Power of Two: Pairing Literacy and Numeracy Professional Learning for Middle Grades Teachers

National Forum to Accelerate Middle-Grades Reform
Supporting Effective Educator Development (SEED) Grant
CFDA Number: 84.367D

Absolute Priority #1: Moderate Evidence of Effectiveness
Absolute Priority #3: Professional Development of Teachers of Academic Subjects
Competitive Priority #1: Strong Evidence of Effectiveness
Competitive Priority #4: Supporting High-Need Students

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Competitive Priority #1: Strong Evidence of Effectiveness
Competitive Priority #4: Supporting High-Need Students

Power of Two: Pairing Literacy and Numeracy Professional Learning for Middle Grades Teachers (Power of Two) addresses Absolute Priority #1: Supporting practices and strategies for which there is moderate evidence of effectiveness. The proposal provides professional development for teachers of academic subjects (Absolute Priority #3) in two of the content areas that have been identified as essential for keeping students on-track for graduation—mathematics and English language arts (Balfanz, 2007). Additionally, the proposal addresses Competitive Priorities #1 (supporting practices and strategies for which there is strong evidence of effectiveness); and #4 (improve academic outcomes and learning environments for high-need students such as English learners, students in low performing school, students who are living in poverty, and students served by rural educational agencies).

Power of Two will center its work in four states (Michigan, North Carolina, Illinois, and California) that are part of the National Forum to Accelerate Middle-Grades Reform’s eighteen state Schools to Watch Network. The randomized controlled project consists of 96 intervention and control classrooms (pairing 48 English language arts and math classrooms) and tests the impact of targeted mathematics strategies and key instructional routines for academic language development with the goal of establishing a professional development model for increasing the number of highly effective middle-grades mathematics and English language arts teachers.

Power of Two ($5,933,806 grant) will improve educator knowledge, understanding, and skills in
teaching through the application and use of Focused Instructional Modeling - Mathematics and Academic Language Development instructional routines.

**Significance**

**National Impact**

The National Forum to Accelerate Middle-Grades Reform (the Forum) is the project lead and national non-profit. It is a well-respected and experienced leader in transforming educational practices and strategies for teachers of students in grades five to eight. The Forum has secured and successfully operated three federal grants in the last eight years where it has performed work in multiple states across the country. Established in 1997, the Forum serves as a unifying voice for middle-grades improvement through more than forty key stakeholders and organizational members and its signature initiative, Schools to Watch (STW). STW provides a process and set of criteria for identifying and recognizing schools on a sustained, upward trajectory of growth and improvement. The Forum has a national reach with STW affiliates in eighteen states whose middle-grades population represents nearly 70 percent of all young adolescents in the country. There are currently 400 Schools to Watch sites representing over 250,000 students and 16,000 teachers. The STW initiative is a dissemination and diffusion model. As a tracer study about the Forum noted, “There is no better system for creating impact and accelerating scale-up. There is a very high degree of use of the Forum’s message in the work of respondents seven levels removed from the Forum” (Brigham, 2003, p.19). The Forum’s tested, high-leverage strategies for knowledge creation, use, and dissemination will be an integral component of this grant. The lessons, data, and products focused on increasing the effectiveness of mathematics and English language arts teachers will be widely promoted.
Schools to Watch States in 2002: North Carolina, Georgia, and California

Schools to Watch States in 2015:
California, Oregon, Utah, Colorado, Texas, Kentucky, Georgia, South Carolina, North
Arkansas, Illinois, Indiana, Ohio, Michigan, Carolina, New Jersey, Pennsylvania, New
Michigan, New York, Virginia
Over the years as the STW initiative expanded across the country, state leaders received countless inquiries from schools seeking turnaround assistance. High-need schools require intense support to transform learning structures, and the Forum needed more resources to make that level of support a reality. This resulted in the successful 2010 Investing in Innovation (i3) development grant proposal. The Schools to Watch: Schools Transformation Network has been providing continuous services to eighteen schools in North Carolina, Illinois and California for over four years; and then in 2013, the Forum was successful in securing a second Investing in Innovation (i3) development grant. Middle-Grades Leadership Development is now operating in twelve schools in Michigan and Kentucky. Collectively these grants reach another 13,000 students and 900 teachers annually with on-the-ground technical assistance, coaching, networking, and intervention implementation. The grants focus on building organizational capacity, using the STW criteria (coupled with analysis of student data) as a comprehensive framework incorporating self-assessment, instructional goal-setting, action planning, and evaluation.

The emerging results from the 2010 i3 grant are promising in terms of changes in the learning environments specifically culture and climate. The work speaks to the fact that when middle-grades schools structure themselves around the STW vision and criteria, significant improvements are possible. The i3 schools now have school cultures that support high expectations; shared leadership and decision making; professional learning; and a sense of shared accountability (Flowers, Begum, Carpenter, Mulhall, & Poes, 2014). Through the Forum’s leadership, the state hubs in NC, IL, CA, and MI have staff positioned and experienced to serve as project leaders and coaches to provide the assistance needed in this grant.
Advancing the Field of Teacher Development for the Middle-Grades

American students are leaving high school increasingly unprepared to meet the demands of a global workforce. Many are unable to write, read, and conceptually think at levels that qualify them to fill living-wage jobs. By eighth grade only 13 percent of African American students, 18 percent of Latino students, 4 percent of English learner (EL) students, and 16 percent of low income (free and reduced lunch students) are proficient in mathematics. In reading only 16 percent of African American students, 20 percent of Latino, 3 percent of English learner students, and 18 percent of low income students can read with proficiency (NCES, 2013).

In The Forgotten Middle, ACT researchers conclude that the academic achievement of eighth-graders is a better predictor of college and career readiness than anything that happens academically in high school (ACT, 2008, 2014). The ACT researchers (2008, 2014) also found that only 2 out of 10 students are on target to be ready for college-level work by the time they leave eighth grade.

Recently, the middle-grades have been recognized as the “last, best chance to keep students on the pathway to high school graduation” (EdSource, 2010, p. 2). The Forgotten Middle (ACT, 2014) examined the role that academically related behaviors of eighth grade students play in future success, and the report found that a student’s academic discipline (i.e. good work and study habits), orderly conduct, and having a positive relationship with school personnel are more likely to lead to success. Balfanz, Herzog and McIver (2007) found that a sixth-grader who exhibits even one of the following indicators has a significantly diminished chance of graduating from high school: a failing grade in reading or mathematics; attendance below 80 percent for the year, and a final “unsatisfactory behavior” mark in at least one class. This attention-drawing research by Balfanz, et al., resulted in a growing national movement
called “the early warning indicators.” Often referred to as the A, B, C’s (attendance, behavior and course grades), early warning indicators (EWI) and tiered interventions systems are now being recognized as an important tool for keeping students on track for graduation and improving the high school graduation rates. Through EWI, teachers and administrators see patterns, identify potential off-track behaviors, and adjust policies and practices in a timely manner (Balfanz, Bridgeland, Hornig Fox, DePaoli, Ingram & Maushar, 2014). The levels of intervention include 1) preventive strategies for an entire grade or school such as the adoption of Schools to Watch criteria; 2) targeted strategies for the 15-20 percent of students who need extra support; and 3) intensive interventions for the 5-10 percent of students who require one-to-one support (Balfanz, Neild, & Herzog, 2007; Mac Iver & Mac Iver, 2009).

The middle-grades are pivotal years that can either place a student successfully on the path to high school, college, and career, or initiate a downward trajectory of disengagement, poor attendance, behavior issues, and low achievement in key subjects. This slide can be stopped and even reversed, but only if adults are paying attention (Balfanz, et al., 2014, p. 42).

Since NAEP (2013) concluded that by eighth grade, 64.5 percent of students are less than proficient in mathematics and reading, it is imperative that middle-grades students have a strong foundation in English language arts and mathematics so students have a fighting chance in high school.

Further, one of the most compelling findings from the first-of-its-kind National Assessment of Educational Progress Vocabulary Report (NAEP, 2012) was that 73 percent of the fourth- and eighth-graders scoring below the 25th percentile in vocabulary qualified for free and reduced lunch. In essence, three quarters of our most under-prepared vocabulary scholars come
from homes with more vulnerable educational and economic foundations. Truly, high-need students in the middle-grades currently do not have a foundation for success. **Power of Two** will produce strong evidence and effective teacher practices, instructional routines, and strategies that can be learned and replicated in other middle-grades schools through the Forum’s STW network which is continuing to grow and expand across the country.

A compounding problem is the lack of pre-service preparation for teachers in the middle-grades. This has historically been and continues to be a major problem. Middle-grades teacher certification ranges from full licensure in a few states to no specific preparation requirements at all in many others (McEwin, 2012). The vast majority of middle-grades teachers and principals lack knowledge of, vision for, and preparation in middle-grades education. They may be rated as “highly qualified” in their content area; yet lack any formal preparation in teaching that content to young adolescents. The middle grades are pivotal for future success as evidenced by the early warning indicators findings and ACT, Inc.; so it is essential to address the learning needs of this unique age group by preparing highly effective teachers who are experts in middle-grades practices and pedagogy as well as the teaching of English language arts and mathematics.

