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A. Significance

A.1. The Magnitude of the Problem to be Addressed by United2Read

Children who fail to achieve proficient literacy skills face serious academic and life challenges. They are more likely to be retained a grade, to under-achieve in mathematics and science, to drop out of high school, to be referred to special education, become teen parents, and to enter the juvenile criminal justice system. Yet only 36% of children in our nation learn to read proficiently by 4th grade and, most distressing, this rate is under 20% for our most vulnerable high need children. For children qualifying for the National School Lunch Program (NSLP), a marker of family poverty, the average National Assessment of Educational Progress (NAEP) score, our nation's report card, is just at basic levels. In contrast, for children not in the NSLP, average scores are at proficient levels (NAEP, 2015).

During early elementary school, children are developing critical literacy skills that cannot develop fully in the absence of effective literacy instruction (NICHD National Reading Panel, 2000). Accumulating research has revealed that individualized or personalized student instruction that is fully informed by assessment data of students' language, decoding, and comprehension skills is more effective than more typical one-size-fits-all instruction observed in many classrooms, particularly for high-need students (Connor et al., 2011a; Connor et al., 2011b). Effective, personalized evidence-based literacy instruction in the classroom is one of the most important ways for high need students to experience effective learning opportunities and achieve proficient literacy skills. Thus, the purpose of this Education Innovation Research Expansion project, *United2Read: Scaling Personalized Literacy Instruction to Ensure Strong Student Achievement*, is to address **Absolute Priority 1, supporting high-need students, and Absolute Priority 2, evidence-driven practices**. The United2Read partnership: the National

Center for Research in Advanced Information and Digital Technology (d.b.a. Digital Promise, digitalpromise.org, Lead), Learning Oventions (learningovations.com), University of California, Irvine (UCI, uci.edu and isilearn.net), MDRC (mdrc.org), and 155 schools (see Appendix D & G.1) serving high-need students in NY, PA, LA, AZ, and CA, will work together to improve students' literacy outcomes from kindergarten (K) through 3rd grade, by scaling up the Assessment-to-instruction (A2i) professional support system to over 300 schools and over 100,000 students.

A.2. The National Significance of the United2Read Project

United2Read partners will bring the A2i professional support system to students and teachers nationwide with the goal of improving high-need students' literacy skills and closing the achievement gap (NAEP, 2015), which are national priorities. A2i has strong evidence of efficacy (see Appendix B) based on results of randomized controlled trials (RCTs) and quasi-experiments conducted since 2005 in 28 schools in Florida and Arizona. The first study in 2005-06, published in *Science*, with 10 schools randomly assigned to treatment or control conditions, showed that first graders, whose teachers used A2i and received professional development (PD), achieved stronger literacy skills than their peers in the control classrooms (Connor, Morrison, Fishman, Schatschneider, & Underwood, 2007). This study was replicated in 2006-07 using a similar design, and replicated the results – in schools where teachers used A2i and received PD students achieved significantly stronger reading skills than students in control schools (Connor et al., 2011b), and the effects were educationally meaningful (Hill, Bloome, Black, & Lipsey, 2008). A study in kindergarten (Al Otaiba et al., 2011), where we contrasted PD on personalizing instruction with or without A2i, also showed significant effects on children's early literacy skills. We then conducted a study with third graders in 2008-09, with teachers randomly assigned to

A2i and PD or to PD focused on vocabulary. Again, students whose teachers used A2i made significantly greater gains than students in control classrooms (Connor et al., 2011a). Follow-up analyses for these studies showed that the more teachers used A2i, the stronger were their students' literacy gains and the effect was greater for high-need students with weaker skills at the beginning of the school year. The follow-up studies also showed that teachers using A2i were more likely to personalize literacy instruction and deliver the A2i recommended amounts of instruction. The closer each student received instruction that matched the A2i recommended instruction, the greater were their literacy gains (Connor et al., 2009). The effects were greater for high-need students -- about half of the students in the sample qualified for the NSLP, 45% were African American, and 14% received special education.

The most telling results came from our longitudinal efficacy study (Connor et al., 2013), conducted from 2008-2011 in a different district in FL, where 1st grade teachers and students were recruited and teachers randomly assigned to either A2i with PD or to a math intervention and PD. Over half of the students were high-need; 47% of children participated in the NSLP and 13% received special education. We then followed the children into second grade, recruited their classmates, and randomly assigned their teachers to A2i or the Math condition, and then into third grade following the same protocol. Results showed significant and meaningful effects for each grade, replicating previous results. More importantly, results showed that 94% of children were reading at or above grade level by the end of 3rd grade (standard scores on reading assessment > 90) when they received *personalized literacy instruction* based on their language and reading skills, provided by teachers using A2i in first, second, *and* third grade. This means that schools providing A2i can accelerate gains in students' literacy during the crucial early elementary grades for all students, including high-need students, children living in poverty,

English learners (EL), and children receiving special education services (Connor et al., 2007; Connor et al., 2011b).

Altogether, these results have national significance – we can improve high-need students’ literacy achievement and can do this by scaling up A2i nationwide. Our plan is to bring the A2i personal support system to over 300 schools and over 100,000 students with the EIR expansion funding.

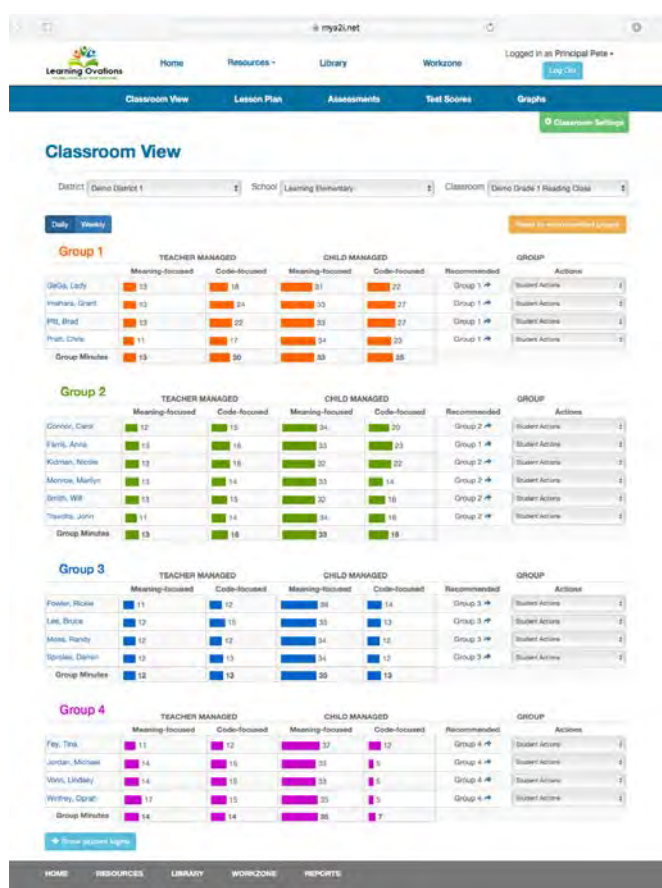
A.3. United2Read: An Exceptional Approach and Promising Strategy to Scale Up Effective Personalized Literacy Instruction and Improve High-Need Students’ Literacy Skills

Envision a 1st grade classroom at a high poverty school. Children seem to be milling about when you enter the classroom but they soon settle down and begin working at various stations throughout the room. You see a phonics/spelling station, a writing station, a computer station with educational programs, and a book-reading corner with cozy beanbag chairs. You also notice that each child has a colored folder—blue, green, yellow, or orange. These folders are aligned with the students’ flexible learning groups recommended in A2i. Four children with their purple folders are at the teacher table. As you listen, they are discussing how to turn the word “pin” into the word “pan.” When the group decides that the “i” should be replaced with an “a” they change the letters on their white board. After about 5 minutes, the teacher rings a bell and says, go to your next station. The children who were with the teacher scatter to the other stations with their folders, open them, and begin to work. At the same time, five children join the teacher at the teacher station. Other children go to the station chart to see where they are supposed to go next. The children soon settle down and the personalized lessons begin.

This is a typical A2i classroom where the teacher has used A2i to assess and track her students’ progress and to develop personalized lessons for them. She consulted the *Classroom*

View (Exhibit 1), where she accesses specific instructional recommendations (minutes/day of meaning-focused and code-focused) for each student in her classroom, which are computed by the *A2i algorithms*. She used the *A2i Lesson Plan* (see Appendix G.2.4), with its library of instructional activities, drawn from her core literacy curriculum and the Florida Center for Reading Research (FCRR) activities (fcrr.org). These tools allow her to make sure that each student has learning opportunities that were selected based on their assessed learning needs and,

Exhibit 1. Classroom View Screenshot from A2i



thus, were appropriately challenging for them (hence the colored folders containing personalized learning materials). She has strategized with her team members in the professional learning community (PLC) at her school about how to meet the needs of certain challenging students – when you observed the classroom, the child who used to be highly disruptive was not noticeable.

Her students spend most of their time in meaningful instruction, are able to work independently, and know how to use the station chart to find their next station. They work appropriately on their own or with peers, and do not interrupt the teacher when she is at the teacher station with other students. By the end of the school year, the students will be generally reading at or above grade level, and will have a good head start on a successful school career (Connor et al., 2013). The United2Read Regional Team partnering with her district and school

have made sure that the resources, assessment data, and materials she needs to teach effectively are available, and have helped her communicate with parents to improve home learning opportunities for her students.

In a recent interview with one of our partner principals in AZ, we asked: *How would you describe what the impact of using A2i has been a) on your teachers; and b) on students?* Her response was: “A2i was a major relief to our literacy teachers.... Most of the reading teachers were seeing literacy rotations, guided reading, phonics instruction, and blended learning for the first time. When this material was made available to my staff, there was a sigh of relief across the staff when we received the data from our first instructional round. They had the data to tell them what to do AND tools to help the teachers build concrete next steps that were research-based. They felt confident in their instructional decision-making. Students were impacted because we saw more students engaged in work independently with texts, as well as more books were purchased across the school since the data shows that students did not need as many minutes in front of a teacher as we originally planned. There was far less need for behavior management support in rooms and more need for how to be creative with pushing independent learning centers.” See full interview in Appendix G.3.

The United2Read partnership with the A2i professional support system technology is an innovative and highly promising way to meet absolute Priorities 1 and 2. In addition, we will contribute to the accumulating knowledge about how to partner with districts and practitioners in ways that ensures teacher and district buy-in so that programs with strong evidence of effectiveness find their way into the classroom.

