

TABLE 10.1 Terminology Associated With Academic Engagement.

Terminology	Definition
Academic engagement	A broad term referring to time when students are paying attention or actively engaged in work (i.e., trying to learn); content that is too challenging, however, will not result in learning (i.e., academic learning time)
Time-on-task	The time students spend complying with teacher requests, which includes engagement in academic material but also a broader constellation of behaviors (e.g., organizing materials)
Academic learning time or AET	The amount of time students are <i>successfully</i> engaged in learning relevant, academic content
OTRs	The presentation of a response stimulus (e.g., teacher or peer question, prompt, or cue or a material prompt) followed by a student response and response contingency (i.e., feedback)

AET, Academic engaged time; OTRs, opportunities to respond.

Assessing Academic Engaged Time

In order for students to be involved in the learning process, teachers must provide students with the choice to be involved. Knowing whether lack of adequate gains in achievement by a student or students within a classroom can be attributable to insufficient opportunities to be involved in the learning process is an important source of information when developing interventions for individual, classroom, or school of students. Collecting data regarding the number and quality of learning opportunities that teachers provide to students is, however, time consuming. Furthermore, measuring whether a student is meaningfully engaged in a task is not always obvious. Two students might both be on-task and reading the same passage, but only one is truly engaged with the material and trying to gain meaning from the text. The second student may not be meaningfully engaged because the student lacks the necessary reading fluency, vocabulary knowledge, background information, or motivation to understand the text. Fortunately, gains in academic achievement can be used as a proxy for AET given its strong relationship with rates of learning and the fact that the purpose of AET is to promote student learning (Greenwood et al., 2002; Singh, Granville, & Dika, 2002).

Fortunately, with many schools employing a multitier system of supports (MTSS) model for identifying students with special education needs (Jimerson, Burns, & VanDerHeyden, 2015), there is an increasing number of schools with access to quality academic achievement data. This data collected as part of the MTSS system can be used as a proxy for AET when examining whether students within a district, school, and individual classrooms are being provided with sufficient AET (Ardoin, Wagner, & Bangs, 2015). Evaluation of academic data across these levels (district, school, and classroom) allows for the determination of the quality of the academic curriculum within the district and school and whether students in some classrooms may not be making expected rates of academic gain due to lack of AET. If only a small portion of classrooms are making inadequate gains in academic achievement and the students in those classrooms did not differ in level of achievement from other classrooms at the beginning of the school year, then one can assume the academic curriculum set forth by the district is not the problem, but rather students are being provided with insufficient AET, or the classroom environment does support or promote AET. Classrooms might fail to support AET because the reinforcers available for engaging in other behavior exceed the reinforcement/motivation available for AET. In such circumstances, students will more often choose to engage in undesirable behaviors than choose to engage in AET (Simonsen, Fairbanks, Briesch, Myers, & Sugai, 2008).

require to be successful both behaviorally and academically ([Jimerson et al., 2015](#)). Tier 1 is the general education curriculum and behavioral supports to which all students have access. Schools employing MTSS should assess the effects of their Tier 1 curriculum by conducting universal screenings, and it involves the administration of academic and sometimes behavioral assessment measures to all students. Academic universal screening data are typically collected three times annually in the areas of mathematics and reading using either curriculum-based measurement procedures or computer adaptive tests ([Mellard, McKnight, & Woods, 2009](#)). Frequently employed behavioral screeners include the Social, Academic, and Emotional Behavior Risk Screener ([Kilgus, Chafouleas, Riley-Tillman, & von der Embse, 2014](#)), Behavior and Emotional Screening System ([Kamphaus & Reynolds, 2007](#)), and Student Risk Screening Scale ([Drummond, 1994](#)).

Academic and behavioral universal screening data are generally used to identify students needing Tier 2 supplemental instruction. Students in Tier 2 are provided with supplemental intervention and the effects of

Measuring Academic Engagement

Although data regarding on-task behavior (i.e., engaged in assigned work) does not provide a complete picture of students' AET, it can provide valuable information that together with other data (e.g., academic achievement data) can provide a fairly complete picture of AET. Estimating rates of on-task behavior within a classroom is a relatively easy procedure and is generally conducted using systematic direct observations. Researchers and practitioners have employed multiple methods for assessing on-task behavior. One method is dividing students within a classroom into small groups and, during prespecified intervals (e.g., 15 seconds), recording whether students were either engaged in academic behavior the entire time (i.e., whole interval recording procedures) or at any point during the interval (i.e., partial interval recording procedures). Whole and partial interval recording procedures are, however, likely to under- and overestimate the frequency of the behavior being observed, respectively (Briesch, Hemphill, Volpe, & Daniels, 2015).

An alternative, more accurate means of measuring on-task behavior of students within a classroom is to observe a different student at the end of each interval using momentary time sampling procedures. In contrast to whole and partial interval recording procedures, momentary time sampling involves recording whether the behavior occurs at the end of the interval regardless of whether the behavior being observed occurred during the whole or part of the interval. After all students in the classroom are observed using momentary time sampling, the observer again rotates through the classroom observing an individual student at the end of each interval. The procedure is repeated until a prespecified period of time has elapsed (e.g., 30 minutes). Percentage of on-task behavior is calculated by dividing the number of intervals during which on-task behavior was observed by the total number of intervals observed and then multiply that number by 100% (Briesch et al., 2015; Dart, Radley, Briesch, Furlow, & Cavell, 2016).

Another commonly used procedure to accurately estimate classroom on-task behavior is the Planned Activity Check (PLA-check; Risley & Cataldo, 1974). This observation method also uses momentary time sampling procedures, but in contrast to observing only one student at the end of each interval, the observer records the total number of students in the classroom either on-task or not on-task at the end of each interval. Typically, interval lengths are longer than those described above, ranging from 1 to 5 minutes, which allows the observer more time to scan through the room and count the number of individuals who are academically engaged. If the number of students in the classroom fluctuates across intervals, for each interval the observer must also record the number of students that are present. Percentage of students engaged in on-task behavior is then determined by first

Choice of Academic Engaged Time

When considering the causes of lack of AET in the classroom, one must recognize what behavior a student engages in at any moment is a choice, and ultimately teachers control the probability of students' behavioral choices ([Martens, 1992](#); [Shriver & Kramer, 1997](#)). Whether students choose to be *productively* and *successfully* engaged with educationally meaningful content over other potential behaviors (daydreaming, communicating with friends) is based upon a number of factors. A primary factor is the extent to which AET is a viable choice. Students who lack the necessary skills to complete assignments or answer questions posed in class essentially lack the choice of AET ([Skinner, Pappas, & Davis, 2005](#)). Students given a text that contains vocabulary they cannot understand might not be able to fully comprehend the text and thus cannot be productive and successful

in understanding what they are reading. For this reason, it is essential that students are able to read assigned text with accuracy and fluency and that they have the necessary vocabulary and contextual information to make sense of what they are being expected to read and learn from. If a different text cannot be used or if the text cannot be modified, strategies such as providing students with listening passage preview, repeated readings, and previewing of the content and vocabulary must be provided so as to allow the student a choice to meaningfully engage themselves with the text.

A second factor that determines the probability a student will choose AET is the likelihood of the choice resulting in the behavior being reinforced and the rate and quality of reinforcement. For example, AET is a greater probability when students are reading a story that they can comprehend. Reading a text for which one lacks prerequisite skills can be akin to asking a person to read a text in an unknown foreign language. Little reinforcement in the form of knowledge or entertainment is likely to be gained by students if they are unable to comprehend the text. The amount of effort that students must put forth when choosing AET will also impact the likelihood that they will make the choice. Students who struggle to decode words or are reluctant to seek reference material or a teacher to understand a text are less likely to choose AET over other behaviors that are more likely to result in reinforcement and require less effort. The quality of reinforcers available for different behaviors in which a student might engage will also determine the probability of them choosing AET over other behaviors. Reinforcement quality for reading can be increased by providing students with text associated with topics in which they are interested.

Another factor that contributes to the probability students will choose AET is the amount, rate, and quality of reinforcement available for *other behaviors* in which the student might otherwise choose to engage. The greater the availability of reinforcers for behaviors other than academic engagement, the less likely a student is to choose AET (Martens, 1992; Skinner et al., 2005). For this reason, quality classroom management procedures are essential in helping teachers to maintain the sources of reinforcement to which students have access to that do not promote students' choice of AET. Evaluation of the teachers' classroom management practices are, therefore, essential when determining why students in a classroom are not making adequate rates of academic progress and whether this is potentially due to students receiving insufficient AET.

TECHNIQUES FOR PROMOTING ACADEMIC ENGAGEMENT IN READING

Although all content areas are important to students' success, reading is especially important as students' ability to read impacts their ability to engage in nearly every content area. When students struggle to read the text within any content area (e.g., mathematics, science), the level of effort required to complete related assignments increases [National Institute of Child Health and Human Development (NICHD), 2000]. Those students who engage in and practice reading improve their reading abilities, and those students who lack the skills to practice or choose not to practice continue to fall further and further behind their peers across all academic areas (Stanovich, 2009).

Teachers can set students up for success in reading and break naturally occurring patterns of student disengagement by increasing the frequency of positive academic engagement. In order for positive academic engagement to occur, instruction must be accessible (i.e., at a student's instructional level), and immediate reinforcement for engagement should be provided. A general approach to creating these conditions is through deliberate planning for increased OTRs during instruction (Simonsen, Myers, & DeLuca, 2010). Frequent OTRs reduce off-task and inappropriate behaviors and increase academic engagement. Delivery of an OTR includes (1) the provision of an academic stimulus (e.g., a teacher prompt or question, a peer statement or question, or material prompt such as a question on a guided note sheet); (2) a student response (individual or group; written, verbal, or signal); and (3) the provision of a response contingency (i.e., feedback; MacSuga-Gage & Gage, 2015).

Providing frequent opportunities for students' academic responding has a reciprocal relationship with learning (see Fig. 10.2). First, frequent engagement requires students to demonstrate knowledge. The act of recalling information is a key to the promotion of long-term retention (Brown, Roediger, & McDaniel, 2014). Thus, simply requiring students to respond to prompts on a frequent and regular basis strengthens students' learning. In turn, if students produce incorrect responses, teachers should provide immediate, corrective feedback. The provision of academic feedback is associated with significant gains in student learning (Fisher et al., 2015). Ideally, students would then apply the feedback in order to produce correct responses—thereby strengthening the connection between prompt and correct response. If students are not provided with both feedback and additional opportunities to produce a correct response, students are less likely to remember and retain the information or skill.

SUMMARY

Without an effective curriculum, teachers are unlikely to be able to maximize students' academic growth. An effective curriculum, however, is not all that is needed. Maximizing student learning requires that teachers have the knowledge regarding what skills students must have to complete academic tasks, whether each student in their classroom has those skills, modifications individual students will need to successfully complete tasks, and what consequences reinforces each students' choices to choose AET. Furthermore, teachers must have the skills necessary to (1) select the appropriate materials to present to their students, (2) solicit response from their students, (3) use students' responses as a means of evaluating students' skills, (4) provide effective feedback, (5) modify instruction/content to match the wide range of skill sets of their students, and (6) effectively manage classroom behavior. Lack of knowledge or skills in any of these areas is likely to lead to low levels of AET.

Many reading intervention programs exist for purchase that claim to be capable of catching students up to their peers. It is, however, important that an intervention program is chosen to match the individual skill needs of the student for whom it will be implemented. Although the ultimate goal may be to improve a student's comprehension skills, if the student's instructional needs are in the area of phonics, an intervention targeting comprehension strategies is unlikely to be effective. Furthermore, just as students are unlikely to be academically engaged when incapable of doing classwork, they are unlikely to be academically engaged if provided with a reading program that is not matched to their skill needs.

As mentioned across other chapters within this handbook, academic engagement is a multidimensional construct. In the current chapter, we focused on one aspect of that broad construct which is students' behavior within the classroom. Specifically, we focus on their choice to be meaningfully engaged in academic work. In the worst of situations, students are not provided with the choice to be academically engaged because instruction is not differentiated and they are given tasks for which they lack the necessary skills. In the best of situations, teachers provide students with academic tasks for which they possess sufficient skills, teachers differentiate instruction in order that all students are able to practice and experience success, and teachers reinforce students' choices of AET. Although this chapter has focused on the promotion of students' choice of AET, a classroom environment in which the teacher works to understand and accommodate differences in students' abilities and reinforces students' efforts to learn and be engaged with their work is likely to be one in which the multidimensional construct of engagement is high amongst all students.

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Student—Centered Practices for Student Mathematical Agency and Engagement

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It becomes theirs because they're the ones who come to that idea, not because I said it or because of some authority; it just makes sense. It makes sense because it's related to the process and the thinking they're going through. ~ *Horton and Freire (1990)*

INTRODUCTION

A number of school-related barriers cause students to disengage in the math classroom. Teacher beliefs and biases, the type of mathematical task assigned, the lesson format, the classroom culture, and students' perceptions of their own and their peers' mathematical abilities—all impact student engagement. This chapter explores how common classroom routines lead students to disengage in math class and will share practices from two evidence-backed pedagogical frameworks for mathematics instruction—cognitively guided instruction (CGI) and complex instruction (CI)—that educators, support staff, and administrators can use to promote student mathematical engagement and success. In alignment with the evidence body for each of these frameworks, this chapter will highlight CGI practices through an elementary school lens, and CI practices through a secondary lens. However, both CGI and CI philosophies complement one another and can be used to inform instruction across K–12 classrooms.

The instructional practices shared in this chapter also address the three assumptions that guide this handbook: (1) engagement is multidimensional, and the three dimensions—behavioral, emotional, and cognitive—must be considered when designing classroom routines and instructional practices, (2) it is important to increase engagement for each and every student, and (3) the critical need to translate research on engagement into practice. To this end, practices aligned with CGI (Carpenter, Fennema, & Franke, 1996) and CI (Cohen, Lotan, Scarloss, & Arellano, 1999; Horn, 2012) frameworks provide useful strategies for creating a student-centered classroom where *all* students are engaged in learning mathematics to high levels.

