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1. INTRODUCTION

1.1 Goals

The Raikes Foundation has been at the forefront of a promising movement to promote interventions that foster what it calls student agency. Research indicates that fostering students’ agency and related mindsets is essential to addressing the foundation’s ambition of “ensuring that all are ready for college, ready for a career, ready for a successful transition into adulthood and, ultimately, ready for life” (Raikes Foundation, n.d.). In a recent speech, Secretary of Education Arne Duncan (2013) noted that “we are badly in need of practical, scalable guidance for what teachers, parents, school leaders, and students themselves can do to boost student motivation.” Further, the director of the Department of Education’s Institute of Education Sciences (Easton, 2012) recently said, “The test score accountability movement has pushed aside many of these so-called ‘non-cognitive’ or ‘soft’ skills, and they belong back on the front burner.”

The Raikes Foundation’s focus on student agency is thus both timely and necessary. The foundation has three specific goals:

- Strengthen the evidence base on academic mindsets and learning strategies through investments in basic and applied research, especially concerning how teachers can cultivate student agency
- Promote adoption of strategies to build student agency through integration with other education reform efforts
- Create demand for student agency in the U.S. education system through capacity building, communication, and advocacy

In 2012, the Raikes Foundation invited 10 school networks (see Exhibit 1) to participate in a short-term partnership in which they could learn from one another about embedding the development of agency into school cultures, teaching practices, and assessment methods. The Middle Shift Learning Network (MSLN) met twice, once in the fall and once in the winter of 2012.

Exhibit 1: MSLN Organizations

- Big Picture Learning
- EdVisions Schools
- Envision Education
- Expeditionary Learning
- High Tech High
- Mastery Charter Schools
- New Tech High
- YES Prep Public Schools
- KIPP Schools
- National Forum to Accelerate Middle Grades Reform
As a follow-up to those meetings, the Raikes Foundation asked IMPAQ International to conduct a formal scan of the student agency practices implemented by the MSLN. The primary objectives of the scan are to:

- Identify and describe key practices MSLN schools use to promote student agency
- Summarize the research supporting those student agency practices

One goal of this work is to understand the student agency practices used in the MSLN and to identify gaps in the evidence base for those practices. Another is to facilitate the sharing of best practices among MSLN organizations and with the larger field.

### 1.2 Methods

To perform this scan, IMPAQ conducted surveys and interviews with key informants from each MSLN organization. Key informants were typically executive directors or senior staff with in-depth knowledge of school practices. The surveys asked respondents to identify **key practices** their schools employed in grades 5–9 to foster student agency. Surveys also asked about how those practices were implemented: grade levels and special groups targeted by the practices, whether use of the practices was required or merely encouraged, and the extent to which the practices were implemented in network schools. Interviews with key informants built on the survey by exploring more deeply how practices were implemented and how they fostered student agency.

The practices described by survey and interview respondents do not comprise an exhaustive list of all network practices that conceivably have an effect on student agency. Rather, respondents described **selected key practices** in the network model’s approach to fostering agency. Some network respondents may have described practices that other networks also use but did not emphasize in the surveys or interviews. The scan was not intended to be a comprehensive review of each network’s practices.

Once practices were identified, we conducted a review of the evidence base supporting those practices. Specifically, we identified research and evaluation on the effectiveness of each practice in fostering student agency and achievement. We attempted to classify the research base by standards of evidence, noting whether the studies were experimental, quasi-experimental, correlational, descriptive, or anecdotal in order to assess the strength of the evidence. Though only experimental studies can determine causation, research that is not experimental is also valuable in understanding how practices work. We therefore report findings of both kinds of studies.

In most cases, we did not find studies of the specific practices used by networks. Rather, we found studies supporting the general underpinnings of these practices. For example, several networks implemented various types of advisory programs. The literature does not focus on the specific advisory models implemented by the networks but does examine the effects of advisory programs with similar configurations.
We categorized the research evidence base for each type of practice under four categories (see Exhibit 8):

- Strong supportive research
- Promising research
- Mixed research
- More research needed

1.3 Student Agency Factors

The term student agency, as defined by the Raikes Foundation, refers to the student attitudes, beliefs, and dispositions about school and learning that are associated with positive academic outcomes and school success. These non-cognitive skills or factors include students’ beliefs about themselves, their goals in school, their feelings of social belonging, and their self-regulatory skills (Dweck, Walton, & Cohen, 2011). Efforts to institute more rigorous curriculum focus on the cognitive skills measured by standardized test scores. However, an increasing body of evidence demonstrates that non-cognitive factors—persistence, time management, self-confidence, and others—are critical to sustained academic success (Farrington et al., 2012). Duckworth and Seligman (2005) report that academic achievement is influenced more by students’ “conscientiousness” or self-discipline than by their cognitive capabilities as measured by IQ. The fact that school grades are better predictors than test scores of both high school and college graduation suggests that the non-cognitive factors that enable students to earn good grades are at least as important as the cognitive skills measured by academic and IQ tests (Farrington et al., 2012).

A growing number of psychological studies have shown that short-term interventions targeting students’ attitudes, beliefs, and dispositions about school and academic success can have substantial long-term effects on academic achievement (Farrington et al., 2012; Snipes, Fancsali, & Stoker, 2012). Such interventions may seek to change students’ beliefs about the nature of intelligence and their capacity to learn, to increase their perceptions of acceptance and support, to improve learning strategies, or to enhance their self-discipline and ability to stay focused (Farrington et al., 2012; Snipes, Fancsali & Stoker, 2012). Thus, if non-cognitive factors are key to academic success (Blackwell, Trzesniewski, & Dweck, 2007) and even to later success in the workplace (Heckman, 2008)—and if these factors are in fact malleable and amenable to intervention—efforts to develop these non-cognitive factors could have a significant effect on achievement gaps based on race or ethnicity, gender, and family income (Farrington et al., 2012). However, as highlighted later in this report, the volume of research on the effects of short-term interventions is not matched by research on the effects of integrating these practices into school and classroom models.
In this report, *student agency* refers to one of the following areas:

1. **Growth mindsets:** “I can learn.”
2. **Self-efficacy:** “I can do this.”
3. **Relevance and purpose:** “This is important to me.”
4. **Social belonging:** “I belong here.”
5. **Goal setting and management:** “These are my goals, and I can reach them.”
6. **Metacognition:** “I know myself and what I need to do.”
7. **Social capital:** “I can get help when I need it.”

### 1.3.1 Growth Mindsets

Individuals with a *growth mindset* believe that ability and intelligence can increase through effort. They also have confidence in their ability to shape their future and to learn new concepts and material. As Farrington and colleagues (2012) point out, when students feel that their academic abilities are fixed, they are less likely to be motivated to persist at tasks or to take on new academic challenges. Instead, they are likely to focus on others’ perceptions of their abilities and try to avoid “failing” in front of others. By contrast, when students believe that their intelligence “grows like a muscle” over time as they put in effort, they are more likely to work hard and have positive outcomes. They also are less worried about struggling with challenging material in front of their peers and teachers (Farrington et al., 2012). Researchers have hypothesized that students with a growth mindset are more likely to have the determination necessary to persist through challenges and work toward long-term goals (Dweck et al., 2011).

### 1.3.2 Self-Efficacy

According to Albert Bandura (1995), *self-efficacy* refers to “the belief in one’s capabilities to organize and execute the courses of action required to manage prospective situations” (p. 2). Students with strong self-efficacy succeed at academic or social tasks precisely because they believe in their own ability to handle the situation. Research has shown that individuals’ self-efficacy beliefs are associated with their ability to persist in working toward a goal and how they react to challenges or “bumps” along the way (Oyserman & James, 2009; Pajares, 2006). According to Farrington and colleagues (2012), “When students believe they are likely to succeed in meeting academic demands in a classroom, they are much more likely to try hard and to persevere in completing academic tasks, even if they find the work challenging or do not experience immediate success” (p. 29).

### 1.3.3 Relevance and Purpose

Students with a sense of *relevance and purpose* believe that school and the work done in school can help them achieve their goals. They find the content of school learning relevant to
themselves and their communities. A considerable amount of research has shown that students who see the value and purpose of an academic task are more likely to persist in the task and perform better than students who do not (e.g., Eccles et al., 1983; McKnight & Kashdan, 2009; Wigfield & Eccles, 1992). Farrington and colleagues (2012) suggest that, “When students are interested in a subject or see a connection between academic tasks and their own future goals, students are more likely to expend persistent effort and exhibit academic behaviors that support school success” (p. 29).

1.3.4 Social Belonging

Students with a sense of social belonging take pride in belonging to their learning community. They are comfortable speaking up and actively engaging in the learning that takes place in that community, and they contribute to building the community through their engagement as learners and teachers of others. Social belonging results when students have a sense of legitimate membership in a classroom or school community. The Collaborative for Academic, Social, and Emotional Learning (CASEL, 2003) notes that the effect of social belonging on academic achievement may be indirect: Students who feel they belong in their learning community are more likely to behave appropriately in the classroom and to experience lower levels of stress than students who feel alienated. They will therefore be more engaged in learning and so experience more academic success (CASEL, 2003; Greenberg et al., 2003). Conversely, students who lack a sense of belonging or are stigmatized by the group tend to experience increased stress and to underperform in school (Good & Dweck, 2006; Osterman, 2000).

