Measuring Social and Emotional Learning with the Survey of Academic and Youth Outcomes (SAYO)

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Sasha Stavsky, M.A.

NIOST
National Institute on
Out-of-School Time

Wellesley
Centers for
Women

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Introduction

Over the past decade, growing evidence has pointed to the unique and positive role out-of-school time (OST) programs can play in the lives of young people. Durlak and Weissburg's 2007 examination of the impact of youth development programs on personal and social skills has suggested that participation in OST programs is associated with youth's feelings of self-confidence and self-esteem, positive feelings and attitudes towards school, positive social behaviors, and reduced problem behaviors such as aggression and noncompliance.[i] With this increased recognition has come increased resources for OST programs; with increased resources has come higher expectations for results. A recent report from Grantmakers for Education indicates that the four most common outcomes grantmakers seek for youth through their grants to OST programs are (1) improved academic achievement, (2) increased student engagement, (3) positive youth development, and (4) 21st century skill building.[ii]

OST programs, which typically draw from positive youth development theory, have historically focused their efforts on nurturing the development of a foundational set of social and emotional skills, attitudes, and behaviors in youth that can contribute to youth's future academic and life successes.[iii,iv] Over the years, the terms used to refer collectively to these nonacademic skills, attitudes, and behaviors have gone by a number of different names, each with their own definitions: "intermediary outcomes," "noncognitive skills," "soft skills," "emotional intelligence," "resiliency," "21st century skills," and, most recently, "grit." While social and emotional competencies are a subset of skills that define many of these terms, the phrase "social and emotional learning" (or "SEL") has become the umbrella term for this entire set of skills, attitudes, and behaviors.

Recently, a number of research consortia and other organizations have developed frameworks that seek to identify and define these SEL competencies. Some of these groups, however, have noted that the development of valid and reliable measurement tools to assess youth outcomes in SEL competency areas has not kept pace with the field.[v,vi] This paper seeks to demonstrate how the Survey of Academic and Youth Outcomes (SAYO), a tool developed by the National Institute on Out-of-School Time (NIOST) and used in the OST field for over a decade, can measure many of the SEL competencies of interest to the OST field.

We begin with a general definition and brief history of SEL research and highlight four recent efforts to define a set of core SEL competencies. Next, we provide a brief description of the SAYO tools. We then describe the extent of alignment between SEL competencies highlighted in the four frameworks with the youth outcome areas measured by the SAYO tools. Finally, we include profiles on how the tools are being used in the field for program improvement and to measure impact.

What Is Social and Emotional Learning?

Social and emotional learning, or SEL, has become the recognized term to refer to the foundational skills, attitudes, and behaviors that facilitate the development of key intrapersonal and interpersonal skills that help promote school engagement and set the stage for later success. The field of social and emotional learning grew out of the work of Howard Gardner, Peter Salovey, and John D. Mayer in the mid 1980s and 1990s. These theorists argued that traditional measures of intelligence—those that narrowly emphasize proficiency in mathematical and verbal skills—fail to recognize equally important aptitudes in nonacademic domains. Gardner's 1983 book, *Frames of Mind: The Theory of Multiple Intelligences[vii]*, identified eight domains in which people may exhibit special abilities: logical-mathematical, linguistic, musical, spatial, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic. Gardner proposed that across these eight intelligence domains individuals possess a unique blend of abilities that work together to support skill development and problem solving.[viii]

In 1990, Salovey and Mayer published a review of the research on emotion-related skills in order to examine the place of social and emotional skills in intelligence. A key result of Salovey and Mayer's review was the identification of the constructs that make up the concept of "emotional intelligence." Salovey and Mayer defined emotional intelligence as, "the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions."[ix] Daniel Goleman's 1995 book, *Emotional Intelligence*, popularized the work of Salovey and Mayer. While recognizing the importance of intellect and expertise for achievement in life and the workplace, Goleman proposed that emotional intelligence—that is, one's ability to understand, empathize, and negotiate with other people—gives individuals additional advantages for achieving success.[x] More recent research, such as Durlak and Weissberg's 2011 meta-analysis of school-based social and emotional learning programs,[xi] has continued to lend evidence that SEL is associated with and key to academic success.

