlantic University

## APPENDIX E

### SE-SELS SURVEY (BEFORE EXPERT PANEL FEEDBACK)

#### **Student Engagement in Social-Emotional Learning Skills (SE-SELS)**

Directions: Below is a list of things that some students do to help themselves feel happier, healthier, and more connected. No one does all these things. Please indicate how often you do each of these things. Please do your best to be as accurate as possible. There are no right or wrong answers. Your answers will not be graded and will not be shared with your parents or teachers. The school counselor uses this information to plan for future lessons and programs.

1. I can tell when I'm having a good or a bad day.

Never                  Rarely                  Sometimes                  Often                  Always

2. I easily recognize my different moods and feelings.

Never                  Rarely                  Sometimes                  Often                  Always

3. I know my own strengths and can confidently share what those are with others.

Never                  Rarely                  Sometimes                  Often                  Always

4. I recognize my own struggles- the things I'm not so good at or have difficulty with.

Never                  Rarely                  Sometimes                  Often                  Always

5. I'm aware of the things I'm not good at or have difficulty with.

Never                  Rarely                  Sometimes                  Often                  Always

6. I know how to manage my emotions well.

Never                  Rarely                  Sometimes                  Often                  Always

7. I keep my emotions under control and manage them effectively. f

Never                  Rarely                  Sometimes                  Often                  Always

8. I respect others who are different from me.

Never                  Rarely                  Sometimes                  Often                  Always

9. I try and see where another person is are coming from (their point of view/perspective).

Never                  Rarely                  Sometimes                  Often                  Always

10. I can identify more than one person in my life who gives me positive social support.

Never                  Rarely                  Sometimes                  Often                  Always

11. I know how to deal with conflicts/arguments in a productive and respectful way.

Never                  Rarely                  Sometimes                  Often                  Always

12. When I need to make a difficult decision, I take my time to think and weigh all options.

Never                  Rarely                  Sometimes                  Often                  Always

13. When it comes to decision-making, I just do what feels right in the moment.

Never                  Rarely                  Sometimes                  Often                  Always

14. In times of stress, I know how to use strategies/techniques to calm myself down and feel back in control.

Never                  Rarely                  Sometimes                  Often                  Always

15. When I see a classmate/peer use a helpful strategy to do better or improve and I try it myself.

Never                  Rarely                  Sometimes                  Often                  Always

16. I'm able to notice when another person is having a bad day.

Never                  Rarely                  Sometimes                  Often                  Always

17. When I notice someone is struggling at school, I do something to let them know I care.

Never                  Rarely                  Sometimes                  Often                  Always

18. I listen to music because it helps me relieve stress and/or improve my mood.

Never                  Rarely                  Sometimes                  Often                  Always

19. When I'm in a conflict with another person, I listen to their side (perspective) and try to understand their point of view.

Never                  Rarely                  Sometimes                  Often                  Always

20. I try to listen to what others say so I can understand their feelings.  
Never                  Rarely                  Sometimes                  Often                  Always

APPENDIX F

INSTITUTIONAL REVIEW BOARD LETTER



Institutional Review Board  
Division of Research  
777 Glades Rd.  
Boca Raton, FL 33431  
Tel: 561.297.1383  
[fau.edu/research/researchint](http://fau.edu/research/researchint)

Patricia Maslin-Ostrowski, Ed.D., Chair

DATE: October 13, 2021

TO: Melissa Mariani, PhD  
FROM: Florida Atlantic University Social, Behavioral and Educational Research IRB

IRBNET ID #: 1824182-1  
PROTOCOL TITLE: [1824182-1] DEVELOPMENT OF THE STUDENT ENGAGEMENT IN SOCIAL-EMOTIONAL LEARNING SKILLS (SE-SELS) SURVEY: AN ASSESSMENT TOOL TO MEASURE STUDENTS' USE OF SEL SKILLS

SUBMISSION TYPE: Other

ACTION: DETERMINATION OF RESEARCH NOT INVOLVING HUMAN SUBJECTS  
EFFECTIVE DATE: October 12, 2021

Thank you for your submission of Other materials for this research study. The Florida Atlantic University Social, Behavioral and Educational Research IRB has determined this project or your role in this project does not meet the definition of human subjects research according to the code of federal regulations, Title 45, Part 46. That is, research involving "a living individual about whom an investigator (whether professional or student) conducting research: (i) Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens."

Therefore, IRB review is not required, and you may proceed with the portion of the project activities that meet this criteria as outlined.

