



# POWER OF TWO

WHITE PAPER



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The Power of Two, an initiative of The National Forum to Accelerate Middle Grades Reform, provided students with a paired intervention experience in English Language Arts and mathematics classrooms. The purposeful pairing of these two subject areas addressed the need for students to make rapid academic growth in a short period of time. Students engaged in the Power of Two experienced the Academic Language Development (ALD) intervention in their English Language Arts classrooms. The instructional anchor of ALD is the *Academic Vocabulary Toolkit*, (AVT) a supplemental curriculum focusing upon high-yield words students must readily comprehend and adeptly utilize across the subject areas. The *Academic Vocabulary Toolkit* is divided into eight units that address a critical competency required for advanced literacy tasks and skillful communication. The eight consistent units emerged from a detailed analysis of the shifts in the standards for literacy and language instruction and performance-based assessments. Students need a practical toolkit of words at their disposal to describe, sequence, interpret, create, analyze, make inferences, argue, and discuss cause and effect. At each grade level, the *Academic Vocabulary Toolkit* provides young scholars with a new set of words to expand their communicative repertoire for the eight foundational competencies. Each toolkit word is introduced and practiced in tandem with a few priority word partners, words and phrases commonly utilized with

the focus word in academic speech and writing. Students learn how the word is actually applied, so they are able to apply it adeptly in future tasks. In each unit, lessons build upon each other, enabling students to understand how target words orchestrate as they engage in tasks requiring the focal competency such as comparing. During the *Academic Vocabulary Toolkit* lessons, students learn far more than the pronunciation and meaning of a high-utility academic word like *assume* or *relevant*. The lessons are designed to maximize verbal and written responses using academic register during partner interactions, collaboration, and class discussions. Through the five-day instructional sequence (20-25 minutes per day), students deepen their word knowledge by analyzing and applying the high-utility academic word in multiple contexts. Students are introduced to the most common word partners, words or phrases that frequently accompany the focus word in academic communication. They are guided in correctly applying the AVT word with essential word partners and grammatical accuracy in engaging yet structured and increasingly complex, constructed verbal and written responses. The lessons are intended to equip academic language learners, both native English speakers and English learners, with the communicative confidence and competence to meet the discourse demands of secondary education.

“I have seen such an improvement in my students’ academic language and presentation of it. Not only has it impacted their confidence, but throughout all content areas, my students are using the strategies and vocabulary.”

– ALD TEACHER

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The same students participated in the Focused Instructional Model (“FIM”) in their mathematics classrooms. FIM is an integrative, holistic process of daily practice that allows teachers to monitor their students’ mastery of content and provides regular interventions based on student needs and deficiencies. Daily formative assessments, administered during the first 10-15 minutes of class, quickly inform teacher decision-making. Students use metacognition to own their learning and find their own opportunities for growth and sustained success. Teachers provide comprehension strategies for students using two daily think-alouds and they make instructional decisions during regular class time as the consistent FIM data is collected. ALD and FIM, implemented together comprised the Power of Two project with an overarching goal to rapidly improve student academic performance.

Middle-grades students across the United States are struggling to demonstrate academic proficiency in these two subjects, both of which are foundational to their future success as students and as citizens. The most recent (2017) NAEP assessment data indicates that 36% of 8th grade students are proficient in reading and only 34% of 8th grade students are proficient in mathematics. This lack of proficiency in English Language Arts (“ELA”) and mathematics causes many challenges across the United States which is facing a workforce shortage. Jobs across the country remain unfilled because

graduating students lack the basic reading and mathematical skills necessary to complete the responsibilities of the job. The need to provide students with learning experiences that better prepare them for further academic studies and for career pathways presents challenges to educators who serve young adolescents. Students in the middle-grades are unique in their development – they go through rapid changes socially, emotionally, and intellectually. Unfortunately, many middle-grades students have difficulty balancing those unique developmental changes and, therefore, they struggle academically during these formative years. Middle-grades students must be taught in environments that honor their developmental needs and teachers must create learning opportunities that advance the cognitive abilities of their students. Using both ALD and FIM, the Power of Two project helped provide these environments for teachers so they could best meet the needs of their students.