Defining Social and Emotional Learning Competencies

In recent years, a number of research consortia and other organizations have published varying frameworks to define the specific SEL skills, attitudes, and behaviors believed to be associated with long-term youth outcomes. Some of these frameworks are based on reviews of the research literature, while others are compilations of previously developed SEL frameworks. For the purposes of this report, we have chosen to focus on four of the most recently published and frequently cited frameworks: the Collaborative for Academic, Social, and Emotional Learning (CASEL) Social and Emotional Learning Core Competencies; the University of Chicago Consortium on Chicago School Research (CCSR) Noncognitive Factors; the Forum for Youth Investment Skill Areas; and the Every Hour Counts Measurement Framework. The SEL competencies identified by each of these four frameworks are listed in Table 1. (See Appendix A for descriptions of frameworks.)

Table 1. Four Frameworks of Social and Emotional Learning Competencies

CASEL SEL Core Competencies	Every Hour Counts Measurement Framework	Forum for Youth Investment Skill Areas	CCSR Noncognitive Factors
Self-awareness	Engagement	Communication	Academic behaviors
Self-management	Development of positive skills & beliefs	Relationships & collaboration	Academic mindsets
Social awareness	Education	Critical thinking & decision making	Learning strategies
Relationship skills		Initiative & self-direction	Academic perseverance
Responsible decision making			Social skills

While there are variations in how organizations define SEL, commonalities emerge among the competencies that are included in their frameworks. These commonalities can be summarized as:

- **Intrinsic motivation** (initiative, persistence, self-direction)
- **Critical thinking skills** (problem solving, metacognitive skills, reasoning and judgment skills)
- **Relational skills** (communication, cooperation, empathy)
- **Emotional self-regulation** (impulse control, stress management, behavior)
- **Self-concept** (knowing one's own strengths and limitations, belief in one's ability to succeed, belief that competence grows with effort)

The Survey of Academic and Youth Outcomes (SAYO): A Tool for Measuring Social and Emotional Learning Competencies

To satisfy funders' expectations for results, OST programs must be able to demonstrate in a measurable way that the work they are doing is having a positive influence on these important SEL skills, attitudes, and behaviors. While there are a number of compendia that list and describe existing, valid, and reliable measures of SEL competencies in children and youth,[xii,xiii,xiv,xv] many of the compendia that have been published have limited application for the OST field. For example, some review tools that are typically used in clinical or diagnostic settings while others restrict their search to include only those measures described in articles published in peer-reviewed academic journals, which may have limited availability beyond the research studies for which they were developed.

The SAYO tools are reliable and validated staff, teacher, and youth surveys that measure selected SEL competencies. The SAYO tools represent components of an integrated assessment system, the APAS (A Program Assessment System). APAS was developed specifically for use in the OST field by NIOST, in partnership with the Massachusetts Department of Elementary and Secondary Education (MA ESE), over a ten-year period beginning in 2001. APAS is comprised of three integrated measurement tools that are research based and scientifically tested: the Survey of Academic and Youth Outcomes Staff and Teacher Surveys (SAYO-S & SAYO-T), the Survey of Academic and Youth Outcomes Youth Survey (SAYO-Y), and the Assessment of Program Practices Tool (APT). Appendix B describes the development and testing of these tools in greater detail.

SAYO-S & SAYO-T measure key intermediary youth outcomes that research suggests are linked to long-term positive development and academic and life success:

Behavior
Initiative
Engagement in Learning
Problem-Solving Skills
Communication Skills
Relations with Adults
Relations with Peers
Homework
Academic Performance
   (SAYO-T only)

_____

SAYO-Y provides a youth perspective on program quality as well as youth's attitudes and beliefs in key areas linked to their long-term academic success. The SAYO scales are grouped into three main sections:

Program Experience
Sense of Competence
Future Planning and
   Expectations

Aligning the SAYO Tools with Four SEL Frameworks

Comparative analyses were made to explore the extent to which the SAYO tools align with the four SEL frameworks listed in Table 1. In order to make the tables easier to read, the sub-elements of the main constructs have not been included (see Appendix A to review these sub-elements). Two of these analyses have already been conducted by The Forum for Youth Investment and Every Hour Counts (see Tables 2 and 3).[xvi,xvii]

