ABSTRACT

ASSESSING SOCIAL AND EMOTIONAL SKILL DEVELOPMENT IN EARLY
ELEMENTARY STUDENTS

David K. Rongey, Ed.D.
Department of Leadership, Educational Psychology and Foundations
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Jon G. Crawford, Director

Due to the current national discourse on the social and emotional well-being of students, the examination of student progress and development in the area of social and emotional skills is a critical area of study. To date, limited research has been conducted in this area. For example, there is little documented research on the direct assessment of student skills in the specific social and emotional learning competencies. With the emergence of a new assessment tool from Rush NeuroBehavioral Center (RNBC), schools are now able to gather performance-based student assessment data in key areas of social emotional skill development. The current study analyzed assessment data collected via direct assessment of students in the early elementary years using the new web-based tool developed by RNBC (SELweb^{TM}).

A component of the study involved sociometric assessment data gathered directly from peers in the classroom. Two rounds of data collected over the course of one school year were utilized to investigate student skill development in two key areas of social and emotional skill: peer connection and nonverbal emotion recognition. The de-identified

data were collected from the responses of approximately 300 students in two grade-centered elementary schools in one Illinois public school district. The purpose of this quasi-experimental quantitative study was to investigate the changes in social and emotional skill development for boys and girls across one academic year. Overall, the research conducted in this study produced only one statistically significant result. Nonetheless, the implications for school-based use of the new RNCB assessment tool, SELweb[TM], are broad.

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ASSESSING SOCIAL AND EMOTIONAL SKILL DEVELOPMENT IN EARLY
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DAVID K. RONGEY

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My final thanks goes to my family. I could not have taken these steps without their patience and support along the way.

DEDICATION

I dedicate this piece of work in loving memory of my beloved mother, Mrs. Evelyn Rongey, who passed away two days before my defense, but whose spirit, persistence, perseverance, determination, and courage were present on defense day. Thank you Mom for sharing your tenacity with me.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

OVERVIEW OF THE STUDY

"To educate a man in mind and not in morals is to create a menace to society."
Theodore Roosevelt

The 21st-century U.S. public schools are charged with the responsibility of

providing students with instruction in the academic content areas of reading, writing, and

mathematics. Increasingly, more responsibility for the social and emotional education of

the nation's children is also being placed upon the public schools. Social and emotional

learning (SEL) is the process of gaining skills to recognize and manage emotions,

develop and exercise care for others, problem solve effectively, develop healthy

relationships, and handle life's challenges (Collaborative for Academic, Social and

Emotional Learning: (CASEL, 2012). SEL is a framework for organizing and

coordinating programming to support the development of the whole child, which includes

the academic, behavioral, social, and emotional skill areas.

The state of Illinois was the first state to develop and require social and emotional

learning standards with the passage of the Illinois Children's Mental Health Act in 2003

(Gordon, Ji Mulhall, Shaw, & Weissberg, 2011). This landmark legislation required

Illinois public schools to provide students instruction in the area of social and emotional

learning; As a result, Illinois educators were charged with the task of educating the mind

and social emotional core of public school students. Although Illinois was the first state

to enact SEL legislation, it is apparent that the nation has seen a shift in the priorities of schools as indicated by the passage of similar legislation in other states.

As schools dedicate time and resources to SEL instruction, the emerging question must focus on how schools may measure student progress in the area of SEL skills. Can schools gain insight into student perspectives of social situations and stressors? Presently, little documented research is available on the direct assessment of student acquisition of SEL skills and competencies. With the emergence of a new assessment tool from Rush NeuroBehavioral Center (RNBC), schools are now able to gather performance-based student assessment data in key areas of social emotional skill development.

Until now, SEL assessment information has been obtained through observation, or ratings completed by a parent, caregiver, or teacher (Denham, 2006). The current study details data collected via direct assessment of students in the early elementary years using the new web-based tool developed by RNBC (SELweb^{TM}).

This option to assess students' SEL skills directly and gain timely results has positive implications for future progress in our schools. Such assessment information may be used to consider student strengths and areas of potential growth within the classroom community.

The active learning techniques found in SEL ensure that decision-making and problem solving skills can be implemented successfully in various school and workplace settings and situations (Elias, Zins, & Weissberg, 1997). Children often learn about caring when the adults in their lives provide instruction and model appropriate behaviors (Elias, et al. 1997). A child's ability to encode, interpret, and reason is an important

predictor of social behavior, peer relationships, and how children care for each other. Implementation of a SEL curriculum has shown an increase in students' academic performance and a lower incidence of problem behaviors (Diekstra, 2008; Greenberg, et al, 2003; Zins, Weissberg, Wang, & Walberg, 2004). The implementation of the SEL program in schools has resulted in success in the labor market. SEL competencies; responsibility, collaboration, self-esteem, self-management, and integrity are also connected to success in the 21st century work place (U.S. Department of Labor, 1991).

Schools dedicating time to SEL instruction have shown positive gains in maintaining a safe and caring learning environment; staff and student relationships are collaborative and reflect trust (Zins et al., 2004). Successful SEL programs target specific social and emotional skills and provide sufficient time for developing these skills. Organizations such as CASEL have dedicated tremendous time and effort to provide resources and assess the efficacy of SEL learning curricula. The compilation of research to support SEL is growing annually across Illinois and other states.

<div align="center">Purpose</div>

The current study used a new online assessment tool, created by RNBC to provide assessment results to school-based teams to review data collected at multiple points during the school year. The use of new tools, such as the one developed by RNBC, in a pre- and post-assessment model allows schools to assess student growth directly in an analogous manner to processes used by school personnel to measure student reading and math skill development across a school year. Such data provide additional information to

discuss student progress and the range of experience needed to support student growth and development.

Data-driven decisions are stressed in the current education system. Generally schools have not had feasible options for assessing student social-emotional development. Similar to academic assessments, assessments of young children's social and emotional status, if administered economically and ethically in terms of teacher, parent, and child time, can be useful in monitoring student skills and evaluation of SEL program implementation for children (Raver, 2003).

A key component of this study involves sociometric assessment data related to the social dynamics of the peer group that is gathered directly in the classroom (Whitcomb & Merrell, 2013). In the early 1980s, there was a resurgence of interest in using sociometric assessment to gather data on peer relations. Supported by research, documenting that childhood social adjustment is a significant predictor of adult maladjustment (Roff, 1961; Roff, Sells, & Golden, 1972), peer relation data may be used to consider current status and predict future challenges. Roff's research shows that children rejected by peers in the elementary school years were also rejected by peers in later years. The current study used new assessment tools to gather the peer connection data and consider the changes occurring over one academic school year.

In addition to peer connection data, information on gender differences can provide useful information when considering classroom environments. Gender differences and segregation of friendships emerge in the early preschool years and have been seen across cultures (Xie & Shi, 2009). Gender has also been documented as a distinguishing factor

in emotion recognition ability (Hall & Matsumoto, 2004; Matsumoto, et al., 2000;).

Women have shown greater accuracy in labeling nonverbal emotion samples (Hall,

Carter, & Horgan, 2000). Hall and Matsumoto examined the responses of male and

female participants when viewing facial emotion expressions. Although past research has

examined gender differences at specific grade levels, the current study offered the

opportunity to explore gender differences across the first- through fourth-grade levels.

The study allowed for an examination of specific social skills (peer connections and

emotion recognition) with the consideration of gender and grade level differences in skill

development.

Research Questions

Because this is a new area of research, few, if any, existing measures allow for

sociometric data collection across three identified SEL skill areas in schools. The

research questions presented below guided this exploration.

- **Research Question 1**: How does social emotional skill development in the area of
  peer connections change within one academic year for first- and fourth-grade boys
  and girls?

- **Research Question 2**: How does social emotional skill development in the area of
  nonverbal emotion recognition change within one academic year for first- and fourth-
  grade boys and girls?

Limitations

This study is not without limitations. First the source of the de-identified data in this study was an upper socioeconomic community where the majority of residents have advanced degrees and are typically employed in business or professional fields. The community is a highly stable, primarily residential community comprised of approximately 90% owner-occupied housing units and having an annual mobility rate of less than 5%. The ethnic make-up of the school district in 2012 was 91.8% White. The socioeconomic makeup of the school district was 3.3% low income, 0.6% limited English proficiency and 14.7% students with Individualized Education Plans (IEPs).

The de-identified data were collected from the responses of approximately 300 students in two grade-centered elementary schools in one Illinois public school district. Although this sample may be significant for this population, the sample size was neither large enough nor inclusive enough to extrapolate trends in the general population. Further studies should include a larger sample of participants from a cross-section of the population, including a significant number of participants from a more representative socioeconomic sampling.

Second the de-identified data represent results of the fall and spring administration of two SELweb™ assessments conducted within one school year. The time frame of one school year limited the conclusions drawn from the analysis of the data. Therefore, to accurately identify a trend in any population, a longitudinal study may be warranted.

Last within this study, de-identified student performance-based assessment data were analyzed. Data were collected via a web-based instrument, SELweb^{TM}, requiring all participants to have online access via a computer. A limiting factor was the necessity for a school network and infrastructure to be in place to support data collection.

Delimitations

Seven modules are used as a universal screening assessment in the SELweb™ tool. These modules are social emotional assessments designed to identify students who may be on a path to being rejected socially by their peers. Collecting and analyzing this data can help educators identify low social acceptance by classmates through the identification of changes of social-skill development in the area of peer connection and emotion recognition. SELweb™ allowed data collection in the seven areas considered to be of significance in the development of social and emotional learning. These seven areas are peer nomination, non-verbal emotion recognition, choice delay task, perspective taking, social problem-solving, delay of frustration, and facial recognition. For the purpose of this study, the de-identified data from two of these modules peer nomination and facial recognition are examined. Further description of these two modules is included in Chapter 3.

Definition of Acronyms

CASEL: Collaborative for Academic, Social, and Emotional Learning was founded in 1994 by Daniel Goleman. It is a scientific organization of educators,

researchers, and others dedicated to effective schools and supporting the positive development of children.

ISBE: The Illinois State Board of Education provides leadership, assistance, resources, and advocacy so every student is prepared to succeed in careers and postsecondary education and shares accountability for doing so with local districts and schools.

NCLB: No Child Left Behind is a federal law impacting public education from kindergarten through high school. The act requires schools to rely on scientifically based research for programs and teaching methodology. The act defines standards for adequate yearly progress.

RNBC: Rush NeuroBehavioral Center is a non-for-profit academic medical center. The mission of RNBC is to empower children, teens, and young adults with social, emotional, and learning challenges to build on their strengths and be successful in life and relationships.

SCANS: Secretary's Commission on Achieving Necessary Skills is a report that focuses on what the workplace requires of students graduating from a 21st-century educational system.

SEL: Social and emotional learning includes the development of social and emotional competencies in children. The foundation of SEL is the understanding that learning evolves in a relationship that is supportive, challenging, engaging, and meaningful. Social and emotional skills are critical to being a good student, citizen, and worker.

SELweb^{*TM*}: RNBC developed this computerized performance-based assessment tool to gather SEL assessment data across classrooms and grade levels.

SES: Socioeconomic status is typically broken into three categories--high SES, middle SES, and low SES--to describe the three areas a family or an individual may fall into. When placing a family or individual into one of these categories, any or all of the three variables (income, education, and occupation) can be assessed.

CHAPTER 2

LITERATURE REVIEW

Before introducing the concept of SEL, this chapter sets forth an overview of

the cultural and political history that shaped school reform efforts and provided a

foundation for SEL's emergence. Particular attention is directed to the impact of the

NCLB Act of 2001 on SEL and Illinois's emergence as a leader for SEL programming.

Next, SEL is defined, and its importance to the development of the whole child is

discussed. Last, two social skills, peer connection and emotion recognition, which are

the focus of the research, are described. The chapter closes with a rationale for this study.

School Reform's Cultural and Political History

This section describes the historical backdrop from which SEL emerged. On

October 4, 1957, the former Soviet Union successfully launched Sputnik I. Sputnik

was the world's first artificial satellite. It was about the size of a beach ball and took

about 98 minutes to orbit the Earth on its elliptical path. Although the Sputnik I

launch was a single event, for many Americans, this Soviet achievement forewarned

the inadequacy of the nation's public school system and triggered the onset of

decades of school reform (Tienken & Orlich, 2013). In response to this harbinger,

the U.S. Congress passed the *National Defense Education Act* (NDEA) (1958). The

NDEA called for an improvement in the American public education system by increasing the attention given to mathematics, science, foreign language, and vocational-technical training. Although the U.S. Constitution leaves public education to the state and local levels of government, the NDEA marked a trend toward expanded federal legislative involvement in the public school system.