The Power of Two approach shifted practice across nearly every sector of education. Superintendents, principals, and teachers all share a vested interest in the academic success of their students. The project provided each ELA teacher with a teaching guide that includes detailed planning and pacing guides, clearly explicated instructional routines, explicit grammar lessons targeting high-frequency errors, reproducible templates, formative and

summative assessments, and an instructional DVD with every lesson phase modeled by the authors, Dr. Kinsella and Theresa Hancock. ELA teachers also received extensive professional development directly from the program authors at the beginning of and throughout the implementation years. The professional development focused on mastery of the key instructional routines designed to dramatically increase students' verbal and written interactions with academic language. The Power of Two also provided mathematics teachers with professional learning experiences that deepened their content and pedagogical expertise specific to the standards that are taught at their grade level. Through the FIM process, teachers examined the grade level content standards and collaborated around putting forth solid instructional approaches for each standard. This interaction among grade level peers provided clarity about the content to be taught and how to effectively relay the information to the students using best teaching practices.

Further, individual teacher support provided through coaching addressed the diverse learning needs of the adults in both ELA and mathematics classrooms. Coaching ensured that the interventions were implemented with fidelity and offered support to teachers as they grew through the implementation process. For example, early in the FIM process, coaching conversations focused on how to minimize time spent on the system. Later in the year, coaching shifted to focusing on data analysis. Teachers moved through the implementation and application continuum at different rates and the coach adjusted the support based on the progress of each individual teacher.

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). In *The Forgotten Middle*, ACT researchers concluded 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) 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. *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 student 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. Balfanz's research resulted in a growing national movement called “the early warning indicators (“EWI”).” Through EWI, teachers and administrators see patterns, identify potential off-track behaviors, and adjust policies and practices in a timely manner. (Balfanz, Bridgeland, Hornig

“ALD has provided a way for me to target specific skills that the majority of my students lack. The greatest impact its made has been the ability of the routine to provide structure for our class.”

— ALD TEACHER

“ALD has helped me be consistent and intensive with vocabulary instruction. It has also helped me make vocabulary more engaging and interactive for students. I also understand the importance of verbally practicing vocabulary.”

– ALD TEACHER

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Fox, DePaoli, Ingram & Maushar, 2014).

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. (Balfanz, et al., 2014, p. 42).

Clearly, high-need students in the middle-grades often do not have a foundation for success, even though it is imperative that middle-grades students have a strong foundation in ELA and mathematics so students have a fighting chance for strong performance in high school.

Contributing to the problem is the lack of pre-service preparation for teachers in the middle-grades. This factor is and has historically been a major problem. Middle-grades teacher certification ranges from full licensure in a few states to no preparation requirements in others (McEwin, 2012). The vast majority of middle-grades teachers and principals lack knowledge of, vision for, and preparation in middle-grades education. They can 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, pedagogy, and the teaching of ELA and mathematics. Specific mathematics and English language arts instructional routines and strategies through the Power of Two changes the trajectory of those middle-grades students in greatest need.

The Power of Two enhanced learning opportunities for students in both ELA and mathematics. The ALD program enhanced learning opportunities for students by deploying the AVT, key instructional routines, and ongoing training and coaching support which enabled teachers to equip students with the productive word knowledge and skills to independently deploy their understanding of academic language in future lesson and assessment contexts. Unlike standard vocabulary lessons in ELA curriculum, the AVT words are not unfamiliar, often low-incidence words selected to support comprehension of a narrative text. Rather, these competency-focused word choices were prioritized for each grade level to advance academic interaction and writing skills. Thus, the optimal implementation of these lessons is not to address a specific word that might crop up in a literary or informational text. Teaching the unit in its entirety allows students to accrue a critical mass of word knowledge through diverse and engaging application tasks, advancing their agility with

complex English sentence structures, grammar and usage.

In the mathematics classrooms, ownership of learning was shifted to the students through the daily practice routine and through the tracking of formative data collected on a bi-weekly basis. As students compared their daily board work (“effort” box) to the think-aloud provided by the teacher (“solution” box), they had the opportunity to identify and correct any misconceptions and to begin to build mental muscle memory about each specific standard. When a particular standard cycled through the system again, students recalled previous experiences with that topic which, in turn, supported their next attempt at solving a similar problem.

As part of the FIM system, student understanding was monitored twice each month through progress monitoring. These formative assessments provided students with opportunities to analyze their personal progress over the same standards repeatedly, noting continued errors and improvements in their understanding. As students tracked their data and conducted this analysis, ownership of the learning was transferred to the student as they set personal

“With FIM, I review key concepts throughout the year instead of just hitting them once. I have a better sense of which concepts students are understanding and which they’re struggling with.”

– FIM TEACHER

goals to increase their scores during the next formative assessment.