THE MATHEMATICAL AGENCY IMPROVEMENT COMMUNITY

The classroom practices and routines shared in this chapter were tested by educators in the Mathematical Agency Improvement Community (MAIC), a network of 40 teachers from 17 schools serving diverse student populations in Southern California. Over the course of 2 years, MAIC teachers tested and scaled student-centered math practices with the shared aim: *By June 2018, 80% of students in participating classrooms will experience increased mathematical agency and success.* Teachers in the network used improvement science—a set of methods and tools

CONCLUSION

Creating a classroom culture focused on collaboration and sense-making can significantly increase the likelihood of student engagement in the math classroom. Using a launch, explore, discuss lesson structure that positions students as the mathematical authority and increases the amount of time students engage in higher order mathematical reasoning can help students cultivate a sense of ownership and intellectual engagement. Focusing classroom discourse on comparing and contrasting different problem-solving strategies instead of on procedural speed and answer-getting provides opportunities for all students to engage in sense-making of big mathematical ideas.

Five high-leverage practices can help teachers use a launch, explore, discuss lesson structure. *Anticipatory planning*—identifying a lesson goal, choosing a problem, and anticipating student responses—provides a guide for teachers to use during the explore phase of a lesson when they *monitor* student thinking and problem-solving strategies. After selecting and *sequencing* student strategies to share, the teacher facilitates a whole-class discussion encouraging students to make *connections* between the different mathematical strategies.

Group work can also be used to build a learning culture and encourage students to see each other as resources rather than competitors. Using the tools from CI, including explicitly teaching group norms, using group roles, and broadening what it means to be mathematical, students embrace their natural problem-solving abilities and learn they are a valued part of the mathematical community.

Changing Beliefs to Be Engaged in School: Using Integrated Mindset Interventions to Promote Student Engagement During School Transitions

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INTRODUCTION

Over the past two decades, the topic of student engagement has received a lot of attention and interest because of its potential for enhancing academic achievement and reducing dropout rates (Wang & Degol, 2014). Research shows that when students are engaged in school, they are more likely to persist in the face of challenges and perform better (Fredricks, Blumenfeld, & Paris, 2004). Moreover, student engagement is a malleable state that can be shaped by the learning context and holds tremendous potential as a locus for interventions (Wang & Degol, 2014). Despite the malleability of student engagement, very few theory- and evidence-based universal intervention programs that target all students have been developed and implemented in the school settings.

Recently, a growing body of studies has demonstrated that brief, school-based psychosocial interventions (e.g., growth mindset intervention, social belonging intervention) can change student motivational beliefs, which may improve student engagement and increase academic success (Blackwell, Trzesniewski, & Dweck, 2007; Lin-Siegler, Ahn, Chen, Fang, & Luna-Lucero, 2016; Walton & Cohen, 2011). However, these interventions face

two important barriers and challenges that limit impacts at the individual and/or population level. First, previous intervention work that targeted student engagement has not specifically addressed the psychosocial stressors associated with school transitions. Second, few interventions thus far have *integrated* the key ingredients of well-validated psychosocial interventions even though many of them share similar underlying messages. As middle school and high school coincide with a variety of academic and social stressors, helping students with the transition should have a long-term impact on students' engagement trajectories (Cohen & Sherman, 2014).

In this chapter, we describe three related but separate psychosocial intervention approaches that work to change students' mindsets, feelings, and beliefs about how they think about stressors, interact with others, and succeed in school and beyond: (1) famous scientists' struggle stories (Hong & Lin-Siegler, 2011; Lin-Siegler et al., 2016), (2) belonging mindset intervention that presents testimonials from student exemplars together with structured writing exercises (Walton & Cohen, 2011), and (3) growth mindset intervention that presents factual descriptions about the possibility for growth in intelligence (Blackwell et al., 2007; Yeager, Romero, et al., 2016). Although the specifics of the various psychosocial interventions differ, they each aim to help students respond to challenges and adversity in ways that maintain or promote academic engagement in school. By conceptualizing the three theoretically grounded approaches together, it is promising to discern a shared psychological "syntax" that can be used as the basis of a novel intervention targeting students' academic and behavioral growth narratives.

We first review the theoretical rationale and empirical evidence for why these particular intervention approaches are well suited for interventions to boost student engagement following the transition to secondary school. We then introduce a new mindset intervention model that integrated the key ingredients of these three well-validated psychosocial interventions. Finally, we describe the development and implementation of this integrated mindset intervention and conclude with a discussion of implications.

THEORETICAL AND EMPIRICAL FOUNDATION FOR PSYCHOSOCIAL INTERVENTIONS

Although there are variations in the conceptualization of student engagement, researchers recognize it as a constellation of multiple distinguishable features, including behavioral, emotional, and cognitive components (Fredricks et al., 2004; Wang & Degol, 2014). Within this frame, *behavioral engagement* is defined in terms of compliance to school norms, active participation in activities, and absence of disruptive behavior (Fredricks et al., 2004). Behavioral engagement is considered crucial for achieving positive academic outcomes (Finn, 1989; Skinner, Wellborn, & Connell, 1990). *Emotional engagement* refers to positive emotional reactions to the school activities, and both interest in and valuing of the academic content (Voelkl, 1997). Emotional engagement is presumed to increase students' attachment to class learning and influence their willingness to do the work (Skinner, Kindermann, Connell, & Wellborn, 2009). *Cognitive engagement* is defined as a student's level of mental investment in learning. It includes being self-regulated, using deep learning strategies, and exerting the metacognitive strategies for comprehension of complex ideas (Zimmerman, 1990). Recently, scholars have added *social engagement* to the tripartite conceptualization of school engagement (Rimm-Kaufman, Baroody, Larsen, Curby, & Abry, 2015; Wang, Fredricks, Ye, Hofkens, & Linn, 2017). Social engagement includes the quality of social interactions with peers and teachers as well as willingness to invest in the formation and maintenance of relationships while learning (Wang et al., 2017).

Intervening Following School Transitions During Secondary School

Research has shown that student engagement declines significantly as they make multiple school transitions across middle and high school (Eccles et al., 1993; Wang & Eccles, 2012a). The transition from elementary to secondary school presents academic and social challenges because students typically move to larger, less personal, and more formal schools (Eccles & Roeser, 2011). Compared to elementary school, middle school is characterized by increased comparison among peers and decreased opportunities to develop meaningful relationships with teachers. Following the middle school transition, students make another transition to high school, which is similarly characterized by disruptions in students' psychological functioning and school performance (Benner & Graham, 2009). Indeed, students are increasingly exposed to academic course tracking, student rankings by academic performance, and pressures to succeed in order to gain entry to college.

Furthermore, studies suggest that, during school transitions, adolescents often experience a mismatch between their developmental needs and the opportunities provided by their school environment, which leads to decreases in students' behavioral and emotional engagement (Eccles et al., 1993). With the increasing curriculum complexity and academic demands, experiencing academic failure in some capacity becomes more common for students in secondary school. Students may associate negative cues in their environments (e.g., getting one poor grade) with the idea that they do not belong and often attribute the cause of this nonbelonging to internal and non-changeable characteristics (e.g., lack of talent) instead of external or malleable conditions (e.g., lack of adequate strategies; Walton & Cohen, 2007). This attribution may cultivate a negative feedback loop and lead to diminished engagement in school. Consequently, students making school transitions are at greater risk of belonging uncertainty, self-perceptions of inadequate ability, and a cycle of internalized academic doubt at a developmental stage characterized by heightened sensitivity to academic failure and social evaluation (Eccles & Roeser, 2011).

These facts make the school transition a critical period—one that may be optimal for interventions that target students' motivational beliefs. Research on educational interventions suggests that timing is key (e.g., Cohen & Sherman, 2014), and carefully crafted, well-timed interventions have the potential to change students' long-term academic trajectories (e.g., Goyer et al., 2017). It is therefore critical to help adolescents manage the challenges and stressors associated with school transitions and to do so early enough to prevent passing thoughts from becoming entrenched beliefs that undermine long-term academic success.

Interventions Utilizing Motivational Approaches

Motivation is essential for successful learning. Crucially related to motivation is how one attributes success and failures. Attribution theory posits that people's judgments about the causes of their own performance have important implications for engagement (Weiner & Kukla, 1970). Many studies have demonstrated the importance of effort for hard work (versus ability) can increase their performance and academic self-efficacy (Blackwell et al., 2007; Yeager & Dweck, 2012). Despite the incremental nature of academic learning, however, students tend to regard learning as rooted in aptitude and inherited ability rather than in hard work, effort, and persistence (Ahn et al., 2016). The belief that performing well in school requires exceptional innate ability can be demotivating and undermines students' behavioral engagement in learning, particularly when students struggle. In order to maintain student engagement in learning, researchers have utilized motivational approaches to help students cope with these psychological hurdles.

Approach 1: Struggle Story-Telling Approach

Attribution theory posits that people's judgments about the causes of their own and other people's performance have important implications for engagement (Weiner & Kukla, 1970). Notably, people who credit their failures to insufficient effort will be more likely to undertake difficult tasks and persist despite setbacks. These people view their outcomes as dependent on how much effort they expend. In contrast, those who ascribe their failures in performance to uncontrollable factors, such as innate intelligence, will display low achievement strivings and give up easily when encountering obstacles (Dweck & Leggett, 1988). For example, students who attribute their failure to lack of effort or effective strategies are more likely to engage and persist in learning in the face of setbacks (Yeager & Dweck, 2012). Attribution researchers have demonstrated that teaching students the importance of effort (versus ability) in order to increase performance and academic self-efficacy is essential for learning. However, the challenge is how to present these key messages in such a way that students actually attend to them in schools.

Lin-Siegler et al. (2016) used a struggle story-telling approach to present stories of how accomplished scientists (e.g., Albert Einstein) struggled and overcame personal and intellectual challenges with effort and persistence. The core message of these stories is: "If even these very intelligent and successful people struggled, perhaps my own struggles are not so unusual." When exposing scientists' vulnerabilities, students may see that they themselves are not so different from the scientists, perceiving scientists as relatable role models with whom students

Approach 2: Belonging Mindset Training

Adolescents have a psychological need to belong and be accepted by other people (e.g., [Baumeister & Leary, 1995](#); [Ryan & Deci, 2000](#)). Studies show that student engagement is optimized when adolescents' needs for belonging are met by the school environment ([Eccles et al., 1993](#); [Ryan & Deci, 2000](#)). However, concerns about belonging are at the core of why transitions to new social contexts can pose problems for the individual ([Walton & Cohen, 2007](#)). Importantly, academic transitions can be especially problematic for students from groups whose intellectual abilities are negatively stereotyped (e.g., first-generation college students). For these students the experience of adversity in academic settings is subjectively different than for their nonstereotyped peers. For example, when stereotyped group members experience adversity (e.g., a lower-than-expected grade), there is a subjectively plausible attribution that can hamper engagement and academic success: "Perhaps people with my background do not belong here" or "maybe there is something about me that means I won't be successful if I try." The implications of these attributions are especially significant following transitions, when students' subjective understandings of their environment are not yet crystalized.

Walton and Cohen (2007) sought to counter those potentially disengaging attributions with a short (i.e., 30 minutes) belonging mindset intervention. This intervention, which has been replicated with over 9000 students at three college institutions in the United States (Yeager, Walton, et al., 2016), employed randomized control trials in which college students were assigned to a control group or a treatment group prior to their college matriculation. In the treatment group, students were given information meant to help convey that doubts and uncertainty about belonging are both normal and likely to improve with time. To deliver the intervention in an engaging way, treatment students were given testimonials of previous students who struggled with a sense of belonging and then engaged in structured writing exercises to help them internalize the information. The exercises were carefully crafted to generate a belonging mindset (e.g., "At first I felt like I would never make new friends, but over time that went away and I now have some of the best friends I could hope for."). The intervention had a rather profound impact on the academic outcomes of students from at-risk backgrounds, including better grades and higher graduation rates. Notably, these effects were mediated by students' behavioral engagement with school: students in the belonging mindset condition were more likely to live on campus, use academic support services, and join in extracurricular activities than the control group (Yeager, Walton, et al., 2016).

Several studies have replicated these findings and suggest that the belonging mindset intervention is especially powerful among first-year college students (Broda et al., 2018; Hausmann, Ye, Schofield, & Woods, 2009; Walton & Cohen, 2011). Furthermore, this intervention appears to be impactful among students who face concerns about belonging in specific subject domains due to stereotype threat, such as women in engineering college majors (Walton, Logel, Peach, Spencer, & Zanna, 2015). Although no studies have yet used the belonging mindset materials with adolescents, this intervention is highly relevant to the social stressors that adolescents face, particularly during school transitions. Indeed, students' sense of belonging at school decreases across middle and high school transitions (Benner & Graham, 2009; Benner, 2011; Wang & Eccles, 2012a), and thus adolescents may benefit greatly from an intervention that helps them regain their social integration at school.

Approach 3: Intelligence Mindset Training

Implicit theory of intelligence research has demonstrated the power of intelligence mindsets in shaping individual performance (Yeager & Dweck, 2012). Compared to people who believe that intelligence is an inherited and unchangeable quality of a person, people who believe that intelligence is malleable tend to show growth in their academic performance overtime (Kamins & Dweck, 1999; Mueller & Dweck, 1998; Yeager & Dweck, 2012). Such research suggests that a person's intelligence mindset impacts educational outcomes because it influences how students respond to adversity (e.g., a poorer-than-expected grade). When students believe that intelligence is fixed and stable, they may conclude from failure that they are simply not smart enough to succeed and disengage from the domain. But if they hold growth intelligence mindsets, failure is not seen as an indictment on intelligence but rather as an indicator of the need for more effort and focus.

