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## **Project Narrative**

### **A. Significance**

#### **1.) The Magnitude or Severity of the Problem to Be Addressed by the Proposed Project**

In its vision of what it means to be literate in the twenty-first century, the Common Core State Standards for English Language Arts (CCSS-ELA) prioritize the ability to analyze and interpret challenging texts using academic discourse in extended pieces of writing. In addition to specifying specific standards for each grade level, the CCSS-ELA present College and Career Readiness Anchor Standards for Reading and Writing in grades K-5 and grades 6-12 that define the skills and understandings all students must demonstrate. These include the ability to “read closely to determine what the text says explicitly and to make logical inferences from it,” and to “write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence” (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010).

As is evident from these anchor standards, the CCSS-ELA, and other state standards developed and adopted since 2010, set a high bar for all students and place a premium on the ability to analyze and interpret challenging texts and to write about those texts using academic discourse in extended pieces of writing. However, results from the most recent administration of the National Assessment of Educational Progress (NAEP) in writing in 2011 (U.S. Department of Education, Institute of Educational Sciences, National Center for Education Statistics, 2012) and the administration of the NAEP in reading in 2015 (U.S. Department of Education, Institute of Educational Sciences, National Center for Education Statistics, 2015) indicate that today’s secondary students face considerable challenges in meeting these standards. Nationally, only 20% of 8th graders and 18% of 12th graders scored at proficient or above in writing; additionally

only 27% of both 8th and 12th graders, respectively, scored at proficient or above in reading. As Figure 1 indicates, large disparities exist between the performance of White, Hispanic, and Black students:

Grade 8	Writing	Reading	Grade12	Writing	Reading
White	34%	44%	White	35%	46%
Hispanic	14%	21%	Hispanic	11%	25%
Black	11%	16%	Black	9%	17%

**Figure 1: NAEP Reading and Writing Scores**

**Most alarming is that only 1% of English learners (ELs) at both grades 8 and 12 scored at proficient or above in writing and only 4% of ELs scored at proficient or above in reading.**

This disparity in performance is likely to be a major hindrance for ELs’ college access and persistence since academic preparation in high school is a major predictor of college success (Adelman, 2006; Kanno & Cromley, 2015).

Currently, ELs are the fastest growing segment of the K-12 student population with the largest increases occurring in grades 7 through 12 (U.S. Department of Education, Institute of Educational Sciences, National Center for Education Statistics, 2017). In 2013-14, over 9% of K-12 public school students were ELs. California leads the nation with almost 23% ELs, but many other states such as Nevada, Texas, Arizona, Illinois, and Minnesota serve large percentages of ELs (U.S. Department of Education, Institute of Educational Sciences, National Center for Education Statistics, 2016). Although ELs in the United States speak more than 350 languages, 73% speak Spanish as their first language (Batalova & McHugh, 2010), 40% have origins in Mexico (Hernandez, Denton, & Macartney, 2008), and 60% of ELs in grades 6 through 12 come from low-income families (Batalova, Fix, & Murray, 2005; Capps et al., 2005). Given that by 2020, one in four children enrolled in America’s K-12 public schools will be Latino (Maxwell, 2012) and the largest number of ELs in today’s schools are LTELs (long-term English learners),

the large literacy gaps between ELs and their non-EL peers will continue to widen. This gap is reflected in high school graduation rates where 62% of ELs graduated in 2014 as opposed to 82% of all students. In the states with whom we are collaborating in this grant, the graduation rates of ELs are as follows: Arizona (18%), Nevada (29%), Minnesota (63.7%), Wisconsin (64%), California (65%), Texas (71.5%), and Illinois (71.7%) (Mitchell, 2016; note that Arizona and Nevada do not include RFEP students in these rates). Currently, not only are ELs less likely than their non-EL peers to graduate from high school, they also enroll in college and graduate from college at far lower rates (Nuñez, Rios-Aguilar, Kanno, & Flores, 2016), and studies have shown that academic writing is “the linguistic challenge that plagues” EL college students the most (Kanno & Cromley, 2015). Because text-based writing is a gatekeeper for college access and persistence and a “threshold skill” for hiring and promotion for salaried workers (National Commission on Writing for America’s Families, Schools, and Colleges, 2004), failure to close these achievement gaps in academic writing will have serious social and economic consequences.

## **2.) The National Significance of the Proposed Project**

The University of California, Irvine, Writing Project (UCIWP), a site of the California Writing Project (CWP), the National Writing Project (NWP), and the Council of the Great City Schools (CGCS) propose a 5 year Expansion grant to replicate and scale up to a national level, including new contexts and populations, an innovative approach to enhancing the academic literacy of English Learners (ELs) in grades 7-11 called the *Pathway to Academic Success Project*. The project will first involve eight National Writing Project sites and partner districts in seven states serving high-need students and high percentages of ELs: UC Irvine Writing Project in Irvine, California and Tustin Unified School District; Central Arizona Writing Project in

