

Landscape Analysis of Non-Cognitive Measures

July 30, 2012

Sally Atkins-Burnett
Camila Fernández
Lauren Akers
Jessica Jacobson
Claire Smither-Wulsin



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Submitted to:
Raikes Foundation
4616 25th Avenue NE, #769
Seattle, WA 98105-4183
Project Officer: Jody Rosentswieg

Submitted by:
Mathematica Policy Research
P.O. Box 2393
Princeton, NJ 08543-2393
Telephone: (609) 799-3535
Facsimile: (609) 799-0005
Project Director: Camila Fernandez

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I. INTRODUCTION

This report is designed to support researchers interested in examining the development of non-cognitive skills in students as they make the transition from late childhood to adolescence. For the purposes of this review, non-cognitive factors refer to skills and dispositions toward learning, as opposed to academic ability or performance. We first describe the motivation for examining non-cognitive factors. Next, we define the constructs of interest for this review and outline our search and screening processes. We then provide general guidelines for evaluating psychometric evidence. Finally, we present a series of summary tables that outline the range of instruments that measure learning strategies and student mindsets and indicate where psychometric evidence is available.

There is a growing body of literature on the significant role that non-cognitive factors play in student achievement and long-term educational attainment (Cunha et al. 2010; Farrington et al. 2012; Fredricks et al. 2011; Rosen et al. 2010; Zimmerman 2008). Recent findings have shown that non-cognitive factors may predict grade point average (GPA) better than intelligence (Duckworth et al. 2011). This relationship is especially noteworthy given the body of research suggesting that “course grades and grade point average (GPA) are vastly better predictors of high school and college graduation, as well as a host of longer-term life outcomes, than [students'] standardized test scores or the coursework students take in school. GPA is also the primary driver of differences by race/ethnicity and gender in educational attainment” (Farrington et al. 2012, p. 7). Clearly, non-cognitive skills, which include certain elements of work habits, attitudes, and motivation, are related to school success and long-term achievement. However, not all non-cognitive factors affect academic outcomes the same way during students’ developmental and educational trajectory (Duckworth and Seligman 2005; Rosen et al. 2010).

Middle school is a critical time for students in relation to their motivation and academic performance. Duckworth et al. (2011) found measurable differences for some middle-school students between grades and performance on standardized tests. The middle-school years are a time of rapid change in students’ physical and neurological development and in their level of independence. During this time of life, students experience many changes in their bodies and development of the frontal cortex, which governs skills such as decision making, impulse control, planning and organization. Wentzel and Wigfield (2007) posits that non-cognitive and psychosocial factors regarding social motivation are critical during middle school mainly because peers and influential adults other than parents become increasingly important. She points out that during this developmental period, students also confront challenges related to the structural aspects of many middle schools (such as larger size, integration of students from several elementary schools into one middle school, more teachers for students to work with, and so on). For that reason, it is not surprising that risk factors during the middle grades are predictive of dropping out of school (Balfanz 2009; Neild and Balfanz 2006) or that educational achievement by 8th grade is strongly related to college and career readiness. This suggests that the upper-elementary and middle-school grades are critical times to develop the non-cognitive and academic skills necessary for college and career readiness (ACT 2008).

Recently there has been heightened interest in various non-cognitive skills and ways of cultivating these competencies to improve student success. Educators and policymakers have been exploring strategies for enhancing non-cognitive skills. For example, some charter management organizations (CMOs)—such as the Knowledge Is Power Program (KIPP)—place a great deal of emphasis on shaping student behaviors by developing systems of sanctions and rewards and by asking all parents and students to sign specific agreements (Lake et al. 2012). Some recent research

completed by Mathematica Policy Research has suggested that the use of these strategies is positively correlated with a CMO's success in increasing student academic achievement (Furgeson et al. 2012).

In line with its commitment to promoting education as a fundamental pathway to opportunity and to affecting youth's future college, career, and life success, the Raikes Foundation is exploring alternative ways to enhance students' non-cognitive skills. To shed light on the skills that promote school success, the Foundation has invested in literature reviews to summarize current knowledge on the link between non-cognitive skills and academic achievement (Farrington et al. 2012). To prepare for future evaluations, the Foundation is also examining alternative measures of non-cognitive skills and psychosocial attitudes that could be used to assess whether interventions are succeeding in enhancing such competencies in middle-school students.

Building on previous work funded by the Raikes Foundation and others, this report presents a review and analysis of quantitative measures of non-cognitive factors and psychosocial attitudes that can be used in self-monitoring and formative evaluations of programs interested in supporting positive development of middle-school youth. This report serves multiple purposes: (1) increasing awareness of the range of instruments available; (2) identifying the breadth of constructs assessed by different measures; (3) providing information about the psychometric data available for these measures; and thus, (4) equipping the Raikes Foundation and other organizations with a resource for future evaluations, whether internal or external. This review can be a useful resource for those seeking to implement or evaluate interventions that support the development of non-cognitive skills and promote positive educational outcomes during middle childhood and adolescence.

In keeping with the interest of the Raikes Foundation and the goals for this review, we grouped a range of non-cognitive skills and psychosocial attitudes in two broad categories: learning strategies and mindsets:

1. **Learning strategies** have been explored under many overlapping but slightly varying concepts in the literature—such as self-regulated learning, metacognitive monitoring, and self-control—but generally refer to “the self-directed processes and self-beliefs that enable learners to transform their mental abilities, such as verbal aptitude, into an academic performance skill, such as writing” (Zimmerman 2008, p. 166). For our purposes, learning strategies include wide-ranging skills associated with students' capacity to (1) set and manage academic goals, (2) engage with and take an active role in learning, (3) develop problem-solving strategies, (4) persist and sustain their effort, (5) monitor their progress and comprehension, (6) use social capital and seek academic help when needed, and (7) make adjustments leading toward academic success.
2. **Mindsets** have also been described in different ways throughout the literature, but generally include student beliefs about intelligence, effort, competence, and the value and relevance of learning. Carol Dweck has discussed extensively the distinction between fixed versus growth mindsets and, more importantly, the effect such mindsets have in academic achievement. In this report, mindsets encompass students' (1) beliefs about their capacity to achieve academic success; (2) beliefs about the connection between effort, ability, and academic achievement; and (3) motivation to pursue academic challenges.

Based on that taxonomy of non-cognitive skills and psychosocial attitudes, we surveyed the literature on the measurement of specific learning strategies and mindsets. This report describes assessments of non-cognitive factors used in previous studies of students from 4th through 9th

grades. It extends the work of existing compendia by integrating a range of non-cognitive skills (learning strategies) and psychosocial attitudes (mindsets) relevant for academic achievement. Previously released literature reviews and compendia have targeted a subset of non-cognitive skills (for example, socioemotional skills or student engagement), but generally have not included the full range of learning strategies and mindsets of interest to the Raikes Foundation. Further, the compendia may include some measures of interest to the Raikes Foundation, but often constructs are labeled differently depending on the source. In this review, we integrate information from a variety of sources to describe the range of instruments available to measure the learning strategies and mindsets most relevant for academic achievement. In Table I.1, we further describe the skills included as part of these broad domains and provide the operational definitions developed in collaboration with the Raikes Foundation to guide this review of measures. The table also provides some examples of the types of items that might be used to assess each skill.

A. Search Results

We conducted a broad and extensive review of the literature using a variety of sources. First, we searched literature reviews, compendia reports, search engines provided with online measures, and student survey instruments from large-scale studies to identify instruments that were aligned with the operational definitions and were appropriate for use in middle school. Table I.2 lists all of the review sources; the “Source ID” is the acronym we use in other tables to refer to each source. Full references for each source are available in the reference list.

Then we conducted a literature search of EBSCOhost academic databases to identify recent articles that provided additional psychometric evidence on relevant measures. The search strategy was organized around construct and key word terms in combination with terms for measurement and age group or grade level. We used Boolean operators to produce a targeted output, and we restricted the search to peer-reviewed journal articles published between 2008 and 2012.

The EBSCOhost search yielded 701 citations. After we eliminated duplicates, 365 citations remained. We conducted a screening process in two phases. In the first, we determined the relevance of the article based on the article title, journal title, and abstract. As a result of this process, we excluded 226 off-topic articles that were published in health journals, related to clinical populations, or fell outside the range of interest for this review. The remaining 139 citations went through a second screening phase, during which we used the following exclusion criteria to determine whether the article was relevant for further review:

- The sample was limited to student populations outside the grade levels of interest.
- The sample was limited to special education populations or exceptional students.
- The study was not conducted in the United States, Australia, or Canada.
- The article was not a quantitative empirical study (we excluded theoretical reviews, case studies, and qualitative papers).
- The instrument did not measure constructs that matched the operational definitions presented in Table I.1.
- The study’s publication predated by more than one year a compendium that included a review of the measure used in the study.
- The study did not report the measure’s reliability or validity.