Table 2. Forum for Youth Investment Skill Areas Aligned with SAYO Outcomes

SEL COMPETENCY	SAYO-S/SAYO-T								SAYO-Y				
	Homework	Behavior	Initiative	Engagement	Problem-Solving Skills	Communication Skills	Relations with Adults	Relations with Peers	Sense of Competence – Learner	Sense of Competence – Socially	Future Planning – Talk to an Adult	Future Expectations	Future Planning – My Actions
Communication						✓							
Relationships & Collaboration							✓	✓		✓			
Critical Thinking & Decision Making					✓								
Initiative & Self-Direction		✓	✓										✓

Note. The first column lists the key constructs of the Forum for Youth Investment Skill Areas framework. The remaining columns indicate the SAYO-S/SAYO-T or SAYO-Y scales that the Forum for Youth Investment has determined measure the same or similar SEL competency area.

Table 3. Every Hour Counts Measurement Framework Aligned with SAYO Outcomes

SEL COMPETENCY	SAYO-S/SAYO-T								SAYO-Y				
	Homework	Behavior	Initiative	Engagement	Problem-Solving Skills	Communication Skills	Relations with Adults	Relations with Peers	Sense of Competence – Learner	Sense of Competence – Socially	Future Planning – Talk to an Adult	Future Expectations	Future Planning – My Actions
Engagement													
High Levels of Program Engagement				*									
Development of Positive Skills & Beliefs													
Critical Thinking					✓								
Persistence			✓		✓								
Self-Regulation		✓											
Collaboration								✓					
Communication						✓							
Growth Mindset									**				

Note. The first column lists the key constructs of the Every Hour Counts Measurement Framework. Some of the sub-elements within *Engagement*, such as "high, sustained program attendance," and "high year-to-year retention," rely on participation data, which are not collected by the SAYO. These sub-elements were not included in this alignment. Similarly, the construct *Education* is not included in this alignment because it relies on a review of school records.

The remaining columns indicate the SAYO-S/SAYO-T or SAYO-Y scales that Every Hour Counts has determined measure the same or similar SEL competency area.

* Every Hour Counts did not include the SAYO-S/SAYO-T Engagement scales in their alignment. NIOST believes that they are a good fit for the High Levels of Program Engagement Experienced/Demonstrated by Youth construct. In addition, the SAYO-Y Enjoyment and Engagement scale provides youth perspective on this construct.

** Every Hour Counts did not review the SAYO-Y. NIOST believes that the SAYO-Y Sense of Competence – Learner scale is a good fit for this construct.

For the CASEL and CCSR frameworks, we conducted a comparative analysis at two levels: by construct and by item. The first level of analysis was to explore the alignment of the SAYO and the CASEL and CCSR frameworks by SEL competency area. This level of analysis proved challenging since competency areas with similar names were found to have differing definitions. For example, CASEL defines *Responsible Decision Making* as, "the ability to make constructive and respectful choices about personal behavior and social interactions based on consideration of ethical standards, safety concerns, social norms, the realistic evaluation of consequences of various actions, and the well-being of self and others." A similar SAYO construct, *Problem-Solving Skills*, is defined as, "youth are able to think through and solve problems." The CASEL construct emphasizes decision making as it relates to personal behavior and social interactions, whereas the SAYO construct is more focused on youth's ability to identify a problem and come up with multiple solutions as well as persistence on a task.

An item-by-item comparison of the SAYO scales with the constructs defined in the CASEL and CCSR frameworks proved more fruitful. The results of this detailed crosswalk showed that the extent of alignment between the SAYO and the constructs included in these frameworks varied. It is important to note that for several of the CASEL and CCSR constructs more than one SAYO scale was needed to fully capture the SEL competency area as defined in the frameworks. In some cases the alignment was strong: the definition of the constructs and/or sub-constructs matched and 75% or more of the SAYO items for a construct aligned closely with these definitions. In some cases, we found moderate alignment for some of the SEL competency areas: there was only partial alignment in the definitions of constructs and 50%–75% of the SAYO items in a scale aligned with constructs. Finally, for some CASEL and CCSR constructs there was little or no alignment with SAYO scales.

Please note that these analyses did not include any statistical tests of association (e.g., correlations) between constructs measured in the SAYO tools and the SEL frameworks. The results of these crosswalks are shown in Tables 4 and 5.