1.3.5 Goal Setting and Management

Goal setting and management refers to a variety of skills, tools, and techniques used to accomplish specific tasks, projects, and goals. This wide scope of activities includes planning, setting goals, monitoring, organizing, scheduling, and prioritizing. Individuals who practice goal setting and management are more likely than those who do not to be motivated and to complete tasks on time. They are also more likely to display self-discipline, persistence, and focus. Research shows that students who are able to regulate their own behavior are more likely to be successful in their academic work (Pintrich & DeGroot, 1990; Pokay & Blumenfeld, 1990; Zimmerman & Martinez Pons, 1986).

1.3.6 Metacognition

Metacognition can be defined as “thinking about one’s own thinking.” According to Linda Darling-Hammond and colleagues (n.d.), metacognition can be broken down into two distinct abilities: Metacognitive knowledge is “awareness of one’s thinking,” while metacognitive regulation is “the ability to manage one’s own thinking processes” (p. 159). When students not only are aware of their thinking processes but also can change their approach in response to self-identified needs, they are more able to succeed at academic tasks (Pintrich & De Groot, 1990; Zimmerman, 2001). Knowing metacognitive and self-regulation strategies—and

1.3.7 Social Capital

Social capital refers to the various interpersonal resources that individuals access through relationships in social networks in order to be successful in school and other institutions (Bourdieu, 1986; Coleman, 1988). As Lin (1982, 1990) argues, individuals convert their social capital into specific supports in order to reach their goals. Young people from middle-class families live within family- and school-based networks that are rich with opportunities for support. Stanton-Salazar (1997) describes how institutional and ideological forces can make it difficult for low-income students to access social capital. Students can overcome these obstacles by developing supportive relationships with adults who are “institutional agents”: adults, teachers, and higher-status peers who can give them the resources and information they need to succeed (Stanton-Salazar, 1997).

1.4 Organization of This Report

Knowing that the non-cognitive factors that define student agency are related to educational success does not mean we know how to foster these skills and traits in students. The remainder of this report focuses on what Farrington and colleagues (2012) call “a key task for educators”: “the intentional development of these skills, traits, strategies, and attitudes in conjunction with the development of content knowledge and academic skills” (p. 5). In the sections that follow, we look at the practices MSLN organizations are implementing in their schools to foster student agency and improve academic achievement, grouping these practices into four categories based on our research review:

1. Classroom-based instructional approaches
   a. Project-based learning
   b. Encouraging a growth mindset
   c. Relevant, personalized instruction
   d. Alternative grading policies

2. School organizational structures
   a. Advisory programs
   b. Community meetings
   c. Interdisciplinary teams
   d. One-to-one access to technology

3. School-based practices
   a. Character education
b. Common intellectual mission  
c. School-wide 21\textsuperscript{st} century learning goals  
d. Reflection protocols  
e. Restoration room  

4. Community-related practices  
   a. Community partnerships and public presentations of work

In each category, we describe the practice and provide details on the ways individual networks implement the practice and on the areas of student agency it is intended to influence, according to network respondents. We then summarize the evidence base that supports the use of the practice to improve student agency and academic achievement. We do not discuss specific populations targeted by the student agency practices; all network respondents reported using these practices across all grade levels and with all populations of students regardless of demographic factors.

In MSLN schools, student agency practices are rarely discrete, stand-alone activities. Rather, they work synergistically within a constellation of instructional approaches and school-wide practices and models. For example, several networks use project-based learning to deliver instruction and foster student agency. Project-based learning involves other practices that are also highlighted in this report, such as community partnerships and public presentations of work, advisory programs, and personalized instruction.
2. CLASSROOM-BASED INSTRUCTIONAL APPROACHES

2.1 Project-Based Learning

2.1.1 Overview and Network Practices

Project-based learning is an instructional approach that uses authentic learning activities to engage students and foster interest and motivation. Generally, these activities are designed to answer a question, solve a problem, defend a position on an issue, or express student points of view through arts and performance. They engage students in the types of learning and work that are meaningful outside the classroom. The principles behind project-based learning—and its efficacy in obtaining desirable student outcomes—have been well established for decades (Grant, 2011). Constructivist theory, which holds that “knowledge is constructed uniquely and individually, in multiple ways, through a variety of tools, resources, and contexts,” is often identified as a driving force behind project-based learning (Lattimer & Riordan, 2011).

Aspects of project-based learning implemented in MSLN schools foster all seven student agency factors. In most network schools, students have some say in choosing a project or their approach to accomplishing it. Projects are generally based in real-world problems, often driven by local community needs or issues. The process of completing projects inherently reflects the kind of work adults do in the 21st century workplace. All these aspects of project-based learning highlight the relevance and purpose of the work. Social belonging is fostered in most networks’ models because students work in teams to accomplish their projects. Furthermore, to accomplish a large, complex project, students must set goals and plan how to meet them. Teachers scaffold project work so that larger, more difficult tasks build on smaller, less complex tasks, thus developing students’ sense of accomplishment and their self-efficacy. Project-based learning fosters growth mindsets by giving students tangible evidence that they are gradually improving their skills and knowledge during project work. When they reflect on what they already know or can do in relation to what they need to know and do to fulfill the project goals, students practice their metacognitive skills. Finally, project-based learning in MSLN schools helps students build social capital in one or both of two ways: by putting them in touch with community experts who help them accomplish their project and by giving them a forum where they present their work to adults in the community.

Our interviews identified six MSLN organizations that implement project-based learning in their schools. For three of them, project-based learning is the primary mode of instruction.

In one network, all content is taught through projects, with very little direct instruction in classrooms. Students are given a complex problem or challenge grounded in community needs and must work in collaborative groups of four or five to solve the problem. The real-world context helps students see the relevance and purpose of the state-mandated skills and content they are learning. Students can request a “workshop” to gather additional information from teachers or community experts. Each team member serves a specified role, and all members
Mental health

To promote student engagement and motivation, content learning, collaborative skills, and critical-thinking skills. For example, students’ confidence levels and work ethics improved in classrooms where teachers reported incorporating project-based learning (Treten & Zachariou, 1995). Two studies of project-based learning in Detroit Public Schools offer evidence of positive student academic outcomes, as measured by standardized test scores (Geier et al., 2008; Marx et al., 2004). Non-cognitive outcomes such as self-regulation and academic mindset also improved (Marx et al., 2004). Because project-based learning was one of the best practices identified in the review, it is recommended for adoption by schools.
component of a larger reform effort in Detroit Public Schools, the extent to which gains were
due to project-based learning or other components of the reform is unclear. Hung, Hwang, and
Huang’s (2012) quasi-experimental study showed that students in a project-based science
classroom demonstrated higher gains in academic and non-cognitive competencies when
compared with a control group of students receiving lecture-based instruction. Weaknesses of
these studies include small sample sizes and short duration of the intervention; most were
restricted to one subject or type of project.

Although schools implementing project-based learning certainly have more room to be creative
than do traditional lecture-based systems, they still must adhere to state curricula and testing
standards. As a recent article notes, project-based learning “often fails when the emphasis falls
too heavily on the ‘project’ element of the title rather than on the ‘learning’” (Grant, 2011).
More research is needed to figure out how best to adapt project-based learning to maintain
rigor in academic knowledge and performance skills while continuing to encourage student
agency.

2.2 Encouraging a Growth Mindset

2.2.1 Overview and Network Practices

Practices that encourage a growth mindset seek to dispel the notion that intelligence is fixed
and replace it with the idea that academic ability can improve with effort. They also strive to
change students’ perceptions of the reasons for poor performance. When students feel that
their academic abilities are fixed, they are less likely to be motivated to persist at tasks and take
on new academic challenges. Conversely, when students believe that their intelligence “grows
like a muscle” over time as they put in effort, they are more likely to be persistent and self-
motivated and to work harder in school (Cury, Elliott, Da Fonseca, & Moller, 2006; Dweck &
Leggett, 1988). Similarly, research has shown that, when students fail at a task, they will try
harder the next time if they think their failure is due to a lack of effort but are less likely to try if
they think their failure is due to their lack of ability (Kelley, 1973; Vispoel & Austin, 1995).

All of the MSLN organizations incorporated practices aimed at encouraging a growth mindset,
often incorporating this work into practices such as project-based learning, advisories,
reflection protocols, and assessments. In addition, our interviews identified three MSLN
organizations that implemented discrete practices to encourage a growth mindset in their
schools. One such practice is to give students feedback that emphasizes their effort and
persistence rather than their native ability. Another involves providing direct instruction on
how the brain “grows like a muscle.” As students develop growth mindsets, they also build self-
efficacy, gaining confidence that they can master new skills by persisting in the face of
challenges.

In one network, teachers implement Wise Feedback/High Assurance, a concept originated by
Cohen, Steele, and Ross (1999). Wise Feedback explicitly invokes the school’s high standards to
help students understand that their mistakes are a sign, not of their lack of capability, but
rather of the high demands of the education program. High Assurance, provided at the same time, is a promise that the student will be able to improve with effort. Teachers in this network said that Wise Feedback/High Assurance forced them to think about how they deliver their messages to students.

In another network, some schools have aligned the language on report cards with a growth mindset framework: They give feedback on student effort and persistence as well as performance. These schools have also helped teachers change the ways in which they provide feedback on specific assignments. Rather than simply saying “Good work!” teachers make specific comments on what students did well and what needs improvement. They also focus on praising the process rather than the product by saying, for example, “I can tell you put a lot of work into that draft.” They avoid statements that undermine the growth mindset, such as “You did well because you are smart.” Students are encouraged to revise and resubmit their work, so they get the message that they should challenge themselves to persist until their work is the best it can be. This network believes that appropriate feedback and recognition of effort develop students’ understanding that learning occurs through effort and that intelligence is not a static commodity.