Table I.1. Construct Definitions

Construct	Definition	Item Examples
Goal Setting and Management Domain		
Goal Setting	Students' capacity to establish short- or long-term objectives, to identify potential obstacles in the pursuit of goals and relevant strategies to tackle them. Appropriate benchmarks that allow students to determine when the goal has been met.	<i>When I set a goal, I think about what I need to do to achieve that goal.</i>
Planning	The process of selecting ways to meet the goals. It involves developing plans to meet established goals; deciding on a standard for success; and organizing time, resources, and the physical environment.	<i>Before a quiz or exam, I plan out how to study the material.</i> <i>Before I start a project, I plan out how I'm going to do it.</i>
Self-Regulation	A goal-oriented effort to influence one's learning behaviors. Academic self regulation consists of self-generated thoughts, feelings, and actions used to achieve academic goals like self talk or self-rewards. It involves students' capacity to withhold short term gratification in favor of longer-term or higher-order goals.	<i>When I am in class, I listen very carefully.</i>
Persistence	The capacity to withstand challenges and setbacks sustaining one's efforts towards goals. The ability to stay focused on a task (goal) and to process information deeply avoiding distractions.	<i>If I cannot understand my schoolwork, I keep trying until I do.</i> <i>Once I set a goal, I don't give up until I achieve it.</i>
Meta-Cognitive Skills Domain		
Learning Skills	Cognitive strategies that involve organizing and manipulating material to facilitate comprehension such as retrieving concepts and ideas related to material currently being studied, making relationships between new information and prior knowledge, and transforming information into meaningful schemas. They include rehearsal, organization, and elaboration.	<i>I outline the chapters in my book to help me study.</i>
Self-Monitoring	Students' ability to self-check what they have learned and determine whether or not their level of understanding is adequate to the task. Self-monitoring strategies may include re-reading, backward and forward searches, self-questioning, contrasting textual information with prior knowledge, and comparing main ideas.	<i>When I finish working a problem, I ask myself questions to make sure I know the material I have been studying.</i>
Performance Awareness	Evaluation of how well one's own performance compares to a standard or to the performance of peers. It involves the ability to objectively assess the mastery of a task.	<i>I check my schoolwork for mistakes.</i>
Self-Correcting	Students' capacity to adjust their learning behaviors in response to their self-monitoring process or performance outcomes. It includes the use of self-correcting strategies when confusion or error is detected.	<i>If I get confused about something at school, I go back and try to figure it out.</i>

Social Capital Domain		
Social Capital	Students' resources for and use of help-seeking from peers, tutors, and non-social resources.	<i>If I have trouble learning something at school, I ask for help.</i>
Mindsets Domain		
Growth Mindset	Beliefs that intelligence is not innate and can be cultivated through effort and education. Students with growth mindsets believe that confronting challenges, profiting from mistakes, and persevering in the face of setbacks are ways of getting smarter.	<i>When I find something difficult, I spend more time learning it so I can be successful.</i> <i>Good preparation before performing a task is a way to develop your intelligence.</i>
Locus of Control	Beliefs that ability can increase with effort and that academic performance does not depend on luck or other factors beyond one's control. It refers to students' internal locus of control for academic performance.	<i>My ability and competence grow with my effort.</i> <i>If I try hard, I believe I can do my schoolwork well.</i> <i>I am successful in school because I pay attention.</i>
Self-Competence	Self-perceptions of one's ability to be successful overall or in a particular domain like math or language arts. [Excludes non-academic perceived self-competence and self-esteem.]	<i>Reading is really easy for me.</i>
Self-Efficacy	Perception that one can effectively perform the behaviors leading to a learning goal. Beliefs that attainment of goals or success is possible and within one's control; also known as agency beliefs.	<i>I can succeed at this.</i> <i>I know I'll be able to learn the material for this class.</i>
Subjective Task Value	Beliefs that learning activities have value and relate to current and future goals.	
Attainment Value	The importance of doing well on a learning task. The pursuit of an achievement goal may be motivated by the need to develop competence [mastery motivation], to demonstrate competence [performance-approach orientation], or to avoid appearing incompetent/negative judgments [performance-avoid orientation].	<i>It is important to me to do well on tests.</i> <i>I would feel good if I was the only one who could answer the teacher's questions.</i> <i>My fear of performing poorly in this class is often what motivates me.</i>
Intrinsic Value	Gaining enjoyment by doing a learning task.	<i>I really enjoy science.</i> <i>Sometimes I get so interested in</i>

Utility Value	Perception that a learning task serves a useful purpose or is necessary to meet an important end goal.	<p><i>my work I don't want to stop.</i></p> <p><i>Algebra will help me get into college.</i></p> <p><i>Math is needed throughout our lives.</i></p>
Other Value		<i>I work hard in school because my parents expect me to.</i>
Negative Mindsets	Negative psycho-social attitudes or beliefs one has about oneself in relation to academic work. Negative attitudes that stifle persistence and undermine academic behaviors.	<p><i>I don't want my friends to notice me answering teacher's questions.</i></p> <p><i>I try to do as little work as possible.</i></p> <p><i>I avoid experiences that are educational.</i></p>
Relevance	Beliefs about the importance of school achievement and the connection between academic performance and the attainment of future life goals. The perceived relevance of school work may vary by specific subject matter (for example, Math, Language, Science).	<p><i>School is important for future success.</i></p> <p><i>I want to learn as much as I can at school.</i></p>
Connectedness	Beliefs that one belongs to an academic community. This involves students' sense that they have a rightful place in a given academic setting and a sense of social belonging or membership in a classroom community. It is related to students' perceived peer and teacher acceptance and classroom climate.	<p><i>I feel happy to be part of school.</i></p> <p><i>Other students at school care about me.</i></p> <p><i>People like me belong here.</i></p> <p><i>Other people think I belong here.</i></p>

Table I.2. Review Sources

Source ID	Type	Title	Short citation and Electronic Access
IES 2009	Compendium	Survey of Outcomes Research in Character Education Programs	Person et al. (2009). http://ies.ed.gov/ncee/pdf/2009006.pdf
SEL Tools	Compendium	Assessments for Social, Emotional, and Academic Learning with Preschool/Elementary-School Children.	Denham, S, P. Ji, and B. Hamre. (2010)
NCEE 2010	Compendium	Compendium of Student, Teacher, and Classroom Measures Used in NCEE Evaluations of Educational Interventions. Volume II. Technical Details, Measure Profiles, and Glossary	Malone et al. (2010).
Rosen et al. 2010	Compendium /Literature review	Noncognitive Skills in the Classroom: New Perspectives on Educational Research	Rosen et al. (2010).
SSHD 2011	Compendium	From Soft Skills to Hard Data: Measuring Youth Program Outcomes	Wilson-Ahlstrom, et al. (2011).
REL-2011	Compendium	Measuring Student Engagement in Upper Elementary Through High School: A Description of 21 Instruments	Fredricks et al. (2011). http://ies.ed.gov/ncee/edlabs Education, Institute of Education Sciences, National Center for Education Evaluation and Regional.
Toolfind	Online	Toolfind: Youth Outcomes Measurement	Tools Directory. http://www.toolfind.org/
C.A.R.T.	Online	Compendium of Assessment and Research Tools for Measurement of Education and Youth Development Outcomes.	http://cart.rmcdenver.com/
A.T.I.S.	Online	Assessment Tools in Informal Science: Ratings and Reviews.	http://www.pearweb.org/atis/tools
E.T.S.	Online	E.T.S. Test Collection	http://www.ets.org/test_link/find_tests/
EBSCO	Online	EBSCO Host. Academic Database of Peer Reviewed Journals in Relevant Topic Areas	http://www.ebsco.com/
CSSR 2012	Literature review/white paper	Teaching Adolescents to Become Learners: The Role of Noncognitive Factors in Shaping School Performance: A Critical Literature Review.	Farrington et al. (2012)
EP	Literature review/white paper	Engagement Pedometer.	Dieterle, E., and A. Vasudeva. White paper, Gates Foundation. January 2012.
Gardner Survey.	Large scale student survey/ Report	Practices that Promote Middle School Students' Motivation and Achievement	John W. Gardner Center for Youth and Their Communities: Issue Brief.
Stupski Survey	Large scale student survey	Stupski Foundation Survey.	Sample provided by the Foundation http://www.stupski.org/context_of_our_work.htm .
Hope Survey	Large scale student survey	Autonomy, Belongingness, and Engagement in School as Contributors to Adolescent Psychological Well-Being.	Van Ryzin, M.J., A.A. Gravely, and C.J. Roseth. (2009).
MADICS	Survey/ Journal article	Maryland Adolescent Development in Context Study.	McNair, R. and H.D. Johnson. (2011). http://www.rcgd.isr.umich.edu/pgc/home.htm .

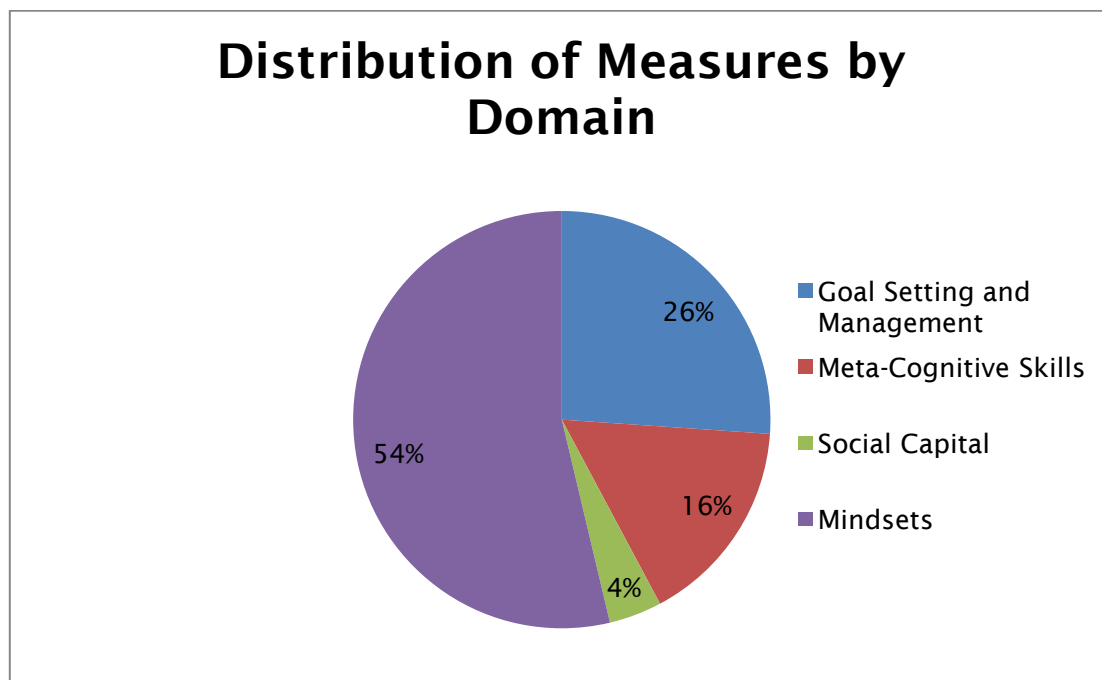
ECLS-K.	Large scale student survey / Report	Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K), Psychometric Report for the Eighth Grade (NCES 2009–002).	Pollack, J.M.; Najarian, M., Rock, D.A. and Atkins-Burnett, S.(2009).
Tripod Survey	Large scale student survey / Report	Learning About Teaching: Initial Findings from the Measures of Effective Teaching Project	Gates Foundation http://camb-ed-us.com/QualityReviews/Tripodsurveyassessments.aspx .