Table 4. CASEL SEL Core Competencies Framework Aligned with SAYO Outcomes

SEL COMPETENCY	SAYO-S/SAYO-T								SAYO-Y					
	Homework	Behavior	Initiative	Engagement	Problem-Solving Skills	Communication Skills	Relations with Adults	Relations with Peers	Sense of Competence – Learner	Sense of Competence – Socially	Future Planning – Talk to an Adult	Future Expectations	Future Planning – My Actions	Future Planning – College
Self-Awareness									•	•		✓		
Self-Management		✓	✓		•			•			•	✓	•	
Social Awareness								✓						
Relationship Skills						✓		•						
Responsible Decision Making		✓						•						

Note. The first column lists the key constructs of the CASEL SEL Core Competencies framework. The remaining columns indicate the SAYO-S/SAYO-T or SAYO-Y scales that measure the same or similar constructs.

SAYO constructs that demonstrate *strong alignment* (i.e., 75% or more of the items aligned closely with the SEL framework construct) are indicated with a checkmark (✓). SAYO constructs that demonstrate *moderate alignment* (i.e., 50%–75% of the items aligned closely with the SEL framework construct) are indicated with a dot (•).

Table 5. CCSR Noncognitive Factors Aligned with SAYO Outcomes

SEL COMPETENCY	SAYO-S/SAYO-T								SAYO-Y					
	Homework	Behavior	Initiative	Engagement	Problem-Solving Skills	Communication Skills	Relations with Adults	Relations with Peers	Sense of Competence – Learner	Sense of Competence – Socially	Future Planning – Talk to an Adult	Future Expectations	Future Planning – My Actions	Future Planning – College
Academic Behaviors	✓			✓										
Academic Mindsets									✓					
Learning Strategies	•		•											
Academic Perseverance	•													
Social Skills						•	•	✓		✓				

Note. The first column lists the key constructs of the CCSR Noncognitive Factors framework. The remaining columns indicate the SAYO-S/SAYO-T or SAYO-Y scales that measure the same or similar constructs.

SAYO constructs that demonstrate *strong alignment* (i.e., 75% or more of the items aligned closely with the SEL framework construct) are indicated with a checkmark (✓). SAYO constructs that demonstrate *moderate alignment* (i.e., 50%–75% of the items aligned closely with the SEL framework construct) are indicated with a dot (•).

The results of these crosswalks indicate that SAYO measures all of the SEL competency areas included in the four frameworks. The Forum for Youth Investment's analysis demonstrates that SAYO includes measures for all four of its skill areas. With the inclusion of the SAYO-S/SAYO-T *Engagement* measurement area, the SAYO aligns with all of the Every Hour Counts outcomes. NIOST found a strong alignment with SAYO for all five of CASEL's SEL competency areas. Finally, SAYO showed strong alignment with three of the CCSR noncognitive factors (*Academic Behaviors* and *Academic Mindsets*) and moderate alignment with the remaining two (*Learning Strategies* and *Academic Perseverance*.) These results are summarized in Table 6.

Table 6. Summary of SAYO/SEL Framework Crosswalks

	SAYO-S/ SAYO-T	SAYO-Y
Forum for Youth Investment Skill Areas		
Communication	✓	
Relationships & Collaboration	✓	✓
Critical Thinking & Decision Making	✓	
Initiative & Self-Direction	✓	✓
Every Hour Counts Measurement Framework		
Engagement	✓	
Development of Positive Skills & Beliefs	✓	✓
CASEL SEL Core Competencies		
Self-Awareness		✓
Self-Management	✓	✓
Social Awareness	✓	
Relationship Skills	✓	
Responsible Decision Making	✓	
CCSR Noncognitive Factors		
Academic Behaviors	✓	
Academic Mindsets		✓
Learning Strategies	•	
Academic Perseverance	•	
Social Skills	✓	✓

Using SAYO for Program Improvement and Measuring Impact

As the comparative analyses show, the SAYO tools offer measures of the key foundational SEL skills for the promotion of longer-term youth outcomes. The SAYO can help programs build and demonstrate their contributions to academic and other long-term goals for youth by helping programs stay focused on outcomes that are most appropriate and realistic to expect from participation in OST programs.

