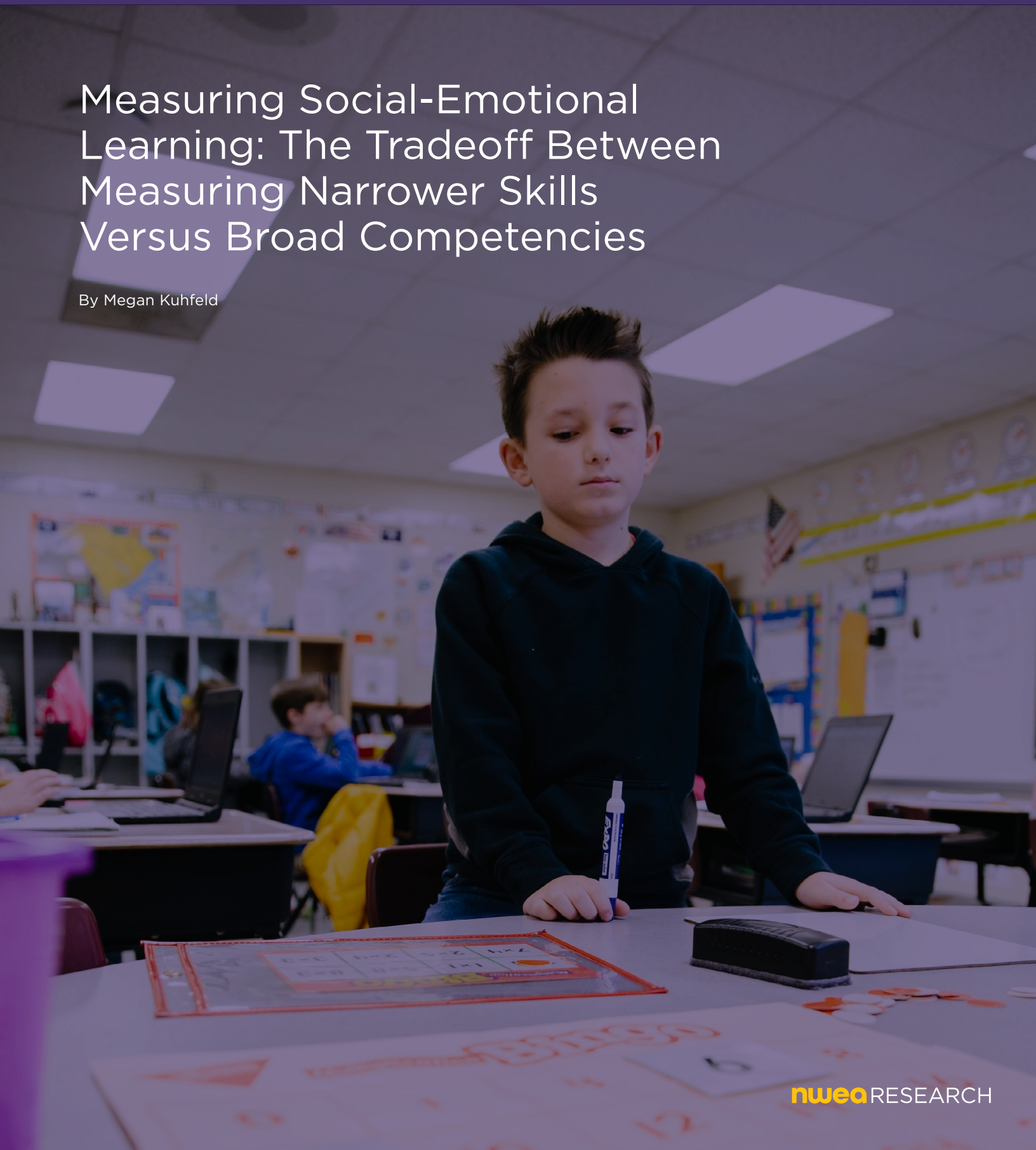
COLLABORATIVE FOR STUDENT GROWTH

BRIEF

Measuring Social-Emotional Learning: The Tradeoff Between Measuring Narrower Skills Versus Broad Competencies

By Megan Kuhfeld



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KEY FINDINGS

- A student survey measure intended to capture seven unique SEL competencies (including academic engagement, self-efficacy, perseverance, and self-management) provided some evidence to support the multidimensionality of SEL constructs, though the skills are often highly correlated.
- But, there is a tradeoff: students' long-term educational outcomes are best predicted by a composite intrapersonal competency domain rather than by the unique dimensions.