The Power of Two theory of action, which centered around the pairing of interventions across content areas, applied to various demographics. In the 2015 Supporting Effective Educator Development grant, the Power of Two approach was implemented in rural, suburban, and urban districts in California, Illinois, Michigan, and North Carolina. This demonstrated the ability to serve diverse populations in various geographic regions across the United States.

The Power of Two approach also meets the demands of diverse cultures. Specifically, the project supports second language students. Students received 20-25 minutes of AVT instruction every day at the beginning of their ELA class to augment the curriculum with high-utility academic vocabulary instruction aligned with advanced academic reading, writing and speaking competencies. During the first five minutes, students complete their Smart Start, a daily formative assessment of a previously taught toolkit word. The students then spend twenty to twenty-five minutes engaging in the next explicit, interactive instructional phase. Likewise, less proficient readers and English learners received daily, explicit academic language instruction with opportunities for constructed verbal and written responses designed to build their confidence and acumen with speaking and writing in academic register.

During the professional development sessions for both ALD and FIM, teachers worked together to learn each system so they were prepared to implement during the upcoming school year. Teachers were able to brainstorm and reflect

together in hopes of better understanding each intervention model. Coaches were also present to help answer any questions the teachers or administrators had about each system. Coaches were able to visit every classroom that was participating in the project, see what was working well and what needed improvement, and then share ideas with teachers in the other schools.

For FIM, grade-level colleagues worked together to choose their unique “Power Standards,” which were the most important topics from each grade level that continuously cycled throughout the school year. FIM teachers collaborated closely with their coaches and discussed fidelity of implementation, data growth or stagnation, how to troubleshoot with difficult students, and more. Grade-level colleagues in each school collaborated to discuss specific FIM challenges and strategies used to solve those challenges. The coaches from each state came together periodically to discuss fidelity of implementation.

Similarly, during ALD follow-up trainings and when co-planning with coaches, grade-level colleagues worked together to select units of words to compliment ELA instruction. For example, when teachers planned to teach argument writing or analyze text using compare and contrast during ELA, they selected units of words from the AVT to compliment and supplement upcoming instruction. Then, working together, teachers co-planned and practiced teaching upcoming lessons to calibrate and improve practices before implementing the lessons with students. Teachers also analyzed formative assessment, Smart Starts, and end of unit assessments to identify students needing additional support. In particular, when noting that students were struggling with a particular grammar skill, teachers were able to provide additional grammar lessons, included in the AVT, during small-group lessons with targeted learners.

“This program has made teaching concepts to my students easier due to the prior exposure and also kept their knowledge of skills sharp by cycling. I believe that FIM has made me a more reflective teacher and also improved my formative assessment collection.”

– FIM TEACHER

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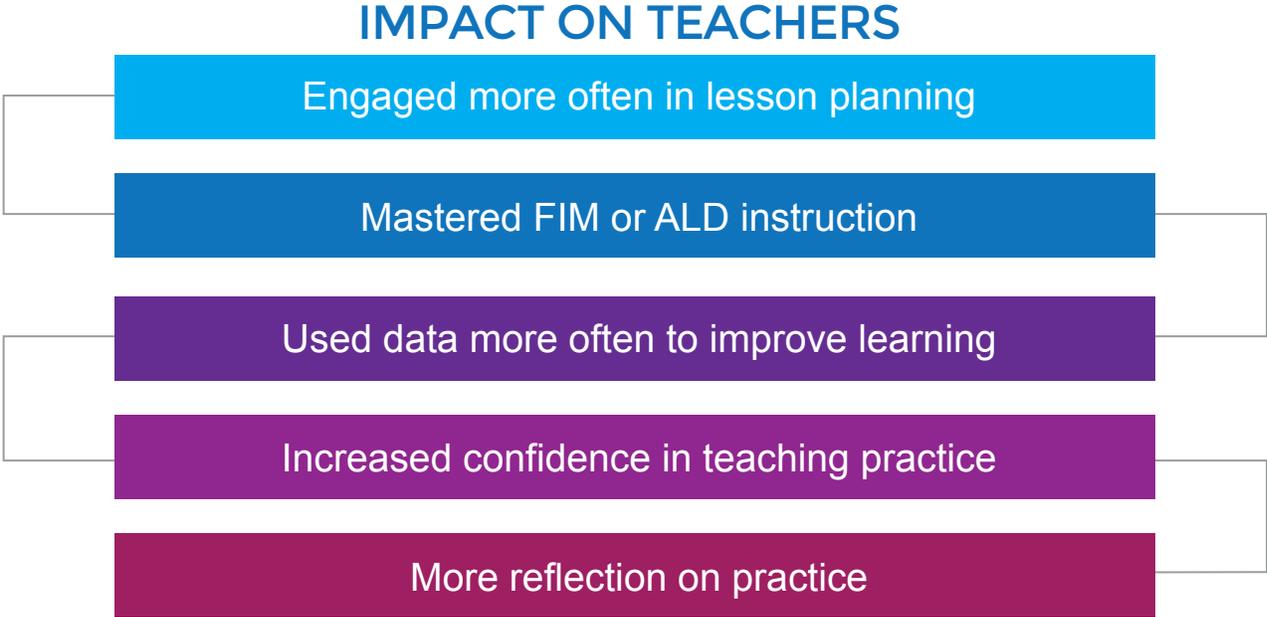
“FIM has made me more aware of the need to continually stress that students must show effort. Students who have been stopped by past failures are now learning that it’s safe to “try” and that they are expected to at least “try.”