In the third network, students are taught directly about growth mindsets. Science classes include lessons on the brain that emphasize its continuous development; advisory groups provide coaching and lessons about growth mindsets. Teachers receive professional development on encouraging growth mindsets and are expected to praise effort, perseverance, and the use of strategies rather than ability, intelligence, or talent. Teachers are also encouraged to adopt growth mindsets for themselves so that they continue to develop their capacities through coaching and professional development.

2.2.2 Research Base

Research studies find increased academic achievement among students who are encouraged to develop a growth mindset. The studies reviewed here used rigorous experimental research designs. However, they assessed the impact of short-term interventions not directly tied to the curriculum, rather than the long-term, embedded mindset practices employed by some MSLN schools.

For example, Blackwell, Trzesniewski, and Dweck (2007) studied the effects of a workshop focused on teaching low-income, low-achieving seventh-grade students that their brains are malleable and that intelligence is not static. The results of the randomized controlled trial found that the workshop had modest positive effects on students’ grade point averages. Paunesku, Goldman, and Dweck (n.d.) conducted an experiment on the effectiveness of Brainology, an interactive, computer-based growth mindset workshop, on students’ academic achievement. The treatment group showed significant increases in reading achievement test scores and more persistence in the face of setbacks than the control group. Similarly, in a random assignment study of Latino middle school students in California, Romero, Paunesku, and Dweck (n.d.) found that Brainology led to a 0.21-point increase in grade point average and to improved behavior.
Finally, in a set of two experiments, Cohen, Steele, and Ross (1999) tested whether adding an explanation that a student was being held to a high standard—which he or she could achieve with effort—could mitigate stereotype threat when the student received critical feedback on a writing assignment. This intervention is the basis for Wise Feedback/High Assurance. African-American college students were asked to write letters of recommendation for their favorite teachers, which were returned with critical feedback. Invoking high standards while delivering assurance that they were capable of meeting those standards led the students to report less bias on the part of the reviewer, greater motivation for the task, and greater willingness to consider a career that involves writing. Invoking high standards alone reduced reports of reviewer bias but did not affect task motivation (Cohen et al., 1999).

2.3 Relevant, Personalized Instruction

2.3.1 Overview and Network Practices

Relevant and personalized instruction comes in two strands, which are often used together. One version of personalization adapts content and methods to students’ learning needs and abilities, a practice often referred to as differentiation. The second kind of personalization delivers content related to students’ individual interests and life experiences. When these strands are combined, the resulting instruction “is paced to learning needs, tailored to learning preferences, and tailored to the specific interests of different learners” (U.S. Department of Education, 2010, p. 12). Personalization takes individual student characteristics and needs into account, using flexible instructional practices. By tailoring instruction to student learning styles and interests, educators hope to increase student engagement and motivation to learn.

Several MSLN organizations personalize instruction by implementing project-based learning (see Section 2.1). Three networks implement additional practices designed to make instruction relevant and personalized. One network works to fit instruction to students’ academic interests and ability; two others described personalization practices that focus on aligning instruction with the life experiences and interests of students.

One network implements personalized instruction in reading through sustained quiet reading time and in mathematics through flexible, personalized curriculum. Time is set aside every day for quiet reading of material based on students’ interests. Each student’s reading program is tied to the student’s individual learning plan and coordinated around state graduation requirements and the student’s projects and interests. Connecting the reading plan to the individual learning plan not only increases the relevance and purpose of the students’ activities but also fosters goal-setting and management skills because students play an active role in identifying the reading they must do to accomplish goals. Similarly, the network fosters math skill development through self-paced and flexible programs. Students work with their advisor and with web-based instructional programs for one hour a day to achieve math standards. There is some group instruction for students working on the same concepts, but most of the
work is done individually. Teachers and students have flexibility in selecting the online program that best meets each student’s needs.

Schools in another network take a broad view of how students develop skills within and outside of school. Teachers conduct home visits to get to know students’ families and home environments. They then work with students to develop a learning plan aligned with the students’ interests and strengths. For example, some students from non-English-speaking families act as interpreters for their parents. Teachers might work with these students to build projects having to do with translation in order to recognize their skills. The network builds **relevance and purpose** in instruction by tapping students’ interests and giving students academic credit for their non-academic contributions.

A third network uses personalization—“voice and choice”—to influence what happens in the classroom and throughout the school. Instruction is personalized because teachers choose topics they are passionate about, and students have some freedom to choose what they would like to learn. For example, the teacher might determine the project topic or theme, while the students choose how to demonstrate their learning, with whom they would like to work, and the nature of their final product. The network believes that personalization leads to greater instructional **relevance** and student engagement, which result in deeper learning.

### 2.3.2 Research Base

Rigorous research on personalized instruction is limited, and available evaluations provide mixed results on its effectiveness, depending on how the practice is employed. In general, the literature on instruction that is tailored to students’ performance levels and instructional needs points to positive effects on reading achievement scores but mixed effects on mathematics scores. Some studies also suggest that tapping students’ personal interests has positive effects on student engagement and motivation, though these findings are also mixed.

Several randomized control trials found that tailoring instruction to students’ performance levels had positive effects on students’ achievement in reading (Connor et al., 2011) and math (Karweit & Slavin, 1985; Slavin, 1984; Slavin, Madden, & Leavey, 1984). In contrast, a recent study of personalized instruction in New York City middle schools found no effect on student achievement in mathematics (Cole, Kemple, & Segeritz, 2012). The Cole study suffered from methodological issues such as a lack of a solid counterfactual case, and both the Cole and Connor studies suffered from small sample sizes.

Other studies suggest that personalizing instruction by making it relevant to students or connecting it to their personal interests has positive effects on student engagement and motivation. In a comprehensive report on fostering high school students’ motivation, the National Research Council (2003) reviewed several studies examining these connections. Most were qualitative, correlational, or quasi-experimental. They showed that students were more excited about learning and learned better when course topics were personally interesting and relevant to their lives. For example, Cordova and Lepper (1996) examined the effects of
contextualization, personalization, and choice on elementary students. All three strategies improved students’ motivation, engagement, and content learning. However, the differences were not statistically significant, possibly due to the study’s small sample size. In contrast to these findings, Bates and Wiest (2004) found that personalizing mathematical word problems with individual student interests, thus making the math more relevant to students, had no effect on the problem-solving performance of fourth-grade students. This study lacked a solid counterfactual case, had a small sample size, and lacked pretest measures.

2.4 Alternative Grading Policies

2.4.1 Overview and Network Practices

Grading practices have long been controversial among educators and academics. Although grades are accepted as an inherent part of the U.S. education system, stakeholders can’t agree on their purpose and function. Some schools have turned away from traditional letter or number grades to embrace other grading schemes that allow greater flexibility and give students room to improve.

One network fosters a growth mindset and self-efficacy through a grading practice—known as “The Power of I” or “A, B, C, Not Yet”—that holds all students to high standards and supports them in learning until they meet or exceed requirements (see Exhibit 2). Students get an “incomplete” for work that is not turned in or is not up to standard. They do not receive failing grades, and “taking a zero” is not an option. Teachers work to support students as they revise work by giving meaningful feedback and by re-teaching, tutoring, and giving students extra help and extra time, for example, in afterschool programs. This practice fosters students’ growth mindsets and self-efficacy by sending the message that all students are expected to achieve high standards and that they can do so if they try. Another network has developed a grading system that rewards students for the academic behaviors that are associating with growth mindsets (see Section 2.2).

**Exhibit 2: “Power of I” Grading Reduces Failure Rate**

When Reservoir Middle School in Newport News, Virginia, implemented the Power of I grading policy, its failure rate declined from 50 students a year to only one. Similarly, Alice Birney Middle School saw a 50 percent reduction in failing grades at the end of the first year of Power of I grading and a school-wide failure rate of less than five percent after the second year (Southern Regional Education Board, 2008).

In another network, schools do not give grades. The network has developed learning goals that offer a framework for considering the knowledge and skills that students need to become successful, well-rounded individuals: communication skills, problem-solving abilities, quantitative reasoning, and social and emotional skills. These schools emphasize aspects of student agency including self-efficacy and goal setting; they also foster a growth mindset by encouraging perseverance.
2.4.2 Research Base

The few studies that focus on “redo” grading are descriptive and anecdotal. Nevertheless, findings from these studies suggest that alternative grading approaches have positive effects on middle-grade students’ academic and behavioral outcomes.

One study, conducted by the Southern Regional Education Board (SREB, 2012), identified practices that prepare students for high school by comparing 10 middle schools that improved student academic outcomes with 10 middle schools that did not. The majority of schools that implemented redo grading reported decreased course failure rates and improved student grades, student effort, student motivation, and parent satisfaction. Several methodological problems limit the generalizability of this study, including a lack of a solid counterfactual case, a small sample size, and a lack of objective outcome measures. In addition, the redo practice was one component of a multifaceted intervention, making it difficult to separate its effect from the effects of other practices. However, the results of this study are corroborated by anecdotal evidence in which schools that implemented Power of I grading reported improvements in their student achievement scores (SREB, 2012).
3. SCHOOL ORGANIZATIONAL STRUCTURES

3.1 Advisory Programs

3.1.1 Overview and Network Practices

Advisory programs are “configurations in which an adult advisor (usually a teacher or other school staff member) meets regularly during the school day with a group of students to provide academic and social-emotional mentorship and support, to create personalization within the school, and to facilitate a small peer community of learners” (Shulkind & Foote, 2009, p. 2). Implementation of advisories is based on the assumption that “every student needs to have a relationship with at least one adult in the school which is characterized by warmth, concern, openness, and understanding” (George & Alexander, 1993, p. 201). As one of its six characteristics of developmentally responsive middle schools, the National Middle School Association (1995, since renamed the Association for Middle Level Education) lists providing a caring, supportive adult advocate or advisor for every student.