We eliminated 107 articles through this second phase of screening, yielding a total of 32 articles eligible for inclusion in our review. We added 16 relevant articles cited in the sources listed in Table I.2, for a total of 48 articles. To ensure that information on measures would be retrieved systematically from the articles selected for further review, we created a coding template and a training manual that guided the team of coders through the review process.

The full search and review process of all sources yielded 196 measures that matched one or more operational definitions and were suitable for use in middle school. Within these 196 measures, the most commonly addressed constructs were self-regulation (within the domain of goal management) and perceptions of connectedness and belongingness to the learning community (within the mindsets domain). By contrast, fewer measures had items that tapped on discreet beliefs about the connection between learning and personal goals, including attainment, intrinsic, and utility value. Notably, relatively few measures targeted any of the constructs within the metacognitive skills domain, such as self-monitoring; performance awareness; self-correcting; and skills to aid remembering, thinking, and learning.

Figure 1 shows the distribution of measures that mapped onto our four major domains: goal setting and management, metacognitive skills, social capital, and mindsets. Of the 196 instruments, 18 measured constructs spanning at least three of our four major domains.

Figure I.1. Distribution of Measures, by Domain



II. RELIABILITY AND VALIDITY OF NON-COGNITIVE SKILL MEASURES

In the field of measurement and evaluation, various indicators are used to describe and understand how well the measure performs and whether it measures what it is intended to measure. The two main indicators are reliability and validity. Reliability is concerned with the consistency of results when the same measurement procedure is applied more than once. It refers to the accuracy of a measure in generating consistent scores. Validity is the extent to which the results of a measure provide information that serves the intended purpose of the measure. Reliability and validity evidence helps in determining how much confidence we can place in the inferences made about a particular measure. Many different factors affect the reliability and validity of a measure, including the size and composition of the sample. An assessment might be reliable and valid for one sample of students (that is, measuring what we think it is measuring) and not valid for another sample. An obvious example of this involves the language used in assessments, but cultural and developmental differences in familiarity with different types of questions can also affect the validity of what an assessment measures. When selecting an assessment, then, it is important to consider whether prior evidence of reliability and validity was collected with samples similar to the sample that will be included in your study.

A. Reliability

Reliability estimates tell you how well the items on a measure work together (do they all seem to be measuring the same thing?) and whether you can have confidence that you would get the same estimate of skill or ability if you administered the assessment on a different day or with different raters.

Common measures of reliability include the following:

- **Internal consistency** reliability describes how well items within a test measure the same construct or domain. In a scale with high internal consistency, the response for one question is highly related to the responses for other questions. Low internal consistency indicates that the items might not address a single underlying concept. Cronbach's coefficient alpha (coefficient α) is the most commonly reported statistic for the internal consistency reliability of a measure. Other estimates can be based on correlations between different sets of items on an assessment (split-half correlations) or factor scores or estimates generated using item-response theory. There are different rules of thumb for evaluating internal consistency, but the rules are similar for the different types of estimates. Assessment users may apply more stringent criteria when the stakes involved in the assessment results are higher. A stronger criterion (usually greater than .85) is set for measures that will determine inclusion or exclusion from program services, such as programs for students with disabilities or gifted programs. For research examining group differences, the lower bound used by some researchers is .60. Even measures with an alpha exceeding .60 sometimes cannot measure skills well-enough to detect differences (between two periods of time or two samples), especially if the sample size is small to moderate. Therefore, researchers often look for measures of internal consistency that are somewhat larger, for example between .70 and .90.
- **Inter-rater reliability** is an estimate of the consistency of different scorers or observers when assessing the same individual at the same time. Methods of estimating inter-rater reliability include percentage agreement, Pearson product-moment correlation, intraclass

correlation, and kappa coefficient (Cohen 1960; Frick and Semmel 1978; Shrout and Fleiss 1979). Inter-rater reliability is particularly relevant for measures that require an observer to score another person's behavior or complete a rating or checklist describing behavior observed. When the observation calls for low inference (assessors determining whether a student exhibited a particular behavior), inter-rater reliability is stronger (greater than .85 for most estimates). With ratings that involve more judgment, inter-rater reliability estimates might be lower. However, similar to internal consistency, the lower the agreement among similar observations, the less confidence you have that the results reflect a true measure of that construct.

- **Test-retest reliability** is a measure of the stability of what is being measured over time. The higher the test-retest reliability, the more stable the assessment tool is considered to be. When the test and retest are separated by a two-week interval with no intervention occurring during that time, you would expect that the results on an assessment would be similar (agreement of results greater than .80). Longer periods between administrations of the same assessment typically will reduce the estimate of stability, because the individual's situation (for example, skill level) can be expected to change. Similarly, if an intervention is expected to change skills and behaviors, lower agreement between scores might indicate that students benefited from the intervention in different ways.

Most reliability estimates range from 0 to 1, with a higher value reflecting greater dependability and less error in measuring the particular construct. A number of factors can affect reliability estimates, including homogeneity of students taking the assessment and the length of the test (longer tests are generally more reliable than shorter ones).

Researchers and assessment developers often require that assessment and screening tools have evidence of reliability values of .70 or higher to support inferences about the measure (Bacon 2004; Cohen 1977; Litwin 2003; Nunnally 1978); however, the minimal level of reliability that is recommended differs according to the type of inference that will be made about the results.

Of the 196 measures, 110 included information about reliability or validity or both. Most had at least some scales with estimates of internal consistency above .70; for 55 measures, all estimates of internal consistency were greater than .70. For 6 scales, all reliability estimates were below .70. Five scales reported evidence of validity but not of reliability.

B. Validity

The concept of validity refers to the appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores. Can we trust the results of the assessment and what we think it means? Test validation is the process of accumulating evidence to support inferences about results. The central issue is how well an instrument measures what it is meant to measure and under what circumstances it does so. Tests or measures may be valid for one purpose or with one group of respondents but not another. Evidence of validity may be accumulated in a variety of ways. We focus here on three types of validity—construct, criterion, and predictive validity.

1. **Construct validity** is the degree to which an assessment measures the theoretical construct it is intended to measure; it confirms that inferences based on the assessment are relevant to the construct. Several approaches are used to provide evidence of construct validity. Researchers use factor analysis to determine whether the items group together in expected ways (dimensions) to describe the construct of interest. For

example, in looking at an assessment of mathematics, you would expect that items assessing understanding of geometry would form one group and those measuring algebra would form another. Factor analysis is used to examine whether the observed dimensionality of the measure is consistent with the theoretical dimensions of the construct and to examine the strength of the associations among the different items and dimensions (Crocker and Algina 1986). Researchers also study correlations of the measure with other assessments, looking for a positive relationship with other measures of that construct or a similar construct (evidence of convergent validity), and weak or negative relationships with measures of dissimilar constructs (evidence of divergent or discriminant validity) (Campbell and Fiske 1959).

2. **Criterion** validity describes the extent to which performance on one construct is related to performance on another criterion or outcome expected to be related to that construct. Although construct validity focuses on the association of very similar constructs designed to capture same phenomenon, criterion validity focuses on association with outcomes that can be causally linked to the skills captured by the measure. The criterion can be measured at the same time (concurrent validity) or in the future (predictive validity). For example, one could compare student reports about their ability to stay on task with achievement test scores collected at the same time. If higher test scores are associated with stronger student-reported task behavior, there is evidence of concurrent validity. To measure predictive validity, researchers look at the association between two measures administered at different points in time. If, for example, a measure of vocabulary in kindergarten is highly and significantly correlated with an assessment of reading ability in grade 2, the vocabulary assessment demonstrates evidence of predictive validity; kindergarten vocabulary usually predicts 2nd grade reading achievement.
3. **Predictive validity** is usually considered a stronger indicator of the validity of a measure. In general, predictive validity is reported as correlation or regression coefficients. The strength of the coefficient will vary depending on how young the student is when the first assessment is administered, the length of time between assessments, and the expected association between the constructs. Typically, lower agreement is found with assessments of younger children (particularly younger than age 5), a longer time between assessments, and constructs that are more distant from one another.

Seventeen percent of the identified 196 measures had some evidence of validity. This represents 60 percent of those with any psychometric evidence. The most frequently reported evidence was a factor analyses, either exploratory or confirmatory. More than 20 surveys or measures reported the results of a factor analyses. Consistent with the distribution of measures (Figure 1), the mindsets domain had the most measures with evidence of validity, followed by goal management. When looking at academic success as measured by grade point averages, teacher reported achievement, or achievement tests, 17 measures reported an association; most of them pertained to the mindsets and goal management domains. The most common construct to show evidence of associations with academic success was beliefs about learning and personal goals. For most other mindsets only one measure reported significant associations with school success. The next most common constructs to have an association with school success were self-regulation and social capital. Although there were fewer measures for the metacognitive skills, 5 measures had evidence of a relation to other student outcomes. Most of these associations were with other student self-report measures. Four measures had an association with GPA in at least one subject.