In 1954 and 1955, the U. S. Supreme Court issued landmark desegregation decisions in *Brown v. Board of Education* (1954, 1955). Following these seminal desegregation rulings, *"*the job of eliminating the 'separate but equal' doctrine from the nation's public schools began" (Crawford & O'Neill, 2011, p. 512). In furtherance of the task of eradicating Jim Crow laws Congress passed the *Civil Rights Act* (1964). Shortly thereafter, President Johnson signed the *Elementary and Secondary Education Act* (ESEA 1965).

In August 1981, at the behest of President Reagan, Secretary of Education T. H. Bell created the National Commission on Excellence in Education. Secretary Bell charged the commission with the task of assessing the condition of America's public schools (*Nation at Risk*, 1983). The commission's 1983 report, *A Nation at Risk,* declared America's place in international markets and position in the world were at risk (Nation at Risk, 1983, p 6). Although almost three decades had passed since Sputnik I, the messages of concern articulated in *A Nation at Risk,* remained constant: the existence of American society was in peril, and the public schools were responsible.

A Nation at Risk (1983), set forth findings and recommendations for four central features of the educational process: content, expectations, time, and teaching. With regard to the skills students should possess, e.g., self-discipline and motivation for high achievement, the report identified several deficiencies in the nation's public schools (U.S. Department of Education, 1983). The overall theme of these inadequacies was an absence of rigor. To correct these problems, the report recommended the adoption of more rigorous (and measurable) standards and expectations for high school students. In addition, the report proposed that all high school students take a standardized test of achievement -- one piece of a nationwide system of state and local standardized tests (U.S. Department of Education, 1983).

With regard to educational leadership and financial support for schools, the report stated that the public should hold educators and politicians responsible for achieving all of the listed recommendations, and also provide the financial support to achieve the required recommendations. Furthermore, the report recommended that "citizens . . . hold educators and elected officials responsible for providing the leadership necessary to achieve [the report's recommended] reforms" (U.S. Department of Education, 1983 pp. 32-33). *A Nation at Risk* (1983) focused the agenda during next two decades on improving the nation's public education system.

The 1986 annual National Governors' Association (NGA) meeting was "the impetus for the creation of national goals" (Schwartz & Robinson, 2000, p. 175). During the two-day meeting, the governors and invited guests discussed seven areas of education reform that task forces had been investigating for the past year. These

areas included: school leadership and management, teaching, school choice, school readiness, technology, school facilities, and college quality. Tennessee's Governor Lamar Alexander (1986) shared the governors undertook this endeavor due to their belief that "better schools mean better jobs, and that the future of the people who elect [them] depend upon having better jobs" (p. 8). Governor Alexander believed the governors collectively had the ability to save the American public education system. He told his colleagues, "It is my judgment and hope that this report, and the issues upon which it focuses, will help to set the agenda for American public education for the next decade" (Alexander, 1986, p. 10). Secretary of Education, William Bennett, told the NGA, "I think your reports may be the most important, constitute the most important event in American education in the last five years" (Bennett, 1986, p 22-23).

Many of the issues the governors explored had previously been addressed in *A Nation at Risk* (1983). New issues were school readiness, technology, school facilities, and school choice. Although these issues were important, more noteworthy was "the ability of the governors to work together across party lines on educational issues and to speak with a unified public voice" (Schwartz & Robinson, 2000, p. 176).

In 1989, the nation's governors and several top business leaders convened to make changes to improve performance of public schools. At the end of the two-day Education Summit, President George H. Bush told the governors that he agreed with the remarks of Governor Clinton and that the meeting of governors had produced an

agreement for national performance goals, making this a positive step for public education in America (Bush, 1989). The Education Summit created six educational goals, which were expanded to include two more in 1994, when President Clinton signed Goals 2000 into law with the passage the *Educate America Act.*

Goals 2000's (1994) primary goal was to promote national reform in education. Specifically, the *Educate America Act* sought to improve the quality of learning and teaching, define local and federal responsibilities, and stimulate the development of a voluntary national system of skill standards to enhance the skills of future workers.

Congress declared by the year 2000,

1) All children will start school ready to learn;

2) The high school completion rate will increase to 90%;

3) All students in Grades 4, 8, and 12 will demonstrate achievement in the core subjects of English, mathematics, science, foreign language, social studies, and the arts;

4) All teachers will have access to continuing education programs and the opportunity for professional development;

5) American students will rank top in the world in mathematics and science;

6) Every adult will be literate and possess the skills to compete in a global economy;

7) Every school will be drug, alcohol, violence, and firearm free and be a place for disciplined learning; and

8) Every school will promote partnerships with families that will increase parent participation (*Educate America Act, Goals 2000*, 1994).

Until *Goals 2000*, education had been perceived as a state and local concern, as it was not an area of federal jurisdiction. This history changed with *Goals 2000*, as a new precedent for the American education system was established; for the first time since the American Constitution was signed, the federal government became intimately involved with local public schools. This was the intent of the Education Summit, which was the impetus for *Goals 2000*. Iowa's Governor Branstad stated, "We unanimously agree that there is a need for the first time in this nation's history to have specific results-oriented goals" (Education Summit Farewell Ceremony, 1989).

Goals 2000 effectuated a shift in control of educational policy from state and local governments to the federal government (Heise, 1994). As a result *Goals 2000* established a foundation for a standardized national curriculum. *Goals 2000* was a giant step on the path of the federalization of America's public education system. This step was a direct response to *A Nation at Risk* (1983) and was in part a political move by the nation's governors. Legitimate concerns about the state of public education were raised and some progress was made as a result of *Goals 2000*; however, due to the 100% compliance language used, the enactment was doomed to failure from the start.

The *NCLB Act of 2001* was signed into law in January 2002. The enactment was a reauthorization of the *ESEA* (1965). The ESEA was a cornerstone of President

Lyndon B. Johnson's War on Poverty (Jennings, 2001). The law was enacted less than one year after the 1964 *Civil Rights Act* and was used to help ensure that states were following the new desegregation laws: the *Civil Rights Act* was the stick and the ESEA was the carrot (Hana, 2005). It was the government's initial entry into public K-12 education (Hana, 2005) and provided authority for the federal government's monetary backing of elementary and secondary education (Crawford, 2011). At the time, it was "the most sweeping educational bill ever to come before Congress. It represented a major new commitment of the federal government to quality and equality in the schooling that we offer our young people" (Johnson, 1965, p. 412).

The central goal of the ESEA (1965) was to improve educational opportunities across K-12 schools in the nation and, more specifically, to provide for the special education needs of those students performing below standards. To fulfill this goal, Title I, the main provision of the ESEA, gave federal funding to schools to help meet the needs of educationally and economically deprived children. The rationale for this provision was, as President Johnson asserted that, "education is the only valid passport from poverty" (Johnson, 1965, p. 414).

The ESEA (1965) resulted in three significant changes to education policy. First, federal aid to education was allocated as categorical aid tied to national policy concerns. Second, state governments assumed a larger role in educational decision-making. And third, funds were allocated directly to students, thereby opening the door for federal aid to parochial schools.

The No Child Left Behind Act of 2001

On January 8, 2002, President Bush signed the Congressional reauthorization and extensive modification of the ESEA into law as the *NCLB Act of 2001* (NCLB, 2001). Described as "large and ponderous" (Fowler, 2013), the purpose of President George W. Bush's first piece of legislation was designed to ensure that every child in America would be able to meet rigorous learning standards. The NCLB reflected a myopic focus on improving student performance in reading and math by requiring states to develop demanding achievement standards that would be tested annually (NCLB, 2001). In 2006, Margaret Spelling, the Secretary of Education, described the NCLB as "nearly perfect" (Rodriquez, 2007). However, Spelling's squeaky-clean perception of the NCLB was not shared by everyone.

For example, some have lamented the NCLB's (2001) failure to recognize that 21st-century education, in addition to academic achievement, also includes "social emotional development" (Pentzien, 2006, p. 576). Elias (2009) describes SEL as "a missing piece in American education policy" (p. 831). Elias asserts that in order to effectively educate the whole child, the school's academic curriculum must be supplemented by the teaching of social emotional skills. Zins et al. (2004) point out that SEL's positive effect upon student learning is affirmed by an increasing collection of "scientifically based research" (p. 19). Research also supports SEL's role in the overall learning process as being "integral rather than incidental" (Ragozzino, Resnik, Utne-O'Brien, & Weissberg, 2003, p. 169). Schonert-Reichl and Hymel (2007) note that the research indicates that SEL must be integrated with academics

in order for students to realize success in both school and life. Not surprisingly, Zins

et al. describe SEL as "an essential component of school reform" (p. 3).

Illinois Emerges as a Leader of SEL Programming

Following a 2001 visit to an Illinois high school and a discussion with

students, a group of educators and advocates recommended the formulation of a

team to examine mental health issues impacting children (VanLandeghem, 2003).

Thereafter, a study team recommended the formation of a Task Force on Children's

Mental Health (VanLandeghem, 2003). The task force, with a membership including

Illinois educators, mental health professionals and child advocates garnered wide

support and provided the Illinois SEL agenda with undergirding to move forward

(VanLandeghem, 2003).

The task force's April 2003 report, *Children's Mental Health: An Urgent*

Priority in Illinois, outlines the need for short- and long-term goals to address the

mental health and social emotional well-being of Illinois children from birth to age

18 (VanLandeghem, 2003). One of the report's priority recommendations calls for

legislation "to incorporate social and emotional standards as part of the Illinois

Learning Standards for the purpose of enhancing and measuring children's school

readiness and ability to achieve academic success" (VanLandeghem, 2003, p. 12).

The task force's priority recommendations also include a proposal for school

districts to adopt policies incorporating SEL into local curricula and provide a

means for assessing student acquisition of SEL skills (VanLandeghem, 2003). These

task force recommendations contributed to the passage of the Illinois *Children's*

Mental Health Act of 2003 (VanLandeghem, 2003). Katherine Curran describes the

statute as "the most comprehensive" piece of state children's mental health

legislation passed to that time (Curran, 2008, p. 87).

Consistent with the task force's recommendations, Section 15 of the *Illinois*

Children's Mental Health Act (2003) directes the ISBE to incorporate SEL standards

into the Illinois Learning Standards and requireS local school boards to adopt a

Student Social and Emotional Development policy (405 ILCS 49/1 et seq., P.A. 93-

495, eff. 8-8-03). Elias (2009) describes SEL as "a missing piece in American

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integrated with academics in order for students to realize success in both school and

life. Not surprisingly, Zins et al. describe SEL "as an essential component of school

reform" (p. 3).

Defining Social and Emotional Learning

SEL is the process of gaining skills to recognize and manage emotions, develop care for others, problem solve effectively, develop healthy relationships and handle life's challenges (CASEL, 2006,2012). The Center on the Social Emotional Foundations for Early Learning (CSEFEL) defines social and emotional development as the capacity of a child to form strong peer relationships, regulate and express emotions in an appropriate way, and learn from the exploration of the environment (Yates, 2012). SEL is a conceptual framework for organizing and coordinating school programming to support student development in the aforementioned skill areas. Typically SEL includes active learning techniques across settings to ensure that the skills of problem-solving and decision-making can be applied in many situations (Elias, et al., 1997).

CASEL (2006) has identified five domains of social and emotional competencies critical for personal development. Each of the five competencies is defined as follows:

1. **Self-awareness** is the ability to accurately assess one's self and maintain a sense of self-confidence in social interactions. Self-awareness skills also reflect a person's ability to accurately assess personal limitations.

2. **Self-management** is the ability to regulate one's emotions to handle stress, control impulses, and persevere in overcoming obstacles. Self-management skills also account for one's ability to set and monitor progress toward personal and academic goals.

3. **Social awareness** is the ability to take another person's perspective and show empathy. Social awareness includes the ability to recognize and appreciate similarities and differences among people and groups.

4. **Relationship skills** include the ability to establish and maintain healthy and rewarding relationships based on cooperation. Relationship skills also include the ability to resist inappropriate social pressure and prevent, manage, and resolve interpersonal conflict.