In one intervention study, Blackwell et al. (2007) showed through a randomized control trial that growth intelligence mindsets can actually be taught to seventh-grade students via the repeated delivery of engaging messages and discussion (e.g., the brain forms new connections when it learns, intelligence grows similar to how muscles grow, fixed labels such as "smart" and "dumb" should be avoided.). Students who took the growth intelligence mindset curriculum got better math grades following the intervention compared to students in the control condition. Another study with seventh-grade students found that the growth mindset intervention was particularly beneficial for female students' math performance and also boosted reading achievement among a low-income, racial minority student sample (Good, Aronson, & Inzlicht, 2003). Moreover, a recent intelligence mindset intervention study that used a quasiexperimental design (intervention was randomized at the classroom level and taught over 6 weeks) found that the growth intelligence mindset messages improved ninth graders' sense of control and interest in learning and also helped students to maintain their behavioral engagement in class (Schmidt, Shumow, & Kackar-Cam, 2017).

Although these intelligence mindset interventions were delivered in-person and were rather time intensive (e.g., 6–8 weeks of lessons), more recent studies have delivered the same intelligence mindset messages in just one lesson (DeBacker et al., 2018) or via online sessions (Paunesku et al., 2015). DeBacker et al. (2018) found that the one-shot mindset intervention helped high school students to adopt growth mindsets, while the studies by Paunesku et al. (2015) and Yeager, Romero, et al. (2016) found that the mindset interventions improved high school students' grade point averages (GPAs) and were particularly effective among lower-achieving

students. The growth mindset intervention is indeed the most widely replicated intervention of the three intervention approaches; the mindset intervention has shown to improve achievement outcomes among college students (Aronson, Fried, & Good, 2002; Broda et al., 2018; Yeager, Walton, et al., 2016) and among adolescents outside of the United States (e.g., in Norway; Bettinger, Ludvigsen, Rege, Solli, & Yeager, 2018).

Integration of the Approaches

The three intervention approaches have several important areas of overlap. For example, the subtext of all three approaches is geared toward helping dispel and demystify the nature of academia and success in school. The student who believes that success is attained because genius is born may be surprised to learn that in fact many famous scientists were not always regarded as intelligent or promising. Similarly, belonging mindset interventions aim to dispel the belief that there is something wrong with oneself or one's identity when faced with adversity, thereby mitigating potentially damaging, demotivating attributions following academic or social adversity. And students who receive training on intelligence mindsets learn that intelligence is not something static but can actually be grown through effort. All three approaches aim to foster continued behavioral engagement when students might otherwise disengage by changing the way that school and success are perceived. All three approaches are delivered with an eye toward engaging the students' attention with counterintuitive content to help them internalize the key messages.

We believe that this makes fertile terrain for integration. Considering each of the interventions through the lens of the other two interventions reveals clear connections and directions for new strategies. For example, belonging mindsets and intelligence mindsets are fundamentally connected in academic settings, whereby believing intelligence can be grown promotes performance that can reinforce a sense of belonging, while feeling a sense of belonging can free up psychological resources to engage and perform well. Meanwhile, the famous-struggles strategy provides a relatable and engaging means for students to receive and contextualize belonging and growth mindset training. Collectively, the different interventions can work toward the same end of instilling adaptive

mindsets in students and thereby reinforce and strengthen one another. We have summarized the similarities and differences between these three psychosocial interventions, as well as the characteristics of empirical studies for each intervention approach in [Table 12.1](#).

In this integrated mindset intervention, we aimed to increase students' school behavioral engagement, as indicated by students' participation and involvement in school, as well as the lack of conduct problems in the classroom. We targeted behavioral engagement specifically because the psychosocial interventions are tailored to address students' beliefs that ultimately motivate adaptive school *behaviors* ([Blackwell et al., 2007](#); [Lin-Siegler et al., 2016](#); [Walton & Cohen, 2011](#)). Moreover, because behavioral engagement offers teachers visible evidence of the student's attempts to comply with school rules and to act as a participating member ([Wang & Degol, 2014](#)), this engagement dimension holds the greatest promise in helping students form positive relationships with teachers and school personnel ([Yeager, Purdie-Vaughns, Hooper, & Cohen, 2017](#)). Establishing these social bonds may create more opportunities for school success through an extended support network and increased academic resources ([Wang & Eccles, 2012b](#)). Indeed, research found that behavioral engagement is the engagement dimension that mostly strongly predicts students' academic achievement and school persistence ([Archambault, Janosz, Fallu, & Pagani, 2009](#); [Wang, Fredricks, Ye, Hofkens, & Linn, 2016](#); [Wang et al., 2017](#)).

Using Narratives as an Integrative Framework

A common challenge for any intervention exists with regard to how to present the messages in a way that students can relate to and internalize. A number of studies have suggested that stories and narratives can powerfully influence people's attitudes, beliefs, and behaviors, and the most relatable stories are usually personal and involve struggles ([Kaufman & Libby, 2012](#); [Zak, 2015](#)). If students can relate the narratives to themselves, because the stories show the human side of scientists ("they weren't always considered smart") or because the protagonists are otherwise seen as similar to the student, they may internalize those narratives and filter their experiences through them (e.g., [Mussweiler, 2003](#)). Research has demonstrated that the personal narratives we hold about ourselves and our abilities are generally stable within social contexts and can strongly influence behavior ([Graybeal, Sexton, & Pennebaker, 2002](#)). But there are times, such as during major life transitions, when self-narratives are particularly malleable via intervention (e.g., [Cohen & Sherman, 2014](#); [Yeager & Walton, 2011](#)).

Description of the Integrated Mindset Intervention

The goal of our integrated mindset intervention is to change the way students perceive academic and social struggles. That is, we confront the mindset that a person's talent is inherited, fixed, and stable. By using narratives, exemplars, and structured writing tasks, we seek to foster the perception that struggles are normal, temporary and can be overcome with effort and persistence. The intervention activities were designed to show students that even the most accomplished scientists are relatable people who experience challenges prior to their success and provide students with scientific evidence that effort and persistence can support growth of intellectual abilities. To this end, there are four major elements to this intervention: (1) struggle stories of celebrities and scientists, (2) belonging mindset student quotations, (3) growth mindset lesson, and (4) reflective writing exercises. Below we discuss each component.

Overview of the Intervention

Following prior studies (e.g., [Walton & Cohen, 2011](#); [Yeager, Walton, et al., 2016](#)), the intervention occurred at the beginning of the school year as to capitalize on students' transitioning to school. Before students viewed the intervention presentation via the computer, the teachers were given a script by the researchers to introduce the presentation as something that all incoming freshmen view during this school transition. Students were given two doses of the intervention in the first few weeks of school, each session taking approximately 30 minutes (one classroom period) to complete. Individuals who were assigned to the mindset intervention condition received two doses of the mindset content (which included viewing all three of the intervention sections that are described below in one video presentation), while individuals who were assigned to the study skills control viewed two study skills presentations.

Theory of Change

Our intervention model is informed by psychosocial theory and research that suggests that students' beliefs about themselves, their school environment, and the factors that contribute to academic success can influence their engagement in school, and, ultimately, their academic achievement (Lin-siegler, Dweck, & Cohen, 2016; Weiner, 1985). Therefore, the primary targets of this intervention are students' mindset about challenges in school. If the stress during the school transition (e.g., experiencing setbacks and belonging uncertainty) causes students to falsely attribute failures to internal and unmalleable factors, which leads to decreased engagement and academic achievement, then helping students to change how they think about potential challenges/failures can be a key lever for improving student outcomes. The mindset intervention aims to give students a way to think about their challenges in school more positively. It changes students' mindsets by normalizing and reappraising academic and social challenges and struggles. By reflecting on prior students' experiences and reading celebrities' and accomplished scientists' stories, the intervention provides reassurance that challenges occur for everyone entering secondary school, not just particular students or groups, and suggests that the situation will resolve with effort and time. As students understand these challenges as a normal phenomenon that gets better with effort overtime, they are better positioned to reappraise negative and ambiguous cues as external and changeable—a mindset that enables students to respond adaptively to challenges and failures. In turn, we anticipate that students will be better equipped to take advantage of and remain behaviorally engaged in school. Finally, we expect that high levels of school engagement will improve students' academic achievement (Hill & Wang, 2015). This theory of change is summarized in Fig. 12.1.

Control Presentation

We made the treatment and control conditions similar on the surface, but the control condition was simply devoid of mindset content. The control presentation included a discussion of various study strategies associated with positive learning outcomes, as well as a lesson on memory. Although improving students' study skills is not the main intent of this intervention, providing a presentation with this material will not prove detrimental to the achievement or motivation of those exempt from the treatment condition. Furthermore, other psychosocial intervention implementations have successfully utilized study skill exercises and memory lessons as a control condition (Blackwell et al., 2007; Walton et al., 2015). The presentation lasts the same amount of time as the intervention pre-

sensation and is administered with the same introduction and explanation. Lastly, the control presentation has writing exercises that mirror those in the experimental condition. The first writing exercise asks students to reflect on a successful study strategy they have utilized before. The second writing activity asks them to reflect on the presentation materials and recommend specific study strategies to a younger student who might be struggling with school.

Integrated Mindset Intervention Study

In this section, we describe our integrated mindset intervention study. We first describe how we developed and customized the intervention. We next detail our implementation procedure, as the success of psychosocial

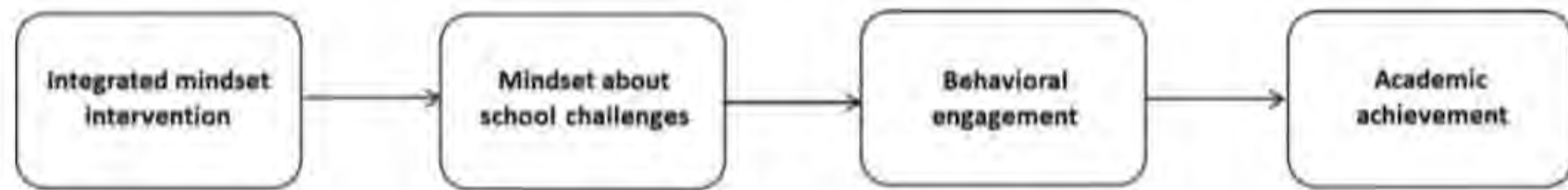


FIGURE 12.1 Theory of change model.

CONCLUSIONS AND IMPLICATIONS

Our intervention study seeks to integrate multiple well-validated psychosocial interventions and uses past work as the building blocks for developing an integrated, low-cost, easy-to-implement intervention protocol. This intervention is one of the very first studies *that integrates* key components of interventions which, when brought together using a narrative framework, constitute a novel intervention program that could be more effective for improving student engagement than any existing program alone. Recognizing that several mindset interventions have similar underlying messages (e.g., normalizing and reappraising challenges), we used these messages to reinforce and strengthen one another in a way that research suggests students will find engaging and memorable. By exemplifying the key mindset message (e.g., effort pays off) through role models' struggling stories, we used a unique and novel approach to contextualize a growth mindset lesson that provides scientific evidence of how the brain grows through effort and learning. Incorporating narratives and role models in the materials allow students to vicariously experience struggle through failures. The message that even successful scientists experience failures prior to their achievements may help students interpret their difficulties in learning as normal occurrences rather than a reflection of their lack of talent.

Moreover, we customized the intervention for the student population participating in the program, namely the intervention incorporates the specific challenges and stressors that students face during the critical transition from elementary to secondary school. Although research using belonging mindset interventions has examined students' experience with the transition to college, no prior research has customized interventions to facilitate the transition from elementary school to middle or high school. This research represents an integration and evolution of previous intervention strategies that would help students in general, and students from at-risk backgrounds in particular, to cope with the academic and social stressors related to the transition to secondary school. By presenting our intervention strategy, we hope to illustrate to policy makers, teachers, and researchers that small changes in the ways students perceive and understand their school environment can have big impacts for students' social and educational outcomes.

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Chronic Absence: A Sign to Invest in Conditions for Learning

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INTRODUCTION

A researcher from a venerable institution of higher education presented a graph correlating attendance and course grades to a room full of public school teachers. After a lengthy academic explanation of the research a teacher in the audience raised a hand gingerly but with conviction, "With all due respect, professor, we don't need a fancy chart or dissertation to tell us that poor attendance causes students to fail classes. If you aren't here, I can't teach you. Simple as that."

While educators everywhere understand that poor attendance results in negative academic outcomes, four harmful false assumptions persist: (1) attendance is simply a reflection of how much students and families value education; (2) improving student attendance is beyond educators' sphere of influence; (3) the main factors leading to chronic absence lie external to a school; and (4) invoking legal consequences is the most appropriate response to poor attendance. To expand the aperture on these problematic assumptions, we examine the link between chronic absence and student disengagement as a function of a school's environment, or Conditions for Learning (CFL). CFL induce the varied feelings and experiences based on human interactions within a school community.

A variety of factors can buffer, attenuate or heighten chronic absence. In this chapter, we define "school factors" as what is happening inside of or internal to the school, and we refer to "community factors" as what is happening outside of or external to the school. Both school and community factors can and often do underlie chronic absence.

so both will be discussed. School factors encompass the pertinent aspects of a learning environment that lead to engagement: physical and emotional safety; connectedness and access to equitable supports; challenging and relevant instruction; and the social and emotional competence of peers and educators (Osher & Kendziora, 2010). CFL that generate engagement originate with educators who embrace their own social, emotional, and academic competencies and harness a commitment to make a positive difference for all students (Bernabei & Brennan, 2014).

Engaging CFL lay a foundation for a strong system of supports and interventions to decrease chronic absence. This chapter discusses the educator capacity necessary to build engaging CFL to affect student engagement and attendance. To begin, we review chronic absence data to understand the scope and size of the issue within the current policy context. Next, we explore which community and school environment factors negatively affect student attendance. This includes an in-depth look at each of the four CFL. The chapter concludes by describing select practices to reducing chronic absence within a multi-tiered approach.