– FIM TEACHER

The Center for Prevention Research and Development (“CPRD”) in the School of Social Work at the University of Illinois evaluated the impact of the Power of Two initiative utilizing a cluster randomized controlled trial (“RCT”) design. Using a treatment vs. control/delayed treatment sample to test the initiative, all teachers received training in either the ALD or FIM interventions and implemented the Power of Two for one year. In Year 1, the treatment vs. control sample consisted of 106 teachers (or 53 classroom pairs of ELA and math teachers) and 1,095 students. In Year 2, when the delayed treatment teachers implemented the Power of Two initiative, there were 46 teachers (or 23 classroom pairs) and 501 students. CPRD collected the coaching logs, classroom observations, teacher surveys, student surveys, and NWEA MAP Assessment data each year for two years.

The Power of Two initiative positively influenced teacher instruction and student learning after one year of implementation. The teacher survey and coaching log data showed a positive impact on teacher instruction (Figure 1). Teachers had mastered the FIM and ALD instructional practices and engaged more frequently in lesson planning, which led to increased confidence in teaching practices. In addition, teachers were using data more frequently for “purposeful data analysis” to improve individual student learning and to reflect on their practice.

Figure 1. Impact of the Power of Two on Teachers



The teacher surveys, coaching logs, and NWEA MAP assessment data documented improvements in student learning (Figure 2). Teachers and coaches reported that students were more eager and ready to learn resulting in greater engagement, increased motivation to learn, and more positive student interactions. As a result, teachers had higher expectations for students. The NWEA MAP assessment also measured student learning and reported increases in math and reading scores from fall to spring for each year of the initiative (Figure 3). Furthermore, students who began the year within the lowest quartile of achievement showed the greatest growth, exceeding the overall average growth for all Power of Two students in math and reading each year (Table 1).