C. Summary Tables

From the search, screening, and review process, we identified 196 measures of learning strategies and student mindsets suitable for use in middle school. We present information about the measures we identified in two tables. Table II.1 lists a general index of instruments, the type of non-cognitive skill measured and the review source in which the instrument was identified. This table does not include psychometric evidence—it provides an index of instruments that measure one or more non-cognitive skills. The specific learning strategies and mindsets are identified using the construct labels presented in Table I.1. It includes brief citations for key references. Full citations for measures retrieved from compendia are available in the original review sources listed in Table I.2.

Table II.2 provides an overview of the availability and nature of psychometric evidence for the measures. It is a subset of the measures in Table II.1. We indicate where sources reported some evidence of validity, even if limited. Users should check the original sources for further information about the strength and quality of evidence. Measures for which no reliability or validity information was available in our main review sources were excluded from Table II.2.

Table II.1. General Index of Measures

Acronym	Instrument	Domain/Construct Codes	Source ID	Brief Citation/Key Reference*
	(Young) Children's Academic Intrinsic Motivation Inventory	Self-Regulation, Task Value, Goal Setting	Rosen et al. 2010	Ginsburg-Block and Fantuzzo (1998); Gottfried et al. (2001)
21st CCLC Teacher Survey	21st CCLC Annual Performance Report-Teacher Survey	Meta-Cognitive Skills	Toolfind	Mathematica Policy Research (2005)
4-H	4-H Study for Positive Youth Development: School Engagement Scale	Relevance, Connectedness, Locus of Control, Task Value, Self-Regulation, Meta-Cognitive Skills	REL 2011; EP	Lerner, R. M., J. V. Lerner, E. Phelps, et al. (2008)
AAMI	Aberdeen Academic Motivation Inventory	Self-Regulation/ Persistence, Self-Efficacy, Self-Correcting	CART	Entwistle (1968)
ACES	Academic Amotivation Inventory	Task Value, Locus of Control	Rosen et al. 2010	Legault et al. (2006)
	Academic Competence Evaluation Scales		Toolfind	DiPerna and Elliott (2000)
	Academic Effort Scale	Locus of Control	Rosen et al. 2010	Gest et al. (2008)
	Academic Motivation Scale	Self-Regulation, Goal Setting	Rosen et al. 2010	Legault et al. (2006); Ratelle et al. (2007); Zanobini and Usai (2002)
ASRQ	Academic Self-Regulation Questionnaire	Self-Regulation	Hope Survey	Ryan and Connell (1989); Deci (2004, personal communication)
AMP	Achievement Motivation Profile	Persistence, Self-Competence/Self-Efficacy, Goal Management	Toolfind	Friendland, Mandel, and Marcus (1996)
ARAS	Adolescent Resiliency Attitudes Scale		CART	Biscoe (1994)
AIR	Assessment of Interpersonal Relations		CART	Bracken (1993)
ATSSA	Attitude Toward Science in School Assessment	Relevance	ATIS	German (1988)
ASI	Attitudes to School Inventory	Self-Efficacy, Mindsets, Self-Competence, Attainment Value	CART	Marjoribanks (1994)
ATM	Attitudes Towards Mathematics Survey	Relevance	REL 2011	Miller et al. (1996)
	Behavioral Inventory	Goal Management, Meta-Cognitive Skills	IES 2009	Dunn and Wilson (ND)
BFQ-C	Big Five Questionnaire – Children version	Self-Regulation, Persistence	CSSR 2012	Barbaranelli et al. (2003), Caprara et al. (2011)
	Bloom's Taxonomy	Meta-Cognitive Skills	21st Century	Bloom (1956)
BSCS	Brief Self-Control Scale	Self-Regulation	CSSR 2012	Tangney, Baumeister, and Boone (2004); Study 6 in Duckworth et al. (2007); Duckworth and Seligman (2005); Duckworth and Seligman (2006)
BEST Student Survey of School Connectedness	Brief Self-Control Scale	Self-Regulation	EBSCO	Duckworth and Seligman (2006)
	Building Esteem in Students Today (BEST) Student Survey of School Connectedness	Social Capital, Connectedness	IES 2009	BEST (2000)
CARS	California Measure of Mental Motivation	Performance Awareness	Rosen et al. 2010	Giancarlo et al. (2004)
	Changes in Attitudes about the Relevance of Science	Mindsets	ATIS	Aiegel and Ranney (2003)

Acronym	Instrument	Domain/Construct Codes	Source ID	Brief Citation/Key Reference*
	Checklist of Personal Gains	Task Value	IES 2009	Laird et al. (1998), adapted from Conrad and Hedin 1980
CASSS (40-item)	Child and Adolescent Social Support Scale	Connectedness	EBSCO	Malecki et al. (2000); Malecki and Demaray (2002); Rueger, Malecki, and Demaray (2008); Rueger, Malecki, and Demaray (2010); Martinez, Aricak, Graves, Peters-Myszak, and Nellis (2011)
CASSS (60-item)	Child and Adolescent Social Support Scale	Connectedness	EBSCO	Malecki et al. (2000); Davidson (2007)
	Child Loneliness Scale	Social Capital, Connectedness	IES 2009	Asher et al. (1984); Asher and Wheeler (1985)
CHS	Children's Hope Scale (Snyder et al. 1997)	Goal Setting	EBSCO	Valle, Huebner and Suldo (2004)
CSCS	Children's Science Curiosity Scale	Meta-Cognitive Skills, Mindsets	ATIS	Harty and Beall (1984)
	Children's Self-Efficacy Scale	Self-Efficacy, Meta-Cognitive Skills	EBSCO	Usher and Pajares (2006)
CLS	Classroom Life Scale	Connectedness	Hope Survey	Johnson et al. (1985)
CCSR/AES	Consortium on Chicago School Research/Academic Engagement Scale		EP, REL 2011	Consortium on Chicago School Research at the University of Chicago (2007)
Control/SPOCQ	Control Beliefs Subscale of the Student Perceptions of Control Questionnaire	Locus of Control, Growth Mindset	CSSR 2012	Skinner, Chapman, and Baltes (1988); Skinner, Wellborn, and Connell (1990); Furrer and Skinner (2003)
CAMI	Control, Agency, and Means-Ends Interview, Agency Subscales for Effort and Ability	Self-Regulation, Locus of Control	CSSR 2012	Rosen (2010), chapter 4
CFBRS	Cooper-Farran Behavioral Rating Scales, Work-Related Subscale	Self-Regulation	CSSR 2012	Cooper and Farran (1991); (Rosen (2010), chapter 4)
	Delay of Gratification Task	Self-Regulation	EBSCO	Author designed (Duckworth and Seligman (2006))
DESSA	Devereux Student Strengths Assessment	Planning, Persistence, Mindsets, Self-Correcting	SEL Tools 2010	Lebuffe, P., V. B. Shapiro, and J. Naglieri (2008); Nickerson, A. B., and C. Fishman (2009)
DHS	Dispositional Hope Scale	Goal Setting	Hope Survey	Snyder et al. (1991)
EATQ-R	EATQ-R, Early Adolescent Temperament Questionnaire-Revised: Activation Control	Self-Regulation	EBSCO; Rosen et al. 2010	Muris and Meesters (2008); Valiente (2008); Valiente et al. (2007)
EATQ-R	EATQ-R, Early Adolescent Temperament Questionnaire-Revised: Inhibitory Control	Self-Regulation	EBSCO; Rosen et al. 2010	Muris and Meesters (2008); Valiente (2008); Valiente et al. (2007)
EPL	Effort and Persistence in Learning Subscale of the Student Approaches to Learning Survey	Planning, Locus of Control	Rosen et al. 2010	Artelt et al. (2003), as cited in Spanjers et al. (2008)
	Effort Versus Ability Failure Attribution Scale	Locus of Control	CSSR 2012	Dweck (1975)
	Effort Withdrawal Scale	Locus of Control	Rosen et al. 2010	Lau and Nie (2008)
	Ego Development, Short Form of Sentence Completion Test	Connectedness	EBSCO	Hy and Loevinger (1996); Loevinger and Wessler (1970); Loevinger, Wessler, and Redmore (1970)