CHRONIC ABSENCE: A GROWING PROBLEM

Fifteen percent of our nation's students are currently chronically absent (Chang, Bauer, & Byrnes, 2018). Chronic absence is defined as individual students who miss 10% (and more) of school for any reason—excused, unexcused, or

CONCLUSION

Whether students overtly express their needs or quietly stop coming to school, it is up to the educators to listen and work together to address chronic absence. Without collaboration, educators risk attempting to design individual interventions for each and every student—an approach that quickly overwhelms human and material resources and leads to teacher attrition ([Center for Great Teachers and Leaders at the American Institutes for Research, 2014](#)). Individualized intervention cannot function at scale—Instead large numbers of chronically absent students signal a need to invest in tier 1 practices. While this may seem counterintuitive, universal practices function preventatively to narrow the stream of students requiring targeted intervention or intensive supports.

Reducing student disengagement relies on educators who model and embody strong SECs, are culturally responsive, integrate SEL into pedagogy, provide feedback without judgment, and receive and are open to support. Educators who see student strengths and respond to needs without blaming students or ignoring the social, emotional, and academic needs of students support attendance and engagement. Instead of blaming students, or applying consequences without regard for circumstance, educators who invest energy in problem-solving after understanding root and contributing causes can find creative ways to support students. Educators with skill, will, and support to create engaging CFL hold the key to engagement and attendance. With such a positive impact of attendance for students at stake, we cannot justify institutional educational practices that fail to create necessary conditions for all students to thrive.

We conclude by sharing four key messages to invalidate false assumptions about chronic absence. Let us work together to spread the following messages: (1) Attendance is not simply a reflection of how much students and families value education, it indicates an unsupportive school environment which is pushing students away instead of pulling them in; chronic absence signals a need to invest in improving CFL; (2) Improving student attendance lies within educators' sphere of influence; attendance is everyone's responsibility from the bus driver to the algebra teacher; (3) Community factors as well as a school's environment can positively or negatively affect attendance; fortunately a supportive school environment buffers or attenuates community factors that lead to chronic absence; and (4) While invoking legal consequences is a common response to poor attendance, better outcomes stem from a range of supports that match local underlying causes of chronic absence.

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Mental Health Interventions

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MENTAL HEALTH NEEDS OF CHILDREN AND ADOLESCENTS

Individual students bring a host of unique environmental and personal circumstances to school that can serve to either optimize their learning in that classroom or, conversely, pose barriers to learning. Mental health problems are acknowledged to pose barriers to learning ([Adelman & Taylor, 2010](#)) in part because diminished mental health limits students' ability to engage at school. In this chapter, we offer a contemporary definition of youth mental health as operationalized through a dual-factor model that recognizes that psychological wellness and illness are interrelated yet separable, and both matter to student success. We illustrate ties between students' mental health and their engagement at school through a synthesis of findings from observational studies that have examined aspects of student engagement (behavioral, emotional/affective, cognitive engagement) in relation to indicators of mental health. Then we examine universal, selective, and intensive evidence-based school mental health interventions, with a focus on those that directly target student engagement and/or have demonstrated positive effects on student engagement.

WHAT IS MENTAL HEALTH?

Traditionally, youth mental health has been viewed from a problem-focused lens, with attention to symptoms of various forms of mental illness that can be conceptualized as internalizing (e.g., depression, anxiety, and social impairments) or externalizing (e.g., conduct problems, delinquent behaviors, health-compromising behaviors such as substance use and early sexual activity). Since the turn of the century and aligned with the positive psychology movement, an increasing number of scholars contend that mental health is not solely defined by the presence or absence of psychological deficiencies (Seligman & Csikszentmihalyi, 2000). Within positive psychology, subjective well-being (SWB) is a key indicator of mental health and includes both cognitive and affective dimensions. Life satisfaction—the cognitive and most studied dimension—entails a global appraisal of the quality of one's life holistically or in key domains (e.g., school, family, friends, living environment, self). Affect refers to the frequency with which one experiences a range of positive emotions (e.g., cheerful, joyful, lively) and negative emotions (e.g., scared, mad, sad). A student with high SWB is content with his or her life and experiences positive emotions more often than negative emotions. Research on a dual-factor model of mental health establishes that youth with the best academic, social, and physical health outcomes have *complete mental health*—defined by both high SWB, and few symptoms of internalizing and externalizing forms of psychopathology.

(Suldo & Shaffer, 2008; Suldo, Thalji-Raitano, Keifer, & Ferron, 2016). Those studies demonstrate that about one-third of students have early or progressive signs of mental health needs in terms of diminished happiness and/or elevated psychopathology symptoms.

EMPIRICAL LINKS BETWEEN STUDENT ENGAGEMENT AND MENTAL HEALTH

Adolescence is identified as a critical transition period in which youth from diverse backgrounds experience a range of physical, social, and emotional changes. This is also a time during which students' engagement in school begins to decline, and symptoms associated with various mental health disorders are more likely to emerge. As such, much of the research establishing the relationship between youth mental health and student engagement has been conducted with upper elementary and secondary students. This section summarizes the correlates of student engagement based on that body of research with a focus on positive and negative indicators of youth mental health deemed relevant in a dual-factor model. This body of knowledge underscores the need for universal prevention strategies as well as selective and targeted mental health interventions to promote opportunities for behavioral, cognitive, and affective engagement among school-aged youth.

Though the terms *student engagement* and *school engagement* are often used interchangeably; throughout this chapter, we focus purposefully on *student engagement*. Appleton, Christenson, and Furlong (2008) emphasize that "*student engagement* (italics added) is preferred over *school engagement* (italics added) because schools engage students as learners, and they are engaged to varying degrees" (p. 380). Appleton et al. (2008) also suggested that the term *school engagement* seems to place more emphasis on the school setting while minimizing factors outside of the school that influences students' engagement. The term *student engagement*, however, places students at the center of efforts rather than the school, as *student engagement* refers to a student's active involvement in the social and academic aspects of school (Fredricks, Blumenfeld, & Paris, 2004). Student engagement is a multicomponent construct that typically includes an affective, behavioral, and cognitive dimension. Affective

engagement refers to students' emotional reactions toward school and class, including students developing strong connections with adults and peers at school; behavioral engagement refers to students' participation in class and school (e.g., involvement in extracurricular activities) and their demonstration of appropriate behaviors; and cognitive engagement is typically represented by students' being invested in their education such as valuing school and using various self-regulation strategies to engage in deeper learning (Christenson et al., 2008; Fredricks et al., 2004). Although we primarily focus on school-based mental health support as a mechanism to foster and maintain students' engagement at school, we acknowledge that variables outside of the school setting are also influential (e.g., family and community). This stance is reflected in our discussion about mental health interventions at the tertiary level in which we note that some students may require more intensive therapy through community agencies to adequately address symptoms associated with various mental health disorders that may pose a barrier to students' affective, cognitive, and behavioral engagement in school.

Internalizing Problems

Many common symptoms of internalizing forms of psychopathology such as social withdrawal, avoidance, and lethargy logically pose barriers to student engagement. Case in point, Conner and Pope (2013) examined the relationship between youth mental health and the affective, behavioral, and cognitive dimensions of engagement among students attending high-achieving schools. Students who reported high levels of engagement across all three dimensions reported significantly fewer feelings of hopelessness, sadness, and despondency. Wang and Peck (2013) found that 9th and 11th grade students who reported low levels of emotional, behavioral, and cognitive engagement reported higher rates of depression compared to their peers. In addition to these associations between engagement and depressive symptoms, researchers have also found a significant negative relationship between student engagement and symptoms associated with anxiety disorders, such as excessive worrying (Conner & Pope, 2013).

Externalizing Problems

Research suggests that students' engagement may be thwarted by the presence of externalizing problems. For example, samples of adolescent students who reported higher levels of affective, cognitive, and/or

behavioral engagement were significantly less likely to report elevated rates of substance use and sexual activity (Carter, McGee, Taylor, & Williams, 2007; Li & Lerner, 2011; Simons-Morton & Chen, 2009). Moreover, middle and high school students who reported being more affectively, cognitively, and/or behaviorally engaged reported lower rates of conduct problems/delinquent behaviors, such as fighting, bullying, stealing, cheating on assignments, and carrying a weapon (Carter et al., 2007; Conner & Pope, 2013; Li & Lerner, 2011; Simons-Morton & Chen, 2009).

Subjective Well-Being

Several studies have found that students' life satisfaction and positive affect are positively correlated with their affective, behavioral, and cognitive engagement, whereas students' negative affect is inversely associated with all three dimensions of student engagement (Heffner & Antaramian, 2016; Lewis, Huebner, Malone, & Valois, 2011). For instance, among students in 7th–10th grades, Reschly, Huebner, Appleton, and Antaramian (2008) found that frequent positive emotions were associated with higher levels of cognitive and affective engagement, whereas negative affect was associated with lower levels of student engagement. Furthermore, positive affect (but not negative affect) was associated with adaptive coping, which, in turn, predicted student engagement. Reschly et al. (2008) concluded that the association between positive emotions and student engagement was partially mediated by adaptive coping. Some research further suggests that students' SWB and engagement in school may have a bidirectional relationship. Backman (2016) explored 5th–9th grade students' happiness in school; results of the qualitative study indicate that students believed happiness promoted their engagement at school and being engaged at school promoted their happiness. In a study of middle school students who rated their life satisfaction and behavioral, affective, and cognitive engagement a two times during the school year (5 months apart), Lewis et al. (2011) found a bidirectional relationship between life satisfaction and cognitive engagement.

A growing number of experimental studies support the notion that interventions designed to foster youth mental health—be they promotion of SWB or prevention/reduction of psychopathology—can lead to improvements in multiple dimensions of student engagement among school-aged youth. Taking a public health approach that promotes mental health and prevents mental disorders ([World Health Organization Department of Mental Health and Substance Abuse, 2004](#)), schools are increasingly addressing students' mental health needs through interventions organized within a three-tiered framework. Tier 1 includes universal school- and class-wide prevention strategies that promote all students' mental health and demonstrate positive improvements in student engagement. Tier 2 includes selective mental health interventions for students with risk factors for, or early signs of, mental health problems. For example, in this chapter, we describe a motivational interviewing intervention that can promote engagement, emotional well-being, and academic success for students at risk of negative academic and mental health outcomes. Tier 3 includes evidence-based mental health interventions (e.g., cognitive-behavioral treatment approaches) that target youth displaying externalizing and internalizing symptoms, which pose barriers to student engagement.

Interventions of most relevance within this chapter include those that can be implemented in the school context to target (1) the specified mental health indicators relevant to student engagement, or (2) student engagement directly, using psychological strategies. To illustrate the approaches described in the remaining portions of the chapter we present several short case studies based on our clinical work with adolescents (note: all names in case studies are pseudonyms). Much of that work has involved teenagers in Advanced Placement and International Baccalaureate (AP/IB) courses. These youth are typically achieving well enough to maintain enrollment in these courses, but the potential emotional toll stemming from this rigorous coursework may go unnoticed by classroom teachers or other school personnel. Students in accelerated curricula (AP and IB) self-report higher levels of stress compared to general education students ([Suldo & Shaunessy-Dedrick, 2013](#)), primarily due to their heavy academic workload and pressure for success ([Suldo, Shaunessy, Thalji, Michalowski, & Shaffer, 2009](#)). As students' stress increases, so does their risk for internalizing and externalizing symptoms and reduced life satisfaction ([Suldo et al., 2009](#)). Findings from a study of over 2300 AP/IB students indicate that positive mental health and academic outcomes were predicted by students' motivation and engagement in addition to

students' use of effective coping skills in response to academic stressors (Suldo, Shaunessy-Dedrick, Ferron, & Dedrick, 2018). Specifically, academic motivation as well as cognitive and affective forms of engagement predicted higher life satisfaction as well as lower psychopathology and school burnout; motivation and cognitive engagement also uniquely predicted superior academic outcomes. Although not a robust predictor in multivariate analyses, this study also identified a small, positive association between behavioral engagement (students' extracurricular activity involvement) and life satisfaction.

With funds from the Institute of Educational Sciences (Suldo & Shaunessy-Dedrick, 2015), we are developing universal and selective interventions to promote AP/IB student success holistically by targeting the development of student engagement and coping skills early (i.e., first semester of freshmen year). Later in this chapter, we describe the Advancing Coping and Engagement (ACE) program, a universal curriculum under development designed to increase AP/IB students' use of adaptive (problem-focused) coping strategies (deemed effective due to empirical links between the coping styles emphasized and positive student outcomes), limit their use of avoidance coping strategies deemed ineffective due to empirical links with negative outcomes, and promote student engagement—specifically students' involvement in extracurricular activities and connectedness with their teachers, AP/IB program, and school. Then, we describe the Motivation, Assessment, and Planning (MAP) intervention, a selective intervention intended for delivery to students who, at mid-year, evidence risk factors for diminished mental health or academic success. Last, we present cognitive-behavioral therapy (CBT) as an approach for supporting students who demonstrate significant mental health problems that preclude engagement.

TIER 1: UNIVERSAL PREVENTION STRATEGIES THAT TARGET MENTAL HEALTH AND ENGAGEMENT

In a multitier framework, Tier 1 includes programs offered to all students regardless of current risk level. Such interventions often occur through school-wide initiatives or through selected classrooms; classroom-based social and emotional learning curricula are often implemented by teachers or interventionists outside the school, such as school mental health providers. In the following sections we provide examples of universal programs developed to promote student mental health—either through prevention and reduction of psychopathology symptoms *or* through increasing SWB—that also found positive impacts on at least one dimension of participants' student engagement during efficacy studies. We also provide two examples of universal programs that target student engagement directly, as a means of fostering students' mental health. In particular, we describe a recently piloted universal intervention—ACE—that the chapter authors developed for high school youth taking accelerated courses.