The need for **Power of Two** is further supported by the work in the Forum’s own 2010 i3 grant. Significant results and changes in culture and climate have occurred in the learning environment of the eighteen i3 schools; but there still appears to be insufficient power even with the contextual changes to quickly turn around mathematics and English language arts performance, those two major academic areas of the A, B, C’s. Two measures provide proof of these changes in culture and climate. On the **School Improvement Self-Study Survey** administered to several hundred i3 teachers annually through of the Center for Prevention Research and Development at the University of Illinois, Urbana/Champaign, the following
ratings of culture and climate improvements have occurred (Flowers et al., 2014):

### School Improvement Self-Study Findings 2010 to 2014

| Work Climate Improved | • Higher levels of commitment to school  
<table>
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<tr>
<th></th>
<th>• Stronger feelings of being recognized for contributions</th>
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| Classroom Climate Improved | • Improved climate in classrooms  
|                        | • Students working more productively and respectfully with each other  
|                        | • Less disruptive  
|                        | • More positive interactions with the teacher |
| Teacher Decision Making Increased | • Increase in opportunities to participate in decisions  
|                                   | • More freedom to autonomously make decisions |
| Collective Teacher Efficacy Improved | • Teachers have an improved collective commitment to the success of their students |
| Leadership Practices of Administration Improved | • Communication  
|                                                  | • Follow-through  
|                                                  | • Problem-solving strategies,  
|                                                  | • Proactive approach to improving the school  
|                                                  | • Collaborative leadership |
| Team Practices Increased | • Frequent engagement in planning coordination activities  
|                           | • Coordination of student assignments and assessments  
|                           | • Contact with parents |
| Team Decision Making Opportunities Increased | • Team Practices  
|                                      | • School-wide policies and practices  
|                                      | • Student performance and assessments |
| Quality of Team Interactions Improved | • Teachers felt more prepared to work together in a collaborative way  
|                                       | • Teachers agreed that they not only address student needs but have consistently high expectations for students |

Further evidence of changes in the *learning environments* can be noted by the teacher ratings on the STW Ratings Rubric over the last four years of the 2010 i3 grant. On the STW Ratings Rubric Findings, there is significant improvement in teacher perceptions of their implementation of the STW criteria:
The intensive work in these eighteen low-performing schools has resulted in substantial changes in the learning environment. These learning environment indicators have been positively associated with student achievement improvements in past research (Flowers, Mertens, & Mulhall, 2003; Mertens & Flowers, 2004, 2006). However, in the analysis of student Cohort 1 in the Forum’s 2010 i3 grant, there is yet to be positive movement in individual student achievement over time in every one of the eighteen schools. Preliminary analysis shows that students in aggregate over the first three years of the 2010 i3 grant did not show a significant gain or change in student performance in language arts and mathematics when measured against students in comparison schools (Flowers, Begum, Carpenter, Mulhall, & Poes, 2015). This set of turnaround schools are substantially better learning environments because the leaders and teachers know about and understand middle-grades education: “The grant was instrumental in moving our school forward because it provided us with the focus to establish a school vision and set school improvement goals; data and benchmarks to measure our progress; and resources to accomplish our goals” (CPRD, 2014). Results from the 2010 i3 grant provide proof that the Forum and its state hub partners can alter learning environments in turnaround schools. And yet because of the i3 Cohort 1 early results, the Forum and its state hub partners realize even more is needed to improve academic outcomes.

The next important step, then, is to build greater teacher effectiveness by employing deeper interventions in the instructional areas of mathematics and English language arts in middle-grades classrooms. The impact of this grant in combination with the Forum’s findings from the i3 work will significantly inform the field of middle-grades education. When taken together, contextual changes and specific mathematics and English language arts instructional routines and strategies could finally change the trajectory of those middle-grades students in
greatest need. There is no doubt teacher effectiveness in the middle grades must improve.

**Improving Student and Teacher Outcomes**

A key finding from the Forum’s 2010 i3 study is significant as it relates to the Forum’s SEED grant theory of action for **Power of Two**.

From the National Forum’s i3 STW data, the researchers found a statistically significant positive relationship between English and mathematics achievement. Among students at project schools, those with higher English achievement tended to have higher mathematics achievement (Flowers, et al., 2015).

This finding is consistent with previous research (Abedi & Lord, 2004; Beal et al., 2010) and was recently affirmed in a study on the predictive power of English proficiency on mathematics scores. That study revealed English proficiency as a statistically significant predictor of mathematics scores (Henry, Nistor, & Baltes, 2014). Further, Larwin (2010) concluded:

> Reading ability significantly contributed to the prediction of student math achievement scores. Findings reveal that 56 percent of the variance in student math achievement can be explained by students’ reading ability. Specifically, these results suggest that weak reading ability issues that are not addressed in younger children may plague their mathematics achievement as they advance to high school and beyond (p. 142).

This grant proposal builds on the **powerful relationship between mathematics and English language arts for rapidly changing outcomes**. As a student progresses through the middle-grades, text demands increase and vocabulary plays an increasingly vital role in content learning such as mathematics and other academic subjects. The knowledge gap increases as the written text complexity rises. In fact, research on school-age English learners concludes that
vocabulary knowledge is the single most reliable predictor of their academic success across subject matter domains (Saville-Troike, 1984). Therefore, the grant will deliver a coordinated two-subject intervention to increase the effectiveness of middle-grades language arts teachers to dramatically increase verbal and written interactions by using the Academic Language Development pedagogy. Concurrently, the grant will coach mathematics teachers in the Focused Instructional Model to directly impact students’ mathematic learning. As a result, it is expected that high-need, middle-grades students will perform at higher levels and will be better prepared for success in high school, resulting in readiness for college and career.

The project addresses the need to implement a two-subject intervention by providing professional development for teachers in the content areas of mathematics and English language arts (Absolute Priority #3, Professional Development for Teachers of Academic Subjects). The sample will be in 96 (treatment and control) sixth and seventh grade math and English language arts classroom pairings with high concentrations of English learners, high-need, poverty, or low-performing student populations (Competitive Priority #4—Supporting High-Need Students). Every student will have two different “doses” of intervention presented by teachers involved in the paired professional learning experiences. The schools/districts selected in each of the four states have underperformed in these two content areas and are ranked as some of the lowest performing schools in each state. The school/district leaders have talked with the state hub leaders about their desire to receive the Forum’s assistance with these two content areas.

To meet the needs of the district and schools to improve student performance, teachers will receive intensive professional development and coaching in these content subjects which are supported with strong evidence of effectiveness (Competitive Priority, #1), and they will apply key strategies and instructional routines in their mathematics and English language arts classes.
Students in the study will receive instruction from professionally prepared teachers in each of the two content areas considered crucial for keeping on-track to enter high school prepared for the academic challenges required for graduation. Teachers will provide their students with instruction based upon the Focused Instructional Model-Mathematics (FIM) and Academic Language Development (ALD) pedagogy, models tested in Michigan and California with results demonstrating that FIM and ALD improve outcomes for students.

The Focused Instructional Model (FIM) is a research-based mathematical instructional method developed by the Institute for Excellence in Education (IEE) in Michigan. FIM transforms classroom instruction and drives increases in student achievement. This systematic process trains teachers to develop integrative lessons that naturally demonstrate real-world application. Teachers use the process to monitor their students’ mastery of the content and provide interventions when appropriate. It is an integrative, holistic approach to teaching built upon instructional best practices. Facilitated by trained coaches, FIM implementation occurs in two phases: 1) an in-depth professional development workshop and 2) on-going coaching and support to assist individual teachers with FIM operation in the classroom. FIM has been implemented in classrooms across Michigan, and the implementation of FIM has been shown to be effective in increasing math achievement for sixth and seventh graders in diverse and high-need schools within a short timeframe as demonstrated by the following results measured by MEAP (Michigan Educational Assessment Program):

1. Tawas Middle School showed a 23.1 percent increase (from 36.2 to 59.3) in the number of sixth grade students proficient in mathematics from 2012-2013 to 2013-2014.
2. Reese Middle School showed a 10.2 percent increase (21.2 to 31.4) in the number of sixth grade students proficient in mathematics from 2012-2013 to 2013-2014. Seventh grade student proficiency increased from 26.4 to 33.4 percent.

3. Maple Street Magnet School showed a 16.6 percent increase (27 to 43.6) in the number of sixth grade students proficient in mathematics from 2011 to 2013-2014. Seventh grade student proficiency changed from 23 to 38.5 percent during that same time period.

FIM Systematic Practice (SP) provides teachers with foundational knowledge to build content and skill mastery in their students. Teachers work as collaborative grade-level and/or content-area teams to identify Critical Focus Areas (CFAs). CFA’s are aligned with Common Core content standards that students are expected to master by the conclusion of a course. Students are then provided daily class time to practice each of the CFAs on a weekly basis, even as the teacher covers different instructional units. This cyclical pattern ensures that students do not forget what they studied earlier in the year and cements their learning into habit. Teachers monitor their students’ understanding and retention of content with bi-weekly formative assessments and stage interventions as appropriate. The formative assessments alternate weekly with demonstrations of the studied content’s real-world application.