The SAYO is currently being used by afterschool, extended day, and summer programs across the country and in Canada. In addition, the SAYO surveys represent a core component of the Massachusetts 21st Century Community Learning Centers accountability system. Two programs, CommonBond Communities and Providence After School Alliance (see box), highlight different ways in which the SAYO tools are being used: at the program-level for program improvement and at the system-level to demonstrate impact.

CommonBond Communities

CommonBond Communities provides affordable housing and other services in Saint Paul, MN, including programming for children and youth. CommonBond is part of the Sprockets network, a system of afterschool and summer programs working in collaboration with community organizations, the City of Saint Paul, and the Saint Paul Public Schools to improve the quality, availability, and effectiveness of OST experiences for youth. Since 2011, Sprockets has been using the SAYO-S and SAYO-Y surveys in some of its networked programs to provide insights on how SEL skills impact youth development.

Participating programs collect fall and spring SAYO data, which are used—in conjunction with participation and program quality data—as part of an improvement planning process. Through group coaching activities such as workshops and webinars, Sprockets helps programs use their data to select improvement areas, provides guidance on the development and implementation of improvement plans, and suggests possible topics for professional development and training.

When CommonBond receives their SAYO data reports, they look at the results site-by-site as well as organization-wide to come up with a program improvement plan for the year. CommonBond compares their SAYO results with quality observations of their programming to determine where their programming is strong and where they could improve. In the past year, CommonBond focused on the results of their SAYO-Y data to help them understand how teens are experiencing their teen leadership programs. While the program was receiving high scores in leadership and responsibility on the program quality survey, their SAYO-Y ratings in this area indicated otherwise. CommonBond recognized that this was an issue of perception rather than practice, and they have made efforts to be more intentional about how they communicate the goals and objectives of activities to youth. As a result, their leadership and responsibility scores have improved.

Providence After School Alliance

The Providence After School Alliance (PASA) operates two citywide afterschool systems: the AfterZone for middle school youth and the Hub for high school youth. These systems include community-based and expanded learning programs that reach over 2,000 youth across the city of Providence. PASA partners with the Providence Public School District to provide an integrated, year-round, in- and out-of-school learning experience.

Over the past few years, PASA has administered SAYO-T and SAYO-Y surveys across its systems to measure the potential impacts of program participation on a set of targeted youth outcomes as well as to provide feedback to inform ongoing program improvements. PASA collects data on teachers' perceptions of youth's academic performance in ELA and Mathematics, initiative, engagement in learning, problem-solving skills, communication skills, and peer relations. In addition, youth provide feedback on their program experiences and how their participation in the program has contributed to their sense of competence socially and as learners.

Using the SAYO data, as well as national OST research, PASA has developed a "graduate profile," which focuses on ensuring that AfterZone and Hub participants leave their programs with the 21st century skills they need to succeed in college and career. The graduate profile has been integral to recent strategic planning across the systems, helping to inform training and professional development, strengthen assessment and evaluation, and identify funding needs to support programs.

In addition, PASA is using the youth outcomes data it collects from the SAYO to help set benchmarks for the development of a digital badging system. Digital badges—much like merit badges awarded by the Scouts—provide recognition for learning and achievement in specific skill areas. PASA's digital badging system will allow participating youth to earn badges in competencies such as communication skills and critical thinking. These badges can help youth demonstrate the relevance of the learning and skills they have achieved in their afterschool experiences to potential employers and higher education institutions.

Summary

As the benefits of OST participation have become more widely known,[xviii] many policymakers, funders, schools, and communities have begun to expect more measureable results from OST programs. In particular, there is growing interest by a variety of stakeholders for OST programs to demonstrate how they impact social and emotional learning. The Forum for Youth Investment's guide *From Soft Skills to Hard Data*[xix] and the *Every Hour Counts Measurement Framework*[xx] identifies a number of tools that OST programs could use to assess the key SEL skills, attitudes, and behaviors that lead to positive long-term results for youth. Not all of the tools included, however, have been used or tested in OST settings. The SAYO tools, by contrast, have been used in the OST field for over a decade and offer measures of all of the SEL competencies that have been identified to be key foundational SEL skills for the promotion of longer-term youth outcomes. As the comparative analyses suggest, many of the SAYO scales would be suitable assessment tools for use by programs interested in measuring youth's SEL skills included in multiple SEL frameworks.