Interventions to Promote Subjective Well-Being

Universal programs and practices designed to promote happiness—sometimes referred to as positive psychology interventions (PPIs)—target the empirically identified correlates of high SWB. These correlates include ways of thinking (e.g., gratitude, optimism), behaving (e.g., using one's signature strengths in daily activities, pursuing goals), and relating to other people at home and school. PPIs entail activities that provide individuals with opportunities to develop intentional thoughts and behaviors that mimic the features of naturally happy people. Case in point, during a 4-week PPI intended to foster gratitude, teachers prompted elementary school students to journal daily in their classroom about things at school for which they were grateful (Diebel, Woodcock, Cooper, & Brignell, 2016). Compared to their peers who journaled about neutral school events, students who completed the daily gratitude journals experienced greater gratitude as intended, as well as significant improvements in school belongingness. Such research demonstrates that a class-wide PPI-gratitude journaling in which students are asked to "write down two or three things that you are thankful or grateful for today at school" (Diebel et al., p. 123) can serve as an evidence-based practice for fostering affective engagement.

Awesome Us is a class-wide program that focuses on recognition and use of character strengths through six

Interventions to Prevent Psychopathology

Universal programs and practices designed to ameliorate psychological problems often target correlates of emotional distress and accordingly develop students' skills in identifying and regulating emotions, managing/coping with stress, utilizing problem-solving, and challenging negative thoughts. For example, the Transformative Life Skills program aims to reduce adolescents' stress through providing students practice in yoga, breathing techniques, and other mindfulness strategies during class-wide lessons throughout the school year (Frank, Kohler, Peal, & Bose, 2017). Frank et al. found that middle school students who took part in Transformative Life Skills experienced gains in coping and engagement. Findings also indicated improvement in the students' use of adaptive coping styles to manage stressors, as well as increases in behavioral engagement (i.e., fewer unexcused absences and problem behaviors resulting in detentions) and affective engagement (i.e., greater sense of belongingness and attachment to school) when compared to peers randomly assigned to a business-as-usual control condition.

FRIENDS for Life is a universal prevention program intended to lessen anxiety through teaching elementary school children how to recognize and respond to worries with cognitive-behavioral strategies such as relaxation and cognitive restructuring throughout a 10-session curriculum (Ruttledge et al., 2016). In addition to positive impacts on reducing anxiety symptoms as intended, Ruttledge et al. found that children who participated in FRIENDS for Life, as delivered by trained classroom teachers, reported sustained increases in affective engagement (school connectedness), as compared to the outcomes of students in a delayed-intervention control condition. Such studies document the improvements in student engagement that follow interventions put in place to reduce the youth mental health symptoms that, among other consequences, pose barriers to learning.

Interventions Targeting Engagement to Improve Mental Health

The Bridges to High School program aims to prevent the adverse mental health and academic problems for which Mexican American youth are particularly at risk, through a universal family-focused intervention for students in urban schools. The nine weekly 2-hour group sessions held in the evenings contain activities intended to build parents' and adolescents' skills in four factors that influence emotional and academic outcomes: (1) effective parenting, (2) youth coping efficacy, (3) youth engagement with learning at school, and (4) family cohe-

TIER 2: SELECTIVE INTERVENTIONS THAT TARGET MENTAL HEALTH AND ENGAGEMENT

In a multitier approach, Tier 2 (selective interventions) includes programs focusing on youth who are at risk for academic, emotional, or behavioral difficulties. These interventions often occur through individual sessions or small group formats and frequently are implemented by school counselors or psychologists. At present, there is limited research available on evidence-based interventions with a dual focus of promotion of student engagement and improved mental health outcomes. There are several well-researched selective interventions that address student engagement, but the majority of these interventions focus on students who are at risk for dropping out of school (see research on *Check & Connect*; Christenson, Stout, & Pohl, 2012) or youth who are targets of peer victimization or bullying (Espelage & Swearer, 2004). We hope to add to this literature by describing a new selective intervention—*MAP meetings*—that we developed for high school youth in accelerated courses. During the 2016–17 year, we field tested the MAP intervention in the spring semester with 49 students who had completed the ACE program during the fall semester.

Motivation, Assessment, and Planning (MAP) Meetings

The Motivation, Assessment, and Planning (MAP) meetings are intended to help students reflect on and further develop healthy coping skills and student engagement practices that are linked to emotional and academic success in AP/IB courses (Suldo, Shaunessy-Dedrick et al., 2018). The MAP meetings follow a multistep process that includes (1) identification of students at risk for academic and/or emotional challenges; (2) assessment of student's current coping strategies; behavioral, affective, and cognitive engagement and motivation; and perceived parenting practices; and (3) joining with the student throughout one to two individual motivational meetings aimed at improving the student's functioning through collaborative action planning.

Identification of Students

We use a multimethod, multisource approach to identify students who may benefit from the MAP intervention (for a description of the screening process, see Suldo, Storey, et al., 2018). Students are identified as “at risk” if they show signs of academic risk (i.e., $GPA \leq 3.00$ or course grade $\leq C$) or emotional risk (i.e., elevated ratings

IMPLICATIONS FOR FUTURE RESEARCH AND PRACTICE

This chapter documents how student engagement is affected by and impacts youth mental health status and needs. The proportion of students in a given school who have Complete Mental Health—that is, high SWB and few psychopathology symptoms, both assessed in accordance with a dual-factor framework (Suldo & Shaffer, 2008)—is likely to vary as a function of the strength of the school's multitiered system of supports for student mental health. The foundation of such entails universal interventions that are implemented with fidelity, and matched to the risk factors most common to the population. A rationale for preventative attention to student mental health will be strengthened by additional demonstrations of how universal programming results in improved outcomes across indicators of engagement, mental health, and academic success. Examining all aspects of youth functioning in outcome evaluations is needed in part to illustrate how these constructs are connected, but also to document that supports that foster engagement or mental health ultimately impact high-stakes educational outcomes such as course grades, progression and graduation, and postsecondary and occupational attainment.

Our review of the literature on mental health interventions also revealed a paucity of selective (Tier 2) supports, particularly those that target students with diminished SWB. Practitioners need additional frameworks for how to provide effective early interventions for students with low happiness, elevated psychopathology symptoms, or signs of risk such as elevated stress or low engagement. In addition, guidance is needed on best practices in monitoring student success during and after selective interventions, in a manner that helps practitioners to triage and provide supports matched in intensity to students' changing levels of mental health. The proportion of students in need of intensive supports would be expected to decline as the provision of evidence-based universal and selective interventions with fidelity rises, but data from the field are needed to support this logic model.

Fortunately, this literature review illustrates the increasing number and breadth of evidence-based intervention options available to educators as they consider how to systematically promote students' SWB and/or reduce mental health problems. This chapter focused on mental health interventions that have been evaluated with regard to effects on student engagement; numerous additional programs and practices at the universal and tertiary levels are reviewed in other comprehensive descriptions of school-based mental health services (e.g., Suldo, 2016; Werner-Seidler, Perry, Cascar, Newby, & Christensen, 2017). In sum, schools have a growing body of professional guidance to consult as well as intervention options to consider when developing a multitiered system of support for student mental health.

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Bullying and Bystander Behaviors

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Worldwide, there has been a rapid increase in attention to bullying. A recent US national survey found that bullying and cyberbullying were the top health concerns of parents (Freed et al., 2017). Over the past two decades, many US states have enacted legislation addressing bullying, particularly in response to news stories and research evidence linking bullying to suicidal and violent behaviors (Holt et al., 2015; Newman, Fox, Harding, Mehta, & Roth, 2004). But even in the absence of these most extreme outcomes, bullying undermines the foundation of school communities, leaving students feeling detached from their peers and the adults who are either unaware of or unable to stop bullying from occurring. Students involved in bullying may question the purpose of schooling and their efficacy as students, which can lead to school absences and attrition. Experiences of school disengagement that result from bullying can reverberate long after the bullying itself has ceased.

In this chapter, we first review existing literature on the association of bullying involvement and student engagement. We make the case that all forms of bullying involvement are related to decreased student engagement—including involvement as a target, aggressor, and bystander. Second, we review evaluations of bullying prevention programs that have specifically examined whether those programs improve student engagement outcomes. The literature in this area is limited, and we propose several directions for future research on bullying prevention programs that could inform school efforts to increase student engagement. Finally, we discuss the critical challenge of engaging students themselves in bullying prevention activities. We highlight some innovative bullying prevention initiatives and provide recommendations for increasing student engagement

Spilling Over: How Participating in After-School Organized Activities Predicts Students' Engagement

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Youth spend over half of their waking hours outside of school (Larson & Verma, 1999). Researchers, practitioners, and policymakers are increasingly interested in how youth choose to spend this time and the implications of these decisions for their engagement and achievement in school. A growing body of research shows that spending time in unstructured and unsupervised contexts after school is associated with lower academic achievement and school attendance (Osgood, Anderson, & Schaffer, 2005). On the other hand, involvement in organized after-school activities that are supervised and structured is related to higher academic achievement, more favorable mental health, and lower risk behavior (Bohnert, Fredricks, & Randall, 2010; Feldman, Farb, & Matjasko, 2012; Mahoney, Vandell, Simpkins, & Zarrett, 2009). Children and youth benefit from spending time in organized activity settings that promote opportunities to form positive relationships with adults and peers as well as participating in engaging activities that allow them to develop and apply new skills (Eccles & Gootman, 2002).

There are three broad types of organized after-school activities that youth can participate in during the after-school hours, including: (1) school-based extracurricular activities like sports and the arts, (2) after-school programs, and (3) community-based youth development programs like Boys and Girls Clubs. Within each of these categories, there is variation in both the type of activities and goals of the program. For example, the primary

Effective School Reforms for Increasing Engagement

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In many high-poverty urban communities, middle grades and high school students exhibit pervasive disengagement. Unlike younger students, secondary students who are not engaged by the coursework, pedagogy, relationships, and activities at school often have the agency and the chutzpah to cut class, skip school, or dropout entirely (NRC & IOM, 2004). Disengagement in school—and the presence of more-engaging activities outside of school—is a major cause of (1) alarmingly high chronic absenteeism rates for secondary students in poor urban neighborhoods, with about one-third of the middle school students and half of the high school students chronically absent (Balfanz & Byrnes, 2012, 2013) and (2) a distressingly low high school graduation rate for low-income students of 76% (DePaoli, Balfanz, Bridgeland, Atwell, & Ingram, 2017). When economically disadvantaged students don't graduate, the social and economic consequences for them, their families, and their communities are severe.

The indicators of student disengagement that have received the most attention among reformers seeking to transform high-poverty urban secondary schools are the telltale behaviors that indirectly indicate alienation and disengagement (such as skipping school or class, disruptive or nonparticipatory behavior that sometimes results in disciplinary referrals or suspensions, and failing or barely passing courses due to half-hearted efforts to study and complete assignments). These behaviors are proven early warning indicators that a student is at high risk of eventually dropping out and has suboptimal levels of cognitive, emotional, behavioral, and/or social engagement at school. Survey measures of engagement in these schools confirm that, on average, the students are emotionally disengaged (e.g., they often find their schoolwork uninteresting and don't particularly like what they are learning

Implementing Check & Connect: Lessons From Two International Effectiveness Experiments

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INTRODUCTION

Although school dropouts are much fewer nowadays than there were 20 or 50 years ago, never in the history of Western countries has this situation been so preoccupying. In a world relying more and more on knowledge economy, shaped by an unprecedented rate of technological changes, education has become, more than ever, the pillar of individual and collective wealth and well-being (Freudenberg & Ruglis, 2008; Organisation for Economic Co-operation and Development (OECD), 2012). In such a context, identifying what are the best practices to promote school perseverance and how to generalize them becomes a central task for school educators, administrators, and policy makers. The What Works Clearinghouse (WWC) tries to support this mission by reviewing the

Creating Caring Classroom and School Communities: Lessons Learned From Social and Emotional Learning Programs and Practices

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INTRODUCTION

School and classroom contexts play a particularly potent role in shaping the developmental trajectories of children and youth (Hamre & Pianta, 2010). This is not surprising when one considers that children spend, on average, at least 15,000 hours in school settings, starting from the age of 4 or 5 when they enter school until they graduate (Pianta, Belsky, Houts, Morrison, & NICHD ECCRN, 2007). Decades of research have shown that caring and supportive classroom and school contexts are foundational to the promotion of students' academic success, as well as their social and emotional competence and well-being (Hamre & Pianta, 2010). Indeed, students can learn and thrive when they are in school and classroom contexts in which they feel safe, secure, connected, and cared for—contexts in which their social–emotional competence and academic growth is nurtured and cultivated (Jones & Kahn, 2017).

How do we create such contexts? The field of social and emotional learning (SEL) provides some answers to this question. Although a primary aim of schools has been to educate children and youth to master content areas, such as reading, writing, math, science, and social studies, there is a growing consensus among educators, policy

makers, and the public at large for a more comprehensive vision of education—one that includes an explicit focus on promoting students' social and emotional competence alongside their academic achievement (Bushaw & Lopez, 2013). Bolstered by evidence indicating that empirically based curricula can promote students' social and emotional skills and well-being as well as deter problem behaviors (e.g., Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011), many schools, both nationally and internationally, have strengthened their efforts to include universal SEL programs that promote students' social and emotional competence. The focus has been on the implementation of *universal* interventions, rather than interventions that only target children with current problems, because universal approaches are likely to have a greater public health benefit (Greenberg, Domitrovich, Weissberg, & Durlak, 2017).

This chapter explores efforts to foster caring communities within school systems at both the classroom and school-wide level. We begin by providing the case for the explicit attention to promoting caring classroom and school contexts as a way to promote students' social and emotional competence and academic success, highlighting the importance of the role of contexts in shaping child development and resilience. We then move to a focus on SEL, first, by providing a definition of SEL, and second, a delineation of the various dimensions that comprise it. Following, we provide a description of several of the extant evidence-based programs for students and teachers in which the promotion of SEL and caring classroom and school environments is central. The chapter ends with conclusions on how an understanding of SEL has implications for our thinking about promoting caring classroom and school environments, along with some future directions for work in this area.

THE CASE FOR PROMOTING STUDENTS' SOCIAL AND EMOTIONAL COMPETENCE IN SCHOOLS

The increased attention to the school-based promotion of children's social and emotional competence by educators, parents, policy makers, and other societal agencies has been driven, in part, by the increased concerns about the mental health of youth. Epidemiological reports estimate that one in five children and youth experience psychological disorders severe enough to warrant mental health services ([U.S. Public Health Service, 2000](#)). In this regard a focus on creating supportive school and classroom contexts that address both students' academic success and social and emotional competence is increasingly recognized as foundational to the promotion of positive mental health and school success ([Domitrovich, Durlak, Staley, & Weissberg, 2017](#)).