Should your project change in such a way that it does meet the definition of human subject research, please contact our office prior to proceeding. If at any time you would like a formal IRB letter, or if your project is funded, please create a new project in IRBNet, upload the HSR form, sign the package electronically, and submit to the IRB Office.

We will keep a copy of this correspondence on file in our office.

If you have any questions or comments about this correspondence, please contact Judith Martinez at:

Institutional Review Board  
Research Integrity/Division of Research  
Florida Atlantic University  
Boca Raton, FL 33431  
Phone: 561.297.1383  
[researchintegrity@fau.edu](mailto:researchintegrity@fau.edu)

**This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within our records.**



## APPENDIX G

### LETTER OF COOPERATION: PALM POINTE EDUCATIONAL RESEARCH SCHOOL



**Palm Pointe Educational Research School @ Tradition**  
10680 Academic Way, Port Saint Lucie, FL 34987 (772) 345-3245  
*A Visionary Partnership between Florida Atlantic University and Saint Lucie Public Schools*

September 14, 2021

To the Florida Atlantic University (IRB):

The following correspondence should serve as an official letter of cooperation and support for researchers from Florida Atlantic University to use the Student Engagement in Social-Emotional Learning Skills (SE-SELS) survey. The SE-SELS assesses students' use of SEL skills associated with the newly developed SSS for SEL Success classroom guidance program for grades 6-9. I understand Palm Pointe Educational Research School @ Tradition's involvement to be:

- A location for the recruitment of students in grades 6-8 to participate in the research study. We will disseminate and collect the IRB stamped recruitment materials & survey instrument.
  - 6<sup>th</sup> Grade: 170 Total Students (82 M; 88 F)
  - 7<sup>th</sup> Grade: 171 Total Students (85 M; 86 F)
  - 8<sup>th</sup> Grade: 161 Total Students (78 M; 83 F)

As the Principal, I provide permission for this survey to be given as part of the regular educational programming evaluation. I understand that this research will be carried out following sound ethical principles and that participant involvement in this research study is strictly voluntary and provides confidentiality of research data, as described in the protocol. Therefore, as the institutional authority of, Palm Pointe Educational Research School @ Tradition, I support the proposed research project and give permission for it to be conducted at (or in collaboration with) our school.

Sincerely,

**Kathleen Perez**  
Principal  
Palm Pointe Educational Research School @ Tradition  
10680 Academic Way  
Port St. Lucie, FL 34987  
772-345-3245

## APPENDIX H

### SE-SELS INTRODUCTORY STATEMENT

#### Student Engagement in Social Emotional Learning Skills Survey\_ADHUS and FAUHS

##### Consent

\* 1. This first question asks whether you agree to participate in this research study. The survey includes 20 questions and takes less than 4 minutes to complete. Please read the following information before making your decision.

This study will seek to establish the usefulness of the Social Engagement in Social-Emotional Learning Skills (SE-SEL) survey designed to measure students' use of social-emotional learning skills. We will store non-identifying data gathered from the study in a secure online environment. Information will be kept confidential and secure, and only the people working with the survey will have access to the data unless required by law.

While we cannot promise any benefits to you or others from your taking part in this research, you may appreciate being able to share your thoughts, feelings, and perceptions about the SEL strategies you use. In addition, after taking the survey, your school counselor and teachers can speak with you if you recognize any problems or concerns you want to address.

For questions about the research study, you can contact the following study team members: Researcher: Lilia Kneidel, Phone Number: 410-693-1922, Email Address: lfarmanara2019@fau.edu; Associate Professor: Melissa Mariani, Ph.D., Email Address: mmarian5@fau.edu. To share feedback privately with the Research Integrity/Division of Research Florida Atlantic University about your research experience, call 561.297.1383 or email them at researchintegrity@fau.edu.

To view the complete consent form or to learn more information about the study, please copy and paste the URL in a new browser window: [https://bit.ly/SE-SEL\\_IRB](https://bit.ly/SE-SEL_IRB)

Do you agree to participate?

Yes

No

Next

## APPENDIX I

### DEMOGRAPHIC QUESTIONS

4. How old are you?

- 10
- 11
- 12
- 13
- 14
- 15
- 16

5. How would you best describe yourself?

- I am a girl.
- I am a boy.
- I would rather not say.
- Other (please specify)

6. Which ethnicity best describes you.

- American Indian or Alaska Native
- Asian
- African American
- Hispanic
- Native Hawaiian or Other Pacific Islander
- Multi-racial
- White
- I would rather not say.
- Other (please specify)

Prev

Next

## REFERENCES

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