Our interviews with network representatives identified seven MSLN organizations that implement advisories or similar programs in their schools. These advisory programs match an adult mentor with a small, stable student group in which each participant receives academic and social support. One network respondent described the advisory as a “second family” or “home” where students develop a sense of social belonging. Most networks keep their advisories small, with group sizes generally ranging from 10 to 16 students. One network uses circle discussions, rather than formal advisories, with groups of up to 25 students. In these circle discussions, which are also referred to as peer-to-peer sessions, students openly discuss a wide range of topics ranging from current events to personal dilemmas.

Some schools have multi-grade advisories that include students from grades 6–8; in other schools, students remain with the same advisor throughout middle school. One network representative emphasized that network schools strive to ensure that advisory groups are heterogeneous with regard to students’ race or ethnicity, gender, achievement, and so on. The frequency with which advisory groups meet varies considerably across network schools, with some meeting daily, others 2–5 times per week, and others a few times every six weeks. Similarly, the length of the advisory sessions varies from 25 minutes to an entire class period. In two networks, advisors also meet with students’ families.

In several network schools, advisors create their own curriculum. In others, advisors receive professional development on facilitating the advisory. Most advisories focus on developing both academic behaviors and social skills; most have both individual and group components. Advisors meet one-on-one with students to foster self-efficacy skills, monitor and support academic progress in a way that builds metacognitive skills, and assist with goal setting and management. Whole-group activities are designed to foster development of academic behaviors, encourage a sense of social belonging and support, and help students to develop the
orientations that foster student agency. Advisory discussions may also focus on student dilemmas or on behavioral problems that have occurred in school, which can serve to increase students’ sense of social belonging and also help students support one another in solving problems, thereby improving their social capital and sense of self-efficacy. Discussions may also help students get involved in the community and develop their knowledge of work outside of school, thus showing them the relevance and purpose of their learning. One network has developed a rubric to assess students’ development of these non-cognitive skills; advisors use the rubric in meetings with students and families. The network is conducting student interviews in 15 schools to provide teachers with concrete examples of what non-cognitive variables “sound and look like” in practice.

**Exhibit 3: Internships Promote Responsibility and Develop Social Capital**

In one network’s schools, students initiate Learning Through Internship (LTI) projects in community internship sites, which include veterinary hospitals, restaurants, schools, law offices, graphic design studios, and many others. Because they are aligned with students’ interests and needs, LTI projects promote student agency and responsibility. Students set goals for their learning and manage their own schedules.

According to a longitudinal study of the network (Arnold, 2011), 42 percent of students concluded that their LTI project was the element of their educational experience that best prepared them for the future. One student reported:

> My LTI experience...taught me to succeed in a professional environment, interact and work with adults, effectively advocate for social justice, and be independent and responsible for my work and decisions.

LTI projects reach students who are not motivated in traditional school contexts. Carrying out authentic work in professional settings inspires students to persist in their work of developing the social and academic skills they need to be successful. One teacher from this network wrote, “Disruptive students show self-control when working as kindergarten assistants, and perfectionists learn to compromise when faced with real-world deadlines” (Levine, 2010, p. 47).

Conducted through advisory groups, LTI projects are supported by school-based advisors and site-based mentors who work as a team to ensure that students are fulfilling job requirements and working toward short- and long-term goals. Students develop metacognitive skills as they work with advisors and mentors to identify their own strengths and weaknesses and chart ways to strengthen areas that need development. Work with site-based mentors also helps students develop critical social capital as they build relationships with adults outside of school and learn to navigate the world of work.

Some networks use advisories for additional purposes. In two networks, students build social capital by participating in internships (see Exhibit 3), where they learn to recruit support from adults outside of school in order to succeed in their work. Advisors meet regularly with each student and his or her mentor in order to discuss the student’s performance and explore how
the student is negotiating relationships with peers and adults. In advisories in two other networks, students set academic goals and develop their academic portfolios with the support of advisors. Another network has students develop authentic projects based on the interests they express in advisory groups. Yet another uses an advisory-like character class to help students understand the power of non-cognitive skills, how they can develop these skills, and how to deploy them in situations they encounter in college and in later life. In these schools, each advisory class relates a specific strength or group of traits to issues in the news, showing how that trait benefits people in the real world. For example, according to a network interviewee, one class discussed unemployment: how it affects people, who has had to exit the workforce and who is trying to re-enter, what are some of the barriers to re-entry, and how those barriers might affect unemployed workers’ ability to exhibit grit and optimism, part of a growth mindset. A final network uses some advisory meetings for team-building exercises and conversations about persistence in the face of challenge, another aspect of a growth mindset (see Exhibit 4).

Exhibit 4: Student-Advisor “Crews” Promote Agency

One network has developed an advisory program in which a small group of students form a “crew.” The adult advisor is called the “crew leader.” This network contends that the crew structure is particularly important for the developmental needs of adolescent students in the middle grades, when young people experience rapid hormonal and neurological changes. Crew activities and discussions promote the development of relational skills, such as kindness, honesty, and integrity, that are essential for student collaboration. For example, in crew meetings, students are encouraged to make eye contact and engage socially with their peers. Problem-solving activities are structured to give students opportunities to practice perseverance and to develop growth mindsets. For example, one crew activity involves a very difficult task that is designed to provoke frustration. When one student makes a mistake, the entire team must start over. In debriefing this activity, students discuss their feelings, how they dealt with their peers’ mistakes, and the ways that mistakes can promote personal growth. Crew activities encourage students to adopt growth mindsets, helping them to understand that struggle and failure are a part of the learning process.

3.1.2 Research Base

The current evidence from the research suggests that advisory programs generally have positive effects on student engagement but no direct effect on academic achievement as commonly measured. The studies we reviewed generally used descriptive, rather than experimental, methods and suffer from other methodological limitations.

The most comprehensive synthesis of research on the effectiveness of advisory programs was published by Galassi, Gulledge, and Cox (1997) over a decade ago. The studies they summarize generally associate advisory groups with positive effects on student-teacher relationships, student interactions, and student behavior. However, the studies suffer from numerous methodological problems including lack of pretests or control groups, small sample sizes, and
reliance primarily on participants’ perceptions. They also cannot separate the effect of advisory programs from those of other practices (Galassi et al., 1997). More recently, MacLaury and Gratz (2003) looked at the effect of advisories led by trained facilitators on middle school students’ perceptions of social support, school environment, and academic achievement. Students participating in advisory groups were significantly more likely than comparison students to express their feelings to teachers and to seek help from people in their community—an indicator of social capital. There were no significant differences, however, in self-reported grades, homework completion rates, or attitudes toward school (MacLaury & Gratz, 2003). Although this study does provide some support for the effects of advisory programs, it has methodological limitations like those of the research summarized by Galassi and colleagues (1997). Most recent published research on advisories has focused not on outcomes but on how to implement advisory programs, train staff, and provide administrative support (Gewetz, 2007).

3.2 Community Meetings

3.2.1 Overview and Network Practices

Two networks’ schools have community meetings where entire grades come together every week. The community meetings are a venue for many activities that promote social belonging, including, for example, celebrations, student presentations, and team building. In one network, the meetings generally begin with an opening chant or song and general announcements, followed by a presentation of academic and behavioral data describing how students are performing. Teachers may present awards to students for following the code of conduct, and students can also nominate teachers for awards. Time is set aside for restorative justice: Students who have violated the conduct code can complete steps in their restorative processes. These activities promote self-efficacy by holding students responsible for their own behavior. The meetings close with a class competition or team-building exercise. In another network, community meetings involve discussions about the school’s character values, creating a school culture that focuses on developing growth mindsets and self-efficacy in a context in which students experience social belonging.

3.2.2 Research Base

Our review of the literature did not reveal studies directly related to the implementation or effectiveness of community meetings.

3.3 Interdisciplinary Teams

3.3.1 Overview and Network Practices

Interdisciplinary team teaching involves organizing two or more teachers to share responsibility for teaching and evaluating one group of students (Alexander & George, 1981; Mertens &
Flowers, 2004). The rationale for team teaching in middle schools is that it creates small learning communities (Main & Bryer, 2005). Plodzik and George (1989) have called interdisciplinary teams “the key organizing element of the middle school” (p. 15).

Our interviews identified one organization in the MSLN using interdisciplinary team teaching to foster student agency. The interdisciplinary teams comprise three to five teachers from different subject departments and one group of students. Some teams stay with the same students for two or even three years. The teachers meet as a group to plan and evaluate curriculum and instruction across academic areas. During team meetings, teachers may discuss specific students and their progress or need for development, share best practices in instruction, and discuss efforts to communicate with families and improve relationships with parents. Interdisciplinary teams foster social belonging because teachers are responsible for the same set of students, the students are connected with one another, and the teachers know and understand them. Interdisciplinary teams coordinate curriculum and activities across subject areas, showing students the relevance and purpose of what they are learning by highlighting the connections among subjects.