CHILD DEVELOPMENT: SITUATED WITHIN COMMUNITIES

When considering the ways to cultivate children's positive growth and well-being, it is important to take a developmental systems perspective that "recognizes that human development is a bidirectional, individual↔context relational process" in which "there are multiple levels of organization within the individual (e.g., genes, motivation, cognitive abilities) that influence one's development course," and "different levels of organization within the social ecology (e.g., families, schools, and neighborhoods) that contribute to development" ([Theokas & Lerner, 2006](#), p. 61). A child experiences life nested within these many interactive contexts, and within each context, a child can be nurtured by a variety of communities (e.g., school, family, church). In addition the interactions within these contexts are influenced by factors, such as a child's personal characteristics, structures within systems (such as the family, school, community), or the culture at large ([Bronfenbrenner, 2005](#)). Research on resilience has shown how the interplay of contextual factors in a child's life plays a critical role in determining how, why, or to what extent life events influence development ([Ungar, 2015](#)). Resilience is a concept applied in prevention and

DEFINING CHARACTERISTICS OF A CARING CLASSROOM AND SCHOOL COMMUNITY

Learning and development are largely social processes (Pianta, 1997). What a child learns, albeit intellectual, social, or emotional, is facilitated through a coordination of his or her knowledge combined with the others whom also share the social space (Resnick, 1994). Through this lens, it is easy to see school as a *community* of learners. A child is able to learn best when safely embedded within a community where human needs are met. Thus, in order for learning to take place, a caring environment must be established first (Noddings, 1992). It is argued that viewing a school as a community—a place where individuals, both children and adults, meet to learn and grow together—establishes a framework from which schools can more effectively meet the academic, social, and emotional needs of teachers and students (Battistich, Solomon, Watson, & Schaps, 1997).

The definition of community, established by Battistich et al. (1997), serves as a framework from which to explore the essential *ingredients* needed to develop and maintain a caring community at either the school or classroom level. A community is defined as places where members: (1) care about and support one another;

DEFINING SOCIAL AND EMOTIONAL LEARNING

SEL involves the processes through which individuals acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage their emotions, feel and show empathy for others, establish and achieve positive goals, develop and maintain positive relationships, and make responsible decisions [Collaborative for Academic, Social, and Emotional Learning (CASEL), 2013]. As such, social-emotional competencies (SEC) are viewed as “mastery skills” underlying virtually all aspects of human functioning.

SEL builds from work in child development, classroom management, prevention, and emerging knowledge about the role of the brain in self-awareness, empathy, and social-cognitive growth (Weissberg, Durlak, Domitrovich, & Gullotta, 2015). SEL focuses on the skills that allow children to calm themselves when angry, make friends, resolve conflicts respectfully, and make ethical and safe choices. Moreover, SEL offers educators, families, and communities relevant strategies and practices to better prepare students for “the tests of life, not a life of tests” (Elias, 2001, p. 40). SEL is sometimes called “the missing piece,” because it represents a part of education that is inextricably linked to school success.

Social and Emotional Learning: The Competencies

The Collaborative for Academic, Social, and Emotional Learning (CASEL; www.casel.org), a nonprofit organization in Chicago, IL, is one of the organizations at the forefront in national and international efforts to promote SEL. CASEL has identified a set of five core intra- and interpersonal and cognitive competencies that underlie effective and successful performance for social roles and life tasks. These competencies are interrelated and reflect the cognitive, affective, and behavioral dimensions of SEL (CASEL, 2013).

1. *Self-awareness*: The ability to identify and recognize one's own emotions, thoughts, and influences on behavior, including recognizing one's own strength and challenges, being aware of one's own goals and values, possessing a well-grounded sense of self-efficacy and optimism, and having a growth mindset that one can learn through hard work. High levels of self-awareness require recognizing how thoughts, feelings, and actions are interconnected.
2. *Self-management*: The ability to regulate one's emotions, thoughts, and behaviors effectively, including stress

management, delaying gratification, impulse control, motivating oneself, and persevering through challenges to achieve personal and educational goals. It also includes self-management within social interactions.

3. *Social awareness*: The ability to take the perspectives of others—including those who come from a different background and culture, to empathize with others, understand social and ethical norms, and to recognize resources and supports in family, school, and community.
4. *Relationship skills*: The ability to form and maintain positive and healthy relationships, communicate clearly, listen actively, cooperate, negotiate constructively during conflict, solve problems with others effectively, and to offer and seek help when needed.
5. *Responsible decision-making*: Knowledge, skills, and attitudes to make constructive choices regarding one's own behavior and social interactions, taking into account safety concerns, ethical standards, social and behavioral norms, consequences, and the well-being of self and others.

SEL programs and approaches are founded on a variety of theoretical perspectives (Mayer & Salovey, 1997). All of these are predicated on the notion that the capacity to process, reason, and use emotion can enhance cognitive activities (such as thinking and decision-making), facilitate the development and maintenance of social relationships, and promote personal growth and well-being (Brackett, Reyes, Rivers, Elbertson, & Salovey, 2012). SEL also draws from theories that emphasize the primacy of *relationships* (Ainsworth & Bowlby, 1991) and are based on the understanding that student learning is a social process that occurs in collaboration with teachers and in interactions with their peers. Thus best learning emerges in the context of supportive relationships that make learning challenging, engaging, and meaningful.

Social and Emotional Learning: The Research Evidence

Perhaps the most compelling evidence for the importance of SEL programs in promoting students' social-emotional competence and academic achievement comes from a meta-analysis conducted by [Durlak et al. \(2011\)](#) of 213 school-based, universal SEL programs involving 270,034 students from kindergarten through high school. Students in SEL programs, relative to students who did not receive an SEL program, were found to demonstrate significant improvements in (1) SEL skills; (2) prosocial attitudes; (3) positive social behaviors; (4) conduct problems; (5) emotional distress; and (6) academic performance. Furthermore, SEL students outperformed non-SEL students on indices of academic achievement by 11-percentile points. These results provide strong empirical evidence for the "value added" of SEL programs in fostering students' social and emotional skills, attitudes, and behaviors and also counter the claim that taking time to promote students' SEL would be detrimental to academic achievement.

Most recently, [Taylor, Oberle, Durlak, and Weissberg \(2017\)](#) conducted a systematic review to address the relative paucity of evidence on the long-term effectiveness of SEL programming in enhancing positive student outcomes. This review is important because it addresses a critical question regarding the cost-benefit of investment in SEL programs, informing allocation of resources for SEL in school budgets. A total of 82 school-based, universal SEL programs involving 97,406 ethnically and sociodemographically diverse kindergarten to high school students in urban and rural settings that had been published by 2014 were reviewed. Results demonstrated that students who had received an SEL intervention continued to show increases in social-emotional skills, positive behaviors, and academic achievement and decreases in conduct problems, emotional distress, and drug use up to almost 4 years after program completion, in contrast to those students who did not receive an SEL intervention.

Components of a Social and Emotional Learning Framework

Research demonstrates that well-implemented SEL programs promote positive development, reduce problem behaviors, and also improve students' academic performance, citizenship, and health-related behaviors

(Schonert-Reichl & Weissberg, 2014). Such skills predict important life outcomes, including completing high school on time, obtaining a college degree, and securing stable employment (Jones, Greenberg, & Crowley, 2015). In their meta-analysis, Durlak et al. (2011) provided solid evidence that SEL programs promote more favorable student outcomes when program implementers follow sequenced, active, focused, and explicit (SAFE) procedures that (1) use a Sequenced step-by-step training approach; (2) emphasize Active forms of learning that require students to practice new skills; (3) Focus specific time and attention on skill development; (4) are Explicit in defining the social and emotional skills they are attempting to promote. Durlak et al. (2011) also found that classroom teachers and other school personnel effectively implemented SEL programs—a finding that suggests that SEL programs can be incorporated into routine school practices and do not require staff from outside the school to successfully deliver an SEL program.

Many SEL approaches include both an *environmental focus* and a *person-centered focus* (Zins, Weissberg, Wang, & Walberg, 2004). Hence, in addition to focusing on specific instruction in social and emotional skills, SEL is a process of creating a school and classroom community that is caring, supportive, and responsive to students' needs. Moreover, effective SEL interventions and skill development occur when teachers possess the requisite social and emotional skills to create an environment that is safe, caring, supportive, and well managed, and have the competencies and knowledge to effectively implement SEL programs. Hence, successful SEL implementation requires explicit attention to addressing three distinct and interrelated dimensions: (1) creation of a positive learning context; (2) explicit promotion of students' SEL; and (3) the SEL of teachers. As illustrated in Fig. 19.1, these three dimensions are portrayed in a circle to demonstrate the interconnectedness of each dimension to the other and to highlight that each dimension is influenced by, and influences, the other dimensions. While the learning context and SEL of students have been discussed in earlier sections of this chapter, we now discuss the important role that educators play in our SEL framework.

Social and Emotional Learning of Educators

Educators are the engine that drives SEL programs and practices in classrooms and schools. The SEL competencies of educators (albeit teachers, administrators, or school staff) play a critical role in influencing the learning context and the infusion of SEL into classrooms and schools (Jones, Bouffard, & Weissbourd, 2013). Classrooms with warm teacher–student relationships facilitate deep learning (Merritt, Wanless, Rimm-Kaufman, Cameron,

CONCLUSION

One of the biggest challenges that confronts the field of SEL is the translation of knowledge garnered from rigorous research on the effectiveness of programs into policy and widespread practice ([Greenberg, 2010](#)). This is necessary so that SEL approaches can be better integrated into schools and communities. Such efforts can help build the processes and structures needed to foster high-quality implementation and promote sustainability ([Weissberg et al., 2015](#)). In this chapter, we have attempted to bridge this divide by summarizing the research and identifying and delineating programs and practices that can assist educators with the practical tools necessary for creating caring classroom and school environments.

The Influence of Diverse Youth Development Models on Student Engagement and Academic Outcomes

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After-school programs have a rich history of enriching and complementing traditional school experiences for participating youth, and there is mounting evidence that engagement in high-quality out-of-school programs can lead to positive academic outcomes ([National Research Council and the Institute of Medicine \(NRC/IOM\), 2002](#); [Shernoff, 2010](#)). Researchers have documented that participation is associated with social-emotional outcomes, such as the development of interpersonal skills, social awareness, and improved peer relations and self-regulation ([Durlak & Weissberg, 2007](#); [NRC/IOM, 2002](#); [Pierce, Bolt, & Vandell, 2010](#)). Positive outcomes have also been reported in the educational domain, with after-school impacts on academic perceptions and behaviors such as increased sense of relevance and value for school, improved educational goals, aspirations, and attendance, and reduced problem behavior and suspension ([Anderson-Butcher, Newsome, & Ferrari, 2002](#); [Cosden, Morrison, Gutierrez, & Brown, 2004](#); [Mahoney, Lord, & Carryl, 2005](#)).

There appear to be particular benefits for at-risk youth that participate in out-of-school time (OST) programming. Indeed, much has been written about how after-school programs can serve as a protective factor against risk-taking behavior in the OST hours and unsupervised time ([Anderson-Butcher & Cash, 2010](#); [Hirsch, 2005](#); [Roffman, Pagano, & Hirsch, 2001](#)). OST participation is linked with increased school attendance as well as reduced externalizing behaviors ([Kremer, Maynard, Poulanin, Vaughn, & Sarteschi, 2015](#)). Marginalized youth

Measuring Student Engagement to Inform Effective Interventions in Schools

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INTRODUCTION

Measuring engagement is an important part of delivering timely and effective interventions to students in schools. Students' engagement in school has been linked to their academic achievement and psychological well-being (e.g., [Sinclair, Christenson, Lehr, & Anderson, 2003](#); [Wang & Holcombe, 2010](#)) and is an integral component of interventions to support students' success in school. Engagement in school, however, is complex and can be measured in several ways and from multiple different perspectives. Unlike how it tends to be described, engagement is not a characteristic of a student; that is, a student is not engaged or disengaged *as a person*. Instead, engagement describes the quality of involvement in an activity or in the environment; that is, a student is engaged in or disengaged from *the activities and context of school*. From this perspective an important goal of interventions is to target factors that support students' productive and persistent involvement in school. Measuring engagement can help educators identify who is put in need of or who could benefit from intervention, when intervention is needed, what types of interventions might be effective, if interventions are working, and/or if more or different supports are needed.

The goal of this chapter is to provide an overview of measuring engagement as it relates to implementing effective interventions in schools. To this end, the chapter is organized in three parts. First, we review what engagement is and why it is important to measure. Second, we describe how student engagement can be measured. Third, we describe examples of interventions that measure engagement, how and why engagement was

measured, and how these data were used to support students. We conclude by summarizing practical considerations for measuring engagement.

PART ONE: STUDENT ENGAGEMENT

What Is Student Engagement?

Student engagement describes the energy, purpose, and durability that students expend toward their academic work and toward their participation in school ([Christenson, Reschly, & Wylie, 2012](#)). While engagement is often described in general terms, research has found that engagement is multidimensional, consisting of cognitive, behavioral, and emotional components (e.g., [Fredricks, Blumenfeld, & Paris, 2004](#); [Skinner & Pitzer, 2012](#)). Cognitive engagement refers to students' mental investment and intellectual effort. Emotional engagement refers to students' interest in, value of, and positive and negative affective responses. Behavioral engagement refers to students' overt participation in learning and in school. Some researchers categorize the dimensions of engagement into observable and internal subtypes—with behavioral and academic engagement considered observable, and affective and cognitive engagement considered more internal to the student ([Appleton, 2012](#)). Finally, some researchers posit that there could be a social dimension to engagement that refers to the quality of students'

interactions with their teachers and peers (Rimm-Kaufman, Baroody, Larsen, Curby, & Abry, 2015; Wang, Fredricks, Ye, Hofkens, & Linn, 2016). In each of these characterizations, researchers agree that the dimensions of engagement work together to describe the dynamic ways in which students interact with and invest in the school context (Fredricks et al., 2004).