The Academic Language Development (ALD) pedagogy is a series of research-informed instructional routines and lessons developed in California by Dr. Kate Kinsella. The goal of Dr. Kinsella’s ALD pedagogy is to dramatically increase the quality and quantity of verbal and written interactions using academic vocabulary. Productive vocabulary knowledge — the ability to effectively comprehend and utilize a wide range of words — is an unparalleled predictor of academic achievement and mobility for English learners, under-resourced students, and native English speakers alike (Kinsella & Hancock, 2014). It is designed to help students go beyond
vague knowledge of words to utilization of critical academic language so students confidently and competently apply them throughout the school day. It is the explicit, interactive instructional routines used in every lesson that guide students in making this compact set of high priority words part of their productive vocabulary—words they are able to skillfully employ in their own speech and writing. Students develop lexical precision as they progress from scaffolded speaking and writing tasks to independent advanced applications. Students are prepared to express their academic vocabulary acumen in secondary coursework and have the mindset and tools to envision a college pathway to a professional career. Their literacy support involves an informed and systematic program to bolster their verbal command of English vocabulary, syntax, and grammar (August & Shanahan, 2006). It includes conscientiously planned, explicit instruction, and daily structured and accountable opportunities to practice language students can leverage on writing and reading assignments (Dutro & Kinsella, 2010). Students require exposure to consistent instructional routines, rather than an eclectic array of strategies and activities, so they can devote their full intellectual capital to learning critical content and using English (Goldenberg, 2008). This ALD pedagogy has been primarily used in English learner settings, but its goals and purposes are applicable to high-need and under-resourced students. The ALD pedagogy:

- Engages students cognitively and linguistically in every lesson phase through structured, accountable responses and consistent, interactive instructional routines.
- Teaches high-leverage, portable language including vocabulary, sentence structure, and grammar that students can apply in academic and social contexts.
- Offers daily contexts for students to productively interact with peers applying advanced social and academic language, critical thinking skills, and pragmatics.
• Equips students with the language, knowledge, and skills to tackle the informational reading and writing demands Common Core standards and assessments.
• Makes regular connections between course-work target language and literacy skills and the demands of college and the professional workplace.
• Improves scholarly demeanor, study skills, and habits through modeling, accountability, encouragement, and high expectations.
• Provides constructive, respectful, and timely feedback on language use, literacy skills, and scholarly comportment.

The California League of Middle Schools (CLMS) received a 2012 Investing in Innovation (i3) Grant: Families for College (FFC), in which it implemented a dedicated intervention period of English language development for a cohort of high-need English learners. This 50-minute period includes specialized curriculum (English 3D) by Kinsella that utilizes her Academic Language Development (ALD) pedagogy. Early results are promising. In the absence of achievement data (California suspended standardized testing in 2013-14 as it transitioned to a CCSS assessment), improvements in student performance can be demonstrated in other ways. In particular, the progress of English learners occurred as evidenced by analysis of the California English Language Development (CELDT) test.

As Charts 1 & 2 show, the majority of students involved in FFC increased in one or more of the domains on the CELDT (96 percent in Sunnymead Middle School and 88 percent in Badger Springs Middle School), with more than 60 percent of students increasing in two, three, or four domains in both middle schools. Teachers agreed unanimously that classes implementing the ALD pedagogy are benefitting their EL students. (Table 2) Students also reported that as a result of the ALD pedagogy they are more confident using academic language when speaking
and writing (Graph 1). Taken together, state CELDT test findings, as well as teacher and student findings, confirmed the effectiveness of ALD pedagogy in improving student achievement among English learners.

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**CHARTS 1 & 2**

Moreno Valley Unified School District Badger Springs Middle School and Sunnymead Middle School English 3D Students, Grades 6–7 Change in CELDT Domains, 2014–2015

*A Domain is a test category on the CELDT. CELDT Domains include Listening, Speaking, Reading, and Writing. There are 5 possible performance levels that can be earned on each Domain of the CELDT: Beginning (1), Early Intermediate (2), Intermediate (3), Early Advanced (4), and Advanced (5).*

**TABLE 2**

Moreno Valley Unified School District English 3D Educators, Grades 6–7, (N=10) Teacher Perceptions of the English 3D Curriculum

<table>
<thead>
<tr>
<th>Teacher Perceptions of the English 3D Curriculum</th>
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</thead>
<tbody>
<tr>
<td>Students have dramatically increased the quantity of the academic language that they use as a result of consistently implemented instructional routines on a daily basis.</td>
</tr>
<tr>
<td>Students who are insecure about class discussions are able to overcome this challenge by discussing their own ideas in an academic register. They enjoy sharing their perspectives when they feel like they “sound smart”.</td>
</tr>
<tr>
<td>Students challenge themselves by trying to use more academic language in their writing. Even teachers in other classes are noticing that English 3D students are better at using academic language in their writing.</td>
</tr>
<tr>
<td>Students have dramatically improved the quality of what they say and write as a result of daily use of the Words to Go and Words to Know, along with the use of the writing frames.</td>
</tr>
</tbody>
</table>
During focus groups interviews, teachers reported significant impacts for themselves and their students:

- Teachers are more confident using academic vocabulary, are more mindful of modeling it for students, and feel more comfortable because the students know it too.
- Teachers report increased collaboration, both among students and with other teachers. Students now know the keys for productive partnering (the 4 L’s).
- Teachers are incorporating these new strategies (academic language, collaboration, etc.) into other classes/subjects beyond English.
- Teachers’ expectations have risen and they report increased rigor in their instruction.
- Students are volunteering more and are more comfortable speaking and presenting in class (including in their other classes). One teacher reports that the quality of class discussions is far superior to the teacher’s other general education classes.
- Student writing has improved, with clearer thesis statements and better supporting evidence. Students are using the sentence frames on essays.
- FFC student attendance has improved, compared to the other students.
Supporting Practices and Strategies for Which There Is Strong Evidence of Effectiveness

(Competitive Priority #1) Power of Two is aligned with several projects, initiatives, and studies that have strong evidence of effectiveness according to the What Works Clearinghouse in terms of both academic contents areas that are the focus of this grant: academic language development and mathematics. The Focused Instructional Model and Academic Language Development student/teacher demographics align with studies that have strong evidence of effectiveness for the grant’s target student population (Other Attachment Evidence of Effectiveness Documentation).

Quality of the Project Design and Services

The Forum’s mission is to make high performing middle grades education the norm, not the exception across the country. The Forum advances a research-driven vision and set of criteria (STW) based on the domains of academic excellence, developmental responsiveness, social equity and organizational supports. Data from the recent analysis of the Forum’s 2010 i3 grant show significant gains in establishing strong environmental improvements in turnaround schools; however, more is required to make significant academic gains with high-need students.

Therefore, the SEED grant enables the Forum to implement and test the compounding effect of a two-subject, year-long intervention strategy which addresses the two academic content areas important for students staying on-track for graduation (EWI). The results from Power of Two, when combined with the learning environmental outcomes of the 2010 i3 Schools to Watch grant, would accelerate middle-grades reform by improving student outcomes for those most in need: students living in high poverty, students attending low performing schools, and EL populations in schools nationwide.

Mathematics and language arts teachers in the intervention classrooms will be prepared to initiate Focused Intervention Model (FIM) and Academic Language Development (ALD) at the
beginning of the school year in 2016. Intervention classrooms will be scheduled so students receive instruction using both FIM and ALD which will more rapidly bolster mathematics and English language arts performance among these high-need students. The key is that students will receive simultaneous doses of instructional support in both content areas thus immediately affecting learning in those two academic content areas shown as critical for future success. A delayed implementation model will be used with the comparison teachers and classrooms in the second year of the grant (Fall, 2017) so these teachers can learn and apply FIM and ALD to a new set of students.

**Clear and Measurable Goals**

**Power of Two** distal goals/outcomes include: 1) increase student performance on mathematics and English language arts assessments as a result of increasing the number of highly effective teachers through the use of the mathematics Focused Instructional Model and the Academic Language Development pedagogy and 2) improve teacher effectiveness on teacher ratings through the use of FIM and ALD for mathematics and English language arts.

Intermediate outcomes include: a) increased teacher use of effective mathematics/ELA strategies and routines; b) increased self-efficacy as teachers of mathematics and ELA; c) improved student confidence in their academic dispositions and academic behaviors in mathematics and language arts; and d) increased student use of FIM and ALD strategies and routines mathematic.
Table 3 Logic Model

<table>
<thead>
<tr>
<th>Programs and Services</th>
<th>Mediators and Moderators</th>
<th>Intermediate Outcomes</th>
<th>Distal Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIM Professional Development for Teachers:</strong></td>
<td>Level of professional development participation among teachers.</td>
<td>Increased teacher use of math instructional strategies.</td>
<td>Student achievement growth in math.</td>
</tr>
<tr>
<td>• 3 day professional development course for math teachers on FIM.</td>
<td>Level of ongoing coaching for teachers.</td>
<td>Increased teacher use of English instructional strategies.</td>
<td>Student achievement growth in English.</td>
</tr>
<tr>
<td>• Ongoing coaching (3 times per month) for math teachers by math coach specialists.</td>
<td>Teacher background and experiences.</td>
<td>Increased teacher efficacy.</td>
<td>Increased teacher effectiveness ratings.</td>
</tr>
<tr>
<td>• Use of daily warm up exercises for students.</td>
<td></td>
<td>Increased student academic language and vocabulary.</td>
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<tr>
<td>• Use bi-weekly progress monitoring tests</td>
<td></td>
<td>Increased student academic efficacy.</td>
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<td><strong>ALD Professional Development for Teachers:</strong></td>
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<tr>
<td>• 7 days of professional learning distributed through the school year.</td>
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<tr>
<td>• Ongoing coaching, (3 times per month) for ELA teachers by ELA coach specialists.</td>
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<td><strong>Training for Math Coach Specialists and English Coaches Specialists:</strong></td>
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<tr>
<td>• FIM or ALD coaching session.</td>
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<td>• Cognitive coaching session.</td>
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<td>• Ongoing virtual coach mentoring (every other week Aug to Oct; monthly thereafter).</td>
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<td>• Annual coach symposium.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

20
The logic model shows that content teachers will receive specific professional training for their academic content areas over time and further shows that coaches will work in each building with the teachers so they are more effective in implementing the strategies and instructional routines learned. Both cognitive coaching and virtual coaching will be used to best assist the teachers they are serving. Different factors and mediators affect the effectiveness of the programs and services therefore; the grant will take into consideration the level of teacher participation, the consistency and level of coaching, and the backgrounds and experiences of the teachers. These will assist the team of evaluators in determining the effects on the intermediate outcomes and finally the distal outcomes.