B. Strategy to Scale

B.1. United2Read will meet Two Unmet Demands

There are *two crucial unmet demands* that United2Read plans to meet with the proposed project. First, as we discussed, United2Read satisfies an **unmet demand to improve high-need students' literacy skills and close the achievement gap** (NAEP, 2015). Second, there is an **unmet demand to better understand how to actually bring practices with strong evidence of effectiveness to scale**. Although the past decade's focus on rigorous development and evaluation of programs and practices has created truly effective programs and practices (e.g., What Works Clearinghouse) and ESSA policy holds states and districts accountable for using evidence-based practices, they are not widely used in schools across the nation. As we learn from our own scaling efforts, we will share these lessons learned widely. We discuss how we plan to do this in the section on Dissemination.

B.2. Specific Strategies to Overcome Barriers to Scale

How do we bring A2i and effective evidence-driven literacy instructional practices to classrooms across the nation? To answer this question, we have two overarching goals: (1) Improve the literacy skills of high need students by providing, at scale, A2i and effective personalized instruction from kindergarten (K) through 3rd grade; and (2) Identify and remove critical barriers to scaling A2i and personalized literacy instruction. Our objectives for Goal 2 are 2.1) Improve the cost effectiveness of the A2i Professional Support System by: testing different models of PD; using IBM Watson to index educational resources; and promoting cost savings by improving student outcomes; 2.2) Set up national and regional centers to ensure sustainability; 2.3) Leverage technology to reduce implementation costs and ensure parent and community participation; and 2.4) Identify and overcome unanticipated barriers to scale.

The United2Read Partnership is uniquely positioned to meet these objectives, overcome barriers to scale, including cost effectiveness, and to scale up implementation of A2i and improve students' literacy outcomes. This starts with the United2Read Partnership itself, which represents important stakeholders: Digital Promise, Learning Ovation, LEAs across the nation, UCI, MDRC, IBM, United Way, the Campaign for Grade Level Reading, and over 155 schools nationwide (see Appendix D). In addition, we have found great enthusiasm for our expansion project. In less than two months, United2Read obtained participation letters from 155 public and charter schools. As shown in Appendix G.1, these schools underscore the “national level” of this project, in a wide variety of communities, including rural and urban, as well as with different groups (e.g., public, charter, economically disadvantaged, racial and ethnic groups, migrant populations, middle class, individuals with disabilities, English learners). Dr. Leroy Nunery (Philadelphia) and Dr. Richard Miller (Santa Ana) both used the same phrase to describe A2i after a presentation: It is “a game changer.”

Dimensions of Scale. We have made a concerted effort to incorporate scaling and best practices of implementation science into both our “Strategy to Scale” and “Project Design and Management Plan.” The i3 White Paper on Scaling Up Evidence-Based Practices (2017) cited four dimensions as framed by Coburn (2003): Spread; Depth; Sustainability; and Ownership. We discuss our specific strategies to overcome barriers to scale using this framework.

Spread – increased number of users – our strategy to scale will include impacting 109,000 students (31,360 in the RCTs) in 305 (70 in the RCTs) schools with a total of 4,875 (1,400 in the RCTs) teachers supported. We will accomplish this objective (Objective 1.2 in the Management Plan [C.4]) by: (1) expanding our partner networks and building on the strength of support we have already achieved; and (2) addressing the barriers to scale that we have already identified,

especially cost effectiveness.

Depth – We aim to achieve long-term changes in practitioners’ practices and beliefs. We have learned that it is difficult to achieve teacher buy-in if they do not truly believe that A2i and personalizing literacy instruction will help their children read better. In our just completed Goal 2 study, the more teachers engaged in PD and provided meaningful feedback on the A2i user experience, the more likely they were to use A2i. In turn, the more teachers used A2i, the stronger were their students’ literacy gains, and the effect was strongest for high-need students. We have learned important lessons during eleven years of developing, testing and deploying A2i that will be used to support practitioner buy-in. For example, we found that K and 1st grade teachers were highly likely to be engaged in PD and implementing personalized instruction in the classroom. Hence, we plan to roll out A2i starting in K and 1st grade, then the second year move to K-2, and to K-3 in year 3, with the K and 1st grade teachers acting as knowledgeable partners and ambassadors for A2i with other teachers. Another lesson learned is that teachers engaged in A2i and implementing personalized instruction when they saw students’ measureable gains on valid and reliable assessments so we will encourage them to use the A2i assessments frequently.

Sustainability – continuation of intervention efforts after initial implementation – we have “planned for sustainability from day one.” We plan to do this by (1) making A2i affordable by lowering costs and leveraging new sources of revenue and cost savings/avoidance; (2) creating national and regional centers that will operate after funding ends; (3) embedding the solution in the broader community, and (4) recruiting the entire United2Read partnership to propel sustainability by aligning and reinforcing outcome connections with various stakeholders. Other partners include *IBM Watson*, who will help us affordably bring aligned literacy activities to schools and in the broader community; *Smarter Learning/Campaign for Grade Level Reading*,

which has over 300 North American communities, state-wide initiatives and agencies dedicated to reading outcomes; *United Way* brings literacy agencies, after school programs and families; *National After School Association* brings alignment with district-based and non-profit after school programs in 38 states; and the *Louisiana State University (LSU) Human Development Center*, bringing policy development and special education implementation expertise by collaborating with state departments of education. (See support letters in Appendix D).

Strong Ownership of reform by districts and schools. A central tenet of ownership is understanding clear value and benefit personally and systemically. Many of our current teachers describe the A2i Professional Support System as “the answer to their prayers” (see Appendix G.3). In addition to embedding and reinforcing the on-going district effort into the larger community systems described above in “Sustainability”, our shared ownership of the outcomes, demonstration of success in peer environments, and delivery of the professional supports necessary to achieve those outcomes creates a blame-free environment with all stakeholders focused on one shared mission: improving high need students’ literacy achievement.

B.2.1. The A2i Professional Support System – Meeting the Unmet Demand to Improve High-Need Students’ Literacy Outcomes. The A2i professional support system is the centerpiece of the United2Read strategy to improve student achievement. A2i currently includes: (a) the A2i technology itself; and (b) PD to support strong school-wide implementation of personalized instruction. A2i can be accessed from any computer that has internet (see Appendix G.4). Teachers log into A2i with a unique password that is role specific for teachers, administrators, coaches, and principals. The Classroom View (Exhibit 1) is where the A2i algorithm recommendations are displayed for each student (Connor, 2013). The A2i recommendation algorithms recommend **four types of literacy instruction** based on rigorous

research (NICHD National Reading Panel, 2000). **Code-focused instruction (CF)** includes the skills found in the Common Core foundational literacy standards, and represent any learning activity that is designed to teach children how to crack the code of reading English – including activities that develop skills in phonemic awareness, phonics, spelling, and reading fluency.

Meaning-focused instruction (MF) supports students as they learn to attach meaning to text they have decoded, read with deep understanding, analyze text critically using thinking and reasoning, read and make inferences across multiple texts, and write thoughtfully and critically (Snow, 2001). CF and MF instruction is either with the teacher (teacher-managed or TM), or with peers or alone (child/peer-managed or CM). Teachers report that recommendations at this grain size allows them the freedom of professional judgement while still providing meaningful guidance. Examples are provided in Exhibit 2.

Exhibit 2. Four types of literacy instruction recommended by A2i

	Code-focused Instruction	Meaning-Focused Instruction
With the teacher – teacher/child managed	TMCF: The teacher is working with a small group of children providing explicit phonics instruction	TMMF: The teacher is reading to the students and discussion the meaning of the text.
Alone or with peers or using technology – child/peer managed	CMCF: Children are working together to practice blending words from phonemes	CMMF: A student is reading a book of his choice in the library center.

A2i Algorithms and Computing Recommended Literacy Instruction. Using assessment data for each student’s vocabulary, decoding, and comprehension the *A2i algorithms compute recommendations (in minutes per day) for each of the four types of literacy instruction using empirically derived computer algorithms* (Connor et al., 2007). The recommendations for instruction are the most innovative and essential part of the A2i technology platform and are patented (Connor, 2013). The graph in Appendix G.5 shows the recommended teacher/student-managed code-focused instruction amount, by grade in September, based on the students’ reading

score but holding vocabulary constant. As a student's performance falls below grade level, the amount of time in teacher/student-managed code-focused (TMCF) instruction required to bring them to grade level by the end of the year goes up exponentially. A minimum *target outcome* is set for each student: end of the school year grade level or a full school year's gains – whichever is greater. In this way, high expectations are set for all students. Unfortunately, high achieving students at higher poverty/lower performing schools are 50% less likely to stay high achieving compared to their peers at more affluent schools (Neal & Schanzenbach, 2007). There is a personalized instructional plan for *every* student, which is dynamic, changes monthly, and revised every time the students are assessed. With A2i's indexed library of learning materials, teachers easily access their schools' materials at appropriate challenge levels through the Lesson Plan.

Professional Development. There is good evidence that simply providing workshops and then sending teachers on their way to implement programs does not improve the effectiveness of teaching nor improve student outcomes (Showers, Joyce, & Bennett, 1987). A2i uses an embedded system of PD that aims to turn responsibility for continuous improvement back to the teachers and educational leaders. A2i includes (1) workshops; (2) professional learning communities (PLCs, Bos, Mather, Narr, & Babur, 1999); and (3) in-classroom PD during the literacy block. PD starts with a *half-day workshop* designed to give teachers hands-on experience using A2i and to begin discussions about how other teachers have implemented personalized instruction in the classroom. After the half-day workshop, all PD is provided in PLCs and through in-classroom support. *PLCs* are initially led by the *Learning Oventions Coaches*. PLC leadership is turned over to the school literacy coaches and lead teachers after the first few months, while the Learning Oventions Coaches continue as participants. In this way, teachers take

ownership. PLCs, also called communities of practice or teacher study groups, meet at least monthly– bi-weekly is preferable.

The third component of A2i PD is *in-classroom support during the literacy block*. Our research and others show decisively that in-classroom support by expert teachers improves teachers’ practice and student outcomes (Biancarosa, Bryk, & Dexter, 2010). During this time, the Learning Ovations Coaches work directly with teachers and students in the classroom modeling effective strategies, problem solving, and providing overall support and suggestions. In-classroom support is followed by one-on-one discussions with teachers to debrief and explore ways to meet challenges and improve practice.

B.2.2. Identifying and Eliminating Barriers to Scaling A2i

In the face of growing demand for improved literacy instruction and outcomes, three barriers to scale have been brought into sharp focus by our design and validation studies, together with on-going dialogue with districts and communities in 11 states and 2 provinces, as well as feedback from philanthropic, education marketing, corporate, after school and community leaders. We present each barrier and our solution next.