Figure 2. Impact of the Power of Two on Students

## IMPACT ON STUDENTS



Figure 3. Annual NWEA Test Growth in Reading

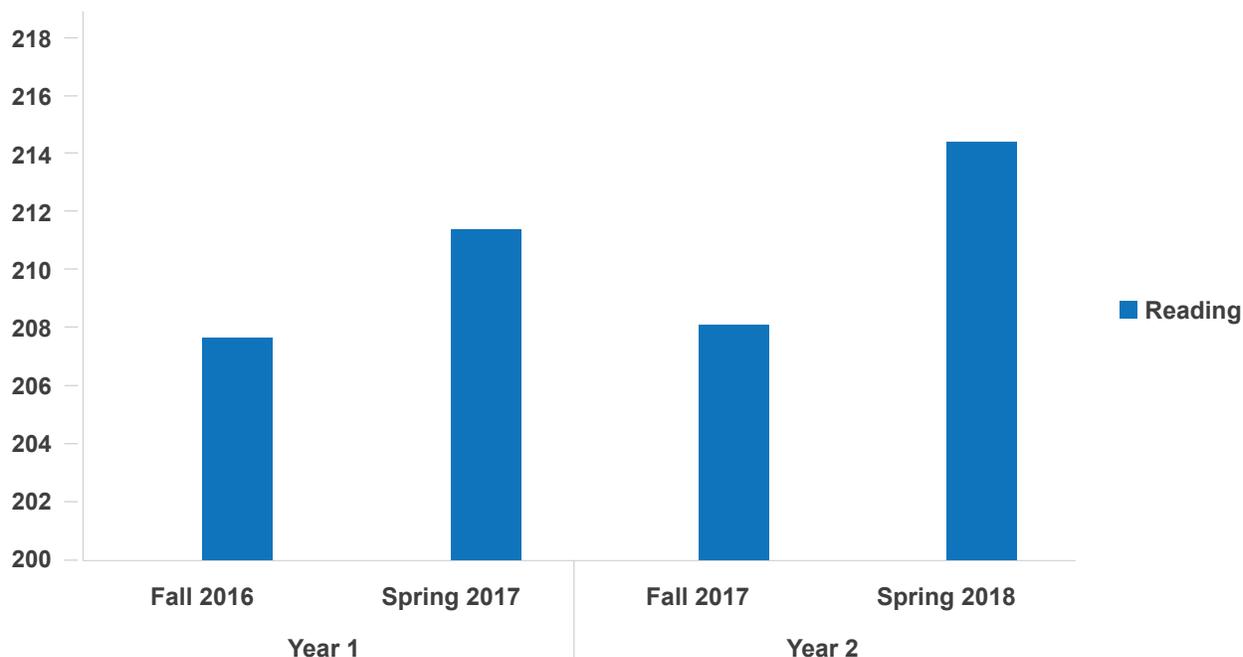


Figure 4. Annual NWEA Test Growth in Math

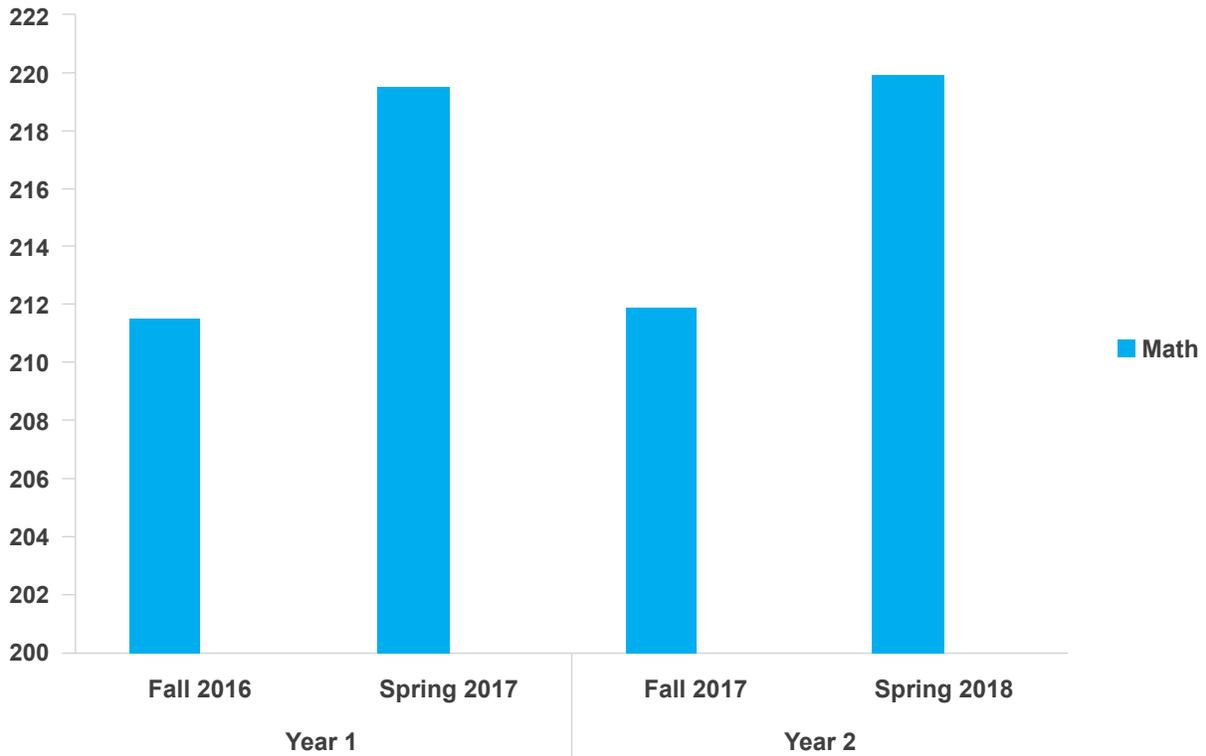


Table 1. Changes in NWEA Test Growth

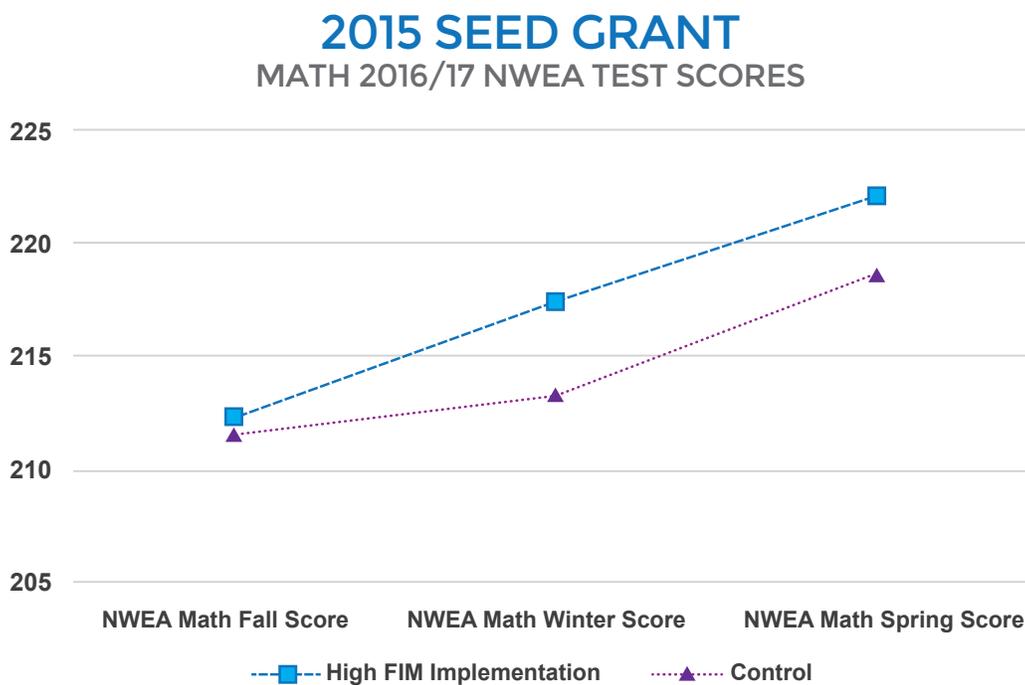
## AVERAGE NWEA TEST GROWTH FROM FALL TO SPRING

|               |         | Overall | Lowest Quartile* |
|---------------|---------|---------|------------------|
| <b>Year 1</b> | Reading | 3.84    | 8.47             |
|               | Math    | 8.06    | 10.1             |
| <b>Year 2</b> | Reading | 6.31    | 12.08            |
|               | Math    | 8.0     | 9.61             |

\*The lowest quartile includes scores that range from 0-25% on the NWEA test.

The three teaching factors with the greatest impact on student learning were: 1) level of consistent implementation (i.e., daily implementation of the ALD and FIM instructional practices and strategies); 2) level of quality implementation (i.e., high fidelity of implementation of the ALD and FIM intervention); and 3) effectiveness of classroom management. Year 1 students in math treatment classrooms with teachers, who were the most highly implemented, confident, and effective with their classroom management skills, showed *significantly* greater math achievement growth than students in control classrooms (Figure 4). Students in these highest implemented math treatment classrooms were more likely to initiate positive interactions with each other, were more motivated to do well in school, held higher academic expectations, lower negative mindset, and lower disruptive behavior when compared to students in the control classroom.