The following chart provides more detailed information about key inputs, objectives, tasks, and professional development associated with the goals of the project.
Table 4 Goals, Objectives, Strategies, Outcomes, and Measures

Purpose: Increase number of effective middle grades mathematics and English language arts teachers

**Goal 1:** Increase student performance on mathematics and English language arts assessments as a result of increasing the number of highly effective teachers through the use of FIM and ALD

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Outcomes</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase math performance in the treatment classrooms in the 2016-2017 school year</td>
<td>Administer NWEA at three intervals in 2016-17 in both math</td>
<td>Students will demonstrate understanding of math and strategies in classroom participation</td>
<td>• Students will score higher on NWEA at the middle and end of the treatment year as compared to students in the control group</td>
</tr>
<tr>
<td>Increase English language arts performance in the treatment classrooms in the 2016-2017 school year</td>
<td>Administer NWEA at three intervals in 2016-17 in language arts</td>
<td>Students will demonstrate understanding of academic language tools and routinely apply them in daily classroom use</td>
<td>• In team or grade level meetings, teachers will discuss and share commonalities of use of AL across content areas • Student scores on NWEA at the middle and end of the treatment year will have risen as compared to students in the control group</td>
</tr>
<tr>
<td>Increase Math performance in control classrooms in 2017-2018 school year</td>
<td>Administer NWEA at three intervals in 2016-17 in math</td>
<td>Students will demonstrate understanding of math strategies in classroom use</td>
<td>• Student scores on NWEA at the middle and end of the treatment year for the original control classrooms</td>
</tr>
<tr>
<td>Increase English language arts performance in control classrooms in the 2017-2018 school year</td>
<td>Administer NWEA at three intervals in 2016-17 in language arts</td>
<td>Students will demonstrate understanding of academic language tools and instructional routines and apply them in daily classroom use</td>
<td>• Student scores on NWEA at the middle and end of the treatment year will have risen for students in the original control classrooms</td>
</tr>
</tbody>
</table>

**Goal 2:** Improve teacher effectiveness on teacher ratings through the use of FIM and ALD for mathematics and English language arts high need students

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Outcomes</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase teacher knowledge of mathematic critical focus areas</td>
<td>Identify teachers for study Identify coaches, conduct training for math Coaches in spring and summer 2016 and begin on-site coaching services in fall 2016</td>
<td>6 mathematics teachers from each of the 4 states will be selected for treatment sites Each state will have math coaches prepared and ready for ongoing classroom support starting in fall of 2016</td>
<td>• Teacher attendance at FIM Strand at national training • Identified CFAs for each school and grade level • Coaching logs • Bi-weekly assessments • Student performance on NWEA, Northwest Evaluation Association conduct three times</td>
</tr>
<tr>
<td>Activity</td>
<td>Action</td>
<td>Outcome</td>
<td>Notes</td>
</tr>
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</tr>
<tr>
<td>Prepare teachers at national training by conducting training for math teachers at conference</td>
<td>All math teachers and coaches are ready to implement in fall 2016</td>
<td>Teachers will be able to identify and select key critical focus areas (CFA) for their grade level and implementation will reflect good fidelity</td>
<td>Repeat of outcomes for treatment teachers in Year I in the treatment year.</td>
</tr>
<tr>
<td>Support through onsite and virtual coaching</td>
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<td></td>
</tr>
<tr>
<td>Control teachers from Year I, receive delayed professional development in FIM</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Increase teacher knowledge of high frequency academic vocabulary</td>
<td>Identify English language arts teachers for study</td>
<td>6 English language arts teachers from each of the 4 states will be selected for treatment sites</td>
<td>Teacher attendance at ADL Strand at national training, Guided Observations, Coaching logs, Student performance on NWEA, Northwest Evaluation Association conduct three times in the treatment year</td>
</tr>
<tr>
<td>Identify coaches, conduct training for academic language development in spring and summer 2016 and begin on-site coaching services in fall 2016</td>
<td>Each state will have coaches prepared and ready for ongoing classroom support starting in fall of 2016</td>
<td>All ELA teachers and coaches are ready to implement in fall 2016</td>
<td></td>
</tr>
<tr>
<td>Prepare ELA teachers at national training</td>
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<td></td>
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<tr>
<td>Support through coaching</td>
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<tr>
<td>Increase teacher efficacy in depth of content knowledge</td>
<td>Support adoption of new skills and strategies through ongoing feedback and coaching</td>
<td>Teachers will be able to describe and demonstrate awareness and application of deep content knowledge in daily lessons</td>
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<td>---------------------------------------------------------------------------------------------------</td>
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<tr>
<td></td>
<td>Provide retraining where identified</td>
<td>In math, teachers will be able to describe CFA in terms of student work models</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide training at designated intervals in 2016-2017</td>
<td>In English language arts, teachers will define instructional routines and regularly model use them in their classrooms.</td>
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<tr>
<td></td>
<td>Monitor fidelity of implementation</td>
<td>Teachers from treatment classroom will be able to mentor teachers from control classrooms in 2017-2018</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Involve treatment teachers in training of control teachers summer 2017 national training</td>
<td>• Student work products and oral/written communications will reflect use of strategies and instructional routines in content areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher effectiveness rating measures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher efficacy ratings on the School Improvement Self Study</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher reflection from guided coaching and level of discourse with coaches and amongst other treatment teachers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Teacher comfortableness with training responsibilities</td>
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</tbody>
</table>
In Year I, the project timeline allows for up-front planning in the six months of the grant to provide the evaluation team with sufficient time to finalize data collection instruments and systems, conduct the randomization of classrooms into intervention and control groups, and to work with the state departments of education and local districts to set up research agreements for data collection. There is also time toward the end of the grant period after the intervention concludes to analyze data and generate reports on the impact of the overall project. State hubs will use the start-up time to formalize agreements with the schools and their teachers, orient the teachers to the process and establish working relationships with teachers, train and prepare coaches, and assist with planning for the professional development event in June at the Forum’s annual Schools to watch conference. The Forum will take advantage of the planning time to build a unified team and address any supports the project team might require as activities commence. It will coordinate the logistics for the initial training in June of 2016. In Years II and III, the Forum will prepare products and documents, provide informational training to other STW state teams on the Power of Two progress to foster expansion, and plan for at least one national training event focusing its implementation in other states/localities, its impact, and its effect on middle-grades practice and policy.

First, the management plan includes the FIM and ALD training plan for the states. Both sets of these deliverables will be mapped out as the grant team commences with the work. The MI state hub will provide the following deliverables and training for the treatment classrooms in FIM during the first and second year of the grant. It will, then, provide similar services for the control classrooms in the end of the second year and into the third year.
### Table 5 – FIM Responsibilities

<table>
<thead>
<tr>
<th>Technical Assistance</th>
<th>Project Training provided by IEE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support states in selection of Mathematics – Coach Specialists</td>
<td>Two days of Professional Development tied to the STW conference in June. 1 day in the fall in each state.</td>
</tr>
<tr>
<td>• Job descriptions</td>
<td>Virtual Coach Mentoring of State Mathematics Coach Specialists</td>
</tr>
<tr>
<td>• States of Mind Interview Questions</td>
<td>• Understanding FIM project</td>
</tr>
<tr>
<td>• Candidate Interview Support if needed</td>
<td>• Coaching FIM in the Classroom</td>
</tr>
<tr>
<td>FIM Daily Warm Ups provided to each project school</td>
<td>• Working with resistant teachers</td>
</tr>
<tr>
<td></td>
<td>• Empowering the Students</td>
</tr>
<tr>
<td></td>
<td>• Data Quick Sorts</td>
</tr>
<tr>
<td></td>
<td>• Tracking school, classroom, and individual student progress</td>
</tr>
<tr>
<td></td>
<td>• Provide Training Materials</td>
</tr>
<tr>
<td>Bi-Weekly FIM Progress Monitoring Tests provided to each project school</td>
<td>Annual Mathematics Coach Specialist Symposium conducted at STW Conference in DC</td>
</tr>
<tr>
<td>Disbursement of “Different Ways of Knowing Mathematics Guide”</td>
<td>Additional Annual Mathematics Coach Specialist Symposium conducted in MI</td>
</tr>
<tr>
<td>Support state partners in their understanding of FIM</td>
<td></td>
</tr>
<tr>
<td>• Fidelity of Implementation</td>
<td></td>
</tr>
<tr>
<td>• Data Usage</td>
<td></td>
</tr>
<tr>
<td>• Changes in teacher practice</td>
<td></td>
</tr>
<tr>
<td>Support state partners with the implementation of the project assessments</td>
<td></td>
</tr>
<tr>
<td>• NWEA</td>
<td>• Provide assessment schedule</td>
</tr>
<tr>
<td>• Teacher surveys</td>
<td>• Provide teacher and student surveys and submit results to SEED partner evaluators</td>
</tr>
<tr>
<td>• Student surveys</td>
<td>• Provide pre and post yearly performance measures: writing and speech prompts</td>
</tr>
<tr>
<td>• Performance-based measures (math)</td>
<td>• Guide analysis of writing results and share video samples of speeches</td>
</tr>
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</tr>
</tbody>
</table>

The CA state hub will provide the following deliverables and training in ALD for the treatment classrooms during the first and second year of the grant. It will, then, provide similar services for the control classrooms in the end of the second year and into the third year.