Phoenix, Arizona and Phoenix Union High School District; the Central Texas Writing Project in San Marcos, Texas and Comal Independent School District; North Star of Texas Writing Project in Denton, Texas and the Denton and Mesquite Independent School District; Southern Nevada Writing Project in Las Vegas, Nevada and the Clark County School District; University of Wisconsin, Milwaukee Writing Project in Milwaukee, Wisconsin, and the Milwaukee Public Schools; the Illinois Writing Project in Chicago, Illinois and DuPage High School District 88; and the Minnesota Writing Project in Minneapolis, Minnesota and Richfield Public Schools. We then envision the dissemination of the Pathway Project within the 180 other NWP sites serving all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands, with special emphasis on those rural NWP sites involved in the NWP's EIR College, Career, and Community Writers Program, as well as to the 70 large urban member districts of the Council of the Great City Schools. SRI International's Center for Educational Policy will serve as the external evaluation partner, and the National Writing Project (NWP) will provide independent scoring of student writing samples as well as provide technical assistance to the project on strategies for scaling up.

The intent of the Pathway Project is to address and validate solutions to persistent educational challenges by providing teachers with curriculum materials and instructional practices to prepare ELs in high-need schools to successfully complete courses in core academic subjects, and to meet their state-adopted English language arts standards, in order to graduate from high school and to become college-bound and career ready. Specifically, the intervention provides ongoing, sustained professional development for English Language Arts teachers focused on how to explicitly teach, model, and scaffold guided instruction in the cognitive strategies (or thinking tools) that research indicates experienced readers and writers access when

they construct meaning, in order to prepare their students to become strategic readers able to analyze and interpret complex texts and analytical writers capable of writing well-reasoned arguments with textual evidence. The centerpiece of the intervention is a high-quality pre/post academic writing assessment (AWA) that is used for formative purposes (i.e., to analyze what students across grade levels know and are able to do in September as compared with the standards for text-based academic writing and to implement effective classroom practices based on the analysis of student work) as well as for summative purposes (i.e., to analyze students' growth as academic writers between September and May of each year). Ultimately, the goal is to increase the success of **all** students, but especially high-need students, including ELs, and to provide a level of academic rigor that enhances student achievement and will put them on a *pathway* toward postsecondary education through improved academic literacy skills. We define high need students as students at risk of educational failure or otherwise students in need of special assistance or support, such as children who are living in poverty, English learners, those who are academically far below grade level, students with disabilities, students who are underperforming on national assessments, and students who are at risk of not graduating on time with a high school diploma.

**Developed in the field, the intervention has a twenty-year track record of producing strong evidence of project effectiveness and is ready for implementation at the national level.** With each iteration, the intervention has continually evolved to meet the changing needs of teachers, students, and state and national literacy standards. The intervention began with an 8 year quasi-experimental longitudinal study in the Santa Ana Unified School District (SAUSD), a large, urban high-need district (98% Latino, 84% Free and Reduced Price Lunch, 88% mainstreamed ELs) designed by Dr. Carol Booth Olson, Director of the UCI Writing Project

(UCIWP) and Professor, UCI School of Education, that yielded an average effect size of .34 across the eight years of implementation, and **met the What Works Clearinghouse Design Standards (WWC) with reservations**. In the last two years of the grant, California introduced the California High School Exit Exam (CAHSEE), which was a requirement for high school graduation. 91% of 10th grade treatment students in 2003 passed the CAHSEE as compared with 75% of control students, and 93% of 10th grade treatment students passed the CAHSEE in 2004 as compared with 66% of control students. A study on the Pathway Project quasi-experimental study (Olson & Land, 2007) won the Alan C. Purves Award in 2007 from the National Council of Teachers of English for the article in the *Research in the Teaching of English* “deemed most likely to improve education practice,” and the Richard A. Meade Award in 2009 from the Council on English Education of the National Council of Teachers of English for “outstanding research in pre-service or in-service English education.” A second quasi-experiment, funded by the California Postsecondary Commission (CPEC), was launched in Paramount and Lynwood Unified School Districts that yielded effect sizes of .63 and .27 in Years 1 and 2, respectively, and **met WWC design standards with reservations**. The project then received Institute of Education Sciences (IES) funding to conduct a Goal 3 Efficacy randomized field trial in SAUSD. Year 1 of that RCT (Kim et al., 2011) yielded an effect size of .35 and **met WWC standards without reservations**. Year 2 of the RCT yielded an effect size of .67 (Olson et al., 2012) and **met WWC standards with reservations**. In both years of the study, there were statistically significant effects on the writing subtest of the California Standards Test ( $d=.10$ ). Since the most rigorous research was conducted in SAUSD, the project applied for and received an Office of English Language Acquisition (OELA) grant to conduct an RCT to replicate the project in Anaheim Union High School District, received significant and positive results (Olson