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[xv] Humphrey, et al. (2011).

[xvi] Wilson-Ahlstrom, A., et al. (2014).

[xvii] Every Hour Counts. (2014). *Every Hour Counts measurement framework: How to measure success in expanded learning systems*. New York, NY: Author.

[xviii] Durlak & Weissberg. (2007).

[xix] Wilson-Ahlstrom, A., et al. (2014).

[xx] Every Hour Counts. (2014).

Appendix A: Defining Social and Emotional Learning Competencies—Four SEL Frameworks

Collaborative for Academic, Social, and Emotional Learning (CASEL) Framework
Collaborative for Academic, Social, and Emotional Learning. (2013). *What is Social and Emotional Learning?* Retrieved from http://www.casel.org/social-and-emotional-learning

CASEL defines social and emotional learning as, "the processes through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions." Based on research on the benefits of social and emotional learning to students' school success, health, well-being, peer and family relationships, and citizenship, CASEL has identified five interrelated sets of cognitive, affective, and behavioral competencies that make up SEL:

- **Self-Awareness:** The ability to accurately recognize one's emotions and thoughts and their influence on behavior. This includes accurately assessing one's strengths and limitations and possessing a well-grounded sense of confidence and optimism.
- **Self-Management:** The ability to regulate one's emotions, thoughts, and behaviors effectively in different situations. This includes managing stress, controlling impulses, motivating oneself, and setting and working toward achieving personal and academic goals.
- **Social Awareness:** The ability to take the perspective of and empathize with others from diverse backgrounds and cultures, to understand social and ethical norms for behavior, and to recognize family, school, and community resources and supports.
- **Relationship Skills:** The ability to establish and maintain healthy and rewarding relationships with diverse individuals and groups. This includes communicating clearly, listening actively, cooperating, resisting inappropriate social pressure, negotiating conflict constructively, and seeking and offering help when needed.
- **Responsible Decision Making:** The ability to make constructive and respectful choices about personal behavior and social interactions based on consideration of ethical standards, safety concerns, social norms, the realistic evaluation of consequences of various actions, and the well-being of self and others.

Every Hour Counts Measurement Framework

Every Hour Counts. (2014). *Every Hour Counts Measurement Framework: How to measure success in expanded learning systems.* New York, NY: Author.

The Every Hour Counts Measurement Framework is designed to serve as a blueprint for understanding the impact of programs on youth outcomes, making improvements at the system and program levels, and influencing policy. In developing their framework, Every Hour Counts looked to research findings at the program level to identify a set of educational, social, and emotional "power skills" most likely to drive student success. On the youth level, they identified three key elements: high youth engagement in the program, the development of positive skills and beliefs, and high academic commitment.

- **Engagement:** High, sustained program attendance; high, year-to-year retention in the program; high levels of program engagement experienced/demonstrated by youth.
- **Development of Positive Skills and Beliefs:** Critical thinking, persistence, self-regulation, collaboration, communication, and growth mindset.
- **Education:** High school-day attendance, on-time grade promotion, evidence of progress toward mastery of academic skills and content based on grades.

The Forum for Youth Investment Skill Areas

Wilson-Ahlstrom, A., Yohalem, N., DuBois, D., Ji, P., & Hillaker, B. (2014). *From soft skills to hard data: Measuring youth program outcomes.* Washington, DC: The Forum for Youth Investment.

In January 2014, The Forum for Youth Investment published a guide to assist OST practitioners in comparing and selecting measurement tools to assess the SEL skills, attitudes, and behaviors that the Forum identified as likely contributors to long-term youth outcomes. The Forum reviewed frameworks developed by CASEL, the Partnership for 21st Century Skills, and the U.S. Department of Labor and identified the constructs that were shared across the frameworks. Of those common constructs, the Forum then focused on skill areas believed to contribute to academic success and upon which OST programs could have a measureable impact through the work they do with youth. These four skills areas are:

- **Communication:** Self-expression, listening, public speaking, and recognizing nonverbal cues.
- **Relationships & Collaboration:** Interpersonal skills, teamwork, flexibility, and cultural competence.