### Table 6 – ALD Responsibilities

<table>
<thead>
<tr>
<th>Key Deliverables and Technical Assistance</th>
<th>Project Training for ALD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support state partners in the selection of Academic Language Development Specialists</td>
<td>Two days of Professional Development tied to the STW conference in June. 1 day in the fall in each state.</td>
</tr>
<tr>
<td>Provide the following:</td>
<td></td>
</tr>
<tr>
<td>• Job descriptions</td>
<td></td>
</tr>
<tr>
<td>• Interview Questions</td>
<td></td>
</tr>
<tr>
<td>• Candidate Interview Support if needed</td>
<td></td>
</tr>
<tr>
<td>Prepare ALD Coaches to provide ongoing support with lesson planning, co-teaching, modeling lessons, in-classroom coaching, data analysis and guiding peer-</td>
<td>Provide coach training (3 days total) and ongoing support for ALD Specialists</td>
</tr>
<tr>
<td></td>
<td>• Coach Training Day 1, DC event</td>
</tr>
</tbody>
</table>
observations

| Support the implementation of 3.1 Curricular Anchors:  
| a. *The Academic Vocabulary Toolkit* (AVT) published by Cengage/National Geographic Learning  
| b. Informational Text (subscription to *News ELA*; *or What’s Happening in the US*)  
| c. Justification, Summary, and Argument Research Writing Frames & Speeches | Coach Training Day 2, Oct in CA  
| Coach Training Day 3 (prior to guided observation and follow-up PD) |

Provide Implementation Training (5 days) for teachers and ALD Coaches

- Understanding the SEED project
- Teaching & learning with AVT
- Using a Close Reading Routine with Informational Text
- Key instructional routines for college and career readiness
- Using informational text for summary, justification, and argument/research writing (includes 3 instructional routines)

Support the implementation and teacher effectiveness (observations & follow-up training to address trends)

Lead principals and coaches on guided observations (observations + follow-up PD - 2 days)

Support the implementation of Daily formative assessments and End-of-Unit assessment (every 4-6 weeks)

Support ALD Coaches collection and analysis of test data (ongoing)

Support the implementation of Writing Rubrics & guided analysis

Provide guided analysis of writing (during 4th day of training)

Support state partners in their understanding of Academic Language Development

- Fidelity of Implementation
- Data Analysis
- Guide observations and provide tools to identify changes in student behaviors and teacher practices

Include state partners in guided observations with principals and coaches

Conduct yearly pre and post-project surveys with state partners about ALD

Support state partners with the implementation of the project assessments

- NWEA and/or SRI
- Teacher surveys
- Student surveys
- Performance-based writing measures

Provide assessment schedule

Provide teacher and student surveys and submit results to SEED partner evaluators

Provide pre and post yearly writing performance measures

Guide analysis of writing results and share video samples of speeches

Next, all four states will have the following expectations and responsibilities to the FIM and ALD work so implementation is at a highest level throughout the grant classrooms.

Table 7 – State Level FIM

<table>
<thead>
<tr>
<th>State Partners Expectations for FIM</th>
<th>Expectations for Mathematics Coach Specialists</th>
</tr>
</thead>
</table>
| Identify and employ Mathematic Coach Specialists  
| • Trainer Program | FIM Training attendance  
| Cognitive Coaching Training |
FIM Coaching

- Send participating teachers to STW Conference in DC for training
- Attend Mathematics Coach Specialist symposium
- Participate in the initial kick-off training at the National Schools to Watch Event
- Facilitate implementation of all data collection tools
- Participate in Virtual Coach Mentoring
  - August – October every other week
  - October and beyond – monthly
- Send Mathematics Coach Specialists to Symposium Annually
- Other optional activities:
  - Support teacher attendance at state middle grades conference
  - Support teacher attendance at state mathematics conferences
- Identify dates and location for FIM Training day 3
- FIM Coach in each building 3 times a month
- Facilitate Implementation of all data collection Tools

Table 8 – State Level ALD

<table>
<thead>
<tr>
<th>State Partner Expectations for ALD</th>
<th>Expectations for ALD Coach Specialists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select and communicate with participating schools/districts</td>
<td>• Participate in additional coaches trainings</td>
</tr>
<tr>
<td>Identify dates and location for Trainings</td>
<td>• Engage in guided observations</td>
</tr>
<tr>
<td>Bring all teachers together for in-state training</td>
<td>• Participate in follow-up trainings to address trends noted during observations</td>
</tr>
<tr>
<td>Identify and employ Academic Language Development (ALD) Coach Specialists</td>
<td>Participate in Virtual Coach Mentoring</td>
</tr>
<tr>
<td>Send participating teachers to STW Conference in DC for training</td>
<td>• 24/7 email and phone support</td>
</tr>
<tr>
<td>Send ALD Specialist Coaches to annual training in CA</td>
<td>• Monthly virtual meetings</td>
</tr>
<tr>
<td>Support teacher attendance at state middle grades conference</td>
<td>• eLearning modules to review segments from “live” training content</td>
</tr>
<tr>
<td></td>
<td>• Participate in the initial kick-off training at the National Schools to Watch Event</td>
</tr>
</tbody>
</table>

Part of Broader Improvement Effort

FIM and ALD have been designed and constructed to align with the Common Core State Standards. Since 2010, all states in the grant have implemented standards aligned with Common Core K-12 Mathematics and K-12 English Language Arts Standards which are intended to better prepare students for learning and work in the 21st Century.

In terms of English language arts CCSS, ALD pedagogy uses skills that help students read and write across the curriculum and that complement the content of the standards in other
academic areas such as history/social studies and science thus offering new grounding in informational text and placing a premium on students building knowledge from that reading.

The CCSS and ALD highlight the growing complexity of texts students must read to be ready for the demands of college and careers. Closely related to text complexity in CCSS and as reflected in the ALD pedagogy—and inextricably connected to reading comprehension—is a focus on academic vocabulary, words that appear in a variety of content areas.

In mathematics, the focus narrows and deepens so that students gain strong foundational understanding, a high degree of procedural skill and fluency, and the ability to apply the math they know to solve problems inside and outside the math classroom. Through FIM, teachers will instruct more about “how to get the answer” and support students’ ability to access concepts from a number of perspectives so that students are able to see math as more than a set of mnemonics or discrete procedures. Students are expected to demonstrate deep conceptual understanding of core math concepts by solving short conceptual problems, applying math in new situations, and speaking about their understanding.

**Sufficient Services to Lead to Improvement**

The Forum will guide and oversee **Power of Two** throughout the three years ensuring continuity and fulfillment of goals and objectives. The Michigan and California teams each will lead the mathematics and academic language development training respectively for all the coaches and teachers in all four states. They will also facilitate the delivery of the strategies and instructional routines in the other content areas to their own coaches and teachers. Teams in Illinois and North Carolina will work side-by-side with the trainers to learn the strategies and instructional routines in order to support their coach specialists and teachers. All four states will engage in one round of the paired intervention and one round of delayed implementation. First,
the intervention classrooms will be fully prepared to implement the work in the 2016-17 school year. Then in the 2017-18 school year, the control classrooms will implement the strategies and instructional routines. Overall forty-eight paired classrooms (96 total classrooms) and approximately 2,200 students will be served over the course of the grant.

As mathematics project lead, the Institute for Excellence in Education (IEE-Michigan STW state hub) will provide professional development and technical assistance support to the other three participating states. Schools/classrooms will be selected for SEED participation by each state hub team. Michigan will use a train-the-trainer model and will prepare Mathematics Coach Specialists to carry the work forward after the project is completed. This system ensures the sustainability of the project for years to come.

California will also employ a train-the-trainer model so that, in addition to coaching, trained ALD Specialists will transition into providing a share of the content in the second year. These highly trained specialists will remain in their respective states to carry on the work long after the project and implementation trainings are completed. The protocols put in place by both the Michigan and California teams will ensure the sustainability of the projects in all four states. Each state will be responsible for the successful follow-through of the grant tasks and actions. The participating states have the know-how and capacity to deliver the proposed work (See Documentation of National Not-for-profit for State STW Hub Expertise).

**Addressing Shortage Areas**

Naturally, most teachers of young adolescent learners have very little specialized middle-grades professional preparation to teach students in grades sixth to eighth. They are basically prepared to teach elementary or high school. They acquire their “expertise” on the job. This grant will take mathematics and English language arts preparation to a new level and provide
valuable data, strategies, instructional routines, and experiences so middle-grades teachers can become more effective in their daily work.

**Addressing Needs of Students in the Study**

The sample population for **Power of Two** contains student characteristics that comply with *Competitive Priority #4*. The students selected for the study perform poorly in the key content areas of English language arts and mathematics. The intervention and control classrooms will be in high-poverty schools averaging over 82 percent poverty (free and reduced lunch status). For 2013-2014 the English language population ranges from 13 percent all the way up to over 70 percent. Eight of the thirteen schools score below 40 percent proficient in sixth grade English language arts with several schools under 5 percent proficient. The math scores range lower with several grade level scores at 10 percent proficient and below. Seventh grade scores show a very similar pattern. In the preparation of the paired classrooms for the study, the state hubs leaders will work with each school to identify the students within each building most in need of the math and English language arts treatments. In discussions with district and building leaders as the grant was prepared, each administrator spoke to the need for assistance. They want interventions to occur within these early years of the middle-grades experience so skills can be learned and strengthened so their students are prepared for the rigors of high school.

**Quality of the Management Plan and Personnel**

The Forum brings together a comprehensive team of dedicated experts to improve middle-grades teacher quality and increase student performance in mathematics and English language arts. Each of the team members will use their highly trained, professional staffs to create transformational breakthroughs in the practice of the participants. The expertise and
experience of the project team is diverse and accomplished.