3.3.2 Research Base

Our review of the literature suggests that interdisciplinary teams are associated with improved student outcomes. The evidence base comes from a series of descriptive studies using data from schools that voluntarily participated in a school improvement self-study. The most comprehensive synthesis of research on teaming based on this self-study (Mertens & Flowers, 2004) finds evidence of positive effects on the learning environment; student achievement; and student self-reported outcomes, including lower incidence of emotional and behavior problems as well as improved self-esteem and efficacy. However, these studies were not designed to determine causal impact and have some methodological weaknesses including lack of control groups and of objective outcome measures. Further, in several studies, interdisciplinary teams were included as one component of a multifaceted intervention, making it impossible to separate the effect of teaming from the effects of the other components.

3.4 One-to-One Access to Technology

3.4.1 Overview and Network Practices

One-to-one access to technology means that all students have access to their own computer, often a laptop that they can take home. Having their own computer allows students to work at their own pace, access a wide variety of information not readily available in textbooks and school libraries, and learn and improve on skills not easily acquired through other means. Many schools are implementing one-to-one technology to help students master 21st century skills such as critical thinking, collaboration, oral and written communication, and analysis (Wagner, 2008). Norris and Soloway (2008) argue that, to realize the full potential of technology in education, one-to-one computer access is a must.
In one network, schools are required to provide each student with a computer. One-to-one access to technology facilitates personalized learning and builds students’ technological literacy in a process students find **relevant and purposeful**. One-to-one access to technology makes every student a self-directed learner who does not need to rely on teachers or textbooks, thus improving **self-efficacy**. Students use technology for communication, research, data analysis, academic supports and interventions, and product creation. All schools use a common platform, which allows communication and collaboration within the school and across the network. Students use discussion forums, Google Docs, and other tools that encourage collaboration, which fosters development of **social belonging** and **social capital**.

### 3.4.2 Research Base

A growing body of research suggests that one-to-one access to computers may help students’ academic skills, particularly in writing and literacy, and encourage higher levels of motivation. Two comparison studies found that one-to-one access to technology had positive effects on literacy achievement. Lowther, Ross, and Morrison (2003) found that having 24-hour access to a laptop had a positive effect on student writing scores and problem-solving skills. Similarly, Suhr, Hernandez, and Warschauer (2010) found that students with their own laptops improved more in several key reading and writing strategies than did students in the control group. After the second year, the difference between treatment and control groups was even larger. Additionally, Dunleavy and Heinecke (2008) found that middle-grade students with one-to-one access to technology scored significantly higher on a science achievement test than did students without access. No significant differences were found in math achievement.

Two main limitations of one-to-one access to technology regularly appear in the literature. First, the mere existence of or access to technology does not directly translate into **regular use** (Cuban, Kirkpatrick, & Peck, 2001). Educators and even students may passively or actively resist the deployment of technology (Donovan, Hartley, & Strudler, 2007). In particular, teachers with limited technical knowledge or experience may feel uncomfortable with computers for a variety of reasons and thus not buy in to their use in the classroom (Atkins & Vasu, 2000).

This discomfort is related to the second major limitation of one-to-one computer access. Teachers often report being unsure of how best to incorporate technology into their curriculum and of how to grade the output students produce using their computers (Windschitl & Sahl, 2002). Teachers may use technology merely to echo their lesson plans through drill and practice rather than coming up with new ways of incorporating the computers into the learning process (Clark, 2000). Teacher training and continued use of technology in schools would help to alleviate these concerns.
4. SCHOOL-BASED PRACTICES

4.1 Character Education

4.1.1 Overview and Network Practices

A rising tide of problem behaviors on the part of troubled students has made character education an increasingly popular intervention in U.S. schools (Williams, 2000). The Character Education Partnership (CEP, 2010) defines 11 principles of effective character education. One key tenet is that character education should be a way of life, permeating all aspects of a school’s culture. CEP argues that “‘stand-alone’ character education programs can be useful first steps or helpful elements of a comprehensive effort but are not an adequate substitute for a holistic approach that integrates character development into every aspect of school life” (p. 6). Another of CEP’s principles promotes the assessment of “student progress in developing an understanding of and a commitment to good character and the degree to which students act upon the core values” (p. 23).

Although character education is not a new concept, the idea of providing grades on character qualities is somewhat more recent. Our interviews revealed that two MSLN organizations implement character education practices and grade students on character-based behaviors.

In one network, each school engages in a process to choose particular character strengths and values that will inform the school’s structures and practices. All of the schools in the network share a focus on compassion, persistence, working through challenges, and negotiating failures. These values, as well as the ones chosen by the particular school, are communicated in community meetings and advisory groups. Students are routinely asked to explain each character value and what it looks like in practice. Additionally, this network’s schools grade students on academic behaviors or “habits of work” such as study skills, time management, persistence, self-awareness, and the ability to seek feedback and assistance. These behaviors are discussed in community and advisory meetings. Students receive separate habits-of-work grades in addition to their academic grades (see Exhibit 5). This practice fosters self-efficacy and encourages persistence—part of a growth mindset—by rewarding positive behaviors as well as performance and products.
In another network, schools use dual learning to bring character into the classroom. Dual learning materials emphasize both academic skills and character traits. For example, in a social studies class, students may learn about “grit,” an aspect of growth mindset, by studying historical characters who persisted through adversity. Report cards called character growth cards assess students in a way that allows for rigorous discussion about the meaning of character and character development. Rather than simply quantifying character traits with numbers, the character growth cards provide indicators addressing specific behaviors that students can see and emulate. Students can then connect what they are doing not only to classroom learning, but also to the way they are experiencing their own development as they move through adolescence, understanding the relevance and purpose of character education. This form of assessment gives teachers a mechanism for encouraging metacognitive strategies and the behaviors associated with a growth mindset. Some schools in this network also employ a “character class,” described in Section 3.1 on advisory groups.

Exhibit 5: Habits-of-Work Grades Reward Effort and Persistence

In addition to receiving grades on academic performance, students at one network’s schools receive “habits of work” grades. Habits of work, which reflect the school’s character values, encompass various academic behaviors, such as “I can advocate for myself,” “I can turn in quality work on time,” and “I can maintain focus in class.” Teachers frequently lead discussions that explicitly link particular habits of work with academic success. Like academic performance, habits of work are graded on a scale of 1–4, with 4 being the highest. Students who get a habits-of-work grade of 3 or higher but an academic grade lower than 3 in a given course have the chance to revise their work to get a higher academic grade. They do not get this opportunity if their habits-of-work grade is lower than 3.

Traditional forms of grading based solely on academic performance can discourage students who are working hard but are still not proficient, while allowing other students to “get by,” making adequate grades without learning good work habits or working to their potential. The principal of Casco Bay High School in Portland, Maine, explained:

> For example, a student may have an 83, but we don’t know if the student knows the stuff kind of well but isn’t trying very hard. Or they could be trying incredibly hard to get that 83.

The principal explained that effort and performance should be assessed separately because they are equally important. Habits-of-work grades allow students to take additional time to achieve learning targets and reward them for their persistence.

Habits-of-work grades encourage student agency by rewarding students’ effort and use of academic behaviors such as participating in classes, taking notes, studying, and doing homework. An honor roll based on habits-of-work grades not only publicly recognizes students who are demonstrating good work habits but also helps to build a school-wide culture that fosters student agency.
4.1.2 Research Base

The research base supporting character education to improve student agency is limited. Most studies have focused on what the CEP refers to as “stand-alone” programs: scripted interventions implemented during specific times in the school day. Moreover, most of the character education programs under study have focused on fostering social skills such as empathy and altruism, on reducing negative behavior such as bullying or dropping out, and on encouraging a sense of belonging at school, rather than on student agency factors.

A recent randomized controlled trial looked for evidence that a character education program affected elementary students’ social behaviors and academic outcomes (Hanson, Dietsch, & Zheng, 2012). Teachers were expected to incorporate 19–25 supplementary character lessons into English language arts instruction each year for two years. Students in the treatment group did not perform better on measures of academic achievement and social competence or have lower scores on measures of problem behaviors than students in the control group.

We located no research assessing the impact of grading students on character traits. One network’s use of character education, including its report card, is based on Peterson and Seligman’s (2004) work outlining 24 character strengths that consistently emerge across history and culture.

4.2 Common Intellectual Mission

4.2.1 Overview and Network Practices

Pursuing a common intellectual mission means that the school has a college agenda for all students; all students take the courses that lead to high school graduation and acceptance into college. Neither advanced nor remedial classes are offered. Because all students pursue a rigorous, de-tracked curriculum, all students know that they are expected to achieve at high levels.

Schools in one MSLN organization adhere to a common intellectual mission. Network schools do not use any type of student tracking; students are selected for enrollment through a lottery system based on zip codes. The schools do not offer remedial or advanced courses, although students may earn honors credit by completing additional or more advanced course assignments. All students pursue a rigorous curriculum that fosters 21st century skills and prepares them to take the seven high school courses required by the state university system. Holding all students to high standards promotes growth mindsets and self-efficacy as students learn that they can—and are expected to—succeed through their own effort. All students are expected to complete an internship, a senior project, and a personal digital portfolio, which give them opportunities to develop social capital as they seek information from others. The real-world nature of these products shows students the relevance of their work, while the process of putting together complex projects requires them to set and manage goals. The network also has a strong focus on diversity, bringing together students from different
backgrounds, genders, and races in the same classrooms and small groups, in a practice that builds students’ sense of **social belonging**.

### 4.2.2 Research Base

Although we found no studies specifically on the effectiveness of employing a common intellectual mission, a growing body of scientific research documents mixed effects for one component of the practice, “de-tracking” students.