Disengagement is also considered to be multidimensional, however, there are different perspectives about how disengagement relates to engagement. Some view disengagement as the absence of engagement—meaning that engagement and disengagement occur on opposite ends of the same scale, with low levels of engagement representing disengagement. Others view disengagement as a distinct process that includes both the absence of positive engagement and the presence of negative engagement in school (Skinner, Kindermann, & Furrer, 2009; Wang, Chow, Hofkens, & Salmela-Aro, 2015; Chapter 7: A Teacher-Focused Intervention to Enhance Students' Classroom Engagement). In this view, students who are disengaged lack sustained involvement in school and engage in maladaptive processes such as withdrawing from school and committing behavioral infractions (Skinner et al., 2009), which has negative consequences for school outcomes that are independent from the effects of engagement (Jimerson, Campos, & Greif, 2003).

Engagement is embedded in the context in which students are engaged. In other words, students are engaged in something, and the characteristics of the activity or setting in which they are engaged shape what engagement in those activities and settings look like. For example, what it means and looks like to engage in a chemistry lab can differ in important ways from what it means and looks like to be engaged in athletics. For these reasons, some research has explored student engagement in specific components of school, such as school engagement (e.g., Fredricks et al., 2004), engagement in extracurricular activities (e.g., Fredricks & Eccles, 2006), and engagement in specific subject areas, such as math, science, and reading (e.g., Wang et al., 2016; Wigfield et al., 2008). Additional research has looked at the importance of microcontexts such as hallways and lunchrooms, which could be important and unique contexts for students' social engagement in school (Cash, Bradshaw, & Leaf, 2015).

Finally, engagement is malleable and can be shaped through interventions by targeting features of the school environment that influence engagement. Objective features of the school environment can be powerful facilitators

of engagement, including school climate, instruction, and the quality of student–teacher interactions (e.g., Downer, Rimm-Kaufman, & Pianta, 2007). Individual factors that are unique to students also shape how students engage. For example, students’ academic, social, and emotional skills contribute to students’ *ability* to engage in school (Rimm-Kaufman & Hulleman, 2015) and motivational beliefs and attributions that shape how students interpret and respond to their experiences influence students’ *willingness* to engage in school (e.g., Hulleman, Godes, Hendricks, & Harackiewicz, 2010; Yeager et al., 2014).

In summary, engagement (and disengagement) refers to the dynamic interplay between person and context, it is multidimensional, and it is malleable and responsive to changes in the school environment that facilitate engagement. In the following section, we explore the role that measuring engagement can have in supporting interventions in schools.

How Can Measuring Engagement Inform Interventions in School?

First, measuring engagement can tell us how students are doing in school. Because engagement describes the quality of students’ involvement, engagement data can help us know who is productively participating in the opportunities available at school and who may be in need of additional support. While all students benefit from positive and preventive supports (Christenson & Thurlow, 2004), the type and level of support that some students need can vary and measuring engagement can inform a leveled response. For example, in a tiered system of interventions a universal system of preventive support is paired with customized levels of support to meet different levels and types of needs (e.g., MacIver & MacIver, 2010). Tier 1 focuses on providing proactive and preventive strategies for all students, Tier 2 generally features structured interventions aimed at helping specific groups of students and can include customized support for individual students, and Tier 3 includes more intensive and individualized support.

Engagement data can inform a system of tiered interventions by identifying which students need support, at what level students need support, and the type and timing of supports that are needed. By revealing how students are behaving, thinking, and feeling about school, engagement data can help to differentiate students who need support to remediate the risk of negative outcomes in the future (Tier 2) from students who need immediate and intensive intervention (Tier 3). Furthermore, continuous measurement can inform when a student’s needs change. For example, Tier 1 features universal school- or district-wide efforts to provide the type of learning and

Indicators of Engagement

There are several methods to measure engagement, all of which use *indicators* to assess the quality of students' involvement. Indicators can be grouped together in scales or they can be used on their own as stand-alone evidence of engagement. For example, survey scales or observational measures of engagement include several indicators of one or more dimensions of engagement, whereas administrative data such as attendance and homework completion are single indicators of behavioral engagement. Understanding what indicators are and how they work can help educators determine what methods are appropriate for measuring engagement in their school and in relation to their specific intervention efforts and/or outcomes of interest.

First, it is important to differentiate indicators from facilitators and outcomes of engagement (see [Sinclair et al., 2003](#)). Indicators describe what engagement is or looks like in a given setting. We discussed that facilitators are factors that *influence* engagement (see pages 3 and 4). Outcomes are consequences or results of engaging in school and generally refer to the metrics or skills that educators want to support in students (e.g., grades, standardized test scores, graduation, or college enrollment). While the three are distinct and while we generally use indicators to measure engagement, some measures of engagement include facilitators (e.g., peer or teacher support) or outcomes (e.g., enrolling in advanced coursework or graduating) ([Lam, Wong, Yang, & Liu, 2012](#)), which can be problematic. Including facilitators along with indicators in the same measure makes it more difficult to identify students who are disengaged or to effectively monitor engagement in the context of an intervention. It also makes it more difficult to identify triggers of engagement or disengagement, which can limit our ability to study the effects of interventions on engagement and to use engagement data to inform or individualize interventions. Furthermore, failing to distinguish between indicators and outcomes of engagement in measures can make it difficult to study the effects of engagement on the outcome ([Lam et al., 2012](#)). Thus in order for engagement data to help educators implement effective interventions, measures should assess indicators of the quality of students' involvement in school—and distinguish the quality of involvement from the influences on involvement (facilitators) and the effects of that involvement (outcomes).

Indicators of engagement can vary in terms of the grain size or scope of evidence to which they refer. They can be very specific and describe the quality of student involvement as it unfolds from moment to moment in a particular context, or indicators can represent more general evidence of engagement that unfolds over time. For

example, indicators of behavioral engagement in class can include asking or answering questions, staying focused, and putting forth effort ([Wang et al., 2016](#)), each of which is specific to students' moment-to-moment involvement. On the other hand, rates of homework completion and attendance are also considered important indicators of behavioral engagement (e.g., [Appleton, 2012](#)), each of which represents a set of behaviors that unfold over a longer period of time. Several considerations of the grain size of indicators can be gleaned from the next section on the methods of measuring engagement. A general rule of thumb is that larger grain sizes are easy to understand but provide less information about what is happening for the student (e.g., attendance); smaller

grain sizes provide more detail, but more indicators and measurement occasions are needed to get an overall assessment of a students' engagement (e.g., answering questions in class, effort, or body language).

Since engagement is embedded in context, indicators of engagement can vary depending on the context in school to which they refer. In many cases the core of the indicator is the same, and the specifics are adjusted for the particular setting. For example, putting forth effort is an important aspect of engagement, but what "effort" looks like can differ across different types of academic work or courses, extracurricular activities, or school overall and can differ in terms of how easy it is to observe and how internal it is to the student. In other cases, indicators could be specific to a particular subject area or part of the school context. For example, indicators of math and science engagement likely include a greater emphasis on group work, complex problem solving, data analysis, abstract reasoning, and argumentation (Fredricks et al., 2016). However, while subject or content specificity of engagement has been explored to some degree in reading, mathematics, and science (e.g., Wang et al., 2016; Wigfield et al., 2008), measures of engagement tend to focus on indicators that apply across subjects or the school context (e.g., homework completion, effort, enjoyment).

Each dimension of engagement has its own set of indicators, and measures of engagement vary in terms of which dimensions they assess and which types of indicators they include (Fredricks & McColskey, 2012). Engagement measures can include subscales for each dimension of engagement, so that educators can get a sense of students' behavioral, cognitive, emotional, and/or social engagement (e.g., Reschly & Christenson, 2012). Alternatively, measures of overall engagement give a global assessment based on all dimensions, a subset of dimensions (e.g., cognitive and behavioral as a measure of "academic engagement"), or even just one dimension. Engagement measures can also differ in terms of what types of indicators they include as evidence of engagement and, in some cases, the same indicator can be categorized in different ways. For example, effort or paying attention are considered evidence of behavioral engagement in some scales (e.g., Wang et al., 2016), and cognitive engagement in others (e.g., Appleton, 2012). The type of grouping or use of indicators in measures depends in part on the perspective of engagement, the focus of the instrument (e.g., school vs classroom engagement), and the type of method used, described in more detail in the following sections.

Different Methods for Measuring Engagement

There are several ways to measure engagement, each of which has advantages and disadvantages. In this section, we review methods that can and have been used to measure engagement in educational settings and describe some of the benefits, limitations, and practical considerations for each one.

Student Self-Report Surveys

One of the most common ways to measure engagement is to have students report on the quality of their own involvement in school. In self-report surveys, students answer Likert-type questions about indicators of their engagement. Student surveys are convenient and versatile; they are easy to administer and can be administered by a range of school personnel in a variety of settings at a relatively low cost. Student reports have good face validity. Unlike teachers and observer who need to infer the aspects of engagement that are not easily observable, students have unique insight into their engagement in school (Appleton, Christenson, & Furlong, 2008). Asking students to report on their own behaviors, attitudes, and thought processes can reveal important information about which students might be put at risk for negative outcomes and/or which students might benefit from additional support.

There are, however, several disadvantages of student self-report surveys. First, surveys assume that engagement can be measured outside of the context in which engagement occurs (Greene & Azevedo, 2010). Surveys also assume that engagement is either stable over time or that students can make accurate assessments of their average engagement (e.g., "In the last 2 weeks, how often have you answered questions in class?" or "How true is this of you: I often ask or answer questions in class."). As a result, student self-reports often do not align with behaviors measured in real time or through observation (Greene, 2015; Winne & Perry, 2000).

There are also a limited number of student surveys available, and existing surveys have several limitations. Most surveys focus on engagement at the school level (Fredricks & McColskey, 2012). There are fewer surveys available to measure engagement in specific contexts or activities outside of class, and far fewer yet that measure their engagement in the social context (see Wang et al., 2016, for an exception). Surveys are generally not available for young children because students need to have sufficient reading comprehension to report on their engagement.

Thus most student surveys are for mid- to upper elementary and secondary students, and the validity of their reports depends on their reading comprehension. Some measures also fail to capture multiple dimensions of engagement and/or have insufficient evidence to support their validity (Fredricks & McColskey, 2012).

Teacher Ratings

The few teacher rating scales that have been developed tend to focus on assessing students' behavioral engagement, which is directly observable and which plays an important role in screening for and monitoring behavior problems (Lane, Menzies, Kalberg, & Oakes, 2012). Teacher surveys can be cost and time-effective to administer. One teacher can report on the engagement of a large number of students, either integrated into or outside of instructional time. They can also measure engagement among young children or children who lack the reading skills needed to understand and complete self-report surveys (Fredricks & McColskey, 2012). However, teachers can have difficulty reporting on students' emotional and cognitive engagement since that requires them to infer how students feel and think based on how they are behaving in class (e.g., Skinner et al., 2009; Wang et al., 2016), and it can be difficult to distinguish and report on the engagement of multiple students. Furthermore, teacher bias based on student characteristics (e.g., achievement level, socioeconomic status) and teacher characteristics (e.g., content knowledge, prior experience) can influence teachers' interpretation and report of student behavior (Mason, Gunersel, & Ney, 2014).

Interviews and Focus Groups

Another way to measure engagement is to directly talk to students about their involvement in school. In interviews and focus groups, educators can assess engagement while also asking students about what influences their engagement (e.g., Blumenfeld et al., 2005; Fredricks et al., 2016). Students can ask about questions they do not understand, they can describe their engagement and their experiences in their own words, and educators can get in-depth information about students' understanding and experiences of engagement (Johnson & Onwuegbuzie, 2004). Interviews and focus groups overcome challenges related to reading comprehension, making them

CONCLUSION

In many ways student engagement is the fabric of students' education and development in schools. Engaging in the school environment is how students learn and grow from being in it. When educators change key components of schooling (e.g., adopting a new curriculum or providing professional development to improve instructional practice), they are aiming to improve student outcomes by changing what it means and looks like to engage in coursework and activities at school. In the daily life of schools, educators tune in to students' engagement, often with an intuitive sense of which students are highly engaged, putting in minimal effort to get by, or are completely tuned out. They know from experience that the way students engage matters for their students' success. Yet, despite being woven into students' and educators' experiences daily lives in school, assessing student engagement is generally left to educators' inference or intuition. Fortunately, engagement is measurable; and several methods for measuring engagement are accessible and provide actionable information. Having good data on their students' engagement helps educators and other key personnel in schools to more accurately understand the degree to which their students are cognitively, behaviorally, and emotionally interacting in school activities and the school environment and can provide key insights into what types of interventions could support their academic success and psychological wellbeing in school.

Conclusion: Status of Student Engagement Interventions

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Student engagement has broad appeal. It represents attitudes and behaviors that are malleable and tied to student achievement, as well as both short- and long-term outcomes for youth (Christenson, Reschly, & Wylie, 2012; Fredricks, Blumenfeld, & Paris, 2004). The malleability of students' engagement is rooted in contexts—families, schools, peers, and communities (Appleton, Christenson, & Furlong, 2008; Christenson et al., 2012; Skinner & Pitzer, 2012). As interest in and knowledge of the importance of student engagement has grown, it became apparent that there is a critical need to develop, implement, and evaluate student engagement interventions (Reschly & Christenson, 2012; Wang & Degol, 2014). Moreover, to date, many of the interventions that have been developed lack a strong theoretical rationale and had limited empirical evidence to support their use (Wang & Degol, 2014). The goal of this handbook was to address these gaps in the literature by reviewing theory and research related to evidence-based academic, behavioral, social, mental health, and community-based interventions designed to increase engagement. Of particular importance was the identification of practical research-based strategies to increase engagement at both an individual and systems level.