**Qualified Personnel**

**Deborah Kasak**—Deborah will serve as the SEED project director. Since 2002 she has served as Executive Director for the Forum. She is currently the principal investigator for two Investing in Innovation i3 grants, a $3.45 million grant awarded in 2013 and $6 million i3 grant awarded in 2010. In both grants, she oversees intensive school reform work. Previously she was the lead for the Forum’s USDE Comprehensive School Reform Quality Initiative grant which addressed the needs of EL, special education, and rural students and produced the middle-grades Mathematics Toolkit available on the Forum’s website. Prior to 2002 as executive director of the Association of Illinois Middle-Level Schools, she helped create the Illinois Middle-Grades Network begun in 1989 with the assistance of a U.S. Department of Education grant. Deborah served as president of the Association of Middle Level Education 2001-02. She received her educational preparation at the University of Illinois and holds multiple degrees including a doctoral degree in educational administration.

**Nancy Flowers** – Nancy is Assistant Director of Research Programs at the Center for Prevention Research and Development (CPRD) at the University of Illinois. She will serve as the lead evaluator for the project. For the past 20 years, she has been a project director and principal investigator for numerous longitudinal research and evaluation projects in the areas of middle-grades school reform and after-school evaluation. These prior research results using the *School Improvement Self-Study*, a set of survey measures designed specifically for middle-grades schools, have been widely disseminated. Currently, Nancy leads the evaluation of The Forum’s 2010 i3 development grant and its 2013 i3 development grant. She has extensive expertise in large-scale data collection (over 1,000 schools), mixed-methods evaluation designs, the analysis
of student outcome data, and the dissemination of results to improve practice, support data-based
decision making, and impact policy for youth and young adolescents. She has written over forty
scholarly publications, reports, and presentations, and currently serves as a council member for
the Middle Level Education Research special interest group of the American Education Research
Association.

Sherry Lambertson– Sherry serves as Executive Director for the Institute for Excellence in
Education. Sherry has over 20 years of experience as both a classroom teacher and administrator.
It is Sherry’s objective to be a reform leader in the educational community in order to ensure that
every child has the opportunity to experience academic excellence, social equity, and
developmental responsiveness in their learning environment. She was selected in 2009 as a
recipient of a Gerstacker Fellowship. She continues her leadership study in the Gerstacker Plus
program even today. She serves on the Michigan Schools to Watch Board and as a member of
the National Forum to Accelerate Middle Grades Reform. Sherry earned two Master’s Degrees
from Central Michigan University in Educational Administration and Middle Level Education
and conferred Educational Specialist Degree from Saginaw Valley State University.

Vicki Mogil -- Vicki is the Illinois Project Director for the National Forum’s School
Transformation Network 2010 i3 grant in the six Chicago Public Schools and is responsible for
all personnel and management issues. A career-long middle-grades educator, she opened and
subsequently served as principal of Emerson Middle School in Niles, Illinois for fourteen years.
Emerson is an Illinois Horizon Schools to Watch school. Vicki serves on the Board of Directors
of the Association of Illinois Middle-Grade Schools, and she holds an Ed.D in Educational
Leadership from Loyola University Chicago.
Ran Barnes -- Ran has served for over fifteen years as a Board member for the North Carolina Association for Middle Level Education. While on that Board, he has served as the Central Office Representative and Past-President. He currently serves as the Treasurer of the organization. In addition, Ran serves on the Board for the National Forum to Accelerate Middle-Grades Reform. While serving on these Boards, Ran has worked with the Forum’s 2010 i3 grant serving schools in NC. He has been responsible for many personnel and management tasks for the i3 work. Ran is active in the Schools to Watch (STW) initiative in North Carolina. Each year he visits schools to help determine the status of a school as a new or redesignated STW.

Betty Terrell -- Betty has served for over 20 years as a Board member for the North Carolina Association for Middle Level Education. While on the Board, she has served as a regional director, past-president and continues to serve as the conference director. Betty serves as the project manager for the Forum’s 2010 (i3) grant for North Carolina. Additionally, she serves as the project manager for the Z. Smith Reynolds grant in North Carolina. She assists schools across North Carolina and has received a state award for her diligent work in middle grades education.

Peter Murphy – Peter has served for over two decades as executive director of CLMS, for which he directs services to 20,000 members, produces multi-day professional development events for thousands of educators around the state, guides the California Schools to Watch model schools program, and oversees grants management. CLMS is the recipient of a U.S. Department of Education 2012 i3 grant, a U. S. Department of Education 2010 School Leadership Program grant, a sub-awardee of a the Forum’s 2010 i3 grant, and the lead agency for a recently completed 2010 United Way of Greater Los Angeles grant. ELs, under-resourced learners, and effective teaching strategies are all topics for which Peter has longtime experience in arranging
trainings. Currently Treasurer of the National Forum to Accelerate Middle-Grades Reform, he served as its President from 2009-2012 and is a founding member of the California Middle Grades Alliance. He has many years of experience as a middle school teacher, Learning Coordinator and Principal and earned advanced degrees in Educational Administration and Special Education

**Kate Kinsella** – Dr. Kinsella is a teacher educator at San Francisco State University and a frequent speaker and consultant to school districts and state departments throughout the United States regarding development of academic language and literacy across the K–12 subject areas. Her 25-year teaching career focus has been equipping children from diverse backgrounds with the communication, reading, and writing skills to be career and college ready. Dr. Kinsella remains active in K–12 classrooms by regularly providing in-class coaching and lesson demonstrations to assist teachers and administrators in understanding how to engage every student in competent language use. Her extensive publishing career includes articles, chapters, English learners’ dictionaries, English language development curriculum, and reading intervention programs.

**Theresa Hancock** -- Theresa Hancock is an educational consultant and expert on professional development for teachers. Her dedicated training, coaching and leadership have enabled districts across California to achieve accelerated gains. Ms. Hancock co-authored the *Academic Vocabulary Toolkit, for grades 3-6* with Dr. Kate Kinsella. The *Academic Vocabulary Toolkit* focuses on explicit instruction of Common Core aligned high-utility academic vocabulary for English Learners and native English speakers alike. She has authored and delivered numerous State Board of Education approved trainings on reading intervention programs for English learners and at-risk students. Her professional history includes co-authorship of professional
development institutes with Dr. Kate Kinsella for Scholastic’s *English 3D* Course I and II, and the secondary *Academic Vocabulary Toolkit*. She has received accolades from former State Superintendent of Public Instruction, Jack O’Connell, for work on the California Instructional Materials Advisory Panel, and extensive school-based support as a curriculum specialist for the Sacramento County Office of Education. Theresa was a contributing writer for *Word Intelligence*, a supplemental vocabulary program developed by CORE, Inc. with Dr. Claude Goldenberg of Stanford University and through two grant awards from the US Department of Education. Theresa is deeply committed to the success of every teacher and to instruction that accelerates the achievement of all learners.

*Clear Plan to Keep Project on Track*

To coordinate the work across all four states, the Forum will monitor and assess progress toward implementation each quarter. The Forum will facilitate cross-state training; conduct regular project calls; develop or customize electronic learning platforms; host webinars and online discussions; create tools for replication; produce annual events for networking; and organize all fiscal and programmatic reporting.

The Forum’s executive director will oversee the entire grant and will hire a part-time project manager and project administrative assistant. The Forum will contract for other services for product development and communication/dissemination. The evaluation team will conduct summative evaluation, and where appropriate, the evaluators will provide regular performance feedback to the project, its coaches, state teams, and project leadership team to assist in the periodic assessment of progress toward achieving the intended outcomes of the grant. Sufficient time is allotted for this grant based upon experience with prior work conducted by the Forum, evaluators, and its affiliated State STW hub partners.
**Sufficient Resources**

Over the three years, the dollar amount requested for this grant is relatively modest; however it will reap significant benefits to bring a depth of content knowledge, strategies, and instructional routines which will increase the level of professional expertise of these math and English language arts middle-grades teachers. The budgets at the national level and within each state hub were constructed based upon recent experience. The Forum has successfully managed several government federal grants in recent years so the Forum leadership has a thorough understanding of the complexities and needed personnel and resources to accomplish the goals and objectives of the scope of work involved in this grant. The state hubs will be conducting the majority of the on-the-ground work so the budget was determined to reflect that fact. Since each state has undertaken similar work over the last several years, they created budgets that reflected program and personnel needs. The evaluation team has years of experience in budgeting and determining resource allocations, and they projected the evaluation costs to be at 12.5 percent of the grant award.

**Sustainability**

**Impact beyond Grant Period**

The Forum’s mission is to make high-performing middle-grades schools the norm, not the exception, and its members and STW state leaders are driven by a moral imperative to help each child produce work of high quality by overcoming systematic variation in resources and outcomes related to race, class, gender and ability. Throughout its existence, the Forum has survived and thrived because of thousands of volunteer hours from hundreds of middle-grades educators nationwide.
Even through the challenging financial times for non-profits in the last decade, the Forum has continued and expanded its work. The Forum is the only middle-grades entity in the country with an established network of the size and magnitude necessary to impact practice and scale-up. Organizations and schools look to the Forum and STW for answers, information, ideas, and cutting-edge strategies. Organizations within the Forum possess the ability to influence key stakeholders, and its membership of over forty national organizations, eighteen affiliate STW organizations, and four hundred schools identified as STW continually use their influence to transform practice. The Forum has a strong reputation and a secure infrastructure. “It’s a diverse and committed membership with the will and capacity to develop and undertake efforts, in collaboration with other organizations and individuals, which can continue the process of transformation” (Kronley & Handley, 2003, pg. 82-83).