What do we really mean, and what do we actually measure, when we examine social-emotional learning (SEL) skills? SEL competencies can be powerful predictors of students' long-term educational and work outcomes[i,ii], which has driven increased interest in SEL among educators, policymakers, and researchers. However, SEL can mean different things to different people: a recent review identified 136 different frameworks that attempt to group, identify, define the key SEL skills students need to succeed in school and their careers[iii], and there are hundreds of different questionnaires and surveys used to measure diverse SEL skills.[iv] Individual SEL skills are often grouped into broader categories, like *interpersonal* and *intrapersonal* competencies, though a single skill in one framework might be considered several different skills in another.

Interpersonal competencies: skills that are important for constructive interactions and relationships with other people. Communication, collaboration, and social skills are three commonly studied examples.

Intrapersonal competencies: attitudes and dispositions that influence how students solve problems in school and work. Self-regulation, growth mindset, academic engagement, and perseverance are some commonly studied examples.

While practitioners and policymakers often refer to SEL as a global characteristic of students, approaches to measuring these skills and using them to identify students who need related supports do not. Rather, when SEL is measured, it is typically with surveys of much narrower, separate skills, like grit, self-efficacy, or self-management. Scores from surveys that measure a single construct, such as grit, are then used to predict outcomes of interest, like educational attainment. Even when studies include multiple SEL skills, they seldom examine how multiple skills and the items used to measure these skills may be related.

The diversity of frameworks and the disconnect between terminology and research practices leaves many essential questions. If we want to predict an important outcome, like the likelihood that a student will graduate high school, will adding a specific SEL skill to those measured improve the accuracy of our predictions? Are these varied SEL constructs really measuring unique competencies: do questions about students' *academic engagement* and motivation to learn, for example, provide information about different skills, or about a broader, shared competency? Researchers are working to align these varied frameworks[v,vi] and to identify the key academic and noncognitive factors that best predict student outcomes so educators and policymakers can answer important questions like these.

This research examined the benefits and trade-offs of focusing on narrowly-defined competencies versus more broadly-defined categories using longitudinal data from the Study of Deeper Learning (SDL)[vii]. The SDL contains student survey responses measuring seven SEL competencies, including one interpersonal and six intrapersonal competencies, that, individually, have been shown to predict high school graduation[viii].

The study addressed two questions:

1. Are the seven competencies psychometrically distinct or do they reflect broader underlying dimensions?
2. What combination of competencies best predicts students' high school graduation and college enrollment?

Interpersonal competency	
SKILL	DEFINITION
Collaboration skills	The extent to which a student perceives that he or she works well in a group and cooperates to identify or create solutions.
Intrapersonal competencies	
Academic engagement	The degree to which a student agrees that he or she has "interest and engagement in learning" and participates actively in classroom learning activities.
Motivation to learn	The degree to which a student is motivated to do well academically and to become more knowledgeable
Self-efficacy	The degree to which a student tends to view him or herself "as capable of meeting task demands in a broad array of contexts."
Locus of control	The extent to which a student feels he or she has control over what happens to them and their beliefs in their own personal control, powerful others, and chance of fate.
Perseverance	The degree to which a student agrees that he or she maintains effort and interest despite failure, adversity, and plateaus in progress.
Self-management	The extent to which a student feels he or she is able to independently manage their work and schedules to meet goals.

Overview of competentices included in the SDL and this study

The data to address the first question came from 1,636 high school students from 24 schools in two states who completed the SEL survey in grades 11 and 12. Because some student characteristic data were only available from one state, a subset of the sample (1,054 students) were used to address the predictive question. High school graduation status and college enrollment data were also used to answer the second research question.

SEL competencies measured were strongly correlated with each other, but there was evidence that some SEL constructs measured unique skills.