Barrier #1: Cost of delivering of the A2i Professional Support System – A2i has three principal costs: (a) the PD required to maintain effective implementation, (b) the cost of indexing schools’ existing evidence-based resources for the A2i library of learning materials, so they can be accessed in the lesson plan, and (c) the opportunities to document cost reductions schools can achieve when their students are reading at grade level.

Expansion Solution 1.A: Improve Cost Effectiveness and Efficiency of A2i Professional Development System – principally by applying technology to lower the cost of on-site PD and on-going coaching required to maintain effective implementation. This is the overarching aim of

our independent evaluation of the different PD Models: (1) the current resource-intensive but effective in-person PD described previously; (2) a more cost-effective version of the PD using technology to reduce the cost of human capital. In this version of the PD, there will be online webinars rather than face-to-face workshops, PLCs will be mediated through live video conferencing (e.g., Zoom, Skype, Google Hangout), and teachers will be able to upload video of their classroom instruction (to a secure cloud server) so that the Learning Ovarions Coach and the teacher can watch the videos together, and then discuss challenges and ways to overcome them; and (3) a minimal support condition where teachers use only the integrated A2i online assessments and data visualization tools. These schools will act as a treated control group. We discuss the RCT, conducted by MDRC, in the Project Evaluation Section. Personalizing PD based on teachers' beliefs, skills, and knowledge improves the distribution of coaching hours delivered to teachers, which is the most expensive part of the system. Thus, we can improve the ratio of our on-site teacher coaches to schools from 1 to 3 (currently) to 1 to 7 (beginning of the EIR RCT) to a target of 1 to 15 by the end of the project in 2022.

***Expansion Solution 1.B:** Use technology and IBM Watson cognitive computing to leverage existing district investments.* A2i is designed to work with virtually all research-informed learning materials and cores. Districts invest in an ever-increasing array of products and services that are supposed to close the reading achievement gap. They are constantly changing their learning materials with new standards, new cores, new assessments, and moves to open source curricula (e.g., Engage NY). Moreover, they do not always use them effectively. Districts have invested in these resources and they are reluctant to abandon them. While we designed A2i to use schools' existing resources more effectively, indexing their resources (i.e., assigning them to CF or MF and TM or CM) to the A2i learning activities library database is manpower intensive and

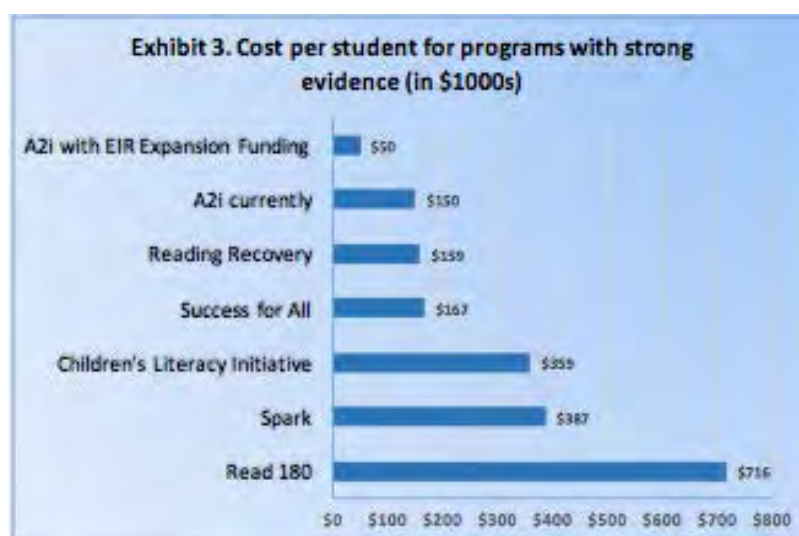
will become prohibitively expensive as we move to scale. We will work with IBM Watson (UCI in-kind matching funds) to use machine learning, natural language processing, and translation to automatically index evidence-based resources to the A2i library of learning activities, which are then accessed in the A2i Lesson Plan. Right now, highly skilled research assistants index these learning materials, which is extremely labor intensive and costly. We plan to train Watson to reliably index learning activities to agree with the human indexers. Thus we can affordably incorporate present and future district and school resources into the A2i library.

Expansion Solution 1.C: Document and enhance cost reduction and avoidance afforded to a district by A2i. In addition to lowering the cost of A2i, there are savings and cost avoidance (i.e., return on investment) when students achieve. Ensuring strong student outcomes is less expensive than on-going interventions and remediation, grade retention, and special education services. As part of the FastTrack SBIR process Learning Ovarions developed an Outcomes Savings Estimator (see Appendix G.6) that tracks the lowered retention, remediation, and referrals to special education partner districts achieved as result of achieving third grade reading rates. We will also track and develop tools to strengthen an additional range of savings: (a) use of indexing to extend life of curricula by using technology to update links to standards and changes in state policy; (b) using the A2i assessments instead of current assessments, which reduces scoring and administrative costs, while improving the timeliness of and access to the data; (c) providing learning materials through the A2i Lesson Plan, which reduces instructional planning time; and (d) a potential reduction in teacher turnover because their students are succeeding (ownership). As part of the Literacy Scan and the memo of understanding for each school participating in the RCT, we will develop tracking mechanisms to record pre- and post-study costs. Our initial estimates with the cost savings we have seen in the SBIR FastTrack project is that the A2i

Professional Support System can pay for itself within 15 months.

Barrier #2: Capital requirement for setting up regional and national infrastructure to support expansion and sustainability, and reducing costs through scale.

Expansion Solution 2. A: Establish competitive per student costs and pricing targets that schools can afford. Often, the reason why ESSA “strong research” practices work is that they are time and human capital intensive. Unfortunately, that is the very characteristic that makes them difficult and costly to scale. When Superintendents are inundated with “freemium” offers from the Ed Tech marketplace, and vendors go from opacity-to-obfuscation regarding outcomes, any “strong research” based scale-up solution has to target a cost that is competitive in the marketplace. As Exhibit 3 shows (<https://www.evidenceforessa.org/>), the per child cost of K-3



programs that meet the ESSA strong evidence standard, are expensive, with average per student cost of \$358/student or \$160,000/school site for a general classroom solution. (Note: We are not comparing A2i to interventions that serve

struggling readers: e.g., Wilson Reading Systems, \$6,696/student). A2i is presently deliverable at \$150/student and, with this proposal, United2Read aims to reduce the cost to \$50 per student or a \$22,500 per school site license. The *Children's Literacy Initiative (CLI)*, which was awarded an i3 Scale-Up grant in 2015, is targeting a **\$359/student** cost at the completion of their scale-up project in 2020. In contrast, the Ed Tech market has a range of reading programs providing less

rigorous evidence-based solutions such as i-Ready, Reading Plus, Lexia, and Achieve 3000, which cost about **\$50/student**. Such programs typically offer limited PD (See Appendix G.7)

Deciding between strong-research and marketplace programs is like apples and oranges: an intervention that achieves proven outcomes versus something that leaves the school to hope for some improvement. Yet superintendents, academic officers, and special education directors have to decide among these options. It is no wonder that the glossy, \$50 solution is often selected, in instead of solutions with strong evidence but high cost – e.g., \$170,000/school for CLI and \$75,000/school for Success for All per school per year (<http://www.evidenceforessa.org/>).

Our aim, with this proposal, is to maintain the high levels of effectiveness for A2i while achieving a cost of \$50/student or \$22,500/school. With our first grant in 2004, we incorporated web-based technology as part of the solution. Because a significant part of teachers' dilemma was the complexity of knowing what a child needed *and* how to find and provide it, technology allowed us to use algorithms to simplify thousands of hours of classroom observation into a click. During our recent Goal 2 and FastTrack SBIR studies, we took a research platform and created one ready for scale. We improved the user-interface, completely rewrote the software codebase, and improved feasibility by working interactively with our teacher and administrator co-designers and partners. We also modeled several different PD and deployment strategies. During these projects, we were able to lower the estimated research cost per student of \$550 to a **\$150/student cost** (about \$67,000/school). Using innovative technology has brought us closer to the market, but we are still above the less-evidence-based competition, and more importantly, still out of reach of most districts' budgets – especially districts with concentrations of high-need students. Scaling up and innovation are our key strategies.

***Expansion Solution 2.B:** Apply EIR funding to scale to multiple regions across the country.*

There is a virtuous cycle between per student cost reduction and scale. A lower cost permits scale, and spreading fixed costs over more schools reduces the per student cost. Thus, taking advantage of the cost reduction outlined above and the EIR funding to establish national and regional capability, United2Read will scale its work to reach 109,200 students in 305 schools across the country in six regions over the five grant years and to reach a cost of \$50/student.

We will begin by establishing four Regional Centers (Northeast, East, South, and West) covering five states: NY, PA, LA, AZ and CA using EIR funds. Two additional regions will be added and their incremental costs will be covered by school district participation. The fully-staffed Regional Centers will be capable of providing on-site support and guidance in local surrounding communities. Part of the expected scaling will come from moving these Regional Centers outward in concentric circles. This expansion plan is consistent with superintendent feedback, “tell me a superintendent I know who is using your service,” and quality delivery. When expansion is driven by past successes and referrals, you *must* have past successes). Scaling up A2i to 300 schools while reducing the cost of providing A2i to schools will get us to our target cost/student. We project reduced costs each year: \$154, \$118, \$96 to \$86 from cost efficiency. We will achieve the targeted per student cost at the market price of **\$50 per student** (\$22,500 per school site license) by the end of the Expansion grant in 2022 by scaling beyond the RCT schools. (See Appendix G.8 for per student cost graph). Exhibit 7 in the Management Plan (C.4) shows the financial and operational model of how this would occur through a combination of leveraging the regional and national infrastructure afforded by the EIR and, we will grow the number of schools from the 70 RCT to 110 (year 2) to 150 (year 3) to 215 (year 4) and to 305 (year 5).

Barrier # 3: Lack of connection and shared ownership with the broader community.

Expansion Solution 3.1: Align literacy methods and supports across all of the students' learning environments from home to after school to school and during summer. The Harvard Family Research Project was one of the first studies to show how fragmentation between school, home, and community undercuts the best intentions of all parties involved, and squanders investments to achieve student outcomes. Learning Ovation has worked with communities throughout North America to better align their systems and achieve lasting and sustained impact (Connor & Kadel-Taras, 2003). With this alignment, community resources can more effectively be deployed to assure rigorous tracking of shared outcome measures (e.g., grade level reading). Further, community-level ownership is key to influencing School Board's decisions. With the decentralization of ESSA, this is even more important. Plus, as teachers and principals well know, for high-need students, the achievement gap widens over the summer. For the SBIR, we developed a beta version of the *A2i App* (Appendix G.9), a streamlined, easy to use version of A2i that includes assessments, graphs, and downloadable recommended lessons. The A2i App will enable easier access and coordination for learners, their parents, and out-of-school providers. EIR funds will be used to finish development and support deployment of the *A2i App*. United Way will aid in dissemination.