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EvsD	Engagement Scale	Persistence	Rosen et al. 2010	Marks (2000)
	Engagement Versus Disaffection with Learning	Self-Regulation, Negative Mindsets	REL 2011; EP; Hope Survey; Rosen et al. 2010	Skinner, E. A., G. Marchand, C. Furrer, and T. Kindermann (2008); Skinner et al. (1990); Kindermann (2007)
ESM	Enhanced Relationships Survey, Experience Sampling Method	Social Capital, Connectedness Meta-Cognitive Skills, Mindsets	IES 2009 CSSR 2012	Developmental Studies Center Yair (2000); Csikszentmihaiyi and Larson (1987); Csikszentmihaiyi, Larson, and Prescott (1977); Larson (1989)
FAS	Eysenck I6 Junior Questionnaire	Self-Regulation	EBSCO	Eysenck, Easting, and Pearson (1984); Duckworth and Seligman (2006)
	Facilitating Conditions Questionnaire	Connectedness, Social Capital	Rosen et al. 2010	McInerney et al. (2005)
	Feelings About School	Performance Awareness, Connectedness	SEL Tools 2010	Valeski and Stipek (2001)
	Feelings Toward Others and the School	Connectedness	IES 2009	Flay et al. (2006)
Kolbe Y Index	Finn Initiative Scale	Self-Regulation, Persistence	CSSR 2012	Finn et al. (1995); Oyserman et al. (2006)
	Fitzpatrick, Askin, and Goldberg (2001); Hoffman (2001); Huitt (1999); Lingard, Tmmerman, and Berry (2005)	Planning	EBSCO	Gerdes and Stromwall (2009)
HMS	Harter's Intrinsic/Extrinsic Motivation Scale	Self-Regulation, Task Value, Goal Setting	Rosen et al. 2010	Lepper et al. (2005); Stevens et al. (2004)
	Helpless Attributions	Locus of Control	CSSR 2012	Blackwell et al. (2007)
	Homework Management Scale	Planning, Self-Efficacy, Self-Regulation, Persistence	EBSCO	Xu (2008)
HPS	Homework Purpose Scale	Locus of Control	EBSCO	Xu (2010); Xu (2011)
ISQ	Identification with School Questionnaire	Connectedness, Negative Mindsets, Relevance	REL 2011; EP	Voelkl, K. E. (1996)
ISEW	Index of Self-Efficacy for Writing	Meta-Cognitive Skills, Self-Regulation	CSSR 2012	Smith et al. (2002) (Rosen 2010, chapter 5)
IPFI	Individual Protective Factors Index	Connectedness, Self-Competence	Toolfind	Springer and Phillips (1995)
IAR	Intellectual Achievement Responsibility Scale	Locus of Control	CSSR 2012	Crandall, Katkovsky, and Crandall (1965)
	Intellectual Achievement Responsibility Scale	Meta-Cognitive Skills	Rosen et al. 2010	Crandall et al. (1965), as cited in Fincham et al. (1989)
	Intrinsic Value Scale	Mindsets	CSSR 2012	Pintrich and Degroot (1990), adapted from Eccles, 1983 and Harter, 1981
ISM	Inventory of Peer Attachment	Connectedness	EBSCO	Armsden and Greenberg (1989)
	Inventory of School Motivation	Self-Competence, Connectedness, Task Value/Utility Value, Meta-Cognitive Skills	CART	McInerney (1995)
Jr. MAI	Junior Metacognitive Awareness Inventory	Learning Skills, Self-Monitoring	EBSCO	Sperling et al. (2012)
	Kirby Delay-Discounting Rate Monetary Choice Questionnaire	Self-Regulation	CSSR 2012	Kirby, Petry, and Bickel (1999); Duckworth and Seligman (2005)
	Kirby Delay-Discounting Rate Monetary Choice Questionnaire	Self-Regulation	EBSCO	Kirby, Petry, and Bickel (1999); Duckworth and Seligman (2006)

Acronym	Instrument	Domain/Construct Codes	Source ID	Brief Citation/Key Reference*
LASSI	Learning and Study Strategies Inventory (Weinstein et al. (1987); Weinstein and Palmer (2002))	Self-Monitoring	EBSCO	Liu (2009); Weinstein et al. (1987); Weinstein and Palmer (2002)
LBS	Learning Behaviors Scale	Self-Competence, Goal Management, Persistence, Self-Correcting, Mindsets	SEL Tools 2010	McDermott (1999)
LCI	Locus of Control Inventory	Self-Efficacy, Mindsets, Connectedness	CART	Pereek (1992)
	Locus of Control Scale	Locus of Control	CART	Pollack, Najarian, Rock, and Atkins-Burnett, (2009)
MADICS	MADICS Dataset, Behavioral Engagement: Adolescent Perceptions of School Quality (interview), 11 items	Connectedness, Attainment value, Self-Regulation	EBSCO	McNair and Johnson (2009)
MADICS	MADICS Dataset, Behavioral Engagement: Adolescent Perceptions of School Quality (self-report), 13 items	Connectedness, Social Capital	EBSCO	McNair and Johnson (2009)
MADICS	MADICS Dataset, Behavioral Engagement: Behavioral Engagement: Attentiveness Measure (3 items)	Self-Regulation	EBSCO	Wang, Willett, and Eccles (2011)
MADICS	MADICS Dataset, Behavioral Engagement: Cognitive Engagement: Cognitive Strategy Use (4 items)	Self-Monitoring, Learning Skills, Self-Regulation, Planning	EBSCO	Wang, Willett, and Eccles (2011)
MADICS	MADICS Dataset, Behavioral Engagement: Cognitive Engagement: Self-Regulated Learning Scale (4 items)	Planning, Persistence	EBSCO	Wang, Willett, and Eccles (2011)
MADICS	MADICS Dataset, Behavioral Engagement: Emotional Engagement: School Belonging (3 items)	Connectedness	EBSCO	Wang, Willett, and Eccles (2011)
MADICS	MADICS Dataset, Behavioral Engagement: Emotional Engagement: Valuing of School Education (6 items)	Relevance, Utility Value	EBSCO	Wang, Willett, and Eccles (2011)
MADICS	MADICS Dataset, Behavioral Engagement: Measure of Adolescents' Grade 7 School Importance Attitudes, 7 items	Relevance, Utility Value	EBSCO	McNair and Johnson (2009)
MADICS	MADICS Dataset, Behavioral Engagement: Time Spent with Child, 7 items	Social Capital	EBSCO	McNair and Johnson (2009)
MLCQ	Making Progress in Reading Questionnaire	Goal Setting, Self-Monitoring, Social Capital, Self-Competence	EBSCO	McDevitt, et al. (2008)
	Mathematics Learning in the Classroom Questionnaire	Social Capital	EBSCO	Walker et al. (2010)
MLCQ	Mathematics Learning in the Classroom Questionnaire (Newman (1990))	Social Capital	EBSCO	Walker et al., (2010)
MARSI	Metacognitive Awareness of Reading Strategies Inventory	Self-Correcting, Learning Skills, Self-Monitoring	NCEE 2010	Mokhtari and Reichard (2002); Mokhtari et al. (2008a); Liu (2009); Cantrell et al. (2010)

Acronym	Instrument	Domain/Construct Codes	Source ID	Brief Citation/Key Reference*
MSLS	Middle School Learning Strategies Scale	Planning, Self-Regulation, Persistence, Self-Monitoring, Learning Skills, Self-Competence, Task Value, Social Capital, Negative Mindsets	EBSCO	Liu (2009);
	Mischel's Self-Imposed Delay Waiting Paradigm (follow-up to marshmallow experiment)	Self-Regulation	CSSR 2012	Mischel and Mischel (1983); Mischel et al. 1988; Shoda et al. 1990
MJSES	Morgan-Jinks Student Efficacy Scale	Self-Efficacy	Rosen et al. 2010	Jinks and Morgan (1999)
MJSES	Morgan-Jinks Student Efficacy Scale	Mindsets	Rosen et al. 2010	Jinks and Morgan, 1999 (Rosen 2010, chpt. 5)
MSLQ	Motivated Strategies for Learning Questionnaire	Planning, Self-Regulation, Persistence, Meta-Cognitive Skills, Self-Competence, Self-Efficacy, Task Value, Relevance	REL 2011; 21st Century; CSSR 2012; EP; Stupski Survey; Rosen et al. 2010	Duncan and McKeachie (2005); Pintrich and Degroot (1990); Pintrich (2000); McDevitt, et al. (2008); Liu (2009), Pintrich et al. (1991); Shores and Shannon (2007)
MES	Motivation and Engagement Scale	Locus of Control, Relevance, Self-Regulation, Planning, Task Value, Self-Efficacy; Negative Mindsets	REL 2011; EBSCO	Martin (2008; 2009)
	Motivation and Youth Development Survey	Self-Competence, Goal Setting	John W. Gardner Center	Midgley et. al (2000)
MRQ	Motivation for Reading Questionnaire	Self-Regulation, Persistence, Self-Correcting, Locus of Control, Self-Competence, Self-Efficacy, Task Value, Negative Mindsets, Relevance, Connectedness	NCEE 2010	Wigfield and Guthrie (1997); Baker and Wigfield (1999)
	Multi-CAM	Self-Regulation, Task Value, Goal Setting	Rosen et al. 2010	Walls and Little (2005)
MSLSS	Multidimensional Students' Life Satisfaction Scale	Intrinsic Value, Negative Mindsets, Connectedness	EBSCO	Lewis, Huebner, Malone, and Valois (2009); Huebner (1994); Zullig, Huebner, and Patton (2010)
MSLSS	Multidimensional Students' Life Satisfaction Scale (Huebner, 1994)	Intrinsic Value, Negative Mindsets	EBSCO	Lewis et al., (2009); Lewis et al., (2011)
	My Class Inventory	Connectedness	EBSCO	Waxman, Read, and Garcia (2008); Fraser (1998)
NELS:88	National Educational Longitudinal Study of 1988	Connectedness	EBSCO	Waxman, Read, and Garcia (2008); Ingels, Abraham, Karr, Spencer, and Franekel (1990)
	On-line Motivation Questionnaire	Self-Efficacy, Task Value, Intrinsic Value, Utility Value	Rosen et al. 2010	Crombach et al. (2003)
PALS	Patterns of Adaptive Learning Scales	Learning Skills, Locus of Control, Self-Efficacy, Task Value, Negative Mindsets, Relevance	NCEE 2010; CSSR 2012; Hope Survey; Gardner Survey	Midgley et. al (2000); Midgley et al. (1998); Blackwell et al. (2007); Meyer et al. (1997); Roeser et al. (1996); Duchesne and Ratelle (2010); Usher and Pajares (2007)
	Peer Social Network Diagram	Connectedness	EBSCO	Lansford and Parker (1999); Parker and Herrera (1996); Tu, Erath, and Flanagan (2012)
PCSC	Perceived Competence Scale for Children	Self-Competence, Self-Regulation, Self-Efficacy	CART, SEL Tools 2010; IES 2009	Harter (1982)