Figure 5. Changes in NWEA Math Score for Treatment vs Control



During their formative middle-grades years, students should be exposed to high-quality learning experiences across multiple domains. They need guidance as they develop socially, emotionally, physically, and intellectually. Teachers can help with the academic development of students by providing classroom routines and experiences that make them eager to learn and apply their new learnings in the real world. The Power of Two project provided schools with two strong models that ultimately increased academic achievement in multiple ELA and math classrooms across the country.

In their “Future of Jobs Report” (2016), the World Economic Forum predicted the top 10 skills sought by employers worldwide in the year 2020. These skills included complex problem solving, critical thinking, cognitive flexibility, creativity, and coordinating with others. Both ALD and FIM provided safe spaces for students to work on developing those critical skills while simultaneously giving students practice with foundational language development and mathematical skills.

To learn more about the National Forum to Accelerate Middle Grades Reform, visit [www.middlegradesforum.org](http://www.middlegradesforum.org).

To learn more about The Institute for Excellence in Education and the Focused Instructional Model (FIM), visit [www.excellenceined.org](http://www.excellenceined.org).

To learn more about the Academic Language Development program or the *Academic Vocabulary Toolkit*, contact Theresa Hancock at [hancocktheresa@gmail.com](mailto:hancocktheresa@gmail.com)

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