- **Critical Thinking & Decision Making:** Reasoning; making judgments and decisions; responsible problem solving; creativity; and accessing, evaluating, and using information.
- **Initiative & Self-Direction:** Self-awareness, setting and working toward goals, management, working independently, and guiding and leading others.

University of Chicago Consortium on Chicago School Research (CCSR) Noncognitive Factors

Farrington, C. A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T. S., Johnson, D. W., & Beechum, N. O. (2012). *Teaching adolescents to become learners. The role of noncognitive factors in shaping school performance: A critical literature review.* Chicago: University of Chicago Consortium on Chicago School Research.

As defined by CCSR, "noncognitive factors" are the behaviors, skills, attitudes, and strategies that are crucial to academic performance; distinct from specific content knowledge and academic skills (or "cognitive factors"), noncognitive factors describe a student's capacity to learn. In 2012, CCSR published a literature review to describe the role of noncognitive factors on academic performance in the classroom. In particular, CCSR was interested in identifying the noncognitive factors that are "malleable"—that is, skills that can be learned or taught, as opposed to inherent, fixed personal traits.

Based on their review, CCSR identified three categories of noncognitive factors that have strong research evidence to suggest that they play a role in school performance and can be promoted through the right instructional approaches and environments:

- **Academic Behaviors:** Going to class, doing homework, organizing materials, participating, and studying.
- **Academic Mindsets:** Belief of belonging in the academic community, belief that ability and competence grow with effort, belief in ability to succeed, and belief that work has value.
- **Learning Strategies:** Study skills, metacognitive strategies, self-regulated learning, and goal setting.

CCSR found that the following two noncognitive factors had only indirect links with academic performance:

- **Academic Perseverance:** grit/tenacity, delayed gratification, self-discipline, and self-control.
- **Social Skills:** interpersonal skills, empathy, cooperation, assertion, and responsibility

Appendix B: The Development and Testing of the APAS Tools

APAS (A Program Assessment System) is comprised of three integrated measurement tools that are research based and scientifically tested: the Survey of Academic and Youth Outcomes Staff and Teacher Surveys (SAYO-S & SAYO-T), the Survey of Academic and Youth Outcomes Youth Survey (SAYO-Y), and the Assessment of Program Practices Tool (APT).

The Survey of Academic and Youth Outcomes: Staff and Teacher Surveys (SAYO-S & SAYO-T)

The SAYO-S & SAYO-T are a set of companion outcome measures that use brief pre- and post- teacher and staff surveys to assess youth in nine areas:

1. **Behavior:** Youth exhibit self-control, follow rules, and meet behavioral expectations appropriate to school and/or program settings.
2. **Initiative:** Youth exhibit motivation, persistence, and goal-directed behavior.
3. **Engagement in Learning:** Youth show interest and are actively involved in school or program activities.
4. **Problem-Solving Skills:** Youth are able to think through and solve problems.
5. **Communication Skills:** Youth are able to effectively express themselves and share their thoughts and ideas with others.
6. **Relations with Adults:** Youth engage positively with adults and gain their support.
7. **Relations with Peers:** Youth get along well with peers.
8. **Homework:** Youth invest effort in and complete homework assignments of good quality.
9. **Academic Performance (SAYO-T only):** Youth meet grade-level expectations for academic performance in Social Studies, Science, English Language Arts, and Mathematics.

Development of the SAYO-S & SAYO-T drew from research in education, resiliency, youth development, and out-of-school time programming, combined with extensive field testing by afterschool programs over a multi-year period. Each of these nine areas—or scales—is comprised of three to eight items. These items have been tested and have shown that they work together to measure the underlying construct. Psychometric testing of the surveys confirmed that the SAYO-S & SAYO-T are valid and reliable instruments that have desired scale structure, internal consistency, and construct validity for use measuring intermediary outcomes for children in grades K–12.[1,2] Results from a

set of correlational analyses show high levels of association between independent ratings assigned by staff and teachers of individual children, suggesting high levels of agreement across raters. The SAYO-S & SAYO-T do not currently have normative data sets that would facilitate the comparison of youth in a given program to a larger population; NIOST is working to make such data available.