Some research suggests that, when implemented well, de-tracking can have positive effects. Ning (2009) conducted a meta-analysis of 15 studies, both experimental and non-experimental, on the effect of de-tracking on students in elementary and secondary school. The findings suggest that de-tracking had moderately positive effects on the academic achievement of lower-ability students and no effect on the achievement of average and high-ability students. In regard to non-academic outcomes, some evidence suggests that de-tracking has a positive impact on self-efficacy for students of average ability but no impact on students of high ability (Ning, 2009). Methodological concerns about the studies in the analysis include lack of rigor in research design, varying definitions of “de-tracking,” lack of comparison groups, and selection bias.

However, competing evidence suggests that de-tracking can hurt the achievement of upper-track students or that tracking is actually beneficial for students of all ability levels. A recent paper by researchers at the National Bureau of Economic Research uses two years of student-level data from the Dallas Independent School District to assess the net benefit of tracking (Collins & Gan, 2013). The results indicate that classes sorted by previous academic performance promoted student achievement in math and reading for both high- and low-performing students (Collins & Gan, 2013). By contrast, some studies have shown that de-tracking in mathematics is associated with adverse effects on high-achieving students (Allensworth, Nomi, Montgomery, & Lee, 2009; Loveless, 2009; Rees, Argys, & Brewer, 1996). However, the data cannot establish that de-tracking caused this difference.

### 4.3 School-wide 21st Century Learning Goals

#### 4.3.1 Overview and Network Practices

Educators agree that higher-order thinking skills are as important as content learning for success in school and beyond. The Partnership for 21st Century Skills (2006) lists key elements of 21st century learning, including information and communication skills, thinking and problem-solving skills, and interpersonal and self-directional skills (see also Trilling & Fadel, 2009).

In one network, schools set five or more school-wide learning outcomes that go beyond state academic standards to address higher-order 21st century skills. These schools might, for example, require students to conduct independent research, interact with adults who can offer expertise, and complete projects that are connected to the outside world. Practicing real-world
skills like these helps students see the **relevance and purpose** of their learning. Establishing these skills as school-wide learning outcomes helps students understand their strengths and identify areas of growth—a form of **metacognition**—in order to **set goals** for learning. In the process, students receive personalized, differentiated support. Student projects must be tied both to state standards and to school-wide learning objectives. Students are assessed on the school-wide 21\textsuperscript{st} century skill goals—in some schools, through a process of peer review—and are regularly asked to reflect on those skills.

### 4.3.2 Research Base

We found no published research assessing the practice of instituting 21\textsuperscript{st} century higher-order skills as school-wide learning outcomes. However, a soon-to-be-released study of Hewlett Foundation’s Deeper Learning Schools will contribute to this evidence base (B. Trilling, personal communication, August 7, 2013).

### 4.4 Reflection Protocols

#### 4.4.1 Overview and Network Practices

Students at one network’s schools engage in group debriefings, called **reflection protocols**, during which students reflect on the skills and content knowledge they developed as they completed large projects and performance-based assessments. During these reflections, students talk about the collaborative process they used, the lessons they learned, and what they might do differently in future work. Led by teachers or more senior peers after each major project or assessment, sessions typically last 20–30 minutes. Reflection protocols are also an integral part of parent, student, and advisor conferences. This process builds students’ **metacognitive** skills and ability to reflect on their own learning processes. The group process also builds students’ sense of **social belonging**.

#### 4.4.2 Research Base

Our review of the literature did not reveal studies on the implementation or effectiveness of reflection protocols. However, there is a body of research that shows that employing metacognitive strategies, a key component of reflection protocols, improves academic performance (Farrington et al., 2012).

### 4.5 Restoration Room

#### 4.5.1 Overview and Network Practices

Restoration rooms (sometimes referred to as **recovery rooms**) are becoming popular replacements for in-school and out-of-school suspension. As highlighted in the recent report *Sent Home and Put Off-Track: The Antecedents, Disproportionalities, and Consequences of Being*
Suspended in Ninth Grade (Balfanz, Byrnes, & Fox, 2013), being suspended from school is associated with the likelihood of dropping out. In response, schools are implementing restoration rooms as ways to keep students in the classroom. These practices are in line with the current trend toward instituting positive discipline programs, such as school-wide positive behavior supports.

One MSLN organization has replaced suspension with restoration rooms. Students who have violated the school code of conduct are escorted to the restoration room, where a dean of students walks them through a number of steps from de-escalation to self-reflection, problem solving, and restorative practices. For younger students, those steps are scaffolded in age-appropriate ways—for example, “Draw a picture of how you feel.” The process ends with students pledging to amend the conduct violation by taking specific actions. A pledge may be as simple as “I won’t do it again.” As restorative consequences, students might apologize for their infraction when they return to class or at the following week’s community meeting, or they might help a teacher during office hours or lunch. Students’ time in the restoration room lasts less than a class period—the whole premise is not to keep them out of the classroom. However, work to complete the restorative steps—which include quantifiable goals—may carry over several days. The restoration room and associated restorative justice steps are designed to influence students’ ability to set behavioral goals, exercise self-control to foster autonomy or self-efficacy, and build interpersonal skills to enhance social belonging.

4.5.2 Research Base

Considerable research has shown that positive behavior supports—such as clear expectations, rewarding appropriate behavior, and using preventive actions to discourage inappropriate behavior—have positive effects on academic achievement and on behavior (Lassen, Steele, & Sailor, 2006; Sugai & Horner, 2002). However, we located no empirical data on the effect of implementing restoration rooms.
5. COMMUNITY-RELATED PRACTICES

5.1 Community Partnerships and Public Presentations of Work

5.1.1 Overview and Network Practices

Several networks employ practices that involve community partnerships and public presentations or exhibitions of student work, often as a component of project-based learning. Though community partnerships are not always connected to student presentations, in all but one case, the examples provided by the MSLN schools did include both components. These practices increase the relevance of school work to students’ lives, provide opportunities for students to develop social capital by interacting with community members, and foster social belonging by encouraging collaborative efforts in which students work toward a common goal. Further, having to plan and execute a piece of work for public presentation develops students’ goal-setting skills. The processes of review, reflection, revision, and assessment that are often embedded in these practices foster metacognition, self-efficacy, and growth mindsets.

One network encourages schools and districts to partner with local organizations, such as community colleges and businesses, to bring their expertise into the school. These partnerships are particularly important for student projects, for which students rely not only on textbook or teacher knowledge but also on local experts.

Schools in one network strive to connect students’ academic studies to the outside world through field studies, presentations at community events, guest speakers, community service, internships, and consultation with outside experts. All students show their work once a year in exhibitions to which the whole community is invited. They also routinely create authentic work that they exhibit to real audiences in professional venues. The adults give feedback on students’ work after being educated about what kind and level of feedback to provide. This network believes that these adult connections help to increase students’ sense of social belonging by demonstrating that adults take their ideas seriously and value their work. These connections also build social capital by giving students opportunities to demonstrate their knowledge and to relate to adults who are not their teachers, a skill they will need in order to access support in college and work environments.

In another network, assessment is structured to promote student agency by holding students responsible for showing what they know. Two or three times a year, students lead family conferences in which they present the work they are doing, discuss their strengths and weaknesses, and respond to questions from their parents and teachers. Unlike the other examples provided in this report, this version of community connection involves students’ families. This type of assessment develops self-efficacy by supporting the development of self-regulated learning processes. At critical points in their academic careers—during 8th, 10th, and 12th grades—students engage in rite-of-passage events in which they present the work they have completed that year and demonstrate that they are ready to move on.
Similarly, another network has students present their projects in front of audiences as part of its College and Career Readiness Performance Assessment System (see Exhibit 6). Public exhibitions of learning encourage the development of self-efficacy because students are active agents in their own learning. They are responsible for presenting their work to show that they are ready to progress to the next level. Preparing this case is a metacognitive process that requires students to reflect on their goals and whether they have met them. In his interview, the network leader argued that these public exhibitions are transformative experiences for young people. He explained that, when students know that they have to defend their ideas in front of an audience of adults, they work harder to revise and develop their work. They push themselves to achieve in a way that fosters a growth mindset: They put more effort into their work and then see the results of that effort.
Exhibit 6: Portfolio Assessment Fosters Self-Efficacy and Metacognition

One network has implemented a new performance assessment system for high school students designed to foster deep learning of academic subjects and the development of leadership skills, persistence, and academic behaviors. The College and Career Readiness Performance Assessment System (CCPAS) teaches students to “learn how to learn”—to understand who they are as learners and how they can persist through challenges. An iterative cycle of revision and teacher feedback helps students reflect on their learning processes and encourages development of metacognitive skills. Working through multiple revisions supports the development of student agency by demonstrating that persistence breeds success.

The process culminates with performance tasks in which students defend their portfolio, as if it were a dissertation, before peers, teachers, and community members. Students present their work and make the case that they are ready to move on to the next level. One student described how defending his portfolio was a transformational experience:

Being put in a position to articulate a concept to an audience takes a greater comprehension than just learning the idea for yourself. By talking about the project, I deepened my own knowledge of the math we were learning. (Network document, n.d.)

This network partnered with the Stanford Center for Assessment, Learning, and Equity and with ShowEvidence, an educational technology company, to develop a CCPAS system for middle school students. This performance-based assessment system is designed to give students ongoing formative feedback as well as to provide a final summative assessment. Teachers use an online platform to score and provide feedback on student work as well as to access professional development on aligning instruction with performance-based assessment. The leader of this network said:

This system is based on the idea that if you want to change the outcomes for kids, you need to do something different with regard to the curricula and assessments and think about the ways in which you need to redesign the school structure and culture. The school leaders also have a different way of thinking and leading the school, which is focused on outcomes like building student agency.