5. **Responsible decision-makin**g includes the skills necessary to make choices based on consideration of ethical standards, safety concerns, appropriate social norms, respect for others, and the likely consequences of one's actions. The application of responsible decision-making skills impacts all domains of school and community.
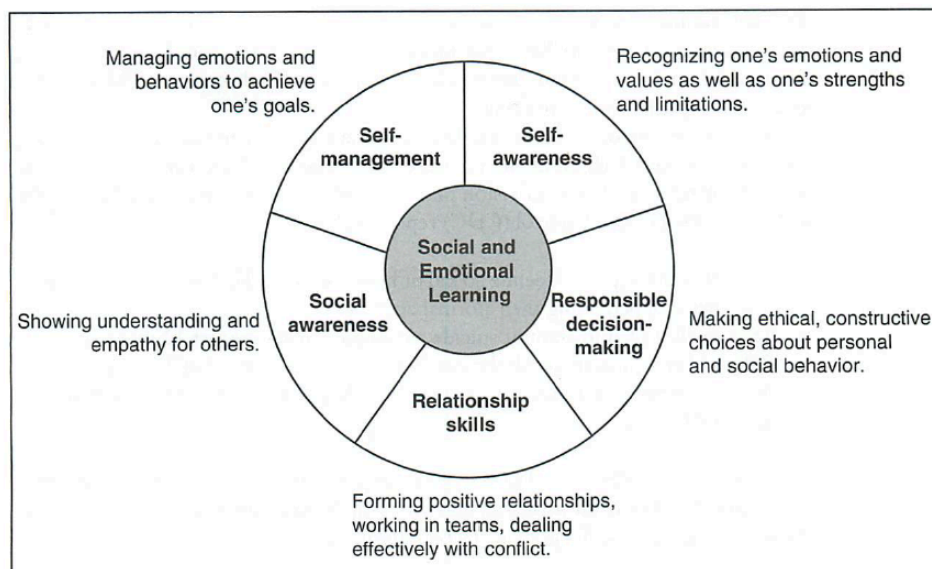

Figure 1. CASEL's Five Key Areas of Social and Emotional Learning Competency (CASEL, 2006, p. 12)

The Significance of SEL

Implementation of SEL programs within a school environment can have multiple benefits for *all* students, including students with or without behavioral issues, both in and out of the school environment. Research has shown that by focusing a SEL program on the five domains identified by CASEL, students improve their social-emotional skills; attitudes about self, others, and school; and academic performance (Elias et al., 1997). Similarly, special education students benefit from receiving social-emotional and skill-building instruction (Adelman & Taylor, 2000; Comer, Ben-Avie, Haynes, & Joyner, 1999; Elias et al., 1997).

Research-based programs that focus on children's academic, social, and emotional growth provide a firm foundation for the development of lifelong skills that are necessary for students to become responsible, contributing members of a strong and informed workforce (U.S. Department of Labor, 1991). To ensure that students have the skills needed to lead productive lives, it is important for schools, parents, and communities to work together (McCloskey, 2007). "It is caring that plays a critical role in overcoming the narrowness, selfishness, and mean-spiritedness that too many of our children cannot avoid being exposed to, and that replaces these attitudes with a culture of welcome" (Elias et al., 1997, p. 6). The Centers for Disease Control (CDC 2009) report, *School Connectedness: Strategies for Increasing Protective Factors Among Youth*, identifies a student's belief that he/she is cared about by adults and peers within the school environment as a critical factor in a student's school success (CDC, 2009). The

(CDC 2009) report includes data from the National Longitudinal Study of Adolescent Health reporting school success from both students and administrators (McNeely, Nonnemaker & Blum, 2002). McNeely et al., gathered survey data from adolescents in grades 7-12, including all high schools in the U.S.. Students in the 1994-1995 school year completed the in-school paper-pencil survey, and results confirmed student perceptions of care in the school environment as critical to their personal success (CDC, 2009).

Children, as well as adults, want to be cared about and cared for in school, the workplace, and the community. Children often learn about caring through adult modeling and explicit instruction (Elias et al., 1997). Teaching children the importance of caring for self and others is a skill that is recognized and desired in the adult workplace. Corporations have recognized that employees who know how to manage social and emotional relationships and interactions are better at making positive contributions to the workplace environment and contributing to the organization's performance (Adams & Hamm, 1994).

Research conducted by Rimm-Kaufman, Pianta, and Cox (2000) sampled over 3,500 kindergarten teachers using the 1996 Transition Practices Survey. The sample included a range of social-economic levels, diversity, and metropolitan status. Rimm-Kaufman et al., report that 60% of kindergarten-age children exhibited the necessary cognitive skills to be successful in school; however, less than 40% of these children had the social-emotional skills necessary to achieve success in kindergarten. Teachers reported inability to follow directions or, work independently, lack of social skills, and less developed communication skills were seen as negatively impacting the success of

children as they entered kindergarten (Rimm-Kaufman, et al., 2000). Longitudinal data collected by Raver (2003) show that the similar skills of listening, working in groups, and following directions are linked to academic performance in the classroom; students who experienced challenges with these key skills were more likely to exhibit antisocial behaviors and struggle to build positive relationships with peers. These same students tended to participate less frequently in classroom activities and performed below the classroom norm on academic tasks (Raver, 2003).

The Dunedin Multidisciplinary Health and Development Study (Moffitt et al., 2011) followed a cohort of 1,037 children born in the same year and documented their growth from birth to age 32. Results show the positive correlation of strong self-control skills with future health, wealth and low levels of adult crime. The research has shown a correlation between social emotional competency and future success, the educational emphasis is often on the academic skills to measure success in schools (Raver, 2003). Similarly, elementary schools that have implemented SEL programs have shown a reduction in problem behaviors and an accompanying increase in academic performance (Diekstra, 2008; Greenberg et al., 2003; Wilson, Gottfredson, & Najaka, 2001; Zins, et al., 2004).

Determining the best-matched SEL curriculum materials to use requires background knowledge of the school environment, student population, and community influences. Success of the program is impacted by the current learning environment and routines within each school, as well as the level of full program integration across the school and community. Research conducted by Eccles and Gootman (2002) indicates that

identifying the social, emotional, and physical influences that impact the culture of the building help to ensure program success in the school. These same factors impact the daily life of each child in the school.

The Commission on Achieving Necessary Skills (U.S. Department of Labor, 2000) issued a report in 1999 that was ordered by the Secretary of Labor. To determine what these skills were, the report focused on interviews with owners and operators of various businesses, and workers in these businesses, including blue-collar assembly-line workers. The information sought included the skills needed in the 21st-century workplace. Of the skills that emerged in qualified individuals, seven are found in SEL domains (U.S. Department of Labor, 2000).

These skills are considered foundational in the successful worker and workplace. The interpersonal success of owners, managers, and common workers, is based in SEL: responsibility, social ability, self-esteem, self-management, and integrity (U.S. Department of Labor, 2000). The *Workplace Essential Skills (SCANS 2000)* report compiled by the U.S. Department of Labor (2000), defines these five SEL skills as critical to employment success.

Metacognition, or learning-to-learn, is commonly referred to as a person's ability to understand his/her own learning style and the thought process that impacts how he/she learns and files new information. Another area of skill is one's ability to be flexible, referred to as adaptability. This skill is necessary for a person to understand the feelings and perspectives of those around him/her. Hearing, perceiving, comprehending, and responding to communication all fall under the skill titled *Listening and Oral*

Communication, and is both receptive and expressive. *Personal Management* incorporates decision-making, self-confidence, and respect for others with maintaining a direction. *Group Effectiveness* and *Organizational Effectiveness* round out the top six skills. The seventh and final of the top skills needed in the modern workplace is *Competence in Reading, Writing, and Computation.* Although reading, writing, and computation are essential for success in the present-day job market, alone they are no longer sufficient for success in the 21st century workplace (U.S. Department of Labor, 1991).

These skills have an impact on an employee's willingness and ability to complete assigned work (Casner-Lotto & Barrington, 2006). Academic subjects such as reading and computation are usually taught as core subjects in school. However, seldom are the skills of collaboration, communication, decision-making, and perspective-taking taught formally in school. Currently, many companies see the importance SEL skills play in productivity. Socially competent employees have a positive relationship with fellow employees as well as with customers. Managers have found that employees with a strong SEL skill set are able to problem solve, communicate, and collaborate (Casner-Lotto & Barrington, 2006).

The Partnership for 21st Century Skills conducted a survey in 2006, which included responses from 431 employers regarding the skills employees in their professions and industries would need to succeed (Casner-Lotto & Barrington, 2006). The survey asked employers to rank 20 skill areas they considered to be related to success in their profession or industry. Five skills emerged from this survey as being

important for those finishing high school: professionalism, teamwork, oral communication, ethics, and reading comprehension. As found in the U.S. Department of Labor (2000) Workplace Essential Skills, these five skills and the seven skills from the SCANS 2000 report indicate that SEL competencies are identified as elements of a successful workforce (Casner-Lotto & Barrington, 2006).

Social, emotional, and academic success for children is rooted in educational instruction (Zins et al., 2004). Successful SEL programs include developing skill activities through role-play. Programs that target specific social and emotional skills and devote instructional time to the teaching and implementation of the program have shown the most in positive gains in maintaining a safe and caring school environment (Zins et al., 2004).

In an effort to look at the connectedness experienced by a student with his or her teacher and student participation in high-risk behaviors such as gang membership, or substance abuse, researchers at the University of Chicago collected information from a sample of 550 individuals between 14 and 18 years of age who had been incarcerated for up to three days (Voisin et al., 2005). With an intent to limit literacy concerns due to participant reading difficulties, researchers had the participants respond to audio-computer-assisted self-interviewing (A-CASI). Through this research, it was found that adolescents who reported a low level of connectedness to their teacher also reported a higher level of high-risk behaviors. In the same survey that the participants were asked eight questions on a 5-point Likert scale. The respondents who had a higher rating of

teacher connectedness also reflected a lower level of high-risk behaviors (Voisin et al., 2005).

The most compelling findings documenting the positive impact of SEL instruction come from a 2008 meta-analysis conducted by the University of Illinois and Loyola University in Chicago. This review was a large, scientifically rigorous review of research on interventions that promote the social and emotional development of students between the ages of 5 and 18 (Payton et al., 2008). This research demonstrates participation in a SEL program resulted in an 11% higher grade point average compared those students who did not participate in a SEL program (Payton et al., 2008). Payton et al., measured academic performance using standardized reading or math achievement test scores from formal measures, such as the Stanford Achievement Test or the Iowa Test of Basic Skills, and report card grades in specific subjects of reading and/or math. The implementation of a SEL program resulted in positive results on standardized tests.

Within the 2008 meta-analysis, Payton et al., used three types of review to examine the impact of implementing a SEL curriculum with students. The three types of review included a universal review, an indicated review, and an after-school review. The studies included in the meta-analysis addressed one or more of the SEL competencies. The study group included participants between the ages of 5 and 18. Also included was a control group (Payton et al., 2008). The universal review included 180 school-based studies with a sample size of 277,977 students. This review focused on SEL lessons being taught to all students and the academic outcomes. The second review was an indicated review, which included 80 studies with a sample size of 11,337 students. This indicated

review focused on students with undiagnosed social, emotional, or behavioral problems

receiving a targeted SEL intervention. The third review was the after-school review

consisting of 57 studies with a sample size of 34,989 students. The focus was on

programs offered outside of the school day with a goal of improving personal and social

skills.

The universal review, as previously introduced, included 180 school-based studies

with approximately 280,000 students. This review reported an increase in the social-

emotional skills and reduced conduct problems with students who had participated in the

SEL program (Payton et al., 2008). Payton et al. report that in more than 50% of the

schools, the classroom teacher was responsible for the SEL program implementation; the

most common program length was one semester to a full school year. In addition to

growth in SEL skills, Payton et al. found improvement in outcomes related to student

attitudes, behaviors, and performance, as well as improvement in skills and emotional

distress. Payton et al. found

- 23% improvement in social and emotional skills, e.g., self-awareness, self-
  management, etc;

- 9% improvement in attitudes about self, others, and school, including higher
  academic motivation, stronger bonding with school and teachers, and more
  positive attitudes about school;

- 9% improvement in pro social school and classroom behavior, e.g., following
  classroom rules;

- 9% decrease in conduct problems (behavior), such as classroom misbehavior and aggression;

- 10% decrease in emotional distress, such as anxiety and depression; and

- 11% improvement in academic performance, e.g., standardized achievement test scores (Payton et al., 2008)

Within the Payton et al. (2008) meta-analysis, there were also findings related to SEL implementation. Students achieved significant gains across all six outcome areas only when

1. The SEL program was implemented with fidelity to the program design;

2. Teachers were the primary facilitators of the SEL instruction; and

3. SEL programs were characterized as **S**equenced, **A**ctive, **F**ocused, and **E**xplicit (SAFE)

It is important to note that although the implementation of SEL programs requires instructional time during the school day, this does not detract from student academic performance. As the findings of the Payton et al (2008) meta-analysis show, although student academic performance was improving, so too were student feelings about self, others, school, classroom behavior, and emotional problems. This research supports a belief that social and emotional instruction can positively influence a child's success in both school and life. In order to be successful, SEL programs should be based on both theory and research, teach SEL application, provide a caring environment, be developmentally appropriate, engage families, and provide staff support (Zins et al., 2004).