B.3. Dissemination

Dissemination is the key to meeting the second unmet demand – the need for a better understanding of how to bring effective practices and programs to scale. While we have experience implementing A2i and personalized literacy instruction in schools and have anticipated principal barriers to scale, we are sure to encounter other unexpected barriers and will figure out ways to overcome them. We have adopted the Dimensions of Scale framework suggested by Coburn (2003). Yet there are sure to be complexities and other dimensions to

consider. Our plan is to share our findings and data freely (while maintaining confidentiality), and to disseminate our findings broadly. We plan a number of routes and will develop more over the course of the expansion project.

Digital Promise is guided by four principles that are relevant to our dissemination aims: Networks connect us; Stories inspire ideas and incite action; Research informs decision-making; and Engagement motivates learning for life. Through existing networks at the school (Verizon Innovative Learning Schools), district (League of Innovation Schools – 85 districts representing 3.2 million learners), and regional level (Education Innovation Clusters), Digital Promise nurtures and expands breakthrough learning tools, technologies, and practices. We will leverage these networks to accelerate the pace of dissemination to a wide audience – educators, researchers, developers, policy makers, parents, and community stakeholders. Digital Promise also has developed several online resources to connect researchers, developers, and practitioners so that they can leverage each other’s expertise and work towards shared goals. For example, the Digital Promise Research Map makes it easier for educators to access existing research. Additionally, Digital Promise regularly highlights and broadly disseminates promising educational practices. We will expand on this work to create an online resource designed to build a community committed to bringing effective evidence-based practices to scale in schools nationwide. Additionally, we will share examples of effective personalized literacy instruction using A2i in schools through Digital Promise blog posts, newsletters, conferences and League of Innovative School meetings.

Social Investors. Increasingly investors are interested in more than just the bottom line; they want to see social impacts (<http://www.ussif.org/>). A2i is attractive subject of best practice in social investing. For example, OWL Ventures referred Learning Ovation to the Chan Zuckerberg

Initiative. The range of opportunity runs from Venture Capitalists to Foundations using program related investments (PRI) dollars to fund transformative outcomes. The key is the sustainability United2Read will develop by combining cost efficiency and scale. Dissemination includes white paper best practices, speaking opportunities and financial modeling for the impact of recurring revenue and scale in cost effectiveness. This may be a best practice for bringing new “investment” for more ESSA “Strong Evidence” solutions that can target reduction of per student cost.

Pay for Success. With A2i’s return on investment through outcome savings (See Outcome Savings Estimator for a more complete explanation and additional materials in Appendix G.6), communities can pursue Social Impact Bonds to help subsidize district participation. These programs raise money to support implementation by valuing the future savings generated by the outcomes realized as a result of the implementation. ESSA provides for Pay for Success. MDRC has experience here (see <http://www.mdrc.org/search/gss/social%20impact%20bonds>).

Community Support: United2Read will work with community influencers, including educational leaders, teachers, parents, non-profits, and parents as education advocates. Campaign for Grade Level Reading (<http://gradelevelreading.net>) has over 300 community affiliations and will reach out to them with our findings. United Way partners will present at the United Way Community Leaders Annual conference to the 1400 United Way leadership teams.

Research Publications. Dr. Connor and Dr. Vandell (UCI), will publish development and expansion findings in journal articles that will be submitted to research and practitioner outlets. Learning Ovarions will use the data developed as part of the baseline and payback analysis for a papers on scalability and leverage and on education technology and privacy. MDRC will publish the results of the independent evaluation in research and practitioner journals. All key personnel will present at both research and practitioner-focused conferences and through webinars

including Digital Promise's current personalized learning community on EdWeb with over 450 active administrators and practitioners.

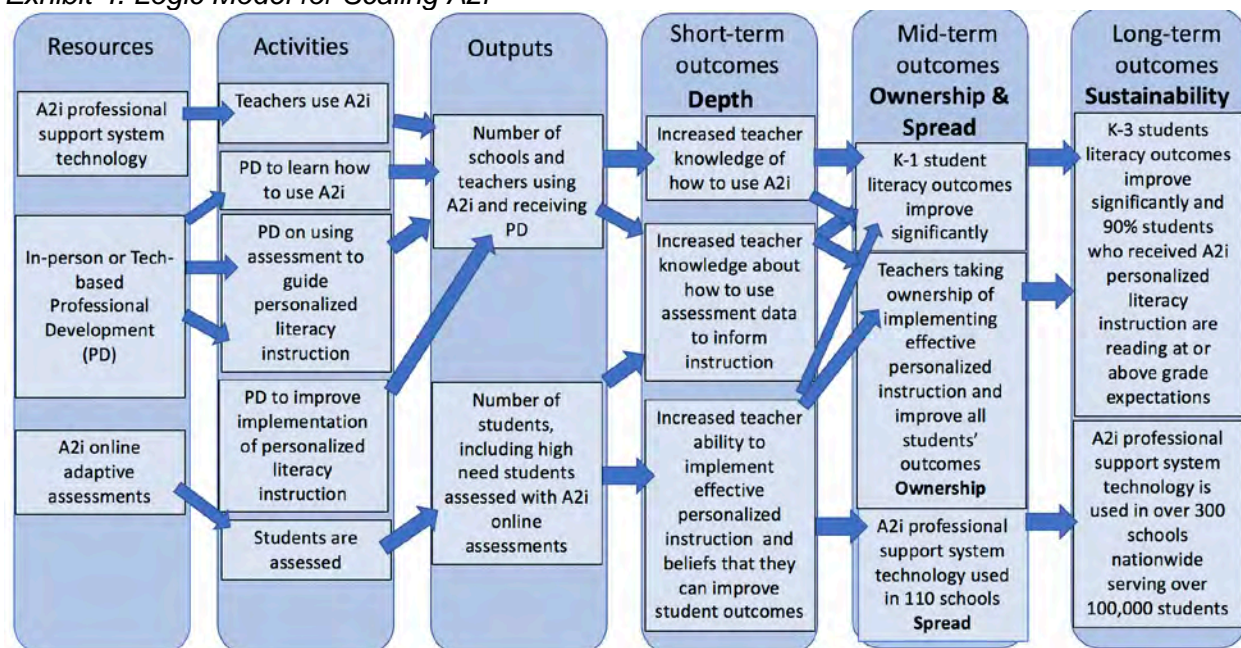
C. Project Design and Management Plan

C. 1. Measurable Goals, Objectives, and Outcomes of the Proposed Project

United2Read has two principal goals: (1) Improve high needs students' literacy skills by providing, at scale, effective personalized instruction from K through 3rd grade; (2) Identify and remove critical barriers to scaling A2i (keeping in mind spread, depth, ownership & sustainability). Goal 1 is defined by 2 objectives: (1.1) Students', including high-need students', literacy achievement improves with 90% of students whose K-3 teachers use A2i and implement personalized instruction reading within grade level expectations or above; and (1.2) Effectively implement the A2i professional support system in over 300 schools serving 109,000 students by Year 5. We present the Logic Model for Objective 1.1 in Exhibit 4. Goal 2 speaks to barriers to scale and has four specific objectives: (2.1) Improve the cost effectiveness of A2i PD by testing different models of PD, which provides the rationale for the independent evaluation; (2.2) Set up national and regional centers to ensure sustainability after the funding period; (2.3) Leverage technology to reduce implementation costs and ensure parent and community participation; and (2.4) Identify and overcome unanticipated barriers to scale. For each of our objectives, we have identified performance measures, specific activities, a timeline, and specific partner responsibility in the Management Plan (see Exhibit 5).

Logic Model for Scaling up A2i. Our Logic Model (Exhibit 4) displays how our resources, activities, and outputs allow us to achieve our short-, mid-, and long-term outcomes. The resources United2Read brings to scaling up A2i includes: (1) the A2i technology, (2) in-person or tech-based PD support, and (3) the A2i online adaptive assessments. Teachers and schools use

Exhibit 4. Logic Model for Scaling A2i



these three resources in five different activities: (1) the teachers use the A2i technology to view the recommendations for each student’s personalized literacy plan in the Classroom View (see Exhibit 1), view the results of the assessments on the student information page (see Appendix G.2.3), and plans to personalize instruction using the A2i Lesson Planning tools (see Appendix G.2.4), where the computer recommends learning activities for each flexible learning group matched to skill level and recommended instruction. To do this, teachers participate in PD – either in-person or mediated by technology. **PD is designed to support teachers** so they can: (2) learn to use the A2i technology, (3) learn to use assessments to inform instruction; and (4) learn how to effectively personalize instruction in the classroom. The final key activity is (5) assessing students using the A2i online student assessments, which provide the data to drive the recommendation and grouping algorithms. There are two **Outputs**: We will carefully monitor the number of schools and teachers using A2i and receiving PD, and the number of students, particularly high-need students, assessed with the A2i online assessments. Our outcomes are aligned with the four dimensions of scale (Coburn, 2003): The **short-term outcomes ensure**

depth of teacher knowledge to use the A2i technology, to use assessment data to inform the personalized instruction they provide to their students; and to provide personalized instruction in the classroom, with the firm belief that they can improve all students' learning, including high-need students. The **mid-term outcomes are about building ownership and spread**. First, K-1 students' literacy outcomes improve significantly, which builds teachers ownership of A2i and implementing effective personalized instruction. They will act as ambassadors to the 2nd and 3rd grade teachers in subsequent years. Mid-term, we aim to fully implement A2i in the 50 schools participating in the independent evaluation assigned to receive either in-person PD or tech PD, plus 60 more schools not in the RCT (Spread). Our **long-term outcomes support sustainability** after the funding ends. Our aim is that 90% of students who consistently participate in A2i classrooms from K through 3rd grade will achieve reading skills at or above grade expectations at scale, and that A2i is used in over 300 schools nationwide.

Performance Measures

Building on the Logic Model, the Management Plan and Timeline (Exhibit 5) displays how and when we are going to achieve our outcomes. It also lists our **performance measures**. We will carefully monitor our progress toward meeting our Objectives with our performance measures, as provided in the Management Plan. The performance measures were selected because they are reliable, valid, and specifically measure our progress toward meeting our goals and objectives. As you will note, measures are used to monitor multiple activities. Below, we provide more details for our most important performance measures (see also Appendix G.7 – G.10).