5.1.2 Research Base

The research base on community partnerships is broad and well rooted. However, the fact that partnerships take a number of forms and serve a variety of purposes makes it extremely difficult to judge the success of community partnerships in general. Many of these programs are working toward different goals in the first place—as different as engaging taxpayers and community residents (Jeynes, 2003), improving academic outcomes, or preventing substance abuse. Specific programs have shown promise in such diverse outcomes as motivating students who are reading below grade level (Sheldon, 2003); improving grades in science, math, and language arts classes (Sheldon & Epstein, 2002); and creating more positive school
environments (Sanders, 2001). More longitudinal or cross-program data is necessary to better examine the overall effects of these efforts.

Far fewer data are available on public presentations of work, particularly in the middle grades. An increasing number of high schools require students to complete a capstone project, which usually involves some sort of public presentation, but this practice is far less common in middle schools. Many schools that do incorporate public exhibitions connect them directly to community partnerships. For example, students may work with community partners to create presentations or other projects, which they then present to other students and community partners (Midgley & Edelin, 1998). Such exhibitions seem to have a positive effect on children’s engagement with school, but quantitative data on improvement in grades, academic achievement, or non-cognitive skills are difficult to come by (Bambino, 2002).
6. NETWORK AGENCY PRACTICES AT A GLANCE

The exhibits below summarize the findings of our network scan and review of the research. Exhibit 7 outlines the 14 student agency practices highlighted by MSLN organizations.\(^{1}\) The exhibit also shows which of the seven agency factors were identified by at least one network respondent as being fostered by each practice.

Exhibit 8 summarizes the research base supporting each practice. We categorized the strength of the evidence base for the practices as follows:

- **Strong supportive research:** Experimental evidence (usually involving a randomized controlled trial with treatment and control groups) suggests a positive impact on student agency, academic achievement, or both.

- **Promising research:** Non-experimental or correlational evidence shows positive outcomes related to student agency or achievement.

- **Mixed research:** Some evidence suggests a positive effect on agency or achievement, but other evidence shows no effect or a negative effect.

- **More research needed:** Our review uncovered no research investigating the effect of the practice.

\(^{1}\) In our interviews and surveys, we asked MSLN members to identify the most salient practices they used to foster student agency. We did not collect information on all practices each network employs, including some practices that were identified by other networks and included in this report. For example, only three network leaders discussed practices related to building a growth mindset. However, most if not all of the MSLN organizations do use practices that address that aspect of student agency. This report is thus in no way an exhaustive treatment of the practices each network uses to foster student agency.
### Exhibit 7: Alignment of Network Practices with Student Agency Factors

<table>
<thead>
<tr>
<th>Practice</th>
<th>Student Agency Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Growth Mindset</td>
</tr>
<tr>
<td>Project-Based Learning*</td>
<td>✅</td>
</tr>
<tr>
<td>Encouraging a Growth Mindset</td>
<td>✅</td>
</tr>
<tr>
<td>Relevant, Personalized Instruction</td>
<td>✅</td>
</tr>
<tr>
<td>Alternative Grading Policies</td>
<td>✅</td>
</tr>
<tr>
<td>Advisory Programs*</td>
<td>✅</td>
</tr>
<tr>
<td>Community Meetings</td>
<td>✅</td>
</tr>
<tr>
<td>Interdisciplinary Teams</td>
<td>✅</td>
</tr>
<tr>
<td>One-to-One Access to Technology</td>
<td>✅</td>
</tr>
<tr>
<td>Character Education</td>
<td>✅</td>
</tr>
<tr>
<td>Common Intellectual Mission</td>
<td>✅</td>
</tr>
<tr>
<td>School-wide 21st Century Learning Goals</td>
<td>✅</td>
</tr>
<tr>
<td>Reflection Protocols</td>
<td>✅</td>
</tr>
<tr>
<td>Restoration Room</td>
<td>✅</td>
</tr>
<tr>
<td>Community Partnerships/Public Presentations of Work*</td>
<td>✅</td>
</tr>
</tbody>
</table>

* These three practices incorporate all seven of the agency factors.
## Exhibit 8: Student Agency Practices Research Base

<table>
<thead>
<tr>
<th>Practice</th>
<th>Evidence Base</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project-Based Learning</strong></td>
<td><strong>Promising Research</strong></td>
</tr>
<tr>
<td></td>
<td>Some small-scale quasi-experimental and correlational studies showed positive effects of project-based learning on academic outcomes and on non-cognitive skills such as self-regulation and academic mindset.</td>
</tr>
<tr>
<td><strong>Encouraging a Growth Mindset</strong></td>
<td><strong>Strong Supportive Research</strong></td>
</tr>
<tr>
<td></td>
<td>Experiments on short-term interventions to teach students about the brain and encourage a growth mindset show positive effects on achievement tests and grades. Experiments on Wise Feedback showed positive effects on mitigating stereotype threat and on task motivation.</td>
</tr>
<tr>
<td><strong>Relevant, Personalized Instruction</strong></td>
<td><strong>Mixed Research</strong></td>
</tr>
<tr>
<td></td>
<td>Rigorous research on personalized instruction is limited, and available evaluations provide mixed results. In general, the literature points to positive effects of personalization on students’ reading scores and mixed effects on math scores. Some studies suggest that personalization has positive effects on student engagement and motivation.</td>
</tr>
<tr>
<td><strong>Alternative Grading Policies</strong></td>
<td><strong>Promising Research</strong></td>
</tr>
<tr>
<td></td>
<td>Limited evidence, primarily descriptive and anecdotal, suggests that alternative grading policies can have positive effects on middle-grade students’ academic and behavioral outcomes.</td>
</tr>
<tr>
<td><strong>Advisory Programs</strong></td>
<td><strong>Mixed Research</strong></td>
</tr>
<tr>
<td></td>
<td>Studies relying primarily on surveys and self-reports generally found evidence of positive effects of advisory programs on student-teacher relationships, student interactions, and student behavior but no effect on academic achievement. The studies suffer from several methodological problems.</td>
</tr>
<tr>
<td><strong>Community Meetings</strong></td>
<td><strong>More Research Needed</strong></td>
</tr>
<tr>
<td></td>
<td>No evidence on the implementation or effectiveness of community meetings.</td>
</tr>
<tr>
<td><strong>Interdisciplinary Teams</strong></td>
<td><strong>Promising Research</strong></td>
</tr>
<tr>
<td></td>
<td>Limited studies based primarily on surveys and self-reports suggest positive effects of interdisciplinary teams on learning environments; student achievement; and student self-reported outcomes related to depression, self-esteem, and behavior problems.</td>
</tr>
<tr>
<td><strong>One-to-One Access to Technology</strong></td>
<td><strong>Promising Research</strong></td>
</tr>
<tr>
<td></td>
<td>Correlational and quasi-experimental research suggests that one-to-one access to technology can improve academic achievement, particularly in writing and literacy.</td>
</tr>
<tr>
<td><strong>Character Education</strong></td>
<td><strong>More Research Needed</strong></td>
</tr>
<tr>
<td></td>
<td>No evidence on the impact of grading students on character traits. Research on stand-alone character curricula, which do not seek to affect student agency factors, showed no impact on academic achievement.</td>
</tr>
<tr>
<td><strong>Common Intellectual Mission</strong></td>
<td><strong>Mixed Research</strong></td>
</tr>
<tr>
<td></td>
<td>A growing body of scientific research on “de-tracking” suggests that it can increase the achievement scores of lower-ability students and have no significant effects on the academic outcomes of higher-ability students. Other studies suggest that de-tracking can hurt the achievement of higher-ability students or that tracking can be beneficial for all students.</td>
</tr>
<tr>
<td><strong>School-wide 21st Century Learning Goals</strong></td>
<td><strong>More Research Needed</strong></td>
</tr>
<tr>
<td></td>
<td>No evidence on the implementation or effectiveness of setting 21st century skill goals.</td>
</tr>
<tr>
<td>Practice</td>
<td>Evidence Base</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Reflection Protocols</td>
<td><strong>More Research Needed</strong></td>
</tr>
<tr>
<td></td>
<td>No evidence on the implementation or effectiveness of reflection protocols</td>
</tr>
<tr>
<td>Restoration Room</td>
<td><strong>More Research Needed</strong></td>
</tr>
<tr>
<td></td>
<td>No evidence on the implementation or effectiveness of restoration rooms</td>
</tr>
<tr>
<td>Community Partnerships/Public Presentations of Work</td>
<td><strong>More Research Needed</strong></td>
</tr>
<tr>
<td></td>
<td>Some descriptive and correlational work on community partnerships has shown positive effects on test scores and student engagement. There is very limited evidence on public presentations of work.</td>
</tr>
</tbody>
</table>
7. SUMMARY AND RECOMMENDATIONS

The practices MSLN organizations use to promote the seven aspects of student agency cluster into 14 areas. All of the practices address at least two of the seven factors of student agency; many address three or more. Three practices address all seven aspects of student agency: advisories, project-based learning, and community partnerships and public presentations of work. Nearly all of the practices address self-efficacy. Nine of the 14 address relevance and purpose; another nine address social belonging. Eight practices foster a growth mindset and the same number foster goal setting and management. Social capital and metacognition are fostered by five practices each.