As shared in detail, the meta-analysis reported by Payton et al. (2008) indicate that the implementation of a SEL curriculum in the elementary grades has a positive impact on addressing areas of social and emotional concern, such as antisocial behaviors, problem-solving, positive self-concepts, and promoting academic integrity (Payton et al., 2008). Students typically do not learn social skills alone but instead acquire these competencies through collaboration with their peers, teachers, and family members. Because of the interconnectedness of these relationships, schools are inherently well suited to address these social, emotional, and academic concerns (Durlak, Dymnicki, Taylor, Weissberg, & Schellinger, 2011).

Additional research completed by Blum, Libby, Bishop, and Bishop (2004) found that students who were better able to recognize their strengths as well as their areas of challenge were more likely to succeed in a diverse school and community culture, where they were encouraged to participate and be engaged in the classroom as well as in community involvement. SEL programs teach students to build upon the skills and dispositions that form a solid foundation for what is recognized as a good character and a contributing, responsible citizen. Some students come to school prepared for both the academic and social rigors that require astuteness in these areas, but others are less prepared and perform below their potential (Blum, et al., 2004).

Although addressing the social, emotional, and academic concerns at the elementary school level was the focus of this research, benefits have also been seen in students as they move into middle and high school. Students who participate in SEL curriculum programs during elementary school are not as prone to commit "high-risk"

behaviors when they reach the middle and high school grades (Hawkins, Catalano, & Miller, 1992). These "high risk" behaviors include illegal use of alcohol, drugs, and violence that diminish student availability for learning. Reduction in rates of out-of-school suspensions at the middle and higher grades have also been linked to SEL programming (Taylor & Dymnicki, 2007). Research conducted by Taylor and Dymnicki includes a follow-up data collection on a subset of students involved in the Payton et al. (2008) meta-analysis. This research included 44 studies from the original in the universal and indicated reviews and reviewed follow-up data gathered six months after the SEL program interventions had ended. The findings documented effect sizes from 0.14 to 0.21, which reflects a small significance in change on the participants, SEL skill areas and academic performance (Taylor & Dymnicki, 2007). This research documents that the positive impact of SEL instruction can be sustained beyond the time period of the intervention and specific curriculum instruction. This work has been critical to support the positive implications for early implementation of SEL in schools.

As a result of adopting a research based SEL curriculum and implementing it with the support and supervision of teachers and school administrators, the school climate becomes more respectful. The students who have been taught SEL skills are reported to have fewer discipline issues and better attendance, all of which contribute to a more stable school climate (Durlak, Weissberg, & Pachan, 2010; Zins et al., 2004). SEL programming enhances the student-school connection. An increase in pro social behavior and reduced conduct problems have been reported, along with improved academic performance on achievement tests (Payton et al., 2008). As a national leader in the

implementation of SEL, Illinois's educational policy was the first in the nation to include a set of learning standards for preschool through high school (Gordon, et al., 2011). The following section details the historical perspective of SEL development within the state of Illinois.

Social and Emotional Learning Programs

Two different SEL instructional programs were utilized in this study. First-grade classrooms used *Second Step,* a program authored by Kathy Beland: fourth-grade classrooms used *Connected and Respected,* a curriculum originally authored by Harrison and Breeding (2007). Both of these programs were designated as "SELect" in the CASEL (2012) guide. This guide offers schools a framework reviewing recommended SEL programs. The *2013 CASEL Guide: Effective Social and Emotional Learning Programs-- Preschool and Elementary School Edition* is a resource for schools to consult when selecting an SEL program. Programs are rated on a scale indicating minimal, adequate, or extensive. In order for a program to be recommended by SELect, it must be multi-year and promote the five SEL competencies: self-management, self-awareness, responsible decision making, relationship skills, and social awareness. The program must also include professional development and materials to support the classroom teacher during implementation. Finally, to be designated as a SELect program, the program must be evidence-based and have at least one evaluation reflecting an improvement in student academic or social behavior. Current Illinois law requires public schools to implement programs that have a focus on the assessment of a child's skill level in the area of SEL,

much as skill assessments are required in other core academic areas including math, reading, and writing.

Assessment of SEL Skills

As detailed in the section on research, educators are able to impact a child's social and emotional learning profile positively by implementing a sequenced, active, focused, and explicit SEL curriculum (Payton et al., 2008). With the leadership of organizations such as CASEL, a defined set of skills and common vocabulary exist to consider student growth with SEL skill development (Elias et al., 1997). A key question that needs to be answered relates to the assessment of SEL skills. How can schools assess social and emotional skills for all students? There is a relative scarcity of easy-to-implement tools to use in assessing student SEL skills. In order to assess program implementation and consider student skill, as schools do readily in the academic areas, assessment tools must also be used to consider baseline SEL skills. Similar to the assessment model used in academic monitoring, schools must define baseline skills and identify students who are in need of further monitoring or tiered intervention to promote growth and development of SEL skills. This study focuses on two areas of SEL skill assessment: peer connections and emotion recognition. The goal of assessment related to these skills is to capture student assessment data and consider baseline data. Educational teams may review the data and consider grade-level interventions and/or more focused individualized student interventions. More specific details and challenges are discussed as follow with reference

to the assessment of the two areas of SEL skill development that are the focus of this study.

Lipton and Nowicki (2009) point out that social and emotional learning involves the comprehension of social-emotional information and the execution of behaviors within a social context. A variety of methods are available to assess student skill; however, not all methods target both the comprehension and execution components of a SEL skill. Rating scales such as the Social Skills Improvement System (SSIS) (Gresham & Elliott, 2008), formerly known as the Social Skills Rating System (SSRS) (Gresham & Elliott, 1990), may be used with children ages 3-18. This screening tool measures social skills and behaviors as reported by teachers, parents, caregivers, and students. The SSIS is administered individually and takes from 10-25 minutes. Such scales record the adult perspective and capture observational data of a child. Observation remains the simplest and most cost-effective option to capture a picture of a child across several contexts. This option is inefficient for gathering assessment SEL data for a class or grade level of students.

Dating back to the 1930s, sociometric assessment has been used to gather information directly from a group of students (Whitcomb & Merrell, 2013). Unique to this form of assessment, the data for an individual student are gathered directly from peers and provides a perspective on the social connections within a group. Sociometric assessment provides an option for measuring peer acceptance and rejection within a classroom grouping of students. Students in a classroom may be asked a question such as, "Which classmates do you like to spend time with?" The individual student responses are

recorded on a social diagram, or social map, and used to consider the connections among the students. Figure 2 represents an example of a second-grade classroom social map depicting two-way connections among students. Female students are represented by the orange label, and the male students are represented with the purple label.
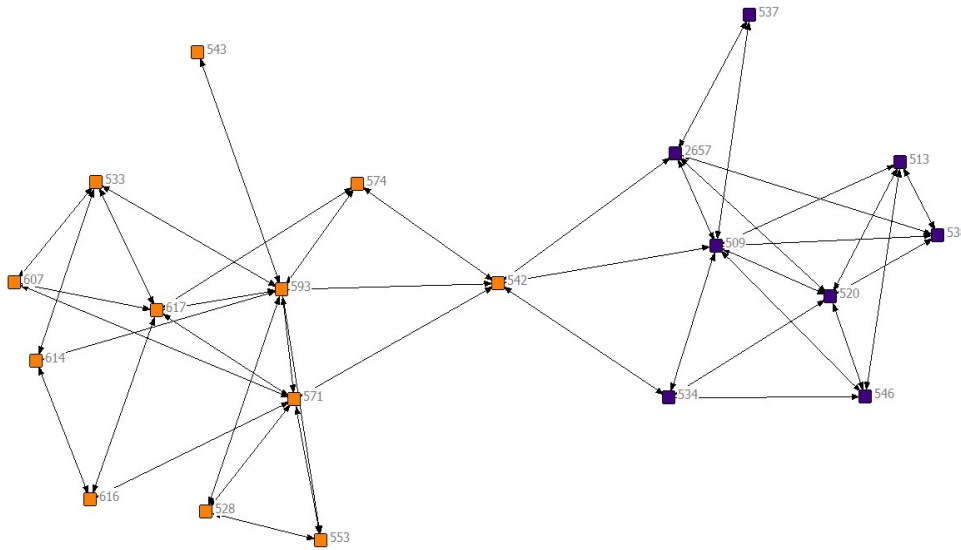

Figure 2. Second-Grade Social Map

Peer connections and sociometric ratings have been shown across several studies to be predictive of future student social standing. Supported by research documenting childhood social adjustment as a significant predictor of adult maladjustment (Roff, 1961; Roff et al., 1972), peer relation data may be used to determine a student's current status and also predict future social challenges the student may encounter. The research conducted by Roff shows that children rejected by peers in elementary school were also rejected by peers in later years. Although the sociometric assessment procedures may

take many forms and include varying questions, research has shown this method to be a positive option for assessing social status and peer relations (Whitcomb & Merrell, 2013).

Options to assess a child's ability to recognize the feelings of others involve being able to discern the emotions of others by observing facial expressions, tone of voice, or body language. The most common assessments are individually administered and require a trained professional to work directly and individually with a student to gather assessment information. In addition, such assessments are typically hand-scored to gain the final results. Denham (2006) created the Affect Knowledge Test (AKT) to assess emotion recognition with preschool children. Puppets are used with interchangeable faces to evaluate a child's knowledge of emotions. The AKT requires a trained professional and takes approximately 10 minutes to administer to each child. Another assessment is the Child and Adolescent Recognition of Emotion, which includes five subtests to assess facial emotion recognition and posture recognition in children ages four to six. Each of these assessments must be administered individually by a trained professional. Thus, administering an individualized assessment across an entire classroom or grade level is both time-consuming and resource-intensive.

Thus, a need exists for cost-effective and easy-to-administer SEL assessment tools for use in schools. Such tools, if administered economically and ethically in terms of teacher, parent, and child time, can be useful in monitoring the success of SEL instruction and support successful programs for children (Raver, 2003; Raver & Zigler, 1997). The ability to determine a child's baseline SEL skill level efficiently and measure growth over a school year would allow schools to monitor SEL progress similar to the

way schools currently measure reading or math skill development across a school year. Performance-based tools designed to measure individual student SEL skill development efficiently are not readily available for use in schools. RNBC has developed a computerized performance-based assessment tool to allow schools to gather SEL assessment data across classrooms and grade levels. The tool is grounded in the research of Malecki and Elliot (2002) and Parker and Asher (1987), which links social rejection to increased risk for challenges with underachievement, school dropout, criminal activity, and need for psychiatric support. RNBC's goal is for its assessment tool to be implemented as a universal screening option that schools may use to identify students who are at risk for social rejection or exhibit a low level of social acceptance. A detailed description of this assessment tool is shared within the instrumentation section of Chapter 3.

This study uses the RNBC computerized performance-based assessment tool to collect data from students on two key SEL modules: peer connections and emotion recognition. There are positive implications for school-based student interventions using the data from these modules. The following section reviews supporting research in the two module areas used in this study.

<center>Peer Connections</center>

Sociometric assessment used in a classroom setting involves the direct gathering of information from peers in the classroom; these data are related to the social dynamics of the peer group (Whitcomb & Merrell, 2013). Sociometric assessment data allow

researchers to gather peer data directly from the group members rather than using observational data. As previously discussed, the use of performance-based and direct measures allow for more accurate skill information for a child outside of what may be observed (Merrell & Gimpel, 1998). Peer connections, or peer acceptance data, must be gathered using a classroom sociometric measure. The benefit of peer connection information is discussed as follows.