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PSES	Perceived School Experiences Scale	Connectedness, Self-Efficacy, Relevance, Task Value	EBSCO	Anderson-Butcher et al. (2012) STUDY 1
	Perceived Self-Efficacy Scale	Mindsets	CSSR 2012; Rosen et al. 2010	Rosen (2010, chapter 5); Brookhart et al. (2006)
PASS	Perception of Ability Scale for Students	Self-Competence, Performance Awareness	Rosen et al. 2010	Chapman et al. (2000)
	Positive Effort Beliefs	Locus of Control	CSSR 2012	Blackwell (2002); Blackwell et al. (2007)
	Positive Strategies	Persistence, Self-Correcting	CSSR 2012	Blackwell et al. (2007)
PS	Possible Selves	Mindsets	CSSR 2012	Oyserman and Saltz, (1993); Oyserman, Terry, and Bybee (2002); Oyserman et al. (2006); http://www.sitemaker.umich.edu/culture.self/files/possible_selves_measure.doc
	Profiles of Student Life: Attitudes and Behaviors	Connectedness	Toolfind	Search Institute (1996), revised 2008
	Protective Factors Scale	Connectedness, Self-Correcting, Goal Setting/Task Value/Relevance, Task Value	Toolfind	Witt, Baker, and Scott (1996)
	Public/Private Ventures Youth Outcome Measure		Toolfind	Public/Private Ventures (2001)
QSL	Quality of School Life Scale; Satisfaction with School and the Commitment to Class Work Subscales	Mindsets, Connectedness	CSSR 2012	Epstein and McPartland (1978)
REI	Reading Engagement Index	Learning Skills, Mindsets (Task Value/Relevance)	EP, REL 2011	Wigfield and Guthrie (1997); Guthrie et al. (2007b)
	Relatedness	Connectedness	CSSR 2012	Furrer and Skinner (2003)
	Relational Health Indices-Youth Version	Social Capital	IES 2009	Liang et al. under review
Rel-Q	Relationship Questionnaire	Self-Monitoring, Performance Awareness, Goal Management	SEL Tools 2010	Schultz, Selman and LaRusso (2003)
	Relative Autonomy Index	Planning, Self-Regulation, Persistence	Rosen et al. 2010	Marchard and Skinner (2007)
	Repetition-Choice Task, similar to that of Bialer and Cromwell (1960)	Self-Correcting, Persistence	CSSR 2012	Dweck (1975)
RAPS	Research Assessment Package for Schools	Self-Regulation, Persistence, Self-Correcting, Locus of Control, Self-Competence, Self-Efficacy, Task Value, Relevance, Connectedness	EP; NCEE 2010; REL 2011; Stupski Survey	Institute for Research and Reform in Education (1998)
	Resiliency Inventory	Self-Efficacy, Connectedness	SEL Tools 2010	Noam and Goldstein (1998)
	Rochester Assessment of Intellectual and Social Engagement	Locus of Control, Connectedness	Rosen et al. 2010	Kiefer and Ryan (2008)
	School Achievement Motivation Rating Scale	Task Value, Relevance	Rosen et al. 2010	Chiu (1997)
	School Climate and Interactions Survey	Connectedness	IES 2009	Marshall, and Caldwell (2007)
SCM	School Climate Measure	Connectedness	EBSCO	Zullig, Huebner, and Patton (2010); Zullig, Koopman, Patton, and Ubbes (2010)
SEM	School Engagement Measure -Macarthur network	Self-Monitoring, Mindsets	REL 2011; EP	Lippman, and Rivers (2008)

Acronym	Instrument	Domain/Construct Codes	Source ID	Brief Citation/Key Reference*
SEQ	School Engagement Scale/Questionnaire	Learning Skills	EP, REL 2011	Perry (2008)
	School Motivation	Mindsets	CSSR 2012	Wentzel and Asher (1995)
SDQ II	SDQ II, Self Description Questionnaire	Self-Competence	EBSCO	Pollack, Najarian, Rock, and Atkins-Burnett, (2009)
SDQ	SDQ, Perceived Interest/Competence-Math Subscale	Self-Competence, Task Value, Relevance	EBSCO	Pollack, Najarian, Rock, and Atkins-Burnett, (2009).
SDQ	SDQ, Perceived Interest/Competence-Reading Subscale	Self-Competence, Task Value, Relevance	EBSCO	Pollack, Najarian, Rock, and Atkins-Burnett, (2009).
	Self- and Task- Perception Questionnaire	Learning Skills, Mindsets	NCEE 2010	Eccles and Wigfield (1995)
STPQ	Self- and Task-Perception Questionnaire: Ability/Expectancy Subscale, 5 items	Self-Competence	NCEE 2010	Eccles & Wigfield (1995)
STPQ	Self- and Task-Perception Questionnaire: Ability/Expectancy Subscale, 5 items - Separate Investigation	Self-Competence	NCEE 2010	Kellow and Jones (2005)
STPQ	Self- and Task-Perception Questionnaire: Attainment Value/Importance (Within Perceived Task Value Subscale), 3 items	Attainment Value	NCEE 2010	Eccles & Wigfield (1995)
STPQ	Self- and Task-Perception Questionnaire: Extrinsic Utility (Within Perceived Task Value Subscale), 2 items	Utility Value	NCEE 2010	Eccles & Wigfield (1995)
STPQ	Self- and Task-Perception Questionnaire: Intrinsic Interest Value (Within Perceived Task Value Subscale), 2 items	Intrinsic Value	NCEE 2010	Eccles & Wigfield (1995)
STPQ	Self- and Task-Perception Questionnaire: Modified Version (adaptations of the Perceived Task Value and Ability/Expectancy Subscales) Competence Belief	Self-Competence	NCEE 2010	Wigfield et al. (1997)
STPQ	Self- and Task-Perception Questionnaire: Modified version (adaptations of the Perceived Task Value and Ability/Expectancy Subscales) Usefulness-Importance	Utility Value, Attainment value	NCEE 2010	Wigfield et al. (1997)
STPQ	Self- and Task-Perception Questionnaire: Modified version (adaptations of the Perceived Task Value and Ability/Expectancy Subscales)	Intrinsic Value	NCEE 2010	Wigfield et al. (1997)
STPQ	Self- and Task-Perception Questionnaire: Required Effort (Perceived Task Difficulty Subscale), 4 items	Self-Competence	NCEE 2010	Eccles & Wigfield (1995)
STPQ	Self- and Task-Perception Questionnaire: Task Difficulty (Perceived Task Difficulty Subscale), 3 items	Self-Competence	NCEE 2010	Eccles & Wigfield (1995)

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ACAS-E	Self-Concept of Ability Scale: Elementary Form	Performance Awareness	CART	Brookover (1967)
SCRS	Self-Control Rating Scale	Self-Regulation	CSSR 2012	Duckworth and Seligman (2005); Kendall and Wilcox, 1979
	Self-Control Rating Scale	Self-Regulation	EBSCO	Kendall, and Wilcox (1979); Duckworth and Seligman (2006)
	Self-Directed Learning Readiness Scale	Planning, Self-Regulation, Self-Monitoring, Performance Awareness, Social Capital, Self-Efficacy, Intrinsic Value	EBSCO	Lounsbury et al. (2009)
	Self-Directed Learning Scale	Goal Management!, Self-Regulation, Persistence, Self-Competence, Self-Correcting, SC, Task Value, Goal Setting, Performance Awareness, Self-Efficacy, Relevance	EBSCO	Lounsbury et al. (2009)
	Self-Efficacy Belief Assessment	Mindsets	CSSR 2012	Eaton and Dembo (1997) (Rosen (2010), chapter 5)
	Self-Efficacy for Self-Regulated Learning Scale (drawn from Bandura's 2006 CSES) (Pajares and Valiante (1999))	Self-Regulation, Self-Competence, Performance Awareness, Self-Efficacy, Intrinsic Value, Negative Mindsets	EBSCO	Usher and Pajares (2007)
SEQ-C	Self-Efficacy Questionnaire for Children	Social Capital, Self-Regulation, Self-Efficacy	EBSCO	Muris (2001); Suldo and Shaffer (2007)
	Self-Efficacy Scale	Mindsets	CSSR 2012	Pintrich and Degroot (1990), adapted from Eccles, 1983 and Schunk, 1981
SPP-A	Self-Esteem Inventory	Self-Regulation	IES 2009	Dunn and Wilson (ND)
	Self-Perception Profile for Adolescents	Performance Awareness, Connectedness, Social Capital	Rosen et al. 2010	Bouchey and Harter (2005)
SPP-C	Self-Perception Profile for Children	Self-Competence, Self-Efficacy	Rosen et al. 2010	Bouchey and Harter (2005)
SRLI	Self-Regulated Learning Inventory (Gordon, Lindner, and Harris (1996); Lindner and Harris, (1992))	Meta-Cognitive Skills	EBSCO	Liu (2009); Gordon, Lindner, and Harris (1996); Lindner and Harris (1992)
SRLQ	Self-Regulated Learning Questionnaire	Meta-Cognitive Skills, Mindsets	CSSR 2012	Rosen (2010), chapter 4; Wentzel and Asher (1995)
SRSI-SR	Self-Regulation Strategy Inventory—Self-Report	Self-Regulation	CSSR 2012	Cleary (2006)
SRSMQ	Self-Regulatory Skills Measurement Questionnaire	Self-Regulation	CSSR 2012; Rosen et al. 2010	Eom and Reiser (2000)
	Sense of Community Survey	Social Capital, Connectedness	IES 2009	Developmental Studies Center
Grit-S	Short Grit Scale	Self-Regulation	CSSR 2012	Duckworth and Quinn (2009)
	Social Health Profile	Connectedness	EBSCO	Tu, Erath, and Flanagan (2012)
SSSC	Social Support Scale for Children	Connectedness	EBSCO	Harter (1985); Rueger, Malecki, and Demaray (2010)
SCDI	Structured Career Development Inventory	Goal Setting, Self-Monitoring, Locus of Control, Persistence	EBSCO	Lapan (2004); Turner et al. (2006)