The Forum has a history of securing and generating funds from multiple sources including private foundations, federal grants, state and local grants, and fees for conferences, training, and technical assistance. Each of the Forum state hubs in the grant also has a record of building state-level capacity. Throughout the grant period, the grant team will do capacity building and information sharing about **Power of Two** with the other STW state leaders. This has proven to be an effective strategy within the Forum’s existing i3 grants. Several other states now provide services to schools in need of improvement because of the lessons learned and strategies refined through the work of the 2010 i3 grant. State STW leaders use products that have been produced through that grant including the on-line Schools to Watch Ratings Rubric, a STW Coaching Guidebook, an early warning indicators case study, and individual school case studies.
Further when the Forum and its state hubs are involved with schools, there is an expectation of continuing connections beyond any grant period. This project will provide grant teachers and their schools with the content and process they need to improve student outcomes in mathematics and English language arts. The Forum will challenge the grant teachers and schools to embed the routines and strategies across other classrooms and grade levels. The teachers involved in the grant will be given opportunities to assume ownership within their buildings and will also be asked to share their experiences through network events at the state and national level. As an additional strategy for sustainability, each of the four states will have a set of trainers in FIM and ALD after the project is completed and will use those trainers to spread the interventions through schools in its STW network and with other schools seeking out help from the state hub. This system ensures the sustainability of the project for years to come.

The Forum will also encourage the grant teachers and schools to aspire to become a STW. That designation would connect the schools to the STW network and re-designation cycle of continuous improvement. School-level sustainability is an important part of the equation, and network participation keeps schools accountable to one another. School-to-school networking is a proven strategy to replicate and sustain change. “Networking accelerates the change process and fosters learning by providing a safe environment that encourages innovation as well as critical and supportive feedback, designed to help build long-term capacity for improvements” (Veugelers & O’Hair, 2005, p. 7). By joining the STW network, the grant teachers and their schools will receive on-going support well beyond the grant.

Finally, the Forum is consistently recognized for its ability to impact policy and practice. Whether through its position statements, national conversations on timely topics, conferences, or congressional briefings, the Forum is accustomed to speaking with one voice on behalf of young
adolescents. *Maturing Investments* refers to the Forum as: “the leading edge of the middle-
grades movement, a means to put forth and galvanize action around a shared vision of middle-
grades education and a unique entity in the philanthropic world…its members have the collective
knowledge and capacity to design and implement, *with outside funding*, initiatives that can have
impacts on policy and practice on national, state, district and school levels” (Kronley & Handley,

**Impact beyond Grantee Organization**

One way to measure how the reach of the Forum occurs is through findings from a tracer
study concerning the quality of its products, and its dissemination capacity. The purpose of a
tracer study is to understand more fully the dynamic process of knowledge exchange and use and
to explore the degree to which different strategies result in more or less dissemination of
knowledge. The Tracer Study (Brigham, 2003, p. 20) found that respondents show an almost
universal respect for the quality of the message and a high degree of use of Forum materials by
the respondents in their own work. In other words, individuals beyond the Forum use its work
such as Schools to Watch. The “dissemination pattern is one of ‘accelerating returns’ rather than
the usual diminishing returns” (Brigham, 2003). This high degree of use of the Forum products
and messages beyond its membership bodes well for dissemination of **Power of Two**.

The Forum has a long-standing history and extensive experience in promoting its
message and products through other organizations, the state STW initiatives, word of mouth
from Schools to Watch to other schools seeking improvements, state boards of education, federal
and state policymakers, and foundations interested in advancing improvements for young
adolescents. The leadership of the Forum is tasked with developing collaborative relationships
with organizations beyond the Forum’s current forty members. In the last year, for example, the
Forum has been involved with the United Way International Middle Grades Initiative, Youth-Nex at the University of Virginia, and the Bush Foundation’s Middle Grades Matters Initiative to name a few of the many Forum collaborative efforts.

**Dissemination of Outcomes to Enable Others to Use the Information or Strategies**

As noted earlier, far too many schools with middle grades continue to struggle with poor student performance. If the Forum gets the results it expects with the SEED grant, countless schools and districts across the country will seek out the information and want to implement FIM and ALD in concert with the vision and criteria of STW. The Forum will employ multiple strategies to bring the message to various stakeholders. One way would be through its partnership with the National Council of Teachers of English’s and its initiative, the National Center for Literacy Education (NCLE). The Forum will use that alliance and its web-based vehicle to share results about ALD with the thousands of other users on the Literacy in Learning Exchange.

Next, informational documents/tools will be produced and available for distribution across other partners such as the Association for Middle Level Education (AMLE), NASSP, NAESP, ASCD, The College Board, Success for All, Learning Forward, the Alliance for Excellent Education, and ACT, Inc. Through the years, each organization has shared Forum products and information across their membership base or collaborated with the Forum on mutually beneficial events such as congressional briefings or topical meetings. The Forum routinely conducts presentations at different national conferences. Research findings will be shared with the AERA Middle Level SIG at AERA annual meetings and with members of another partner, Professors of Middle Level Education. In addition, there will presentations at the Forum’s annual Schools to Watch Conference in the Washington, DC area; and some of the
grant resources will be used to bring in grant teachers to speak first-hand about the effects of this work for them and their students.

Annual Forum meetings will be used to inform members about the progress and emerging outcomes. Where possible, the Forum will collaborate with the STW states to hold professional development offerings about the grant’s outcomes and practices. This was an effective strategy used during the Forum’s Comprehensive School Reform Quality Initiative Grant on Mathematics (2006-2010). The Forum supported training sessions in Utah, South Carolina, Virginia, and Utah to bring the mathematics materials, tools, and resources directly to district leaders and teachers. This was a win-win strategy worthy of replication.

Through the leadership of the National Forum, the four state STW hubs of California, Illinois, Michigan, and North Carolina will commit to assist other state STW hubs to implement and replicate **Power of Two** so the practices and instructional routines spread beyond the walls of the grant sites to other schools in each state and throughout the Forum’s broad STW national network. They will deliver training within their states, and in the final year, they will serve as mentors to other state leaders. Finally, the Forum’s website and social media tools will be used to disseminate the work and findings.

**Quality of the Project Evaluation**

**Appropriate Methods**

The Center for Prevention Research and Development (CPRD) at the University of Illinois will serve as the independent evaluator for the project. For over two decades, CPRD has served as an evaluator for numerous regional and national middle school reform initiatives. Currently CPRD is conducting the evaluations of The Forum’s 2010 i3 *Schools to Watch Transformation Network* grant and its 2013 i3 *Middle-Grades Leadership Development* grant.

The evaluation, guided by the project’s logic model, hypothesizes that treatment classrooms engaged in the intervention for one year will follow this theory of change:

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<tr>
<th>PROFESSIONAL DEVELOPMENT/COACHING</th>
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<td>IMPROVED MATH AND ENGLISH TEACHING</td>
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<td>PRACTICES</td>
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<td>INCREASED STUDENT ACADEMIC EFFICACY and LANGUAGE</td>
<td>INCREASED TEACHER EFFICACY</td>
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<td>STUDENT ACHIEVEMENT GROWTH</td>
<td>IMPROVED TEACHER EFFECTIVENESS</td>
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<td>EFFECTIVENESS</td>
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Through participation in the project, math teachers will receive specialized training and ongoing coaching in the Focused Instructional Model – Math (FIM) and English language arts teachers will receive specialized training and ongoing coaching in Academic Language Development (ALD). This in turn will improve math and English teaching practices; which in turn will increase student academic efficacy and language; which improves teacher efficacy; which ultimately results in improved student achievement growth and improved teacher effectiveness. The objectives of the evaluation are to (a) conduct formative evaluation to inform and guide the project intervention, (b) assess the fidelity to which the project is implemented as designed; and (c) conduct summative evaluation to measure the impact of the project on student achievement growth and teacher effectiveness. To that end, the evaluation will employ a randomized controlled trial (RCT) design that meets the What Works Clearinghouse standards of evidence (What Works Clearinghouse, 2014). Evaluation methods will include both quantitative and qualitative components. The formative evaluation data will be collected via coach’s activity
logs and classroom observations of teaching practices. Intermediate outcomes will be collected via teacher and student surveys. The summative evaluation data will be collected from the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) assessments in math and English (see Table 9 for data collection schedule) and teacher effectiveness ratings. Additionally, a measurement tool to assess fidelity of implementation of the project will also be used.

Quantitative and Qualitative Data and Formative Data

The evaluation will include forty-eight math and English 6th and 7th grade classroom pairings (i.e., 48 math classrooms and 48 English classrooms or 96 classrooms) in California, Illinois, Michigan, and North Carolina. Half of the classrooms will be treatment (24 treatment pairs) and half will be control (24 control pairs). Each math/English pairing will teach the same group of students, so students in treatment classrooms will receive both the math intervention and the English intervention from the same pair of teachers. This will generate a large sample of 96 total classrooms and approximately 2,200 students. All schools will be selected based on the following criteria: 1) public school; 2) containing the middle grades (5th or 6th through 8th grades); and 3) serving high-need student populations (e.g., students at risk of educational failure, such as students who are living in poverty, English learners, or students who are far below grade level). The evaluation team will first match the classrooms into pairs to ensure balance and then randomly assign the classroom pairs to either treatment or control. All classroom pairs have an equal chance to be assigned to treatment or control via simple random assignment. During the treatment period (2016/17 school year), treatment classrooms will implement the project and collect data for the evaluation; control classrooms will collect the same data as treatment classrooms, but they will not receive any of the professional development
or coaching, nor will they receive reporting on collected data. It will be “business as usual” in control classrooms. To incentivize the schools to participate in the study and the control classrooms to participate in the data collection, control classrooms will receive a delayed intervention during the 2017/18 school year. Treatment classrooms are therefore being compared with a true no-intervention counterfactual. Since we are using an RCT design and classrooms within schools will be randomly assigned to treatment or control, it will result in groups that are similar on average, in both observable and unobservable characteristics, and any differences in outcomes between the two groups will be considered due to the intervention. To minimize cross-contamination between treatment and control classrooms, the project team will employ the following strategies: 1) Since many middle-grades schools employ interdisciplinary teaming, an organizational structure whereby a group of teachers from different subjects teach a common group of students (Kellough & Kellough, 2008), state project leaders will work with principals to take advantage of this normal separation between teams to communicate the project goals and expectations and stress the delineation between treatment and control classrooms; and 2) Communicate clear protocols with treatment teachers during training and coaching that they cannot share new practices, strategies, and resources with control teachers.