In the early 1980s, there was a resurgence of interest in using sociometric assessment to gather data on peer relations. This push to gather direct peer data was prompted by research showing that childhood social adjustment is a significant predictor of adult maladjustment (Roff, 1961; Roff et al., 1972). The research conducted by Roff showed that children rejected by peers in the elementary school years were also rejected by peers in later years. More recent research conducted by Parker and Asher (1993) suggests that between 6% and 11% of upper elementary children do not have two-way reciprocated friendships. A two-way (or reciprocated friendship) is when a student selects a peer as a friend and that same peer has nominated the student as his/her friend.

Within their research, Parker and Asher (1993) found that having a friend and the friendship quality were important predictors of loneliness. Bukowski, Pizzamiglio, Newcomb, and Hoza (1996) examined the close association between popularity and friendship and found support for the idea that being liked by the group is an antecedent to friendship development. They found a larger social network affords a child more opportunities for friendship formation (Bukowski, et al., 1996).

In research conducted by Coie and Dodge (1983), annual sociometric data were gathered on a sample of third and fifth graders across a five-year period. Annual data reflected the social status change and four types of social status (popular, rejected, neglected, and controversial) for each of the children. As peer nomination data were collected, students were asked to name three classmates whom they liked most and three whom they liked least. Data showed that the majority of the students who were labeled as rejected did not make shifts toward a most positive social status over the five-year period (Coie & Dodge, 1983). The identification of students as rejected or socially isolated is a critical step to accomplish prior to considering ways to support students.

Coie and Dodge (1983) collected sociometric peer nomination data across the entire grade level; students were given a grade-level list of classmates to select peers. For the purposes of this study, an area warranting further investigation is classroom-level sociometric data and the changes in a classroom social dynamic occurring over the course of a school year. As Coie and Dodge determined, identification of rejected students is critical in determining the need for intervention. This study uses the RNBC's new SEL assessment tool to gather assessment data.

Gender has also been documented as a distinguishing factor in peer connections (Eder & Hallinan, 1978; Xie & Shi, 2009). Eder and Hallinan examined the patterns of friendship and compared gender differences by gathering sociometric data from fifth-and-sixth-graders in five classrooms across an academic year (Eder & Hallinan, 1978). The researchers collected data seven times throughout the school year. Students were asked to name their best friends. Eder and Hallinan analyzed the data considering same-sex

choices using four possible friendship connections: no connection, a dyad connection, a triad connection with reciprocal connections across one pair, and a triad connection with reciprocal connections across two pairs of friends (Eder & Hallinan, 1978). The results confirmed that girls' friendship connections remained consistent throughout a school year boys' peer connections increased across the school year. Gender differences and segregation of friendships emerge in the early preschool years and have been seen across cultures (Xie & Shi, 2009). Although past research has examined gender differences and friendship connections at specific grade levels, the current study offers the opportunity to explore peer connections and gender differences across the first-through fourth-grade levels.

<div align="center">Emotion Recognition</div>

Widen and Russell (2010) found that the recognition of emotions relies upon emotional understanding. The ability to recognize a non-verbal emotion through facial expression is a concept that begins to emerge early in infancy. The understanding of the emotion is different from the recognition of the emotion. The understanding of the emotion is dependent on the child's ability to recognize facial expressions and perceive the cause and/or consequences of the emotion portrayed in the facial expression. Widen and Russell's study examined whether a facial expression could result in a child's emotional recognition. The study included 120 four to ten-year-old children and focused on six basic-level emotions; happiness, anger, fear, surprise, disgust, and contempt. Widen and Russell also introduced three social emotions, referenced as higher-level

emotional concepts: embarrassment, compassion, and shame. The study found that younger children were able to recognize the social emotions, and older children were able to recognize and distinguish the social emotions from the basic-level emotions, implying a higher level of understanding of the emotion (Widen & Russell, 2010).

The Widen and Russell (2010) study shows that the six basic-level emotions emerge early in childhood and the understanding of the more complicated social emotions, such as embarrassment, compassion, and shame becomes apparent later in childhood. The ability to differentiate these six basic emotions from more complicated social emotions materialized as the children matured (Haidt & Keltner, 1999). Though the Haidt and Keltner study was conducted on an adult, cross-cultural population, the findings support Widen and Russell's conclusion that the ability to recognize emotions emerges with maturity.

Widen and Russell's (2010) research found younger children, i.e., kindergarten and first grade, were able to differentiate sadness from shame. Preschool children were not able to make this distinction when presented with a picture representation. However, preschool children were able to differentiate sadness from shame when presented with a story and an accompanying pictorial representation (Widen & Russell, 2010). This research also shows that children in second and third grades were able to make the distinction between sadness and shame without an accompanying narrative script. This research demonstrates that younger students were able to differentiate among emotions when the presentation was accompanied by a script, whereas older students were able to make the same differentiation by viewing facial emotions alone.

Similar research with 168 preschool children by Widen and Russell (2008) indicates that younger children were able to identify basic emotions of happiness, sadness and anger but older children were able to identify the more complex emotion of fear. Widen and Russell's (2010) research shows there was a higher level of ability of emotion recognition as the child aged. This current study investigates elementary school student ability to recognize subtle facial expressions. Widen and Russell determined that emotion recognition follows a developmental progression, and the current study uses a new assessment tool to assess a child's facial recognition skill using a more sensitive range of facial emotions.

Gender has also been documented as a distinguishing factor in emotion recognition ability (Hall & Matsumoto, 2004; Matsumoto, et al., 2000). Women have shown a greater accuracy in labeling nonverbal emotion samples (Hall, et al., 2000). Hall and Matsumoto (2004) examined the responses of male and female participants and viewing facial emotion expressions. The researchers collected data from 27 female and 69 male undergraduate students at the University of California, Berkley. Hall and Matsumoto utilized the Matsumoto and Ekman's (1988) Japanese and Caucasian Facial Expressions of Emotion (JACFEE) test. Participants viewed the facial representations, one at a time, for 10 seconds. The faces appeared in random order and participants rated the presence of seven emotions; anger, contempt, disgust, fear, happiness, sadness, and surprise. A 9-point scale was used to rate the level of emotion with 0= not at all, 1=a little, 4=moderately, and 9=a lot (Hall & Matsumoto, 2004). The results confirmed that women were more accurate and correctly rated emotions more often than men. Although past

research has examined adult ability to recognize gender differences and emotion recognition, the current study explores emotion recognition ability and gender differences with a population of elementary school children.

Research Questions

As reflected by this literature review, not enough is known about the relationship between peer connections and emotion recognition skills. In addition, there is a paucity of research examining these key social and emotional skills among elementary school children in the general education setting. Because this is a new area of research, there are few, if any, existing measures that allow for sociometric data collection across the two identified skills areas within a school setting. Current measurement procedures could be improved to provide timely, reliable, and valid assessment of social emotional skills in elementary school children. As such, one of the primary goals of this study is to provide a review of sociometric assessment data collected using a newly developed SELweb[TM] tool. The research questions presented as follows guide this exploration.

Research Question 1: How does social emotional skill development in the area of peer connections change within one academic year for first- and fourth-grade boys and girls?

Previous research indicates boys that typically increase their peer connections within a school year and interact within larger peer groups (Eder & Hallinan, 1978). Consequently, girls tend to maintain a more consistent number of peer connections across a school year. Although Eder and Hallinan conducted research across a smaller sample

set of fifth and sixth graders, it is predicted that boys will consistently show stronger peer

connections than girls at the first- and fourth-grade levels.

Research Question 2: How does social emotional skill development in the area of nonverbal emotion recognition change within one academic year for first and fourth grade boys and girls?

Previous research indicates that older children perform more accurately on facial

emotion recognition tasks (Widen & Russell, 2010). According to Widen and Russell,

children above the age of 10 were able to recognize and distinguish complex social

emotions from the more basic-level emotions. Children demonstrate an increasingly

sophisticated ability to recognize emotions as they age. It is hypothesized that fourth-

graders will show a larger growth in emotion recognition across one academic year. In

addition, prior research indicates that females are more accurately able to label nonverbal

emotions (Hall & Matsumoto, 2004). Although past research has examined gender

differences and emotion recognition ability at the adult level, this study predicts that girls

will show consistently stronger emotional recognition ability than will boys at the first-

and fourth-grade levels.

CHAPTER 3

METHODOLOGY

Participants

The study included approximately 130 first-grade students and 130 fourth-grade

students from two grade-centered public elementary schools in one Illinois school district.

There are approximately 1,300 total students in the school district. The schools are

located in a suburban community with an approximate population of between 8,000 and

10,000 residents (according to 2010 census data) located within a 20-mile radius of

Chicago. The majority of residents hold advanced degrees and are typically employed in

business or professional fields. The four-square-mile community is a highly stable,

primarily residential community comprised of approximately 90% owner-occupied

housing units and having an annual mobility rate of less than 5%. The ethnic make-up of

the school district in 2012 was 91.8% White, .2% Black, 2.1% Hispanic, 3.1%

Asian, .0% Native Hawaiian/Pacific Islander, 0.1% American Indian, and 2.7% two or

more races. The SES makeup of the school district was 3.3% low income, 0.6% limited

English proficiency, and 14.7% students with IEPs.

Research Design

The overall research design is quasi-experimental research with nonequivalent

group design. Within the current study, de-identified data were analyzed from first- and

fourth-grade classrooms. Within the sample set, there was neither randomized assignment

nor was there a control group in the classroom groupings represented in the first and

fourth grade samples. The statistical method was an analysis of variance (ANOVA); the

analysis utilized a pre- and post-test model. The sample set includes November 2012 and

May 2013 data for each student within the sample. Within the analysis, the independent

variables were gender and grade. These two variables are inherently not manipulateable.

The dependent variable varied based upon the two research questions.

Instrumentation

The study used a computerized performance based assessment tool developed by

RNBC to gather SEL assessment data across classrooms and grade levels. RNBC intends

the tool to be implemented as a universal screening assessment to identify those students

who are at risk for social rejection or exhibit a low level of social acceptance. The

assessment modules designed by RNBC are intended for students in kindergarten through

fourth grade. Henceforth, the RNBC modules is named SELweb[TM]. During the 2012-

2013 school year, RNBC conducted a validity study of SELweb[TM] with a diverse sample

of 1,239 students ranging from kindergarten to third grade (McKown, Allen, Russo-

Ponsaran, & Johnson, 2013). Results demonstrated that SELweb[TM] exhibits strong

reliability and convergent and discriminant validity. Student performance on the

computer-based modules is positively related to classroom teacher reports of student

social-skill levels (McKown et al., 2013).

The SELweb[TM] assessment includes seven modules, each designed to measure a

dimension of SEL. SELweb[TM] is a computerized assessment instrument using a host,

termed "the professor," to guide students through each module. To limit any bias based

on reading ability, verbal directions are also provided. The length of time to complete a

single module varies from 5 to 15 minutes based on the tasks included. The time to

complete all seven modules varies from 45 to 60 minutes, as documented across

classrooms. Of the seven modules, this study used the results from the *Peer Nomination*

(peer connection as shared in the results section) module and *Nonverbal Emotion*

Recognition module.

The first module within SELweb[TM] is *Peer Nomination.* Within the Peer

Nomination module, a student views the names of each child in their classroom. The

student is asked to "click on the names of the children you like to spend time with" and

their responses are recorded to generate a peer-preference score and a social map.

The second module within SELweb[TM] is *Nonverbal Emotion Recognition.* Within

the Nonverbal Emotion Recognition module, faces of children appear individually and

the student identifies the face as happy, sad, scared, or just okay. Each emotion is

presented to the student with varying levels of intensity of emotion on the face shown.

The faces are male and female, and the student identifies approximately 45 faces in this

module.

The third module within SELweb[TM] is *Choice Delay Task* and is designed to measure self-regulation. Within the Choice Delay Task module, the student has 10 opportunities to earn points when sending a rocket ship into space. The student is directed to "gain as many points as possible" before beginning the task. Selecting Rocket 1 is fast but gains one point; selecting Rocket 2 is medium speed with a two-point gain. The selection of Rocket 3 is the slowest with a three-point gain.

The fourth module within SELweb[TM] is *Perspective Taking* and is designed to measure a student's ability to infer the intention of another person. Within the Perspective Taking module, the student is presented with 12 stories with auditory and visual representation. At the end of each story, the student is asked to answer questions related to the story and the context of the scenario. The student is asked to infer a person's intention and feelings within the 12 scenarios.

The fifth module within SELweb[TM] is *Choice Delay (Comet & Bear)* and is designed to measure a student's ability to self-regulate. Two dogs, Comet and Bear, guide the students as several statements are made. Comet might say, "I like waiting in line." and Bear might say, "I hate waiting in line." The student is asked to select which dog he/she is most like. The student completes 10 items from Comet and Bear.