1.1a. Literacy Scan. Much as the assessments described below assess individual student's skills, the Literacy Scan, (Appendix G.10) is a review and assessment of district and school resources that optimize personalized literacy instruction. The Literacy Scan also considers teachers' current

Exhibit 5. Management Plan: Goals, Objectives, Performance Measures, Activities, Timeline, and Responsibilities

Goals	Objectives	Performance Measures	Activities	Y1 Oct 2017 Q1	Y1 Feb Q2	Y1 June Q3	Y1 Sept Q4	Y2 2018- 19	Y3 2019- 20	Y4 2020- 21	Y5 2021- 22	Responsibility (Lead Partner in bold)		
Goal 1: Improve high needs students' literacy skills by providing, at scale, A2i and effective personalized instruction from kindergarten through 3 rd grade	Objective 1.1: Students', including High Need students' literacy achievement improve, with 90% of students whose K-3 teachers use the A2i professional support system and implement personalized instruction are reading within grade level expectations. Objective 1.2: Effectively implement the A2i professional support system in over 300 schools serving 100,000 students by Year 5	Performance Measure 1.1a: Literacy Scan	Activity 1.1.1. The Literacy Scan is used with partner schools during the first year to develop a personalized support plan for district, school, and classroom and to develop Memos of Understanding									Learning Ovations and Regional teams, which consist of Learning Ovations Regional Manager, teacher coaches, districts, schools & teachers		
			Activity 1.1.2. Using the literacy scan, districts and schools provide needed structural changes and resources (e.g., 60-90 min literacy block, planning time for teachers and coaches)									Learning Ovations and Regional teams, which consist of Learning Ovations Regional Manager, teacher coaches, districts, schools & teachers		
		Performance Measure 1.1b: Student performance on the A2i student assessments; school measures; state mandated assessments.	Activity 1.1.3. Teachers participate in professional development (PD) in-person or technology-based										Learning Ovations with Learning Ovations Teacher Coaches and teachers, educational leaders	
			Activity 1.1.4: Teachers evaluate students' literacy skills using A2i assessments <i>at least</i> 3 times/year, and may use existing evidence based assessment protocol.										Learning Ovations , Teachers, supported by Learning Ovation Teacher Coaches and districts, school leaders	
		Performance Measure 1.1c: A2i User logs	Activity 1.1.5. Teachers use A2i at least 20 minutes per week on average and provide personalized literacy instruction following the A2i recommendations.											Learning Ovations , Teachers, supported by Learning Ovation Teacher Coaches and districts, school leaders
			Performance Measure 1.1d: A2i Observation Rubric and OLOS	Activity 1.2.1: Create and maintain database of District Partners including number of schools, classrooms, and students to track expansion										Learning Ovations , United2Read Leadership Team, national and regional teams
		Performance Measure 1.2a: Count of Districts, Schools, and Classrooms	Activity 1.2.2: Expand number of districts and schools using the A2i professional support system each year, per plan											United2Read Leadership Team , National and Regional teams, Campaign for Grade Level Reading, NAA, UW
Goal 2: Identify and remove critical barriers to scaling A2i and personalized literacy instruction	Objective 2.1: Improve Cost Effectiveness of A2i - testing different PD models -index learning materials using IBM Watson - recapture costs through reductions in special education and retention	Performance Measures (also see Independent Evaluation Plan) 2.1a: Student performance on the A2i student assessments; 2.1.b. school records, measures & state mandated assessments 2.1c: A2i User logs 2.1d: A2i Observation Rubric 2.1e: Qualitative research including interviews and surveys with stake holders. 2.1f: cost/student	Activity 2.1.1. Conduct longitudinal RCT following independent evaluation protocol using both qualitative and quantitative methods									MCRC & Digital Promise		
			Activity 2.1.2. Schools randomly assign to condition -A2i with in-person PD -A2i with tech-based PD -A2i assessment only Implement different PD protocols at randomly assigned schools and conduct RCT as specified in evaluation plan.										MDRC	
			Activity 2.1.3.a work with UCI and IBM Watson to create the translation for inclusion in the A2i library and lesson plan.										UCI (in-kind) & Learning Ovations , Digital Promise	
			Activity 2.1.3.b. Create stand-alone A2i Assessments with data visualization										UCI (in-kind)	
			Activity 2.1.4. Ensure continuous improvement by reviewing performance measures at least quarterly											United2Read Leadership Team , National Team, Regional Teams

Goals	Objectives	Performance Measures	Activities	Y1 Oct 2017 Q1	Y1 Feb Q2	Y1 June Q3	Y1 Sept Q4	Y2 2018- 19	Y3 2019- 20	Y4 2020- 12	Y5 2021- 22	Responsibility (Lead Partner in bold)	
Goal 2: Identify and remove critical barriers to scaling A2i and personalized literacy instruction	Objective 2.2: Set up national and regional centers to ensure sustainability after the funding period and reduce costs by spreading fixed costs across more schools	Performance Measures 2.2a. cost/student 2.2b. Number and qualifications (resumes) of personnel hired for National and Regional centers following plan described in Learning Ovatons budget justification	Activity 2.2.1. Advertise positions, interview, and hire highly qualified staff.									Learning Ovatons, National and Regional Teams (see expansion plan)	
			Activity 2.2.2. Hire additional highly qualified staff as expansion continues										
			Activity 2.2.3. Establish competitive costs and pricing schools can afford										Learning Ovatons, National and Regional Teams (see expansion plan)
	Objective 2.3: Use technology to improve parent and community participation and student literacy achievement	Performance Measures 2.3a. Feedback from users using the A2i app 2.3.b: Student performance on A2i assessments. 2.3c. A2i App user logs	Activity 2.4.1. Complete development of the A2i app										UCI & Learning Ovatons, Digital Promise,
			Activity 2.4.2. Pilot trials of the A2i App with parents and afterschool programs										Learning Ovatons and Digital Promise, Campaign for Grade Level Reading, United Way, NAA
			Activity 2.4.3. Improve student literacy outcomes by preventing summer reading loss and improving after school learning opportunities										Learning Ovatons and Digital Promise, Campaign for Grade Level Reading, United Way, NAA
	Objective 2.4: Identify and overcome unanticipated barriers to scale.	Performance Measures 2.4a: Student performance on the A2i student assessments; school measures; state mandated assessments. 2.4b: Literacy Scan 2.4c: A2i User logs 2.4d: Observation Rubric 2.4e: Qualitative research including interviews and surveys with stake holders 2.5f: Cost/student	Activity 2.5.2. Review Literacy Scan and A2i Observation results to identify potential barriers										United2Read National and Regional Teams
			Activity 2.5.3. Review A2i User logs and if teachers and educational leaders are not using A2i as expected, begin an investigation as to why.										United2Read National and Regional Teams
			Activity 2.5.4. Interview key stakeholders where indicators reveal a potential barrier to scale to investigate barriers, why they are happening, and what can be done to overcome them.										Digital Promise, National and Regional Teams
			Activity 2.5.5. Create reports of barriers encountered and how they were overcome – this should be disseminated to all United2Read partners, stakeholders, and to interested developers, researchers and practitioners.										UCI, with United2Read Leadership Team
			Activity 2.5.6. Disseminate Reports of Lessons Learned about Scaling Evidenced-based programs.										United2Read Leadership Team

practices and the extent to which they personalize literacy instruction from whole class instruction through fully personalized instruction. Districts start by completing an online survey. This is followed up by an in-depth conversation with Learning Ovation experts covering topics such as curricula, classroom activities, assessments, standards, dedicated block of time devoted to literacy instruction, learning management systems, union concerns, and state and local mandates. Using the results of the Literacy Scan, Learning Ovation and the district/school work together to establish a task list of resources needed to fully utilize A2i in their unique context. The Literacy Scan will be used to monitor progress for Activity 1.1.1, developing a personalized support plan for districts and schools; 1.1.2, monitoring how well schools provide needed structural changes and resources; and 2.5.2, identifying potential unanticipated barriers to scale (Exhibit 5).

1.1b. A2i Online Adaptive Assessments. A2i has three integrated online and adaptive assessments (see Appendix G.11) that, based on the Item Response Theory (IRT) analyses, are valid and reliable for children from K-5th grade (see Appendix G.12). The assessments are given on either laptop (e.g., Chromebooks) or desktop computers with a mouse and headphones. From the Assessment Log-in Page (Appendix G.11.1), students select the assessment they want to take and log in with their unique password. Then, under headphones, students listen to instructions and complete sample items before they take the assessment items. They begin each assessment based on their grade in school. If they miss an item, the next item presented is easier. If they get the item right, the next item presented is more difficult. This continues until a precise score is attained. To date, with the exception of kindergarteners at the beginning of the year or children not familiar with using computers, all children have been able to complete the assessments independently. For students who need help, trained paraprofessionals provide assistance. The

teacher does not need to take time away from instruction.

The *Word Match Game* and *Letters2Meaning* assess the three constructs required by the A2i recommendation algorithms – vocabulary, decoding, and comprehension. For children reading at a 2nd grade level or greater, *Reading2Comprehension* assesses higher order comprehension skills. All of the tasks are self-paced and children may listen to prompts repeatedly by clicking the *listen* icon. Each assessment provides scores as Age Equivalents, Grade Equivalents, and Developmental Scale Scores. Because the assessments are taken online, the *scores are instantly available in the Student Information Page*, in the progress monitoring graphs and in table form. Scores can be exported for detailed analyses (see Appendix G.2.3). The A2i Student Assessments will be used to monitor Activity 1.1.4, to monitor whether and how frequently teachers assess their students; and to monitor students' language and literacy outcomes towards meeting Objective 1.1 that high-need students are achieving reading skills at grade level expectations. A stand-alone version with the A2i assessments and data visualization tools will be developed as part of the Optimizing Learning Opportunities for Students (OLOS) system (in-kind match) and will be used by the 20 A2i assessment-only schools (Activity 2.1.3b).

1.1c. A2i User Logs. Whenever users log into A2i, their use of the technology is recorded and the following information is available: date and time the user logged in, the date and time for each page, time (ms) spent on each page, which page was accessed, if the user examined student assessment data, and the student identification number (not name). From these data, A2i provides user-friendly reports and graphs (Appendix G.2.6). Research shows that the more teachers use A2i, the stronger are their students' literacy (Connor et al., 2007). Hence, the A2i User Logs are a valid and reliable way of monitoring the integrity of implementation. The A2i User Logs will be used to monitor Activity 1.1.5, teachers use A2i at least 20 minutes per week; Activity 2.1.4,

continuous improvement, and fidelity for Activity 2.1.1, conducting the independent evaluation of A2i in-person and tech-based PD. We will also use the **A2i App user logs** to monitor Activity 2.4.2, assess access and fidelity during piloting and dissemination of the A2i App.