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SEI	Student Engagement Instrument	Connectedness, Self-Monitoring, Performance Awareness, Social Capital, Locus of Control, Relevance, Task Value	REL 2011; EP	Appleton, Christenson, Kim, and Reschly (2006)
	Student Engagement, Student Self-Report	Negative Mindsets	CSSR 2012	Furrer and Skinner (2003)
	Student Engagement, Teacher Report	Negative Mindsets	CSSR 2012	Furrer and Skinner (2003)
	Student Participation Questionnaire	Self-Regulation, Persistence	Rosen et al. 2010	Finn et al. (1991); Finn et al. (1995)
	Student Participation Questionnaire	Self-Regulation, Persistence	Rosen et al. 2010	Finn et al. (1991); Finn et al. (1995)
SSES	Student School Climate Questionnaire	Social Capital	IES 2009	Katsuyama and Kimble (2002)
	Student School Engagement Survey	Intrinsic Value, Self-Regulation, Learning Skills	REL 2011; EP	National Center for School Engagement (2006); Tyler, Boelter, and Boykin (2008); Fredericks, Blumenfeld, and Paris (2004)
	Student Survey	Social Capital, Self-Regulation, Self-Competence, Learning Skills, Intrinsic Value, Persistence	EBSCO	Bernstein et al. (2009)
	Students' Life Satisfaction Scale (Huebner (1991))	Connectedness	EBSCO	Suldo (2009)
	Stupski Foundation Survey	Task Value, Planning, Meta-Cognitive Skills, Self-Regulation, Locus of Control, Persistence, Growth Mindset, Social Capital	Stupski	Vallerand; Zimmerman and Bandura (2006); Pintrich et al. (1991) (MindsetsLQ); RAPS (1998); Helplessness Plans (full scale); Dweck (full scale); self-presentation of low achievement (full scale); Modified Karabenick and Knapp (1991)
	Survey of Perceptions of Oneself and School	Mindsets, Persistence	IES 2009	Pinhas and Kim (2004)
	Survey of Perceptions of Oneself in School and School Climate	Mindsets, Persistence	IES 2009	Pinhas and Kim (2004)
	Survey of Student Behavior and Affect	Goal Management, Locus of Control	IES 2009	RMC Research Corporation (2007)
SMQ	Swanson Metacognitive Questionnaire	Planning, Self-Regulation, Self-Monitoring	EBSCO	Sperling et al. (2012)
	Teacher and Student Efficacy Beliefs Survey	Meta-Cognitive Skills	CSSR 2012	Barkley (2006) (Rosen (2010), chapter 5)
EJI	The Eysenck I.6 Junior Impulsiveness Subscale	Self-Regulation	CSSR 2012	Duckworth and Seligman (2005); Eysenck, Easting, and Pearson (1984); Duckworth and Seligman (2006)
Grit LR	The Grit Scale	Self-Regulation	CSSR 2012	Study 6 in Duckworth et al. (2007)
	The Learning Record	Mindsets, Meta-Cognitive Skills	21st Century	Barr (2000); Barr (1997)
	The Middle School Self-Efficacy Scale	Mindsets	CSSR 2012	Fouad et al. (1997); (Rosen (2010), chapter 5)
	The Middle School Self-Efficacy Scale (for career decision-making)	Self-Efficacy	Rosen et al. 2010	Fouad et al. (1997)
	The Middle School Self-Efficacy Scale (for career decision-making)	Self-Efficacy	Rosen et al. 2010	Fouad et al. (1997)
	The Youth Outcome Toolbox	Planning, Persistence	Toolfind; SSHD 2011	National Research Center, Inc. (2006)
	Theory of Intelligence Scale	Growth Mindset	CSSR 2012	Blackwell et al. (2007)

Acronym	Instrument	Domain/Construct Codes	Source ID	Brief Citation/Key Reference*
WDS	Topeka Character Education Survey	Mindsets	IES 2009	Tatarko, B. (2007)
	Tripod Survey Instrument	Mindsets	MET	
	Ulm Motivational Test Battery	Performance Awareness	Rosen et al. 2010	Ziegler et al. (2008)
	Writing Dispositions Scale	Self-Efficacy, Persistence, Intrinsic Value, Performance Awareness	EBSCO	Piazza and Siebert (2008)
	Writing Self-Efficacy Scale	Self-Efficacy	EBSCO	Andrade et al. (2009)
	Your Experience with Reading Goals: In Your Own Words Questionnaire	Goal Setting	EBSCO	McDevitt et al. (2008)
YES	Youth Experiences Survey (2.0)	Connectedness	Toolfind	Hansen and Larson (2005)

* Full citations for measures retrieved from compendia are not included in the reference list. Consult original compendia to retrieve full citation

Table II.2. General Index of Measures with Reliability and Validity

Acronym	Instrument	Domain/Construct Codes	Reliability Evidence	Validity Evidence ^a
	(Young) Children's Academic Intrinsic Motivation Inventory	Self-Regulation, Subjective Task Value, Goal Setting	x	
4-H	4-H Study for Positive Youth Development: School Engagement Scale	Relevance, Connectedness, Locus of Control, Task Value, Self-Regulation, Meta-Cognitive Skills	x [†]	x
	Academic Amotivation Inventory	Subjective Task Value, Locus of Control	x	
	Academic Effort Scale	Locus of Control	x	x
	Academic Motivation Scale	Self-Regulation, Goal Setting	x [†]	
	Behavioral Inventory	Goal Management, Meta-Cognitive Skills	x	
	California Measure of Mental Motivation	Performance Awareness	x [†]	x
CASSS (40-item)	Child and Adolescent Social Support Scale	Connectedness	x [†]	x
CASSS (60-item)	Child and Adolescent Social Support Scale	Connectedness	x	x
CHS	Children's Hope Scale (Snyder et al. 1997)	Goal Setting	x [†]	x
	Children's Self-Efficacy Scale	Self-Efficacy, Meta-Cognitive Skills	x [†]	
	Delay of Gratification Task	Self-Regulation	x*	
DESSA	Devereux Student Strengths Assessment	Planning, Persistence, Mindsets, Self-Correcting	x	x
EATQ-R	EATQ-R, Early Adolescent Temperament Questionnaire-Revised: Activation Control	Self-Regulation	x [†]	x
EATQ-R	EATQ-R, Early Adolescent Temperament Questionnaire-Revised: Inhibitory Control	Self-Regulation	x [†]	x
EPL	Effort and Persistence in Learning Subscale of the Student Approaches to Learning Survey	Planning, Locus of Control	x	x
	Effort Withdrawal Scale	Locus of Control		x
	Ego Development, Short Form of Sentence Completion Test	Connectedness	x	
	Engagement Scale	Persistence	x*	x
EvSD	Engagement Versus Disaffection with Learning	Self-Regulation, Negative Mindsets	x [†]	x
	Enhanced Relationships Survey,	Social Capital, Connectedness	x [†]	
	Facilitating Conditions Questionnaire	Connectedness, Social Capital	x [†]	
	Feelings Toward Others and the School	Connectedness	x [†]	x
	Harter's Intrinsic/Extrinsic Motivation Scale	Self-Regulation, Subjective Task Value, Goal Setting	x	
HMS	Homework Management Scale	Planning, Self-Efficacy, Self-Regulation, Persistence	x	x
HPS	Homework Purpose Scale	Locus of Control	x	x
ISQ	Identification with School Questionnaire	Connectedness, Negative Mindsets, Relevance	x [†]	x
	Intellectual Achievement Responsibility Scale	Meta-Cognitive Skills	x*	
	Inventory of Peer Attachment	Connectedness	x	
Jr. MAI	Junior Metacognitive Awareness Inventory	Learning Skills, Self-Monitoring	x	x
LASSI	Learning and Study Strategies Inventory (Weinstein et al. 1987; Weinstein and Palmer 2002)	Self-Monitoring	x [†]	