The sixth module within SELweb[TM] is *Social Problem-Solving* and is designed to measure a student's ability to think through complex social situations. Within the Social Problem-Solving module, the student listens to six social scenarios, including more unclear social challenges such as a peer attempting to enter a group and a peer being bumped on the playground. The student is asked several questions pertaining to the social

exchange ("How would you feel?" or "Do you think what happened occurred by accident or on purpose?") and the student is asked how he/she would respond if he/she were in the similar situation.

The seventh module within SELweb^{TM} is *Delay of Frustration* and is designed to measure a student's ability to tolerate frustration with a task. It may also be described as a matching task as the students are presented with two images on the screen and asked to press "yes" if they are the same and press "no" if they are different. The student is told to go as fast as possible and to get as many correct as possible. Within this task, the button is preprogrammed to become "stuck." The system records the student clicks on the mouse to gather information about student actions when the yes/no button is stuck. Students are given three minutes to complete this activity. The administration time is approximately 50 minutes for all SELweb^{TM} modules. Based on age and attention span, RNBC recommends that the assessment be delivered across two sittings to ensure that students are more closely engaged in the tasks (McKown, 2012). The results are reported by individual, class, and grade level. This information may be used to develop age-based norms and consider a child's profile across several areas of skill and behavior. Although SELweb^{TM} contains seven modules to gather assessment data, for the purposes of this study, three modules were deemed a priority for further review: peer nominations, nonverbal emotion recognition, and social problem-solving. These three modules were identified when considering the practical implication of Tier 1 classroom based interventions for social and emotional learning skills. Specific recommendations for such classroom interventions are revisited in Chapter 5.

Procedure

This study includes the analysis of student data that were previously collected as a component of the school district annual assessment plan. In preparation for the proposed study, submission was made for Institutional Review Board (IRB) approval from Northern Illinois University (NIU). The NIU IRB that determined the study was exempted from the requirements of IRB approval, as de-identified data would be used for analysis.

Data collection occurred at a time determined by school administration. For the purposes of longitudinal data, the full SELweb^{TM} assessment was administered to all students in first through fourth grade at two time points in the school year. Students participated in the assessment in November 2012 and May 2013.

In preparation for the administration of SELweb^{TM}, student rosters for both first and fourth grade were uploaded to the RNBC secure student data server. Student photographs were also uploaded for the first-grade students to assist in children identifying their peers. This information was accessed as students entered the secure online portal for assessment administration. All assessments were administered in a computer lab group setting ranging from 18 to 22 students per group. Computers were prepared for the administration of SELweb^{TM}, and the secure SELweb^{TM} website was loaded on all machines. Each computer had a pair of headphones attached to allow students to hear the auditory directions, which were shared within each module. Classroom teachers signed up for a lab space for two 45-minute periods to complete the SELweb^{TM} administration in the fall and spring term.

Prior to the first administration of SELweb[TM], a team from RNBC conducted an on-site training to review the assessment and the modules. A sample assessment was completed to allow the teachers to preview the assessment and understand the expectations of the assessment for the students. A handout with reminders for each module was created and shared with all classroom teachers (see Appendix). Within this handout, potential student questions and teacher responses were documented to provide model responses for the teachers when monitoring the lab during SELweb[TM] administration. During each administration of SELweb[TM], a school psychologist and school administrator shared the initial directions and reminders for the session. A consistent team member was present at all testing administration sessions.

As students entered the lab for each SELweb[TM] administration, students were gathered for initial instructions; these instructions were consistent across all administration sessions. Students were guided to take a seat at a computer station and an administrator selected the appropriate class and student name from the SELweb[TM] administration website. This step ensured the student was matched with the correct name and class code. All SELweb[TM] administration sessions occurred in a quiet environment, free from external distractions. Students were directed to raise their hand should they require assistance with any portion of the SELweb[TM] assessment. During the entire SELweb[TM] assessment session, the classroom teachers also remained as a support within the lab setting. Classroom teachers, the school psychologist, and the school administrator were available to provide assistance to students.

The full administration of SELweb[TM] was completed in a two-week period in the fall and spring testing window. If a student was absent during the scheduled class assessment period, a make-up session facilitated by the school psychologist was scheduled when the student returned to school.

CHAPTER 4

RESULTS

In order to examine the relationship among the primary study variables,

descriptive statistics were conducted (see Table 1 for sample size, means, and standard

deviations for primary study variables and Table 2 for correlations among primary study

variables).

Primary Analyses

Research Question 1 asked, "How does social emotional skill development in the area of peer connections change within one academic year for first- and fourth-grade boys and girls?"

Prediction 1: It was predicted that boys would show stronger peer connections than girls

(not supported).

Prediction 2: It was predicted that fourth-grade students would show stronger peer

connections than first-grade students (not supported).

In order to examine Research Question 1 and the corresponding predictions, a 2

(gender) X 2 (grade) ANOVA was conducted. The independent variables were gender

(boys, girls) and grade (1st, 4th), whereas the dependent variables were change over time

on Peer Connections (Spring score, Fall score). Results of the analysis (shown in Table 3)

indicate the gender X grade interaction term did not yield significant results, $F = 0.46$ (1, 235), $p = 0.50$. Similarly there were no significant main effects for gender, $F = 2.21$ (1, 235), $p = .14$, indicating that the mean change score for boys (M = -1.41, SD = 17.14) did differ significantly from the mean change score for girls (M = 1.80, SD = 15.90). Also, the main effect of grade was not significant, $F = 0.06$ (1, 235), $p = 0.80$, indicating that the mean change score for first graders (M = 0.00, SD = 12.74) did not differ significantly from the mean change score for fourth graders (M = 0.02, SD = 19.78). Two-way ANOVA is a robust method and can handle all but extreme violations of assumptions (Field & Hole, 2003 (see Tables 4 and 5 for details regarding these results). Because Levene's Test was significant, $F = 7.85$ (3, 231), $p < .001$, indicating that the assumption of homogeneity of variance was not met among the groups with respect to the dependent variable, a Kruskal-Wallis test was also conducted in order to make certain that significant differences did not exist among groups. With respect to the main effect of grade, the Kruskal-Wallis test yielded nonsignificant results, H (1) = .000, $p = .992$. The examination of gender via the Kurskal-Wallis test also yielded nonsignificant results, H (1) = 1.94, $p = .164$.

Table 1

Descriptive Statistics

	N	Min	Max	Mean	SD
Grade	235	1.00	4.00	2.52	1.50
Gender	235	.00	1.00	.56	0.50
Special Education	235	.00	1.00	.09	0.29
Peer Preference – Fall	235	63.26	143.06	100.00	14.68
Peer Preference – Spring	235	59.67	145.07	100.01	14.74
Emotion Recognition. – Fall	235	48.11	136.14	100.00	14.97
Emotion Recognition – Spring	234	28.85	159.84	104.27	18.12
Perspective-Taking – Fall	235	12.37	129.22	100.00	14.97
Perspective-Taking –Spring	233	48.25	121.52	103.60	11.51
Delay of Gratification – Fall	235	29.97	120.76	100.00	14.97
Delay of Gratification – Spring	234	34.30	120.74	104.64	15.18
Frustration Tolerance – Fall	233	28.64	122.45	100.00	14.97
Frustration Tolerance – Spring	233	50.00	122.52	104.58	12.64
Problem Identification – Fall	234	64.55	124.69	100.00	14.97
Problem Identification – Spring	233	47.55	126.67	99.25	16.47
Social Goal – Fall	234	68.14	134.41	100.00	14.97
Social Goal – Spring	233	50.00	107.70	100.66	12.30
Chooses Positive Solution – Fall	234	60.62	126.80	100.00	14.97
Chooses Positive Solution – Spring	233	50.00	129.23	103.10	17.35
Peer Connection Change	235	-40.94	56.58	.01	16.65
Emotion Recognition Change	234	-71.74	69.55	4.16	21.04
Social Problem Solving Change	232	-67.87	56.37	3.28	20.23

Table 2

Pearson Correlation Matrix among Variables

		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Peer Pref. Fall	.36**	.08	-.10	.07	-.03	.29**	.16*	.18**	.01	.16*	.18**	-.03	.05	-.09	.07
2	Peer Pref. Spring		.12	.10	.16*	.05	.08	.20**	.04	.17**	.12	.28**	.08	.04	-.01	.24**
3	Emotion Rec. Fall			.20**	.21**	.15*	.17**	.19**	.01	-.04	.11	.09	.05	.02	-.10	.21**
4	Emotion Rec. Spring				.07	.20**	-.01	.19**	-.12	.05	.05	.20**	.03	.04	.01	.21**
5	Pos. Solut. Fall					.22**	.13*	.07	-.03	-.08	.15*	.12	.03	.05	-.07	.21**
6	Pos. Solut. Spring						.05	.13*	-.04	.05	.12	.18**	.13*	-.01	-.07	.46**
7	Pers.-Taking Fall							.32**	.21**	.07	.29**	.10	.09	.09	-.12	.03
8	Pers.-Taking Spring								.07	.27**	.21**	.24**	.00	.16*	-.17*	.24**
9	Delay of Grat. Fall									.27**	.12	-.05	.09	.16*	-.03	.04
10	Delay of Grat. Spring										.03	.21**	.03	.08	.05	.14*
11	Frustration Tol. Fall											.14*	.07	.07	-.18**	.11
12	Frustr. Tol. Spring												-.01	.09	-.09	.19**
13	Problem Id. Fall													.19**	-.18**	.07
14	Problem Id. Spring														-.14*	.00
15	Social Goal Fall															-.03

**Correlation is significant at the .01 level (2-tailed).

*Correlation is significant at the .05 level (2-tailed).

Table 3

Univariate ANOVA Examining Change Scores for Peer Connections by Grade-Level and Gender

Source	Df	Mean Square	F	Partial η^2	P
Gender	1	611.78	2.21	0.009	0.14
Grade	1	17.84	0.06	0.000	0.80
Gender x Grade	1	127.82	0.46	0.002	0.50

Table 4

Means, Standard Deviations, and Sample Size for Peer Connection Change by Grade and Gender

	Girls		Boys		Total	
	M (SD)	*N*	*M (SD)*	*N*	*M (SD)*	*N*
First Grade	0.89 (13.32)	58	-0.89 (12.18)	58	0.00 (12.74)	116
Fourth Grade	2.94 (18.74)	46	-1.82 (20.32)	73	0.02 (19.78)	119
Total	1.80 (15.90)	104	-1.41 (17.14)	131	0.01 (16.65)	235

Exploratory Follow-Ups to Research Question 1

Were there grade level or gender differences on the Fall or Spring Peer Connections Scores?

In order to examine the exploratory follow-up questions two, 2 (gender) X 2 (grade level) ANOVAs were conducted. The dependent variable for the first ANOVA was the Fall Peer Connections Score, and the dependent variable for the second ANOVA was the Spring Peer Connections Score. Results of the first ANOVA examining Fall Peer

Connection scores determined that there were nonsignificant results for gender X grade interaction term, $F = 0.65$ (1, 235), $p = 0.42$. Similarly, the main effect for grade yielded nonsignificant results, $F = 0.15$ (1, 235), $p = 0.70$, indicating that the Fall Peer Connections mean score for first grade (M =100.00, SD = 14.74) did not differ significantly from the Fall Peer Connections mean score for fourth grade (M =100.00, SD = 14.68). Conversely, the main effect for gender was significant, $F = 6.51$ (1, 235), $p <.01$. An examination of the mean scores indicates that the mean scores for boys (M = 102.13, SD = 14.52) were higher than mean scores for girls (M = 97.31, SD = 14.49) on the Fall Peer Connections score. Levene's Test was significant for the dependent variable of Fall Peer Connections, $F = 3.88$ (3, 231), $p = .01$, indicating that the assumption of homogeneity of variance was not met. As a result, the Kruskal-Wallis test was conducted in order to make certain that significant differences did not exist among groups. With respect to the main effect of grade, the Kruskal-Wallis test yielded nonsignificant results, $H (1) = .162$, $p = .687$. The examination of gender via the Kurskal-Wallis test yielded significant results, $H (1) = 6.38$, $p = .01$. This verifies that there are indeed gender differences with respect to the Fall Peer Connections score, with boys scoring higher than girls (see Tables 6 and 7).