1.1d. Observation (see Appendix G.13). The **A2i Observation Rubric** is completed immediately after the in-classroom PD to monitor practice and help teachers and coaches strategize about how to improve practice and classroom organization, and meet the recommended minutes and student skill levels provided in A2i. The checklist and rubric assess the extent to which the school-wide changes have been made (e.g., literacy block); teachers are individualizing instruction and the strategies they are using; their classroom organization and management strategies; their support for discussion and language development; and their warmth and responsiveness to their students. Higher scores on this measure predict stronger children’s academic and behavioral outcomes (Connor et al., 2014). The **OLOS observation system**, developed at UCI (in-kind match) will be used in selected RCT schools. OLOS is a low inference observation system designed by and for practitioners, and records personalized instruction at both the student and classroom level. The Observations will be used to monitor Activity 1.1.5., teachers personalize students’ literacy instruction; 2.1.1, fidelity for the independent evaluation; 2.1.4, to ensure continuous improvement; and 2.5.3 to identify unanticipated barriers.

2.1d. Qualitative Research Including Interviews and Surveys will be developed for our specific questions. The Literacy Scan includes a survey and interviews, which are conducted by highly trained staff. The Digital Promise Research Team has expertise in developing and conducting interviews and surveys to understand and inform implementation and scale of digital learning tools. Digital Promise will conduct interviews with school staff at select “case study” sites to identify critical barriers to successful A2i implementation and to the scalability and

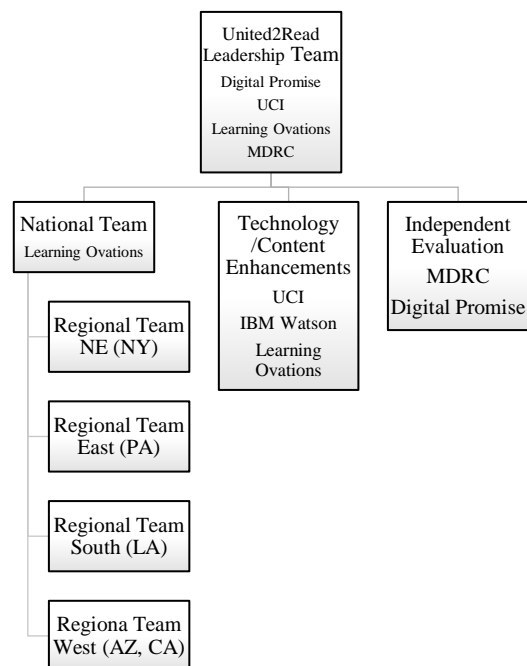
sustainability of A2i. Case study sites will be selected based on region and treatment condition (A2i with in-person PD, A2i with tech-based PD, A2i assessment only). Additionally, Digital Promise will use short surveys to regularly gather feedback from regional teams on the implementation challenges schools encounter. Interviews and surveys will be used to monitor progress to Objective 1.2, implementing A2i; Objective 2.1, improving cost effectiveness; and Objective 2.4, identifying and overcoming unanticipated barriers to scale.

2.3a. Watson Computer-Human Inter-Rater Reliability. During the training phases of Watson, we will compare Watson's indexing of learning materials with indexing by trained research assistants at UCI who are typically responsible for indexing the materials for the A2i library. We will calculate percent agreement and Kappa with an aim of achieving Kappa > .70. Human-computer agreement will be used to monitor progress toward Activity 2.4.3 of Objective 2.3, working with IBM Watson to translate school and open-source resources in to the A2i library index format so that they can be accessed through the A2i Lesson Plan.

C.2. Plan to Achieve the Goals and Objectives of the United2Read Project on Time and within Budget

National and Regional Teams and Responsibilities. The main driver of change will be the *United2Read Leadership Team*, Digital Promise, Learning Ovation, UCI, and MDRC (see Exhibit 6). As the independent evaluator, MDRC will be part of the Leadership Team to the extent that this will not interfere with their independence. The United2Read Leadership Team will be responsible for all aspects of project management and the successful completion of our goals and objectives. This includes dissemination and ensuring continuous improvement throughout the system. Reporting to the Leadership Team will be the **National Team**, which will include the Learning Ovation leadership and professionals. The National Team will be

Exhibit 6. Management Structure



responsible for training, development, dissemination, expansion to new regions, and overseeing implementation of PD and technology services provided by the Regional Teams, as well as monthly reporting on progress, milestones and barriers to the Leadership Team. The National Team will oversee the four **Regional Teams**: Northeast (NY), East (PA), South (LA) and West (AZ and CA). The Regional Teams will be responsible for conducting the Literacy Scan, collaborating directly with districts, schools and teachers, providing the professional development (Learning Oventions

Coaches), and supporting within-region expansion to new schools. The Learning Oventions Coaches will be part of the regional teams. Each of the Regional Teams will be led by the *Learning Oventions Regional Manager*, who will act as the facilitator until the district and school teams operate independently and take ownership for their students' outcomes. The Regional Team will work closely with *District members* with the authority to identify and utilize resources; *School members*, who are the on-the-ground school experts; and *parents and community stakeholders*, who will help align learning opportunities during and outside of school.

The **Technology and Content Enhancement Team**, led by UCI, with IBM Watson, Learning Oventions, and Digital Promise, will work closely with the Learning Oventions technology team to: use technology to expand the A2i library of indexed learning activities, update the A2i technology, and complete development and testing of the A2i App.

The **Evaluation Team** will perform the independent RCT evaluation and be led by MDRC. Digital Promise will perform qualitative research on systemic and administrative barriers to scale in addition to the RCT evaluation.

Responsible Personnel

Digital Promise: Karen Cator will be the Principal Investigator on the project and responsible for delivering the ultimate outcomes of this initiative on time and within budget. Karen is the President and CEO of Digital Promise and a leading voice for transforming American education through technology, innovation, and research. From 2009-2013, Karen was Director of the Office of Educational Technology at the U.S. Department of Education, where she led the development of the 2010 National Education Technology Plan and focused the Office's efforts on teacher and leader support. She has extensive experience managing large scale technology initiatives in schools and districts across the country. She will be supported by a Program Director who will manage grant reporting processes, communications, and project management including the monthly leadership council tracking of milestones and outcomes for the project. Digital Promise will also provide research capacity managed by Chief of Research Dr. Aubrey Francisco to support the qualitative analysis of administrative and systems barriers to scalable expansion of the A2i program. Lastly, Vic Vuchic, Chief Innovation Officer and Executive Director of the Learner Positioning Systems (LPS) Initiative will provide strategic support and guidance to the team and integrate key findings into Digital Promise's broader LPS work.

University of California, Irvine: Dr. Carol McDonald Connor and Dr. Deborah Vandell, as members of the leadership team, will be responsible for all aspects of the United2Read project including PD, partnerships with schools, and completing the UCI in-kind development of the

stand-alone version of A2i assessments, programming IBM Watson, and classroom observation with OLOS. **Dr. Connor** is a Chancellor's Professor in the UCI School of Education and an expert in language and literacy development. She led the development of A2i and the RCTs. **Dr. Vandell** is a Professor and Founding Dean of the UCI School of Education with expertise in early childhood development and learning. She was part of the NICHD Study of Early Childcare and Youth Development. Both have extensive experience running very large projects. UCI, a major research-1 institution, has a strong history of successful grant stewardship.

Learning Oventions: Joseph A Connor, JD, MBA, is the Founder and CEO of Learning Oventions, which is a social benefits corporation. He has extensive experience running large corporations and in working with communities. Learning Oventions will be responsible for setting up the National and Regional Centers/Teams, and for all PD and technology development. Learning Oventions Expert Teachers will oversee all PD activities (during and outside of school) and will serve on Regional Teams. **Nick Voegeli, BA**, is the Chief Technology Officer and will be responsible for leading the technical development and enhancements that address barriers to scaling A2i. **Elliot Amiel, MBA**, is the Chief Financial Officer of Learning Oventions and will supervise all the cost accounting data structuring, gathering, and benchmarking in all regions for per student cost, reporting to the United2Read Leadership Team. Further, he will prepare the cost reduction protocols described in the Outcome Savings Estimator (See Appendix G.6).

MDRC: Dr. Pei Zhu, a Senior Research Associate in MDRC's K-12 Education Policy Area, will lead the MDRC independent evaluation. Dr. Zhu holds a PhD in economics from Princeton and is MDRC's most experienced education program impact analyst. She has led analysis of program impacts in the U.S. Department of Education-funded national evaluations of reading and math after-school programs, reading professional development, math professional

development, Response to Intervention for early grade reading, Success for All elementary school reading, and Success for All middle school math. She is also an expert in quantitative analysis and methods, having published on school-level random assignment, instrumental variables, regression discontinuity, comparative interrupted times series analysis, and the use of state achievement tests in multi-state program evaluations. Dr. Zhu will lead an experienced team of program implementation and data processing analysts.

C.3. Ensuring Feedback and Continuous Improvement of United2Read

The Leadership, National, Regional, Technology/Content and Evaluation Teams will be guided by the overarching goals and objectives of the project (see Exhibit 5) and will review monthly the performance measures described above to inform decision making and to monitor progress. At every Leadership, National, and Regional Team meeting, the data from the performance measures will be reviewed and changes made to the *Project Management Plan* in Exhibit 5 and to the PD Protocols, technology, and all aspects of the project, as needed. This iterative review of data allows for continuous improvement so that productive use of feedback is translated into action. The Leadership Team will meet virtually via videoconference at least once per month (more frequently as needed) and in-person at least one time each year. During the meetings, finances and progress toward goals and objectives will be reviewed using timely data from monthly reports from each Team and review of Performance Measures. The Leadership Team will also work closely with the U.S. Department of Education to insure on time completion of the goals and objectives of the project. The United2Read Leadership Team will also work closely with National and Regional teams to: (1) ensure the teams are working in a coordinated fashion, (2) ensure the teams are meeting their objectives, and (3) provide expertise and support as needed.

C.4. Project Resources Beyond the Funding Period

a. Multi-Year Financial and Operating Model and Plan. The United2Read Team has planned for sustainability from day one. As the Operating Model in Exhibit 7 shows, our strategies to scale will reduce the per student cost of delivering A2i and will develop sustainable national and regional infrastructure. In addition to the 70 RCT schools, we will expand to another 235 schools for a total of 305 schools by the end of the EIR funding.