Acronym	Instrument	Domain/Construct Codes	Reliability Evidence	Validity Evidence ^a
LBS	Learning Behaviors Scale	Self-Competence, Goal Management, Persistence, Self-Correcting, Mindsets	x	x
LCI	Locus of Control Inventory	Self-Efficacy, Mindsets, Connectedness	x [†]	x
	Locus of Control Scale	Locus of Control	x [†]	x
MADICS	MADICS Dataset, Behavioral Engagement: Adolescent Perceptions of School Quality (interview), 11 items	Connectedness, Attainment Value, Self-Regulation	x*	x
MADICS	MADICS Dataset, Behavioral Engagement: Adolescent Perceptions of School Quality (self-report), 13 items	Connectedness, Social Capital		x
MADICS	MADICS Dataset, Behavioral Engagement: Behavioral Engagement: Attentiveness Measure (3 items)	Self-Regulation	x	x
MADICS	MADICS Dataset, Behavioral Engagement: Cognitive Engagement: Cognitive Strategy Use (4 items)	Self-Monitoring, Learning Skills, Self-Regulation, Planning	x	x
MADICS	MADICS Dataset, Behavioral Engagement: Cognitive Engagement: Self-Regulated Learning Scale (4 items)	Planning, Persistence	x	x
MADICS	MADICS Dataset, Behavioral Engagement: Emotional Engagement: School Belonging (3 items)	Connectedness	x	x
MADICS	MADICS Dataset, Behavioral Engagement: Emotional Engagement: Valuing of School Education (6 items)	Relevance, Utility Value	x	x
MADICS	MADICS Dataset, Behavioral Engagement: Measure of Adolescents' Grade 7 School Importance Attitudes, 7 items	Relevance, Utility Value		x
MADICS	MADICS Dataset, Behavioral Engagement: Time Spent with Child, 7 items	Social Capital		x
	Making Progress in Reading Questionnaire	Goal Setting, Self-Monitoring, Meta-Cognitive Skills ⁵ , Self-Competence	x	
MARSI	Metacognitive Awareness of Reading Strategies Inventory	Self-Correcting, Learning Skills, Self-Monitoring	x	x
MSLS	Middle School Learning Strategies Scale	Planning, Self-Regulation, Persistence, Self-Monitoring, Learning Skills, Self-Competence, Task Value, Social Capital, Negative Mindse	x [†]	x
MJSES	Morgan-Jinks Student Efficacy Scale	Self-Efficacy	x [†]	
MSLQ	Motivated Strategies for Learning Questionnaire	Planning, Self-Regulation, Persistence, Meta-Cognitive Skills, Self-Competence, Self-Efficacy, Task Value, Relevance	x [†]	x
MES	Motivation and engagement Scale	Locus of Control, Relevance, Self-Regulation, Planning, Task Value, Self-Efficacy; Negative Mindsets	x [†]	x
	Multi-CAM	Self-Regulation, Subjective Task Value, Goal Setting	x	
MSLSS	Multidimensional Students' Life Satisfaction Scale (Huebner 1994)	Intrinsic Value, Negative Mindsets	x	x
	My Class Inventory	Connectedness	x [†]	x
	On-line Motivation Questionnaire	Self-Efficacy, Subjective Task Value, Intrinsic Value, Utility Value	x [†]	x
PALS	Patterns of Adaptive Learning Scales	Learning Skills, Locus of Control, Self-Efficacy, Task Value, Negative	x	x

Acronym	Instrument	Domain/Construct Codes	Reliability Evidence	Validity Evidence ^a
		Mindsets, Relevance		
	Peer Social Network Diagram	Connectedness	x	x
PCSC	Perceived Competence Scale for Children: Academic Press, Academic Motivation, School Connectedness	Self-Competence, Self-Regulation, Self-Efficacy	x [†]	x
PSES	Perceived School Experiences Scale	Connectedness, Self-Efficacy, Relevance, Subjective Task Value	x	
	Perceived Self-Efficacy Scale	Mindsets	x	
PASS	Perception of Ability Scale for Students	Self-Competence, Performance Awareness	x [†]	x
SHORT PYD	Positive Youth Development Student Questionnaire (Short Version) (4-H Study of Positive Youth Development) Version 1.3- School Engagement Items only	Relevance, Connectedness, Locus of Control	x*	
	Relational Health Indices-Youth Version	Social Capital	x	
	Relative Autonomy Index	Planning, Self-Regulation, Persistence	x	
RAPS	Research Assessment Package for Schools	Self-Regulation, Persistence, Self-Correcting, Locus of Control, Self-Competence, Self-Efficacy, Task Value, Relevance, Connectedness	x [†]	x
	Rochester Assessment of Intellectual and Social Engagement	Locus of Control, Connectedness	x [†]	x
	School Achievement Motivation Rating Scale	Subjective Task Value, Relevance	x [†]	
	School Climate and Interactions Survey	Connectedness	x [†]	
SCM	School Climate Measure	Connectedness	x [†]	x
SEM	School Engagement Measure -Macarthur network	Self-Monitoring, Mindsets	x [†]	x
SDQ II	SDQ II, Self Description Questionnaire	Self-Competence	x	
SDQ	SDQ, Perceived Interest/Competence-Math Subscale	Self-Competence, Subjective Task Value, Relevance	x [†]	x
SDQ	SDQ, Perceived Interest/Competence-Reading Subscale	Self-Competence, Subjective Task Value, Relevance	x [†]	x
	Self- and Task- Perception Questionnaire	Learning Skills, Mindsets	x	x
STPQ	Self- and Task-Perception Questionnaire: Ability/Expectancy Subscale, 5 items	Self-Competence	x	x
STPQ	Self- and Task-Perception Questionnaire: Ability/Expectancy Subscale, 5 items - separate investigation (Kellow and Jones 2005)	Self-Competence	x	x
STPQ	Self- and Task-Perception Questionnaire: Attainment Value/Importance (Within Perceived Task Value Subscale), 3 items	Attainment Value	x	x
STPQ	Self- and Task-Perception Questionnaire: Extrinsic Utility (Within Perceived Task Value Subscale), 2 items	Utility Value	x*	x
STPQ	Self- and Task-Perception Questionnaire: Intrinsic Interest Value (Within Perceived Task Value Subscale), 2 items	Intrinsic Value	x	x
STPQ	Self- and Task-Perception Questionnaire: Modified Version (adaptations of the Perceived Task Value	Self-Competence	x [†]	

Acronym	Instrument	Domain/Construct Codes	Reliability Evidence	Validity Evidence ^a
	and Ability/Expectancy Subscales): Wigfield et al. 1997			
STPQ	Competence Belief Self- and Task-Perception Questionnaire: Modified Version (adaptations of the Perceived Task Value and Ability/Expectancy Subscales): Wigfield et al. 1997	Utility Value, Attainment Value	x [†]	
STPQ	Usefulness-Importance Self- and Task-Perception Questionnaire: Modified Version (adaptations of the Perceived Task Value and Ability/Expectancy Subscales): Wigfield et al. 1997	Intrinsic Value	x [†]	
STPQ	Self- and Task-Perception Questionnaire: Required Effort (Perceived Task Difficulty Subscale), 4 items	Self-Competence	x	x
STPQ	Self- and Task-Perception Questionnaire: Task Difficulty (Perceived Task Difficulty Subscale), 3 items	Self-Competence	x	x
	Self-Directed Learning Readiness Scale	Planning, Self-Regulation, Self-Monitoring, Performance Awareness, Meta-Cognitive Skills ⁵ , Self-Efficacy, Intrinsic Value	x	x
	Self-Directed Learning Scale	Planning, Self-Regulation, Self-Monitoring, Performance Awareness, Social Capital, Self-Efficacy, Intrinsic Value	x	x
	Self-Efficacy Belief Assessment	Persistence	x	
	Self-Efficacy for Self-Regulated Learning Scale (drawn from Bandura's 2006 CSES) (Pajares and Valiante, 1999)	Self-Regulation, Self-Competence, Performance Awareness, Self-Efficacy, Intrinsic Value, Negative Mindsets	x [†]	
SEQ-C	Self-Efficacy Questionnaire for Children	Social Capital, Self-Regulation, Self-Efficacy	x	x
	Self-Efficacy Scale	Mindsets	x	x
SPP-A	Self-Perception Profile for Adolescents	Performance Awareness, Connectedness, Social Capital	x	
SPP-C	Self-Perception Profile for Children	Self-Competence, Self-Efficacy	x [†]	x
SRLI	Self-Regulated Learning Inventory (Gordon, Lindner, and Harris 1996; Lindner and Harris 1991)	Meta-Cognitive Skills	x [†]	
Motivation for Reading Questionnaire	Self-Regulation, Persistence, Self-Correcting, Locus of Control, Self-Competence, Self-Efficacy, Task Value, Negative Mindsets, Relevance, Connectedness	MRQ	x [†]	x
SRSMQ	Self-Regulatory Skills Measurement Questionnaire	Self-Regulation	x	
	Sense of Community Survey	Social Capital, Connectedness	x [†]	
	Social Health Profile	Connectedness	x	
SSSC	Social Support Scale for Children	Connectedness	x	
SCDI	Structured Career Development Inventory	Goal Setting, Self-Monitoring, Locus of Control, Persistence	x	
SEI	Student Engagement Instrument	Connectedness, Self-Monitoring, Performance Awareness, Social Capital, Locus of Control, Relevance, Task Value	x	x

Acronym	Instrument	Domain/Construct Codes	Reliability Evidence	Validity Evidence ^a
SSES	Student Participation Questionnaire	Self-Regulation, Persistence	x	
	Student Participation Questionnaire	Self-Regulation, Persistence	x	
	Student School Engagement Survey	Intrinsic Value, Self-Regulation, Learning Skills	x	x
	Students' Life Satisfaction Scale (Huebner 1991)	Connectedness	x [†]	x
	Survey of Perceptions of Oneself and School	Mindsets, Persistence	x [†]	
SMQ	Survey of Student Behavior and Affect	Goal Management, Locus of Control	x [†]	
	Swanson Metacognitive Questionnaire	Planning, Self-Regulation, Self-Monitoring	x [†]	x
	Teacher and Student Efficacy Beliefs Survey	Planning, Locus of Control	x	
	The Middle School Self-Efficacy Scale (for career decision-making)	Self-Efficacy	x	x
	The Middle School Self-Efficacy Scale (for career decision-making)	Self-Efficacy	x [†]	x
	Theory of Intelligence Scale	Growth Mindset	x	x
	Writing Self-Efficacy Scale	Self-Efficacy	x	
	Your Experience with Reading Goals: In Your Own Words Questionnaire	Goal Setting	x [†]	

^a The X indicates that sources reported at least minimal evidence of validity. Users should check the original sources for further information about the strength and quality of evidence.
 * All estimates (alpha or r) below .70
 † Some estimates (alpha or r) below .70

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