Table 5

Univariate ANOVA Examining Gender or Grade level Differences in Fall Peer Connection Scores

Source	Df	Mean Square	F	Partial η^2	P
Gender	1	1377.91	6.51	0.03	0.01
Grade	1	30.74	0.15	0.00	0.70
Gender x Grade	1	138.21	0.65	0.00	0.42

Table 6

Means Standard Deviations, and Sample Size for Peer Connections in the Fall by Grade and Gender

	Girls		Boys		Total	
	M (SD)	*N*	*M (SD)*	*N*	*M (SD)*	*N*
First Grade	98.32 (16.70)	58	101.68 (12.39)	58	100.00 (14.74)	116
Fourth Grade	96.04 (11.16)	46	102.50 (16.09)	73	100.00 (14.68)	119
Total	97.31 (14.49)	104	102.13 (14.52)	131	100.00 (14.68)	235

The same ANOVA analysis was conducted, using the Spring Peer Connections score as the dependent variable. Results indicated that there were nonsignificant results for gender X grade interaction term, $F = 0.98$ (1, 235), $p = 0.98$. Similarly, the main effect for grade yielded nonsignificant results, $F = 0.93$ (1, 235), $p = 0.93$, indicating that the Spring Peer Connections mean score for first grade (M =100.00, SD = 14.74) did not differ significantly from the Spring Peer Connections mean score for fourth grade (M =100.02, SD = 14.80). The main effect for gender was also nonsignificant, $F = 0.40$ (1, 235), $p = 0.40$, indicating that the mean scores for boys (M = 100.72, SD = 13.73) were

not significantly different from the mean scores for girls (M = 99.11, SD = 15.95) on the

Spring Peer Connections score (see Tables 8 and 9).

<div align="center">Research Question 2</div>

Research Question 2 asked, "How does social emotional skill development in the area of nonverbal emotion recognition change within one academic year for first- and fourth-grade boys and girls?"

Prediction 1: It was predicted that fourth-grade girls would show the largest growth in non-verbal emotion recognition skills in one academic year (not supported).

In order to examine Research Question 2 and the corresponding prediction, a 2

(gender) X 2 (grade) ANOVA was conducted. The independent variables were gender

(boys, girls) and grade (1st, 4th), and the dependent variable was change over time on

nonverbal emotion recognition (Spring score – Fall score). Results of the analysis

indicate the gender X grade interaction term did not yield significant results, $F = 0.47$ (1,

235), $p = 0.50$. .

Table 7

Univariate ANOVA Examining Gender or Grade-Level Differences in Spring Peer Connection Scores

Source	Df	Mean Square	F	Partial η^2	p
Gender	1	153.41	0.40	0.00	0.40
Grade	1	1.75	0.93	0.00	0.93
Gender x Grade	1	.20	0.98	0.00	0.98

Table 8

Means, Standard Deviations, and Sample Size for Peer Connection in the Spring by Grade and Gender

	Girls		Boys		Total	
	M (SD)	*N*	*M (SD)*	*N*	*M (SD)*	*N*
First Grade	99.21 (15.38)	58	100.79 (14.15)	58	100.00 (14.74)	116
Fourth Grade	98.98 (16.79)	46	100.67 (13.48)	73	100.02 (14.80)	119
Total	99.11 (15.95)	104	100.72 (13.73)	131	100.01 (14.74)	235

Similarly, there were no significant main effects for gender, $F = 0.07$ (1, 235), $p = 0.78$, indicating that the mean change score for boys (M = 3.80, SD = 22.27) did differ significantly from the mean change score for girls (M = 4.60, SD = 19.50). Also, the main effect of grade was not significant, $F = 0.02$ (1, 235), $p = 0.89$, indicating that the mean change score for first graders (M = 4.29, SD = 15.07) did not differ significantly from the mean change score for fourth graders (M = 4.03, SD = 25.59) (see Tables 10 and 11).

Similar to the primary analysis for Research Question 1, Levene's Test was significant for the analyses on Research Question 2, $F = 7.62$ (3, 230), $p < .001$, indicating that the assumption of homogeneity of variance was not met among the groups with respect to the dependent variable. To ensure accurate findings given this assumption violation, a Kruskal-Wallis test was also conducted in order to make certain that significant differences did not exist among groups. With respect to the main effect of grade, the Kruskal-Wallis test yielded nonsignificant results, $H (1) = .156$, $p = .693$. The

examination of gender via the Kurskal-Wallis test also yielded nonsignificant results, *H*

(1) = .563, *p* = .453.

Exploratory Follow-Ups to Research Question 2

Were there grade-Level or gender differences on the Fall or Spring nonverbal emotion recognition scores?

In order to examine the exploratory follow-up question, two 2 (gender) X 2 (grade level) ANOVAs were conducted. The dependent variable for the first ANOVA was the Fall emotion recognition score, and the dependent variable for the second ANOVA was the Spring emotion recognition score. Results of the first ANOVA examining Fall nonverbal emotion recognition scores determined that there were nonsignificant results for gender X grade interaction term, $F = 0.23$ (1, 235), $p = 0.63$. Similarly, the main effect for grade yielded non-significant results, $F = 0.02$ (1, 235), $p = 0.88$, indicating that the Fall nonverbal emotion recognition mean score for first grade (M =100.00, SD = 14.97) did not differ significantly from the Fall nonverbal emotion recognition mean score for fourth grade (M = 100.00, SD = 15.00).

Table 9

Univariate ANOVA Examining Gender or Grade-Level Differences in the Change of Emotion Recognition Development

Source	*Df*	Mean Square	*F*	Partial η^2	*p*
Gender	1	33.42	0.07	0.00	0.78
Grade	1	8.25	0.02	0.00	0.89
Gender x Grade	1	208.66	0.47	0.00	0.50

Table 10

Means, Standard Deviations, and Sample Size for Emotion Recognition Development by Grade and Gender

	Girls		Boys		Total	
	M (SD)	*N*	*M (SD)*	*N*	*M (SD)*	*N*
First Grade	5.62 (13.95)	58	2.94 (16.14)	57	4.29 (15.07)	115
Fourth Grade	3.32 (24.91)	46	4.47 (26.17)	73	4.03 (25.59)	119
Total	4.60 (19.50)	104	3.80 (22.27)	130	4.16 (21.04)	234

The main effect for gender was also non-significant, $F = 3.10$ (1, 235), $p = 0.08$, indicating mean scores for boys (M = 98.47, SD = 15.58) were not significantly different from the mean scores for girls (M = 101.92, SD = 14.00) on the Fall nonverbal emotion recognition score (see Tables 12 and 13).

The same ANOVA analysis was conducted using the Spring nonverbal emotion recognition score as the dependent variable. Results indicated that there were nonsignificant results for the gender X grade interaction term, $F = 1.22$ (1, 235), $p = 0.27$. Similarly, the main effect for grade yielded non-significant results, $F = 0.02$ (1, 235), $p = 0.90$, indicating that the Spring nonverbal emotion recognition mean score for first grade (M = 104.52, SD = 16.89) did not differ significantly from the Spring nonverbal emotion recognition mean score for fourth grade (M = 104.03, SD = 19.30). The main effect for gender was also nonsignificant, $F = 2.84$ (1, 235), $p = 0.09$, indicating that the mean scores for boys (M = 102.46, SD = 18.96) were not significantly different from the mean scores for girls (M = 106.53, SD = 16.83) on the Spring nonverbal emotion recognition score (see Tables 14 and 15).

Table 11

Univariate ANOVA Examining Gender or Grade-Level Differences in the Fall Scores of Nonverbal Emotion Recognition

Source	Df	Mean Square	F	Partial η²	P
Gender	1	694.06	3.10	0.01	0.08
Grade	1	4.76	0.02	0.00	0.88
Gender x Grade	1	50.57	0.23	0.00	0.63

Table 12

Means, Standard Deviations, and Sample Size for Fall Scores of Nonverbal Emotion Recognition by Grade and Gender

	Girls		Boys		Total	
	M (SD)	*N*	*M (SD)*	*N*	*M (SD)*	*N*
First Grade	102.21 (14.83)	58	97.79 (14.97)	58	100.00 (15.00)	116
Fourth Grade	101.56 (13.03)	46	99.02 (16.13)	73	100.00 (15.00)	119
Total	101.92 (14.00)	104	98.47 (15.58)	131	100.00 (14.97)	235

Table 13

Univariate ANOVA Examining Gender or Grade-Level Differences in the Spring Scores of Nonverbal Emotion Recognition

Source	Df	Mean Square	F	Partial η²	P
Gender	1	928.45	2.84	0.01	0.09
Grade	1	5.26	0.02	0.00	0.90
Gender x Grade	1	397.70	1.22	0.01	0.27

Table 14

Means, Standard Deviations, and Sample Size for Spring Scores of Nonverbal Emotion Recognition by Grade and Gender

	Girls		Boys		Total	
	M (SD)	*N*	*M (SD)*	*N*	*M (SD)*	*N*
First Grade	107.83 (15.35)	58	101.15 (17.84)	57	104.52 (16.89)	115
Fourth Grade	104.88 (18.58)	46	103.49 (19.84)	73	104.03 (19.30)	119
Total	106.53 (16.83)	104	102.46 (18.96)	130	104.27 (18.12)	234

A second exploratory analysis was conducted with nonverbal emotion recognition change scores as the dependent variable. Specifically, it was of interest to learn if there were differences in the change scores for students who were identified as qualifying for special education services compared to students who were not identified. An independent sample *t*-test was conducted to examine differences in the nonverbal emotion recognition change score for students who receive special education services compared to those who do not. Because of drastically unequal samples sizes between the two groups (N = 21 for those who qualify for special education and N = 240 for those who did not), a randomly selected sample of 21 students was chosen to form the non-special education comparison group. Results of the independent samples *t*-test were nonsignificant, *t* = -.556 (39), *p* = .581, indicating there was not a statistically significant difference on nonverbal emotion recognition change scores between students who receive special education services (M=7.37, SD = 16.01) and those who do not receive services (M=10.99, SD = 24.99).

CHAPTER 5

DISCUSSION

The computerized assessment tool, SELweb ™, specifically focused on the development of a first- and a fourth-grade cohort over an academic school year. This performance-based assessment was a quasi-experimental, quantitative measurement of the social and emotional skills of the students involved in the study. Two specific skill areas were selected for focus in this research. The two areas of skill focus were peer connections and nonverbal emotion recognition. This study was designed with the purpose of determining changes during one academic year for boys and girls in the selected cohorts. The study employed statistical analysis in the form of ANOVA to identify the changes over the targeted academic year. Limitations, findings, and implications for further research regarding peer connections and emotion recognition with regard to educational practice, research and policy are included in the following pages.

Findings and Interpretations

The purpose of this quasi-experimental quantitative study was to investigate the changes in social and emotional skill development for boys and girls across one academic year. The study was designed to answer two research questions. The findings for each question are reviewed within the context of the statistical analysis.

The first main prediction of the current study examined the changes in social emotional skill development in the area of peer connections within one academic year for first- and fourth-grade boys and girls. It was hypothesized that boys would show stronger peer connections than girls; in addition, it was hypothesized that fourth-grade students would show stronger changes in peer connections than would first-grade students. The results of the statistical analysis revealed no significant difference in peer connections for boys or girls. In addition, the results revealed no significant difference on peer connections between first-grade and fourth-grade students. Earlier peer connection research conducted by Eder and Hallinan (1978) that determined boys' connections were shown to increase across a school year. Unlike the findings of Eder and Hallinan, the current study found no significant differences between girls' and boys' connections across the school year; however, the sample set included in the current study is of varying grade levels and reviews the comparison of growth across two grade levels (first and fourth).

In addition to the main prediction, an exploratory follow-up analysis was completed to further investigate the gender or grade-level differences in fall or spring peer connection scores. Results showed no significant differences for grade-level connections in fall or spring. An examination of main effect of gender was found to be significant during the exploratory analysis. Boys were shown to exhibit higher peer connection scores than were girls as measured by the fall peer connection scores. This finding is in keeping with earlier research by Eder and Hallinan (1978), which reflects key findings of boys' tendency to interact in larger groups, although girls are more likely

to connect and play in smaller social groups (Eder & Hallinan, 1978). As students begin a school year in a new classroom grouping, the connections for boys may be more easily formed in the new classroom community. This finding has important implications for classroom support and teacher awareness and supports the formation of classroom community and connections at the start of a school year.