Exhibit 7. Operating Model

EIR statistics	Year 2	Year 3	Year 4	Year 5
EIR Budget	\$2,357,678	\$2,230,110	\$2,172,479	\$2,027,462
Cost per school-EIR	\$33,681	\$31,859	\$31,035	\$28,964
# students served-EIR	15,680	23,520	31,360	31,360
Avg Cost / student /year - EIR	\$150	\$117	\$96	\$86
Expansion Income	\$1,033,532	\$1,512,355	\$2,550,990	\$3,857,776
# students served-Expansion	8,960	22,400	45,920	77,840
Avg Cost / student /year - Expansion	\$115	\$68	\$56	\$50
Total Operating Income	\$3,391,209	\$3,742,465	\$4,723,470	\$5,885,238
# students served-Total	24,640	45,920	77,280	109,200
Avg Cost / student /year-Total	\$138	\$81	\$61	\$54
Scaling statistics	Year 2	Year 3	Year 4	Year 5
EIR # schools	70	70	70	70
Expansion in EIR regions	40	80	120	160
Expansion outside EIR regions			25	75
Total schools impacted	110	150	215	305
EIR # students	15,680	23,520	31,360	31,360
Expansion # Students	8,960	22,400	45,920	77,840
Total # students served	24,640	45,920	77,280	109,200
EIR # teachers/adults	700	1,050	1,400	1,400
Growth in EIR regions	400	1,000	1,800	2,600
Growth outside EIR regions			250	875
Total # teachers/adults	1,100	2,050	3,450	4,875

These 235 incremental expansion schools are projected to provide \$3.6 million in revenue and slightly more than \$1 million pre-tax earnings to sustain continued growth (see Exhibit 8).

Exhibit 8. Summary Profit and Loss, and Cash Flow (\$ thousands) & number of schools

Summary P&L and Cash Flow							
\$(000)	2017	2018	2019	2020	2021	2022	2023
TOTAL REVENUE	0	370	1,185	2,157	3,590	5,928	8,266
EXPENSES	262	924	1,321	1,898	2,478	4,701	5,879
EARNINGS	(262)	(554)	(136)	259	1,112	1,227	2,387
% of Revenue		-150%	-11%	12%	31%	21%	29%
Net Cash Flow	(286)	(758)	(340)	(66)	526	91	1,182
Cash / Earnings %	-109%	-137%	-250%	-26%	54%	11%	75%

	2017	2018	2019	2020	2021	<<EIR ends	
						2022	2023
# schools - EIR	-	70	70	70	70	-	-
# schools - Cumulative Growth	-	40	80	145	235	395	485
Total # Schools Served	-	110	150	215	305	395	485

In 2021/2022, by the time the grant funding ceases, the reduction in per student cost to \$50/student allows A2i to continue to expand to a total of 485 (2023) schools without further external funding. (See Appendix G.14 for full Financial Model details). This is the value of bringing the cost per student for an ESSA “strong research” solution in-line with market pricing.

b. Commitment from Partners. Our sustainability starts with the United2Read Partnership itself. We represent important stakeholders who are committed to improve the literacy achievement of high-need students. Focusing on this work until full scale is achieved is not just an EIR funding requirement. Rather it is mission critical for Digital Promise, Learning Ovation, United Way, and the Campaign for Grade Level Reading. Further sustainability is represented by our partners UCI, MDRC, and IBM Watson, who are dedicated to continuous improvement of evidence-based educational resources. Most importantly, we have letters of support from our partner districts, representing 155 schools across the nation who attest to the importance of our mission, and the creative and sustainable solution the A2i professional support system offers.

c. Broad Support from Stakeholders. United2Read has gained broad support from stakeholders. The regional education offices from Boards of Cooperative Educational Services

(BOCES) in NY and the Orange County Department of Education in California have provided letters of support, which demonstrates that the United2Read effort resonates with a broad range of educational policy leaders. The partners listed above and the 155 schools that signed on underscores the breadth and depth of the support for this expansion project.

D. Independent Project Evaluation

The proposed evaluation will be a well-designed school-level random assignment study conducted by MDRC examining - across the three categories of schools – the following research questions: 1) the resources and inputs of PD support for A2i provided, 2) the resulting implementation of A2i and differences in fidelity, 3) teacher instructional practices, and 4) students’ academic outcomes. The evaluation will also examine 5) the cost-effectiveness of the three PD support strategies and 6) the success of the scale up strategy for the program. Because of the strong experimental evidence of the effectiveness of A2i as compared to the usual reading instruction approaches, the focus of this expansion proposal and our evaluation is to investigate whether it is possible to develop lower-cost methods of PD support and implementation of A2i that result in similar academic outcomes for children. Since the cost and staff resources involved in implementing the existing in-person PD support version of A2i is a key barrier to scaling the program to more schools, the project and its evaluation will directly address the central scale-up question concerning A2i. The entire evaluation will be anchored on the instructional Logic Model and the Management Plan (see Exhibits 4 & 5).

These questions will be addressed by randomly assigning a sample of 70 schools to one of three groups: 1) 20 schools with access to the A2i assessments only (A2i-assessment); 2) 25 schools with materials, A2i technology, initial online training and ongoing online PD (A2i tech-based PD); and 3) 25 schools with the materials, A2i technology, and intensive in-person PD

following the research protocol (A2i in-person PD). Estimates of the differences between the categories of schools in the resulting teacher instruction and student academic outcomes across the years of program implementation will provide ongoing and summative findings on whether the crucial barrier to scaling of cost and staff time was effectively addressed while preserving children's academic outcomes. This evaluation is designed to provide strong causal evidence of the impacts of the program and will meet the What Works Clearinghouse (WWC) evidence standards without reservations.

Overview of the School Sample and Program Rollout. Exhibit 9 shows the schedule of program rollout, the resulting sample of schools for analysis at various grade levels by school year, and the extent of program maturity in each school year. We anticipate conservatively that each school will have approximately 100 students in each grade, for a total student sample per grade of approximately 7,000 students per grade. If the final sample of students per school is larger than these assumptions, we will have greater statistical power in the analysis, as discussed later in this section.

As discussed earlier in the proposal, we have interest from districts and schools in four regions of the country, with a potential of over 300 schools in our evaluation sample, with letters of commitment from 155 schools included in this proposal. Descriptions of each of the districts is provided in Appendix G.1. The potential sample includes schools from each region of the country; with urban, suburban, and rural schools, and many districts with large percentages of high-need students. In making the final selection of the evaluation sample, we will focus on districts and schools serving high-need students that can accommodate the research data collection (with an "opt out" parental consent at most), that are, ideally, located in states with state-wide data systems allowing cost-efficient collection of student records, that have the

capacity to implement the program (without other competing initiatives that would divert staff attention excessively or major reorganizations underway), and that do not have similar programs in place already.

Exhibit 9: School Sample and Program Exposure by School Year

Schools Sample/Program Characteristics	SY 18-19	SY 19-20	SY 20-21	SY 21-22
Total school sample	K-G1 in 70 schools	K-G2 in 70 schools	K-G3 in 70 schools	K-G3 in 70 schools
Schools by program category	25 schools with in-person support 25 schools with online support 20 schools with only A2i Assessments			
Program exposure for students	K: 1 year G1: 1 year	K: 1 year G1: 2 years G2: 2 years	K: 1 year G1: 2 years G2: 3 years G3: 3 years	K: 1 year G1: 2 years G2: 3 years G3: 4 years
Program maturity	1 year	2 years	3 years	4 years

The Framework for the Evaluation. Our evaluation design is anchored on the Logic Model for A2i (Exhibit 4) and the Management Plan showing operational benchmarks and metrics (Exhibit 5). For instructional change, the theory shown in Exhibit 4 posits that three key inputting resources (A2i technology, PD, and the A2i online assessments) will facilitate teachers and schools to better understand and use A2i assessments and instructional activities, which will lead to improved teacher knowledge of how to use A2i including the assessments and to personalize instruction, and a greater sense they can improve student outcomes. As a result of these instructional changes, one would expect to see improved reading achievement among students exposed to the program, and greater teacher ownership of the changes. For scale up, Exhibit 5 outlines various strategies to address identified barriers to scaling and the intended expansion of the program, as discussed earlier.

A2i PD Support Provided (RQ1) and Fidelity of Implementation (RQ2) Across the Three Categories of Schools. The A2i Logic Model identifies three key components of resources present in this initiative (A2i technology, in-person PD or tech-based PD, and the A2i

online adaptive assessments). The A2i technology will be described and its usage (see fidelity below) will be documented. Schools will complete the Literacy Scan (see Appendix G.10) with general school characteristics, academic outcomes, the reading curriculum, teaching practices, reading interventions, technology and data systems in place, and existing implementation and support for improving teacher practice. These important contextual features can be coded to provide information for interpreting program implementation and impact findings. The evaluation team will also observe initial live training in a sample of schools where offered, and document through program records the content and participation of school staff in initial training, ongoing online PD, and coaching providing individualized PD in the in-person school category. Schools in the in-person or tech-based PD conditions will be supported by the Regional Teams and a Learning Oventions Coach following the A2i Logic Model. Teachers in the A2i-assessment condition will participate in a one-half day workshop on how to assess students using the A2i online assessments, and how to interpret the result. Tech support will be available to resolve technical difficulties but no further PD will be provided.

The work of these groups will be described using program documents and interviews with program and school staff (conducted by Digital Promise) and the teacher perspective will be documented through teacher surveys. The evaluation, through document review and interviews with program and school staff, will describe the strategies developed and put in place to overcome barriers to scale, especially those related to building staff buy-in, staff time for implementing, and financial costs; through document review, program and school staff interviews, and teacher surveys. Variation in PD support will be a key driver of differences in program costs across the three categories of schools, which will feed into the cost effectiveness analysis of the different approaches.

The analysis of *fidelity* focuses on key aspects of the program – shown as Activities in the Logic Model (Exhibit 4), with the data sources for each discussed in the Management Plan. While we will collect original data in each category of schools through interviews with program and school staff and teacher surveys in this evaluation, we will also rely on the detailed information collected as part of the ongoing monitoring and support of A2i by Learning Ovation staff, who are much more knowledgeable about the intended implementation of the program, and are in much closer touch with schools in the tech-based and in-person PD schools. The Project Management Plan (Exhibit 5) shows the type of performance measure information available from program records on key aspects of program implementation in the two categories of schools where full implementation of A2i is expected. With these data, we can describe the differences in implementation.