The formative evaluation will use two process measurement tools to assess the implementation of the math and English interventions. First, coaching activities will be tracked at treatment schools using CPRD’s online coach’s log reporting system, which documents the coaching work for quantity of time, techniques, reflection of needs, resources used, and assessments of barriers. On an ongoing basis, each coach will complete the online log. The information will be summarized and reported to coaches and state leadership teams for performance feedback. Second, the implementation of the math and English teaching practices
will be assessed with a process measurement tool in the form of classroom observational ratings of teacher practice by coaches and the project team. Both the FIM and ALD have observation tools that they currently use. The evaluation team will work with them to adapt these tools for this project and test and validate the tools with a pilot group of teachers. Reviews will occur periodically throughout the project to evaluate interrater reliability. Prior to treatment, during the middle of treatment, and at the end of treatment, observations will be done in treatment and control classrooms on the practices that are part of the project, evaluating both the frequency and the quality of those practices. This formal performance feedback information will be provided to treatment teachers and state leadership teams for performance feedback on progress toward implementation. Informally, treatment teachers will also receive regular feedback from coaches during debriefing meetings following coaching.

Intermediate outcomes, student academic efficacy and language/vocabulary and teacher efficacy will be measured prior to treatment and at the end of treatment in both treatment and control classrooms by CPRD’s School Improvement Self-Study Student and Teacher Surveys. The efficacy constructs on the surveys have been demonstrated in prior research to be correlated with increases in student achievement (Flowers, Begum, Carpenter, & Mulhall, 2015; Flowers, Begum, Carpenter, Mulhall, & Poes, 2014; Flowers, Mertens, & Mulhall, 2003; Mertens & Flowers, 2004, 2006). The surveys will be augmented to include measures of academic language/vocabulary, focused instructional modeling, and other topics central to the project such as teacher ratings of coaching quality, teacher background and experiences, number of classes taught, etc.

The summative evaluation for assessing the impact of the project on teacher effectiveness and student achievement growth in math and English, the final outcomes, at treatment versus
control classrooms, will use two data sources. Teacher effectiveness will be measured with a rigorous, transparent, and fair evaluation at the end of treatment for both treatment and control teachers. Since each state requires a different process for evaluating teacher effectiveness, the data collection components from the evaluation data and other school sources will be used, including: classroom observations of teaching practices; self-ratings of teacher efficacy; principal ratings via their standard district process; and student achievement growth. Of these data, a higher weight will be allocated to student achievement growth, after taking into account student’s prior achievement and demographic characteristics.

Student achievement growth in math and English will be measured with the NWEA Measures of Academic Progress (MAP) assessments in math and English. The MAP assessments are rigorous and comparable across schools. MAP is used throughout the country and is designed to measure growth, project proficiency on high-stakes tests, and inform how educators differentiate instruction, evaluate programs, and structure curriculum. The assessments have been tested by NWEA researchers to ensure test reliability, validity, and fairness across all populations tested (Wang, Jiao, & Zhang, 2013; Wang, McCall, Jiao, & Harris, 2013; Zhang, Lau, & Wang, 2013). Additionally, NWEA researchers have conducted linking studies that analyze students’ performance on MAP assessments as compared to state-specific assessments with positive results in California, Illinois, and Michigan (NWEA, 2010, 2012, & 2013). Students in all treatment and control classrooms will take the NWEA MAP assessments three times (beginning, middle, and end of the school year). Reports of the assessment results will be provided to treatment teachers, coaches, and the project team for performance feedback on student progress.
Produce Rigorous Evidence

The evaluation will also include an assessment of the degree to which the project is implemented as designed. By collecting high-quality implementation information from each classroom, it will enable analyses to account for the level of implementation when assessing project impact and ensure that we can show the intervention was implemented as intended (What Works Clearinghouse, 2014). A tool to track and assess fidelity of implementation will be developed by the evaluation team. An operational definition for each key component of the project will be developed, along with a fidelity scale to assess dosage, and where appropriate, a criterion for assessing implementation levels (high, medium, low) will be established. A variety of data sources will be used to complete the fidelity measure including coach’s logs, quarterly state reports, professional development sign-in sheets, meeting minutes, etc. A composite score will be calculated based on the individual component scores and weighted as necessary.

The analysis plan for evaluating the impact of the intervention will use the data collected in 2016/17 from treatment classrooms and control classrooms. The analysis will use a 2-level fixed model (students within classrooms) approach, controlling for a variety of covariates (e.g., free/reduced lunch status, EL status, etc.). The confirmatory research questions guiding the impact analysis are as follows:

1. Does the project intervention significantly improve the math achievement of students, after one year of intervention, as compared to control students?

2. Does the project intervention significantly improve the English achievement of students, after one year of intervention, as compared to control students?

3. After the intervention, are there more effective teachers among the treatment classrooms versus the control classrooms?
Research question one will examine the overall intervention effect on math achievement and research question two will examine the overall intervention effect on English achievement. When assessing the intervention effect, hierarchical linear models will be run to account for the nesting of students in classrooms. Two linear models will be fit with math and English scores as the dependent variables for research questions one and two respectively. These models will be adjusted for level one covariates such as pre-treatment student achievement, ethnicity, EL status, academic efficacy, academic language/vocabulary, and level 2 covariates such as classroom level percentage of free/reduced lunch students, percentage of EL students, teacher instructional practices, teacher efficacy, and number of classes taught. Baseline teacher efficacy, percentage of free/reduced lunch students and percentage of EL students in the class will be included as random effects in the model. Results from the Intent to Treat (ITT) and Treatment of the Treated (TOT) analyses will be reported. Additional models that examine the classroom pairings will also be run to explicate the impact of receiving both the math and English interventions on overall student academic achievement.

Research question three will examine whether the treatment results in more effective teachers among treatment classrooms than control classrooms. Using the evaluation’s data as well as data collected by the school (i.e., classroom observations of teaching practices, self-ratings of teacher efficacy, principal ratings via their standard district process, and student MAP achievement growth), weighting achievement growth, and controlling for student’s prior achievement and demographic characteristics, an overall effectiveness score will be calculated in order to assess the number of effective teachers among the treatment classrooms versus the control classrooms. Since the dependent variable is the number of effective teachers, which is a discreet count, poison regression models will be run to examine differences between treatment
and control groups. If prior teacher effectiveness ratings are available, an attempt will be made to create a baseline measure of teacher effectiveness by standardizing the scales that may differ across school districts and states. Risk ratios will be reported from a model adjusted for covariates such as teacher demographics, years of teaching experience, and teacher efficacy.

Secondary analysis involving the intermediate outcomes of student efficacy and academic language/vocabulary and teacher efficacy from the survey data will also be conducted to estimate the impact of the treatment on these constructs. Again, a series of linear models will be run, controlling for covariates as described in the impact study, to assess the impact of treatment on intermediate outcomes.

In addition to the impact study analysis and exploratory analysis of the 2016/17 data, the analysis plan will also examine the data collected from the control classrooms during their delayed intervention of the project in 2017/18. These classrooms will not have a set of control classrooms to compare their teacher effectiveness and achievement growth to due to time and budget constraints. Therefore, two linear mixed models will be fit with math and English scores as the dependent variables and adjusted for pre-treatment student achievement, student level ethnicity, EL status, academic efficacy, academic language/vocabulary, and classroom level percentage of free/reduced lunch students, percentage of EL students, teacher instructional practices, teacher efficacy, and number of classes taught. While average treatment effect cannot be obtained as the delayed intervention group does not have a control group, it will still be possible to examine associations to make comparisons.

The evaluation team will share the results of the evaluation analyses broadly. Reports of impact study results, exploratory analysis results, and lessons learned from implementation will be distributed to schools, coaches, state leadership team, project leadership, and The Forum and
its membership. The evaluation team is experienced at working in collaborative partnerships that provide formative data to inform the project initiative and implementation (Flowers & Carpenter, 2009; Flowers, Mertens, & Mulhall, 2007). At a broader level, findings and recommendations for best practices will also be shared via professional conferences and publications.

The evaluation team will collaborate with USDE evaluators in overall meta-evaluation activities for grantees. The evaluation and project teams will also engage in networking opportunities with the broader community of grantees via national meetings to share lessons learned, barriers, and project results.

Table 9 Data Collection Schedule

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<td>Pre and Post</td>
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<td>Self-Study Student Survey</td>
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<td>Pre and Post</td>
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<td>Summative Evaluation Data</td>
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<td>NWEA MAP assessments (math and English)</td>
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<td>Pre, Middle, and Post</td>
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<td>Teacher effectiveness ratings</td>
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<td>Implementation Data</td>
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<tr>
<td>Fidelity of implementation measurement tool</td>
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