The second main prediction of the current study examined the changes in social emotional skill development in the area of nonverbal emotion recognition within one academic year for first- and fourth-grade boys and girls. It was predicted that fourth-grade girls would show the largest growth in nonverbal emotion recognition skills in one academic year. This prediction was not supported.

Similarly, the results of the statistical analysis revealed no significant difference in nonverbal emotion recognition for boys or girls. In addition, the results revealed no significant difference for nonverbal emotion recognition between first-grade and fourth-grade students. Earlier nonverbal emotion recognition research conducted by Hall and Matsumoto (2004) determines that adult females were significantly more accurate at identifying nonverbal emotions. The current research offered the opportunity to consider the skill set within the context of a first- and fourth-grade-level sample set. Unlike the findings of Hall and Matsumoto, the current study found no significant differences between girls' and boys' nonverbal emotion. It is important to note that the participants of the Hall and Matsumoto research were male and female undergraduates with a wide range of age levels; although the ages ranged, there was a minimum age of 18 for the participants. It is possible that factors relating to maturation and emotional development

impacted the non discernable differences in the first- and fourth-grade results. Further investigation, including a closer examination of nonverbal emotion recognition skill when considering student age and gender, would be beneficial.

In addition to the main prediction, an exploratory follow-up analysis was completed to investigate the gender or grade-level differences in fall or spring nonverbal emotion recognition scores. Results showed no significant differences for grade-level non-verbal emotion recognition scores in fall or spring; additionally, no significant differences existed between boys and girls in the fall or spring. A second exploratory analysis was conducted to learn if there were significant differences for students identified as qualifying for special education services as compared to non identified students. Results showed no significant differences for nonverbal emotion recognition changes scores for students with identified disabilities. For the purposes of this study, no discrimination or identifying data documented the area of eligibility of students with special education plans. Further investigation including a closer examination of student eligibility and documented disability area (e.g., speech and language, specific learning disability, etc.), would be beneficial for future consideration.

Although prior research has indicated that there is evidence of a predictable gender difference associated with nonverbal emotion recognition skills (Hall & Matsumoto, 2004), it is important to note that the participants of such research were male and female undergraduates with a wide range of age levels. Although the current research focused on first- and fourth-graders, there may not have been a wide-enough age gap to detect any gender difference in skill level for nonverbal emotion recognition. There is no

additional research on the measurement of nonverbal emotion recognition using data gathered across a wider age range via the newly developed SELweb^{TM}. A closer examination of gender and grade-level differences of nonverbal emotion recognition skill needs to be conducted using SELweb^{TM} in order to gain a better understanding of how this skill changes over time for elementary boys and girls. In order to consider the changes, which may occur as students mature and develop beyond the elementary years, further research should include sample sets of students in the middle school and high school age ranges. Such research would allow for a closer review of non-verbal emotion recognition skill development and gender differences.

SELweb^{TM} is a relatively new research tool that has yet to be used on a wide scale either across Illinois or nationally. Currently, there is limited documentation of the data from this assessment. Future research can benefit from a national baseline for grade and gender performance in both peer connectedness and emotion recognition of similarly aged students.

Limitations

As reported in Chapter 1, a few limitations and shortcomings were evident. The source of the de-identified data in this study was from an upper socioeconomic community where the majority of residents have advanced degrees and are typically employed in business or professional fields. The community is a highly stable, primarily residential community comprised of approximately 90% owner-occupied housing units and having an annual mobility rate of less than 5%. The ethnic make-up of the school

district in 2012 was 91.8% White. The socioeconomic makeup of the school district was 3.3% low income, 0.6% limited English proficiency, and 14.7% students with an IEP.

The de-identified data were collected from the responses of approximately 300 students in two grade-centered elementary schools in one district in Illinois. Although this sample may be significant for this population, the sample size is neither large enough nor inclusive enough to extrapolate trends in the general population. Further study should include a larger sample of participants from a cross-section of the population that would include a significant number of participants from a more representative socioeconomic sampling.

Second, the de-identified data represents results of fall and spring administration of two SELweb[TM] assessments that were conducted within one school year. The time frame of one school year may limit the conclusions that can be drawn from the analysis of the data. To identify a trend in any population accurately, a longitudinal study may be warranted.

Within this study, de-identified student performance-based assessment data were analyzed. The data were collected via a web-based instrument, SELweb[TM], requiring all participants to have online access via a computer. Limiting factors exist as a school network and infrastructure must be in place to support this version of implementation.

Implications of Findings

The measurement of student social and emotional growth over a specific time period is essential for the identification of skill deficiency. The use of an assessment tool permits educators an opportunity to collect data and to identify students who are struggling in a particular skill area. Educators now have an opportunity to enable school problem-solving teams to use collected SEL data to identify student skill level and to determine a plan of intervention and action. The use of an assessment tool such as SELweb^{TM} across multiple points during a school year may serve to provide ongoing progress monitoring data and reflecting upon the efficacy of the intervention.

Although there was only one statistically significant result identified during this study, the broader implications for school-based use of an assessment such as SELweb^{TM} can provide educators and parents with additional information that has not been previously available. Continued use and refinement of a tool such as SEL web^{TM} is needed to provide performance-based assessment data for identified SEL skills. Once refined, SELweb^{TM} may be utilized to examine SEL skill development for early elementary students. Although the use of an SEL assessment tool is a relatively new option for educators to gather classroom and school-based SEL data, there remains much to be learned about the use of this tool to measure skill and growth over time. Additional study should be taken into consideration, including a larger implementation and use of SEL assessment tools.

SELweb^{TM} generates data regarding the level of individual student social-skill functioning. By collecting and analyzing these individualized performance data over time,

teachers working collaboratively with school problem-solving teams may identify individual students who manifest a deficit in a specific social-skill area. After these students are identified, targeted intervention strategies may be developed and implemented. With ongoing data collection, both the teacher and problem-solving team can monitor the impact of the interventions and make appropriate adjustments as deemed necessary.

As assessment tools such as SELweb™ are made available to a broader range of schools, there is likely to be a greater need for additional SEL interventions to address skill deficits. Increasingly more resources are available for schools to purchase to address focused SEL skill instruction, and the data from an SEL assessment can allow educators to identify targeted areas for further instruction and support.

Future Research Directions

Future research should expand the study of performance-based SEL assessment to include larger samples of participants from cross-sections of the population that would include a significant number of participants from a more representative socioeconomic sampling. Participants other than just first- and fourth-graders warrant further examination. The study of all student SEL data is important, but the closer examination of students whose scores represent a deficit in social-skill development warrants special attention. These are the students who may struggle with making friends and successfully navigating the social experiences in school. More information is needed about school interventions, which may be implemented to impact growth in specific SEL domains.

There is much more to be learned about student and classroom-level interventions, which may promote skill development in the area of social and emotional learning.

Further study should also include a comparison of curriculum implementation as related to students' social and emotional skill development. Consideration must be given to areas of strength and areas of deficiency in relation to the unit implementation and targeted lessons in a classroom. Although this specific topic remains largely unexplored in published research, such investigation would be beneficial to guide curriculum decisions and classroom interventions across schools.

Conclusions

The results of this study demonstrate that performance-based assessment can be used to gather individual, classroom, and grade-level SEL skill data for use in identifying and developing an action plan to address SEL skill deficiencies. Documentation of SEL performance through the use of a SEL assessment tool could be used to examine specific skills in the SEL domain. The purpose of this data collection was to gather social and emotional skill development data for first- and fourth-grade students over an academic school year and to monitor the growth over an academic year. SELweb[TM] permitted the collection of performance-based data that can be used to identify and develop an action plan to address individual student performance needs. Educators should consider a student's profile and plan for specific social-skill interventions as identified by a SEL assessment tool. Educators may also use the data collected from a SEL tool to monitor student performance throughout the school year. Future research should focus on the

development of student interventions based on the students' specific responses within the

SELweb^{TM} assessment. The positive impact of individual student and whole-class

SELweb^{TM} data can only be seen when this information is reviewed by school teams and

used to determine interventions that can be implemented to impact growth. In order to

meet the needs of the 21st century and educate the mind and social emotional core of each

child in present day schools, educators must be willing to assess in the area of SEL and

reflect thoughtfully upon the results. The true value of this tool comes with the action

steps taken after the assessment data are reviewed at the school level.

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APPENDIX

SELweb^{TM} ASSESSMENT ADMINISTRATION MANUAL

SELweb™
Social Emotional Learning Assessment
(Amended to include the two modules used in the current research)

Assessment Overview

1. *Peer Nomination:* Selecting which classmates you like to spend time with
2. *Non-verbal Emotion Recognition:* Is this student happy, sad, angry, scared, just okay?
3. *Rocket* Task: Send 10 rockets to space
4. *Perspective Taking:* Listen to 12 stories and answer questions

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5. *Comet and Bear:* Respond to 10 questions from two dogs
6. *Social Problem Solving:* Listen to 6 stories and respond to questions
7. *Matching Activity:* Get as many completed until the time runs out**

NOTES:

**The *Matching Activity* is truly measuring *Delay* of *Frustration.* One button is purposely stuck. If a student raises his/her hand to ask for help, slowly walk over and share "Just do your best" or "Just keep trying."

Never inform the **students** *that the button is* **programmed to** *be* **stuck!** When you get back to the room, you may tell the students you will let the test makers know about the button.

When the headphones are flashing on the screen, the child can adjust the volume. When the volume is properly adjusted and the child has clicked the arrow key, the first assessment module will begin.

General Questions

Here are questions, regardless of module...	*Here's how to answer...*
- Can I go back and change my answer?	- No, once you press the arrow to move on you can't change your answer. Do the best you can.
- I didn't mean to press that!	-That's okay. Just do the best you can for the rest of the test.

<u>Peer Nomination</u>
The peer nomination assessment module is designed to obtain a reliable and valid measure of each child's peer acceptance, or the extent to which classmates feel positively towards him or her by asking the question: Click on the names of the children you'd like to play with.

Total Items: 1
Estimated time to complete: 5 minutes

Here's what the child will hear...
"We want to learn about how you feel about your classmates. This isn't a test and there are no right or wrong answers. We won't be telling other children what you say. Please don't tell other children what you say." "First you'll see a list of children in your class." "Look at each name as it appears and listen as the name is read aloud." "Now I want you to click on some names. If you want the name read out loud, point to the name and it will be read again." "There might be a lot of children in the class who you'd like to spend time with. Click on the names of the children you'd like to spend time with." "Okay great, click on the names of any other children you'd like to spend time with. You can click as many names as you want. Click on all the children you'd like to spend time with."

Here's what the child will see...

Here's what the child may ask...	Here's how to answer...
-Can I change my answer?	-Yes, click on a different student's name and/or unclick a name you have already selected by clicking it again
- I did not hear/understand/remember the directions.	- Repeat instructions
- I don't know whom to pick.	-Look at the list and pick who you want; Who you'd like to spend time with
- What if I don't want to pick anyone?	- Choose at least one child in your class whom you'd like to spend time with. Then you can press the arrow button to move on.

Nonverbal Accuracy Threshold (Non-Verbal Emotion Recognition)

The nonverbal accuracy assessment module is designed to measure how well children can read facial expressions that signal happiness, sadness, anger, and fear. For this assessment module, faces of children will appear individually. The child must select if the face is *happy, sad, angry, scared, or just okay.* Each emotion will be presented to the child with varying levels of intensity, meaning some faces are more expressive and others are more subtle.

Total Items: 44 or 45 depending on randomized version administered
Estimated Time to Complete: 5 minutes

Here's what the child will hear...
"You're going to see many faces. Tell us if each face is happy, sad, angry, scared, or just okay. [If the child has not clicked "next" after 4 seconds, the following audio will be read aloud] To go on to the next item press the arrow button. You may change your answer by clicking a different answer."

Here's what the child will see…

Here's what the child may ask...	Here's how to answer...
-Can I change my answer?	-Yes, click on a different answer
- I did not hear/understand/remember the directions.	- Repeat instructions
- I cannot decide which emotion to choose?	- Try your best to choose how the child feels
- What does [emotion word] mean?	- *Happy* means feeling cheerful or glad - *Sad* means to feel unhappy, gloomy, or down - *Angry* means feeling mad or upset - *Scared* means to be afraid

Here's what the child may ask...	*Here's how to answer...*
- I do not know which emotion that is	- Look at the face and decide if it is happy, sad, angry, scared, or just okay. If it is happy, click this button. [point] If it is sad, click this button. [point] If it is angry, click this button [point] If it is scared, click this button. [point] If it is just okay, click this button. [point] Just do the best you can.