The Survey of Academic and Youth Outcomes: Youth Survey (SAYO-Y)

The SAYO-Y uses brief pre- and post- youth surveys to assess youth's perspective on program quality and their attitudes and beliefs. The SAYO-Y scales were designed to complement areas measured by the SAYO-S & SAYO-T surveys, and particularly to target those areas that can only be measured by asking the youth themselves. The SAYO-Y scales are grouped into three main sections:

1. **Program Experiences:** Youth's perception of the social environment and their relationships with adults and peers; opportunities for choice and autonomy and for leadership and responsibility; youth's enjoyment of and engagement in the program; and youth's sense of challenge.
2. **Sense of Competence:** Youth's beliefs of their own competence as readers, writers, in math, in science, socially, and generally as learners.
3. **Youth's Future Planning and Expectations:** Whether youth have talked to an adult about their aspirations regarding secondary education, life, and career goals; youth's expectations for their academic future; and what actions youth are currently taking to make sure they will reach their future goals.

Development of the SAYO-Y drew from research in areas related to out-of-school time program quality, sense of competence, academic motivation, and future aspirations, as well as input from youth, afterschool programs, and school districts. Each of these scales is comprised of three to eight items. These items have been tested and have shown that they work together to measure the underlying construct. Psychometric testing of the SAYO-Y demonstrates that the scales have strong scale structure, internal consistency, and adequate scale distribution; show change over time for sub-sets of youth; and detect differences between sites in responses to measures of program experience for youth in grades 4–12.[3] In addition, youth responses to the various SAYO-Y scales are correlated with each other and with staff and teacher responses to the SAYO-S & SAYO-T in expected ways. The SAYO-Y does not currently have a normative data set that would facilitate the comparison of youth in a given program to a larger population; NIOST is working to make such data available.

The Assessment of Program Practices Tool (APT)

The APT is a program quality assessment that guides observations of social processes and other program practices in order to obtain a snapshot of what out-of-school time programs look like "in action." It measures 12 aspects of process quality in three key quality domains:

1. **Supportive Social Environment:** welcoming and inclusive environment, supportive staff-youth relationships, positive peer relationships, and relationships with families.
2. **Opportunities for Engagement in Learning and Skill Building:** quality of activities, staff practices that promote engagement and thinking, targeted academic skill building, youth engagement and participation.
3. **Program Organization and Structure:** varied and flexible offerings, high program and activity organization, positive behavior guidance, space conducive to learning.

Development of the APT drew from research in the arts, education, and youth development literature. Each of these quality areas is comprised of four to 22 items. These items have been tested and have shown that they work together to measure the underlying construct. Psychometric testing of the APT shows that the quality areas have strong scale structure and test-retest stability, adequate score range and distribution, and inter-rater reliability.[4] The APT is also able to measure quality related to distinct times within the program day (e.g., arrival, transition, activity, and pick-up time) by using the APT Time of Day sections. In addition, the APT shows adequate predictive validity with quality ratings predicting youth outcomes in expected ways. The APT does not currently have a normative data set that would facilitate comparisons of program ratings against a larger population of programs; NIOST is working to make such data available.

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[1] National Institute on Out-of-School Time. (2013). *Psychometric testing of the Survey of Academic and Youth Outcomes: Staff*. Wellesley, MA: NIOST.

[2] National Institute on Out-of-School Time. (2013). *Psychometric testing of the Survey of Academic and Youth Outcomes: Teacher*. Wellesley, MA: NIOST.

[3] National Institute on Out-of-School Time. (2013). *Psychometric testing of the Survey of Academic and Youth Outcomes: Youth*. Wellesley, MA: NIOST.

[4] Tracy, A., Surr, W., & Richer, A. (2012). *The assessment of Afterschool Program Practices Tool (APT): Findings from the APT validation study*. Wellesley, MA: NIOST.

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NIOST's mission is to ensure that all children, youth and families have access to high quality programs, activities, and opportunities. We believe that these experiences are essential to the healthy development of children and youth, who then can become effective and capable members of society.

Our work bridges the worlds of research and practice. We provide **evaluations, consultation,** and **training** to create innovative and effective solutions to out-of-school time needs on a local, state, regional and national basis.

Wellesley College
Waban House \ 106 Central Street
Wellesley, MA 02481-8203
Tel 781 283 2547
www.niost.org