Several assumptions guided this handbook. First, engagement is a multidimensional construct that includes three distinct, yet interrelated dimensions—behavioral, emotional/affective, and cognitive engagement. Scholars have noted that the engagement construct allows for a richer, more complex, and accurate depiction of students' experience at school (Fredricks et al., 2004). Thus interventions should target engagement comprehensively (Christenson et al., 2012). Second, increasing engagement is important for all students, not just those at greatest

risk of dropping out of school. Many students in our schools are bored, uninvolved, feel alienated from their peers and adults, are not invested in learning, and fail to see the relevance of their classes for their future endeavors (Fredricks, 2014). These conditions are apparent to educators and create an impetus for enhancing engagement for all students. Third, engagement is influenced by both factors in and outside of the school (e.g., family, community, peers, and classrooms); hence, interventions should not only address the multidimensional nature of engagement but also reflect how contexts either enhance or undermine student engagement. Finally, much more information is needed on both the implementation and effectiveness of these interventions to better determine for whom and under what conditions engagement interventions are most effective (Christenson et al., 2012).

Table 25.1 presents the formal intervention programs outlined in the chapters in this volume, including information on components and type of intervention, ages served, evaluation of effectiveness, and implementation information. This table does not include a range of practical research-based strategies and practices to increase engagement that were discussed in the chapters but are not part of a formal intervention program. This handbook illustrates the progress that has been made in developing interventions to enhance engagement in a range of contexts both in and outside of school, including families, peers, and communities, and research on the effectiveness of these programs and practices. The interventions reviewed in this handbook address a range of goals, from keeping students in school to the broader goals of facilitating students' skills and values to help them

successfully transition to adulthood. These interventions also vary in terms of whether they target risk or protective factors. Many interventions target risk factors that reflect students' disengagement and place students at higher risk for dropping out, such as high rates of absences, problem behaviors, and low family educational expectations. In addition, some of programs take a strength-based approach to interventions based on children's assets and their potential contributions to the school.

This chapter has several goals. First, we review the themes that cut across the formal interventions and practices described in these chapters. Next, we outline what is missing from these chapters and current gaps in our knowledge base. We conclude with a discussion of future directions.

COMMON THEMES

Several themes were evident across the chapters. The highlighting of themes is beneficial to interventionists as these themes may also be considered salient components of an intervention that engages all students.

Relationships Are Key

First and foremost, creating positive and productive relationships between students and their teachers, support staff, peers, and parents are a fundamental component of these interventions. The interventions reviewed in these chapters support the development of these relationships through formal processes, such as small learning communities, advisory programs, school clubs, mentoring, instruction in social and emotional skills, and teacher and parent training (see [Table 25.1](#)). In addition, many of the chapters describe more informal ways to improve relationships through creating a more welcoming community, providing more opportunities for student voice, and providing small group and collaborative learning opportunities.

The centrality of relationships in these interventions is unsurprising given the extensive research demonstrating that supportive relationships with teachers, peers, and other adults at the school are predictive of higher engagement and have been found to be especially important for the engagement of low-income and racial minority adolescents (Christenson et al., 2012; Wang & Holcombe, 2010). Moreover, the relation between engagement and teacher and peer support is cyclical, as research shows that as students become engaged, they get greater support from teachers and their peers, which in turn leads to greater engagement over time (Skinner, Furrer, Marchand, & Kinderman, 2008; Furrer, Skinner, & Pitzer, 2014). Relationships that support student engagement are characterized as caring, trusting, supportive, respectful, responsive to individual needs of each student, and autonomy supportive. We need to train interventionists, support personal, teachers, and peers, on how to build and support these relationships, especially with our most disengaged students. This is important because research suggests that disengaged students benefit most from developing positive relationships but are less likely to get this support (Baker, Grant, & Morlock, 2008).

Interventions Need to Take a Multidimensional Approach to Engagement

A second theme is the importance of considering engagement as a multidimensional construct when designing interventions. Until recently, there has been a tendency to emphasize the behavioral indicators of engagement and disengagement, which fails to recognize the complex, interrelated aspects of students' emotion, cognition, and behavior. The authors reviewed a range of interventions that have been developed to address all three subtypes of engagement. For example, several of the interventions targeted behavioral indicators, through use of disciplinary interventions, attendance monitoring, and early data warning systems (EDWS). Although behavioral indicators, such as attendance and work completion, are influential prerequisites for grades and academic performance, the most positive outcomes occur when interventions address all three components of engagement (i.e., behavior, emotion, and cognition) (Christenson et al., 2012). In addition, many of the interventions also targeted emotional engagement, through instructional interventions that focused on increasing school value, interventions that aimed to improve relationships with adults and peers, and interventions that addressed students' social, emotional, and mental health needs. Finally, there were a few interventions that also addressed cognitive engagement by increasing instructional rigor and relevance through active learning and constructivist pedagogical approaches.

Context Matters

A third theme that cuts across the chapters is the seminal role of contextual factors in influencing engagement. Disengagement reflects a complex interplay of factors among students, families, school, and communities. If we want to reduce the likelihood of disengagement, interventions need to take a comprehensive approach and target the range of contexts where students spend their time. The chapters also highlight the need to consider what makes an engaging school and out of school learning context. The chapters support the tenets of self-determination theory as a framework for describing the relations between context, motivation, and engagement (Ryan & Deci, 2017). This theory assumes that engagement will be higher in contexts that support individuals' need for relatedness, or feeling connected to others; autonomy, or need to experience behavior as self-initiated rather than controlled by external factors; and competence, or the need to feel able to effectively interact with the environment and achieve mastery. The need for relatedness is supported when students develop positive and supportive relationships with adults and peers. The need for autonomy is supported when students have a voice and some freedom in determining their behaviors. Finally, the need for competence is supported when students know the personal strategies effective in achieving school success.

Interventions Align With Multitiered Systems of Support

A fourth theme that emerged in the chapters was that student engagement interventions align well with multitiered systems of support, making both universal (Tier 1) and more intensive (Tiers 2 and 3) strategies essential to engage all students. The majority of interventions reviewed in this handbook would be considered universal interventions that address school-wide practices that either facilitate or inhibit student engagement. In addition, many of the interventions reviewed also included more targeted or intensive interventions for those students most at risk. Tier 2 interventions (i.e., selective, targeted) provide additional support, often in smaller groups, to students showing some risk of disengaging from school. Tier 3 interventions reviewed are individu-

alized, intensive, and designed for students with the most significant risk of disengagement in school. Universal strategies (Tier 1) are the foundation for more individualized strategies to support disengaged youth (Tiers 2 and 3). In other words, strong school-wide interventions designed to increase engagement among all students make it more likely that targeted and individualized interventions will be effective at reengaging our most disengaged youth.

Data Play a Key Role

The final theme that emerged was the seminal role that engagement data play in the identification, design, and evaluation of interventions. These findings support the notion of an assessment-to-intervention link, where data are used to both identify and monitor the effectiveness of different interventions across universal and more intensive strategies and among different subgroups of students. One example of the use of data to inform the target of engagement interventions is the use of early warning systems (see [Chapter 4: Early Warning Indicators and Intervention Systems: State of the Field](#), and [Chapter 22: Student Engagement Instrument as a Tool to Support the Link Between Assessment and Intervention: A Comparison of Implementations in Two Districts](#)). As part of early warning systems, school districts are collecting data on disciplinary issues, attendance, and course performance to determine the different tiers of support subgroup of students need. These data are used also to identify those students who are most disengaged and at greater risks of not graduating from high school.

Finally, although this handbook provides a clear evidence of the growth and evaluation of interventions to enhance students' engagement, definitive statements regarding for whom an intervention will be effective cannot be made. Context does matter. Thus schools and districts should select intervention programs that have the strongest evidence base or select different components of interventions that align with the identifiable components of a successful intervention that best fit their particular context. Evaluating the effectiveness on these programs/practices in their own particular settings provides relevant context-specific information. Given the relatively recent status of engagement-related interventions, educators may also combine existing and new strategies in their settings with the idea of supporting students' needs for competence, autonomy, and relatedness to enhance students' engagement. Here, too, evaluation is essential.

WHAT'S MISSING AND FUTURE DIRECTIONS

As is evident across these chapters, one of the biggest gaps in our knowledge base is information on fidelity, or whether the intervention was implemented as intended. There is an assumption that evidence-based programs can be implemented in any situation, with limited attention to participant's background and the organizational characteristics of the school. Much of the research still assumes a one-size-fits-all approach. To date, few studies have examined variations in outcomes of interventions across demographic groups and school context, neglecting the large variation that exists both within and across schools and classrooms. The lack of information on the effectiveness of these interventions across different contexts makes it more difficult for school districts to decide if an intervention will be right for their particular school and student population, as well as knowing how to modify either a particular intervention or set of strategies to fit the needs of their particular context.

The reality is that interventions are rarely delivered as designed. Collecting data on intervention fidelity, including the adherence to core components of interventions, dosage, responsiveness, and quality of the program, can provide important insight into the reasons why an intervention either does or does not work (Durlak, 1998; Fagan, Hanson, Hawkins, & Arthur, 2008). Unfortunately, few of the chapters included any data on any of these aspects of intervention fidelity. One exception is research on Check & Connect, which demonstrated that the intervention had greater benefits when mentors were adequately selected and trained, and when they could establish a larger support network for targeted students (see [Chapter 2: Promoting Student Engagement from Childhood to Adolescence as a Way to Improve Positive Youth Development and School Completion](#), and [Chapter 18: Implementing Check & Connect: Lessons from Two International Effectiveness Experiments](#)).

Previous reviews of the engagement literature have raised questions about the extent of knowledge regarding the effectiveness of interventions (Christenson et al., 2012; Wang & Degol, 2014). This volume illustrates the recent and significant progress made in this area. For example, most chapters included data demonstrating the effectiveness of interventions in improving engagement. However, it must be noted that the quality of the research designs varied. Several of the interventions reviewed were evaluated using rigorous quasi-experimental

or experimental designs, which we advocate, when feasible, as the standard for ongoing research. Others, however, were more limited in their methodology, and few studies as yet were able to report on the long-term effectiveness of these interventions, a further indication of how nascent the field is. The majority of studies reviewed in this handbook used either a cross-sectional or short-term longitudinal design. This is an important gap as many interventions are assumed to reduce dropout rates but have not collected long-term data. Moreover, it is possible that for some interventions the effects may be delayed over time. From the available research, it is less clear for how long and under what conditions interventions need to be provided to achieve positive outcomes.

We also know very little about how interventions are implemented in context (Pianta, 2003). The research on school-based interventions suggests that much of success of these programs has little to do with the design of the program and more to do with how it was implemented and the interactions with children (Pianta, 2003). Implementation is also affected by organizational and cultural factors at the school, such as alignment of the intervention with school philosophy, policies, and programs; ongoing financial supports for interventions; and methods for addressing teacher turnover (Forman, Olin, Hoagwood, Crowe, & Saga, 2009).

One of the most important factors to maximize the quality of implementation is training and professional development for staff (Durlak, 1998; Kratochill, Volpiansky, Clements, & Ball, 2007). We need to provide practitioners with both the latitude and the supports necessary to select and/or create an intervention that fits their context and data at their schools. In addition, we need to consider the supports that implementers (i.e., parents, teachers, and support staff) will need to effectively implement these interventions. However, with a few exceptions, there was limited attention to the training that is needed to both select and effectively implement these interventions programs.

As the two chapters from practitioners so eloquently noted (see Chapter 23: Building an Engaging Community: Practices and Interventions that Support Students in Schools, and Chapter 24: The Met High School: Engaging Youth One Student at a Time), many teachers and schools still frame disengagement as the fault of the student rather than considering how environmental factors play a role. There has been a tendency to blame individual students for indicators of disengagement rather than considering how engagement is an interaction between individual and contextual factors. Shifting these assumptions requires a safe and supportive environment, where individuals have a chance to reflect on their beliefs, manage their well-being, try new practices, and have opportunities for continuous improvement.

In contrast to the practitioner reflections, there was less attention to how teacher and school personnel mind-sets may influence the implementation of interventions in the other chapters. Unfortunately, too often

interventions are developed without consideration of the individuals who will be implementing these practices. One way to strengthen the connection between research and practice is to include practitioners in the design of interventions. Their knowledge of both the staff who will implement these programs and the characteristics of their contexts can provide critical insight into how these programs and policies will likely be implemented in practice.

In concert with conclusions regarding the importance of context is the idea that there is not one perfect intervention that works for all. Instead, interventionists must be sensitive to person–environment fit. In other words, what is the perfect teaching strategy, interaction style, or reading program, for one student may be totally different for another. An intervention model, such as Check & Connect, appears to be effective for many students and at different school levels and populations, yet it is not effective for all. This, too, speaks to the importance of using data to monitor students' responses to intervention and changing strategies or programs as indicated by a further deterioration in engagement or lack of response.

Finally, an important question is how to develop engaging intervention programs. The reality is that if participants are not invested in these programs, even the most well-designed programs will have limited impact on engagement outcomes. For example, many of the strategies used to implement bullying prevention programs have been found by participants to be boring and ineffective. The research on engagement can inform the development of more engaging intervention and prevention programs. As outlined in self-determination theory (Ryan & Deci, 2017), adolescents will be more engaged in programs that support their need for relatedness, autonomy, and competence. Research supports the tenets of this theory; engagement is higher when adolescents have opportunities to make meaningful decisions, work on real-world and meaning tasks, and develop relationships with both nonfamilial adults and peers (Christenson et al., 2012; Fredricks, 2014).

In conclusion, this handbook illustrates the tremendous progress that has been made in our understanding of the relation between context, engagement, and adjustment, and how scholars are using this information to develop more effective prevention and intervention programs. Together, practitioners and administrators should work toward a shared goal of increasing engagement among all students, through both universal programs at

the school level and more targeted and individualized programs at the student level. Despite this progress, our review also illustrates the gaps that still exist in this knowledge base and the future directions that can help the field to develop more effective and targeted engagement interventions to serve the unique needs of diverse students and school contexts.

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