In analyzing program fidelity, we will rely primarily on the A2i user logs, coaching logs, OLOS, and the A2i Observation Rubric. To achieve an educationally meaningful impact, based on previous research, teachers used A2i for 20 minutes/week on average, and this time was concentrated in the classroom view, students' assessment information (charts and graphs), and the lesson plan. Adequate fidelity will be achieved if teachers use A2i for at least 20 minutes/week averaged over a 3-month period. The other measure of fidelity will be the Observation Rubric and OLOS (see Appendix G.13). Adequate fidelity will be defined as teachers who are rated as at least 3 on each of two dimensions – Individualizing instruction and Warmth/Responsiveness/Control/Discipline [based on a Likert scale of 1 (low) to 6 (exemplary)]. Where OLOS is used, the distance between recommended and observed amounts of instruction (DFR), a mean DFR of less than 12 minutes will be considered adequate fidelity.

Teacher Instructional Practice (RQ3): Since any estimated program impacts are driven by

the difference in reading instruction across the three categories of schools, an analysis of the “service contrast” in literacy instruction is essential to interpreting the evaluation impact findings. A teacher survey done as part of the Literacy Scan can provide a baseline measure of practices in the schools. The evaluation teacher survey will be fielded in the all schools in the first year for teachers in grades K-1 and in the third year for teachers in grades K-3 to provide common follow-up data across the three categories of schools on core features of reading instruction, school decision making, buy-in to the A2i program, expectations for student learning especially for high-need students, and satisfaction with the school’s reading instructional approach. This central quantitative measure of service contrast will be supplemented by interviews with staff in a sample of schools and document review. With the two annual waves of this follow-up survey, we can assess how the service contrast changes over time as the program matures and as schools in the three categories experience different levels of support.

The Impact of these Differences in Support on Student Outcomes (RQ4). Our research plan for estimating impacts on student academic outcomes recognizes that multiple hypothesis testing can produce statistically significant impacts by chance, so we will follow the IES guidelines (NCEE- 200804081) by pre-specifying a small number of primary or *confirmatory* impact research questions and by conducting a composite statistical test to “qualify” or call into question multiple hypothesis tests that are statistically significant individually but may be due to chance in the context of mixed findings.

Our main *confirmatory* impact research question focuses on the cumulative impact of the different levels of PD support for A2i implementation, in essence addressing the central scale-up question of whether more in-person and costly support for A2i implementation produces better academic outcomes than the more cost efficient technology-based PD. More specifically, we

propose the following question: **What is the cumulative impact of A2i with in-person PD support as compared to A2i with tech-based PD support on students' reading achievement after three years of program implementation and exposure?** We will examine this confirmatory question by estimating impacts as a cohort of students move through the schools starting in first grade in school year (SY) 2018-19 to third grade in SY 2020-21, with the cumulative impact at third grade being our confirmatory question.¹ This cohort of students is highlighted in Exhibit 9. We focus on this sample because first graders will have baseline data from prior kindergarten testing (increasing the precision of the estimate) and at 3rd grade students take the state reading test, the most policy relevant outcome measure.

In addition to this confirmatory question we will address a series of *exploratory* impact questions intended to deepen our understanding of the relative effectiveness of different levels of PD support. Some questions continue to focus on the comparison between in-person and tech-based PD support, for example, by shifting to the cohort of students who begin as kindergarteners and progress to 2nd grade, with the outcome being a program-administered reading test. We will examine difference at each individual grade level or as the program matures over time or for subgroups of students defined on baseline characteristics. We will also compare student outcomes in schools receiving online support to outcomes in schools receiving even less program support (A2i-assess) to assess further the impact of cost reductions.

Key Outcome Measures. The primary student outcome is student achievement in reading, though we will also examine identification for special education and retention in grade (which are key outcomes for cost avoidance) in exploratory analysis. For our confirmatory question for

¹ If student mobility in the study schools is high, confirmatory question sample will be students who have been present in the study schools for the entire three years of the study.

third graders, we will use the total reading score on the state test of English language arts as the outcome. Since the evaluation sample will be drawn from multiple states, we will standardize test scores in a way that allows us to conduct the analysis across different tests.² With the adoption of new tests anchored on the Common Core, the content of state tests has become more similar than in the past, further facilitating this approach.

In the first year of program implementation, we will also field a reading test in grades K and 1 in schools in the tech-based PD and in-person PD schools to conduct an early, exploratory assessment of reading differences across these two levels of support, providing early feedback using a common, specially-fielded test to provide findings that can help refine program implementation. Our current plan is to field the Gates-McGinitie Reading Test, which is widely used, has strong psychometric qualities, and can be group administered. It provides scale scores, National Percentile Ranks, Grade Equivalent, Normal Curve Equivalent, and has national norms (See <http://www.hmhco.com/hmh-assessments/reading/gmrt>). If the final sample of schools has the capacity to field a computer adaptive test of reading such as the MAP for Primary Grades, we may shift to this so that the test for a child can be short, though the fielding logistics may be more complex for teachers.

In our exploratory analysis, we also propose to use the program-fielded test for analysis of

² For a discussion of using existing achievement tests – including different tests across sites - see Somers, Marie-Andrée, Pei Zhu, and Edmond Wong. “Whether and How to Use State Tests to Measure Student Achievement in a Multi-State Randomized Experiment: An Empirical Assessment Based on Four Recent Evaluations.” NCEE Reference Report 2012-4015. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education, 2011.

reading impacts: this is relevant for comparisons involving the A2i-assess schools in the first year, all schools in the second year, for grades other than third in the final year. For earlier grades, we will use the A2i online reading assessment (Exhibit G.8) that will be implemented in all schools in a similar way. We also will examine additional outcomes from student records such as retention in grade, special education status, and how program impacts vary by certain student subgroups, especially high-need students.

Model for Estimating Program Impacts. Our basic impact estimate will be a two-level model with students nested in schools. To improve the precision of the impact estimate (statistical power) we will include covariates in the model for key student baseline characteristics such as EL status, special education status, NSLP status, and any available prior test scores (this will not be available for kindergarteners in the sample). For our comparisons of 25 in-person PD and 25 tech-based PD elementary schools, we estimate minimum detectable effect sizes (MDESs)—defined as the smallest true effect that can be detected at a specified level of power and significance level for a given sample—of 0.196 on student reading test scores for our confirmatory question which focuses on the third-year impact on reading test scores for third grade students. These calculations are based on conservative estimates of a sample of 50 schools from four regions (blocking at the regional level) split 50/50 between treatment and control, 3 teachers and 100 students per grade in each school, 80 percent power, and 62% and 35% of the outcome variance at the school and student level, respectively, explained by covariates in the model, a statistical significance level of .05 with a two-tailed test and a school-level intra-class correlation of 0.140 (Hedges & Hedberg, 2007). This estimated MDES for the confirmatory question (impact after three years of instruction) is less than the prior estimates of the cumulative impact of A2i over three years (.76) and is less than the mean level of impacts for at each grade

level in prior studies (.36). In presenting impact findings, we will present the absolute impact estimate (if a single test is used across all sites), effect sizes, and a translation into the proportion of the typical student learning growth for students at the appropriate grade level (e.g., this impact translates into an additional X months of student learning for typical Y grade students). For comparisons of either A2i tech-based PD or A2i in-person PD with A2i-assess (a 25 to 20 school comparison), the MDES is 0.209, calculated similarly to that above.

Cost-Effectiveness of the Lower-Cost PD Support Strategies (RQ5). Following the instructions in the RFA, MDRC will conduct an analysis of the cost-effectiveness of the three A2i PD strategies, largely relying on extant data from program operations, supplemented by teacher surveys and program and school staff interviews. Drawing on the ingredients approach pioneered by Hank Levin and his colleagues at Teachers College (*Economic Evaluation in Education: Cost Effectiveness and Benefit-Cost Analysis, 2017*), we will work with Learning Oventions to identify the resources (technology, materials, staff time, facilities, etc.) involved in implementing A2i under the three different conditions. We will also draw on information from the teacher surveys on differences in teacher activities across the three strategies. We will then “cost out” these different resources using data assembled by Learning Oventions as part of its program implementation and publically available information on average school staff salaries.

This will result in different levels of resources and resulting costs involved in implementing the three approaches. This will then be compared to our analysis of differences in student outcomes in the three categories of schools. If, for example, there are not statistically significant differences in student outcomes between the A2i tech-based PD and A2i in-person PD schools, then this will be the evidence that the A2i tech-based PD approach is more cost effective. If there are differences in student outcomes, we will be able to document what the added effort and cost

produces in better student outcomes- in a sense, what schools will get for the greater cost.

Assessment of the Scale-Up Strategy (RQ6). The strategy to scale section earlier in the proposal describes the various approaches United2Read will take to lower the barriers to use of A2i (e.g., reducing the cost of PD, Watson). Our cost analysis will document the extent that these efforts reduce the cost of supporting and implementing A2i, and interviews with Learning Oventions staff and document review will describe how this strategy may have evolved over time. Interviews with school and district staff in a sample of “case study” sites conducted by Digital Promise will also explore if and how these strategies helped schools implement the program and address what were previously barriers to scaling. Finally, the evaluation team will document the extent to which the A2i team was able to expand to meet the scale up targets of schools and students identified earlier in the proposal. To the extent this was a success, we will explore strategies that were especially useful. To the extent the effort fell short, we will explore possible reasons why and approaches to enhancing the scale up strategies.

This Evaluation Provides Timely Operational Feedback and an Objective Assessment of the Program. The evaluation plan includes periodic meetings and briefing with the United2Read leadership plus presentation of findings for an external audience after each school year. The reports are designed to be concise and accessible to practitioners and policy makers while also providing findings that meet the WWC standards. Included in the dissemination plan are an infographic on the launch of the study, a policy brief covering school years 2018-19 and 2019-20, and longer research report including school year 2020-21 data and summarizing findings across the entire time period.

The objectivity of the evaluation is assured by the agreement between the partners in the proposed team. MDRC will be responsible for the evaluation. The evaluation team will seek the

advice of the Leadership Team on relevant aspects of the design to make sure the evaluation is appropriately anchored on the program Logic Model, project Management Plan, and study procedures are feasible within the study schools. MDRC will brief the United2Read teams on findings as they emerge, solicit comments and suggestions on improvements in the analysis and interpretation, and share drafts of the reports for review and comment prior to release. MDRC will have final decision-making authority on the evaluation, and the work will be subject to MDRC quality control and review procedures. The results will be widely disseminated to the public through MDRC's website, in public presentations, and in peer-reviewed articles, as appropriate. MDRC also will produce a restricted-use data file available to other researchers after the project ends under strict data security agreements to allow further analysis of the data. This is described in more detail in the data management plan (see Appendix G. Data Management Plan).

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