Analyses of student responses to the 52 items on the SEL survey showed that survey responses did not lead to well-differentiated scores among the seven competencies studied. Some competencies did appear to be conceptually unique: survey items that measured the interpersonal competency *collaboration skills* had low to moderate correlation with items measuring varied intrapersonal competencies. However, there were strong correlations, over 0.85, between several competencies, and some of the survey questions' responses were more closely correlated with questions that were intended to measure a different SEL skill.

Additional analyses identified five item clusters that measured conceptually unique competencies. Many of these five clusters were rearrangements of the original seven domains that the items were written to measure. The first, *Collaboration*, included the ten original collaboration survey items. The second, which we termed Engagement included some items from Motivation to learn (for example, "I think what I am learning in my classes is interesting") and *Academic engagement* items. The third conceptual grouping, *Independent learning* included a subset of the original *self-management* items focused on learning effectively on your own. The fourth, *Self-efficacy*, included both *self-efficacy* and locus of *control* items. The last domain, Goal orientation, included *self-management*, *perseverance*, and two *motivation* to learn items. Clustering items into these five groupings strengthened how well items were related to their respective domains, though this approach only was a marginal improvement in terms of model fit over simpler model in which all of the intrapersonal SEL skills were grouped together.

Students' long-term educational outcomes were better predicted by a combined intrapersonal competency domain

Three SEL competencies, *Engagement*, *Independent learning*, and *Self-efficacy* were identified as the strongest predictors among the individual SEL skills of

students' on-time high school graduation and college enrollment rates. We then compared the predictive power (with regards to on-time high school graduation and college enrollment) of the individual competencies with a combined SEL score (including both interpersonal and intrapersonal competencies), and with two broad SEL scores (the interpersonal competency and a composite intrapersonal competency). The models also included other factors, including student math test scores and several background variables.

Most students in this sample (92 percent) graduated high school on time, so there was little variation in graduation rates for the high-school graduation models to explain. None of the SEL constructs, individually or combined, were significant predictors of high school graduation in this sample, though student math scores, were a significant predictor.

For college enrollment, both the combined intrapersonal/interpersonal SEL score and the intrapersonal composite score were significant predictors of four-year college enrollment, but the individual interpersonal competencies were not. Furthermore, including the composite intrapersonal factor resulted in the largest amount of explained variance in four-year college enrollment of all of the models considered.

RECOMMENDATIONS

More work is needed to build a shared definition and understanding of which SEL skills matter for student success, and how to best measure these skills.

While SEL competencies have gained a great deal of prominence in educational policy in recent years, how we think about, measure, and report these skills is not yet well aligned.

One key missing piece is a shared understanding and definition of SEL domains that are sufficiently distinct and provide information above and beyond a combined score. This study provides some evidence of multiple factors within intrapersonal survey items, correlations in scores between the different competencies, when reduced to the five clusters, remained fairly high, from 0.57 to 0.84. One possible explanation is that these domains represent a broader trait that explains much of the shared variance in the responses. Another possibility is that these positive correlations represent a "halo effect", where students who have generally positive view of themselves rate themselves positively across a wide range of theoretically unique domains. A third possibility is these high correlations are the result of social desirability bias, where students provide inaccurate responses that make themselves seem better. Most likely, the reality is some combination of these possibilities. Additional research is needed to examine whether student self-report responses correlate highly with ratings from parents and teachers, or results from other measurement tools like performance tasks. In addition, alternative measures of SEL skills like situational judgement tests or discrete choice experiments may provide more promising opportunities to measure SEL skills that may avoid some of the limitations of self-report measures.

The research community must build more reliable surveys of SEL skills.

Another important but rarely addressed concern about scores produced from self-report survey measures is that the average number of items measuring any given competency is typically less than ten, and sometimes as low as two or three. By comparison, it is very rare to see a cognitive assessment with 10 or fewer items, as test developers know that it is difficulty to precisely estimate students' ability without a range of item difficulties. It is possible that the improved predictive power seen with the composite score simply reflects that there is too much noise in the separate competency scores (which are based on smaller numbers of items) drowning out the unique predictive power. More attention should be paid to the reliability of inter/intrapersonal survey measures. In particular, more "difficult" items should be developed to better differentiate between students at the upper end of the scale and improve reliability.

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