According to our survey and interviews, the most commonly used practices across the networks are advisory groups, project-based learning, and relevant and personalized instruction. These practices are not new, having been part of urban education reform at least since efforts in the 1990s funded by the Annenberg and Gates Foundations.

Further, these and most other student agency practices in MSLN schools are not discrete, stand-alone activities. Rather, they are implemented (and studied) within a constellation of instructional approaches and school-wide practices designed to promote student agency. Some are supported by a small body of rigorous research; others are supported by promising correlative evidence suggesting that the practice is associated with academic achievement or development of agency. Implementing common evidence-based reform practices in an integrated approach to promoting student agency may have a greater impact than short-term psychosocial interventions can produce. As Farrington and colleagues (2012) note:

> We cannot expect a teacher to implement separate interventions for all of the non-cognitive factors that matter for their students’ performance. Instead, they need guidance about how best to build classroom contexts and utilize pedagogical strategies that will leverage the body of research on non-cognitive factors as they teach content and skills. (p. 76)

Thus, the integrated approach used by the MSLN organizations is likely to improve teachers’ “uptake” of student agency practices, thereby enhancing their effect. However, more research on the effects of integrating these practices into school and classroom models is needed to determine the actual effect on student agency and achievement.

Further, additional research on the common dimensions or characteristics of effective student agency practices that could be implemented in a variety of contexts—for example, in daily classroom practices or in specific activities such as advisories—would be valuable. The Consortium on Chicago School Research has conducted research of this nature. For example, it has identified six elements that are key to fostering rigorous instruction: 1) setting clear and ambitious goals, 2) requiring students to do challenging and meaningful work, 3) actively supporting students’ learning, 4) making learning relevant to students’ lives and interests, 5)
creating an academic community in the classroom and a sense of belonging among students, and 6) organizing classrooms to facilitate learning. Similarly, research could focus on identifying a set of underlying mechanisms that foster student agency, such as student choice and revision and reflection.

Some MSLN student agency practices focus on student collaboration and community engagement, while others focus on individual students. For example, advisory structures and community meetings work through groups, while individualized math or reading programs and one-to-one access to technology work with individuals. We do not know if one approach is more effective than the other in fostering student agency or particular agency factors. Although more research is needed to investigate this question, perhaps the most effective approach is to address student agency through both collective and individual approaches.

7.1 Challenges to Implementing Student Agency Practices

One issue MSLN organizations face in implementing student agency practices is conflict with the current educational culture. Leaders from five networks suggested that maintaining a focus on student agency is difficult in the context of standardized test pressures. They were challenged to maintain school cultures that promote growth, persistence, a culture of revision, and holistic assessment given the current climate that primarily values academic test performance. One way networks have mitigated this challenge is by creating grading systems that recognize not only academic performance but also character values, community contributions, and academic behaviors such as effort and persistence.

MSLN leaders also described how standardized testing takes valuable time away from practices that promote student agency, such as project-based learning. One said, “True agency is built in a deep dive into disciplinary learning, to get into the heart of learning. With the emphasis on standardized testing, there is too much pressure to go broad; teachers feel like they need to cover a lot of academic content.” Similarly, schools want to implement agency practices, such as relevant and personalized learning, but they must also address the Common Core State Standards. The two goals are not necessarily at odds, but thoughtful planning is required to align the practices designed to achieve them.

Another challenge cited by network leaders is that some teachers are not fully implementing network agency practices in their classrooms. One possible explanation is that teachers are overloaded with demands to implement multiple reforms that may or may not be coherent with their work. Practices designed to promote student agency must be aligned with other school-based practices and reforms (Fullan, 2007)—another argument for incorporating student agency practices into existing structures such as advisory programs and project-based learning. However, several network leaders mentioned that teachers sometimes do not feel prepared to implement practices such as advisories. Clearly resources must be devoted to giving teachers the training and support they need to implement student agency practices.
7.2 Recommendations

Our review of MSLN student agency practices and the corresponding research leads to recommendations in two broad areas:

- Conduct additional research to identify the practices that are most likely to have the greatest effect on student agency and achievement
- Support communities of practice to help networks and schools continue to build their capacity to promote student agency

These two activities should be pursued simultaneously in order to bring the most promising practices to the greatest number of middle school students as quickly as is responsible and feasible.

7.2.1 Conduct Additional Research and Documentation of Practices

Practices that foster non-cognitive factors such as student agency are receiving a lot of attention for their promise as means to improve student achievement, particularly for those most in need. Thus, now is an opportune time to address some of the shortfalls in the knowledge base about these practices. We encourage funders to guide and underwrite a research agenda that can provide the needed evidence base while supporting replication and scale-up of effective practices.

Although some MSLN student agency practices, such as advisories, are widely used across the nation, very few of the practices discussed in this report are supported by rigorous evidence of impact on student agency or achievement, as shown in Exhibit 8. Only one practice, encouraging a growth mindset, is supported by multiple rigorous experimental studies, which have shown the positive effects of short, discrete interventions. However, rigorous studies of school-wide practices intended to encourage a growth mindset, such as the reflection protocols or project-based learning employed by some MSLN schools, have not been conducted. For four other practices—interdisciplinary teams, project-based learning, alternative grading policies, and one-to-one access to technology—rigorous impact studies are lacking, but correlational studies show promising evidence of their effect on outcomes of interest. Evidence for three practices—advisory groups, relevant and personalized instruction, and common intellectual mission—is mixed, with some studies showing positive effects of some version of the practice and others showing no effect. We classify the remaining six practices as needing more research. Although experimental evidence is considered to the “gold standard” in educational research, a practice on which such rigorous research has not been conducted should not be assumed to be ineffective. As noted by Ron Berger, Chief Academic Officer of Expeditionary Learning, “The areas with the strongest evidence are not necessarily the most important or effective areas, but may simply be those that are the most reductive and standardized and therefore easiest to build experimental studies around.”
Our scan suggests several specific areas that need further research in order to identify practices that are effective in fostering student agency. First, the field needs rigorous studies of the impact of student agency practices not only on agency and its factors, but also on academic achievement and other educational outcomes such as graduation, college enrollment, college persistence, degree or certification attainment, and career success.

Next, we need to build the field’s capacity to assess students’ development of agency. Some work has already begun in this area: The Raikes Foundation is supporting scans of the instruments available to measure non-cognitive factors and of the assessment tools used by MSLN organizations, both conducted by Mathematica. The foundation is also supporting work conducted by the Consortium on Chicago School Research to develop, test, and implement a pilot survey of students in grades 6–12 to measure student agency factors.

Further, we need to understand how specific practices encourage specific agency factors. To accomplish this goal, researchers need to identify each practice’s theory of action, including key components, intermediate and long-term outcomes, and important context factors. How and under what circumstances, for example, does project-based learning foster social capital? What experiences do students need to have in conducting their projects, and what supports do they require? The research must document how student agency practices are implemented in the day-to-day life of schools, how they are experienced by students and teachers, and how they influence schools’ cultures. To replicate agency practices, the field needs a clear understanding of the challenges, a clear vision of what successful implementation entails, and an understanding of the common characteristics or dimensions of successful practices. Detailed documentation of practices would also facilitate sharing among schools and networks.

Another critical need is to investigate how to foster student agency so that it is transferrable across settings. For example, how can reflection protocols build metacognitive strategies that students use in other classes and settings when metacognition is not a specific focus of instruction? Further, what practices foster student agency across disciplines? Are some agency strategies discipline-specific? For example, are different strategies required to foster persistence in mathematics, English, and social studies classes?

Finally, little of the research conducted to date has examined agency in the middle grades. Such research is crucial to identifying developmentally appropriate practices during this critical period.

7.2.2 Build Additional Capacity to Foster Sharing of Promising Practices Among Teachers and Schools

The MSLN organizations use a variety of approaches to build student agency. Some of the practices described in this report have been implemented for decades, though we are at a nascent stage of fully understanding whether, how, and under what circumstances these practices work. Nonetheless, MSLN practitioners have years of experience in implementing these practices, and their knowledge is a significant resource.
Further capacity building to foster student agency would thus be facilitated by continuing a community of practice among schools as, for example, in the MSLN or in the Deeper Learning Network funded by the Hewlett Foundation. The community of practice would provide a forum for sharing and documenting practices so that many schools, as well as the larger field, could benefit. For example, a community of practice could facilitate:

- **Cross-network school visits and exchanges** in which school and network staff and leaders observe specific practices in a specific context. Visitors could investigate the nuances of a student agency practice by interviewing staff who are implementing it and students who are experiencing it.

- **A practice-building conference** in which network representatives present detailed portraits of a practice and facilitate a small-group discussion with other network leaders on implementing the practice or adapting it to work in their specific contexts.

- **Teacher study groups** in which teachers from different networks review research on student agency and develop curricula and school-based practices that target particular aspects of student agency.

In IMPAQ’s review of the evidence base on academic mindset interventions (Snipes, Fancsali, & Stoker, 2012), we recommend that “the field would benefit from a concerted attempt to accelerate the work, ensure that it addresses the right priorities and the most important needs, and disseminate the results to key stakeholders” (p. 32). That recommendation holds for the Raikes Foundation’s work on student agency practices. A dual focus on building capacity to implement and refine student agency practices while pursuing a research agenda that builds the evidence base for these practices will allow the foundation and the field to move forward quickly yet deliberately to bring these promising practices to the middle school students who need them most.
REFERENCES


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To learn more about how our exceptional people are developing innovative solutions with a real-world impact, or to join our team, please visit our website at www.impaqint.com

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