et al. 2017--Year 1,  $d=.48$ ; Year 2,  $d=.60$ ), and **met WWC standards with reservations**. 10<sup>th</sup> grade ELs in the treatment group in Year 2 also passed the CAHSEE at 20 percentage points higher than the state pass rate (Pathway treatment = 57.9%; State = 38%). The next step was to receive an Investing in Innovation Fund (i3) Validation grant to scale the Pathway Project up to a regional level involving four Writing Project sites and partner districts: the UCIWP and Norwalk-La Mirada USD; the South Coast Writing Project at UC Santa Barbara and Santa Barbara USD; the California State Los Angeles Writing Project and Hacienda- La Puente USD, and the California State San Marcos Writing Project and a consortium of San Diego County Districts. We are now in Year 4 of the i3 Validation. Results from SRI for the Year 1 RCT indicate a positive and statistically significant result across all four sites ( $d=.31$ ) and a positive and statistically significant result across all four sites for students experiencing the project for the first time in Year 2 ( $d=.21$ ). SRI has concluded, based on this analysis, “that Pathway can be effectively replicated in other Writing Project sites” (Woodworth et. al., 2017). An article describing the impact of the i3 Pathway Project is currently being drafted for submission to the *Journal of Educational Psychology*. This article will be submitted to the WWC for review.

Given the dearth of research on effective strategies for improving the academic literacy and especially the text-based academic writing of secondary ELs (Fitzgerald, 2017; Graham & Perin, 2007), the significance of college composition coursework for college access and persistence, and that currently only 4% of Latinos (a proxy for ELs) enrolled in community college actually transfer to a four-year institution at the end of two years (California Community Colleges, 2006 – 2007), **we believe that, as a nation, we must invest in the academic future of these high-need students**. The Pathway Project has demonstrated its efficacy in improving academic writing outcomes for ELs and their non-EL peers. Evidence from our most recent

published study (Olson et al., 2017) suggests that students of all races and ethnicities benefitted from the Pathway intervention (White, Hispanic/Latino, Black, and Asian) but that the project conferred the greatest advantage to Latino students who outscored their White peers in the control condition on the post-test. Further, ELs and Redesignated ELs grew more in their academic writing over the course of a year than English Only students. Finally, students receiving free and reduced price lunch (FRPL) demonstrated more statistically significant gains than non-FRPL students. In November 2016, the IES What Works Clearinghouse released the Practice Guide, *Helping Secondary Students to Write Effectively* (Graham et al., 2016). A search of the literature on secondary writing yielded more than 3,400 citations. Of the eligible studies, 55 used randomized controlled trials or quasi-experimental designs to examine the effectiveness of the practices found in the guide's recommendations. Of these, 15 studies met the WWC's rigorous group design standards. Four of these 15 studies are reports of Pathway intervention research. Pathway studies were cited as evidence of all three recommendations of the expert panel: 1) Explicitly teach appropriate writing strategies using a Model-Practice-Reflect cycle; 2) Integrate writing and reading to emphasize key writing features; 3.) Use assessments of student writing to inform instruction and feedback.

Evidence also exists of the potential impact of Pathway instruction on college persistence. In a study of 95 12th grade SAUSD Pathway treatment and control students who matriculated to Santa Ana College, 78% of treatment students persisted to the second year of college as opposed to 45% of control students and 35% of all entering freshmen (Matuchniak, 2013).

### **3.) Extent to Which the Proposed Project Represents an Exceptional Approach to the Priorities Established for the Competition**

The Pathway Project takes a cognitive strategies approach to closing the achievement gap between ELs and their native English-speaking peers in the area of text-based academic writing. Numerous reports from policy centers and blue-ribbon panels “implicate” poor understanding of cognitive strategies as the primary reason why “adolescents struggle with reading and writing” (Conley, 2008, p. 84; Graham, 2006; Snow & Biancarosa, 2003). The cognitive strategies intervention that is the focus of this study is grounded in a wide body of research on what experienced readers and writers do when they construct meaning from and with texts. Countless studies demonstrate the efficacy of cognitive strategy use in reading (Block & Pressley, 2002; Duke & Pearson, 2002; National Institute of Child Health and Human Development, 2000; Paris, Wasik, & Turner, 2001; Tierney & Pearson, 1983; Tierney & Shanahan, 1991). Similarly, Graham and Perin (2007) indicate that strategy instruction is the most effective of eleven key elements of writing instruction ( $d=.82$ ) for all students and particularly for students who find writing challenging. In fact, in the WWC Practice Guide *Teaching Secondary Students to Write Effectively* (Graham et al., 2016), the expert panel determined as its number one recommendation, with the highest level of evidence, that teachers should explicitly teach, model, and enable students to practice and reflect upon writing strategies and concluded, “teaching students cognitive strategies is one way to develop their strategic thinking skills, ultimately helping them to write more effectively” (p. 7).

Increasingly, recent instructional frameworks and recommendations also support approaches that incorporate strategy instruction to advance ELs’ development of English (Calderon, Slavin, & Sanchez, 2011; Francis, Rivera, Lesaux, Keiffer, & Rivera, 2006; Goldenberg, 2008; Schleppegrell, 2009). Short and Fitzsimmons (2007) hypothesize that strategy instruction is especially effective for ELs because it provides them with an explicit focus on

language, increases their exposure to academic texts, makes the texts they read comprehensible, gives them multiple opportunities to affirm or correct their understanding and use of language, assists them in retrieving new language features and in using these features for academic purposes, and provides them with the means of learning language on their own, outside of class. They further hypothesize that mainstreamed adolescent ELs with an intermediate level of English proficiency, who represent the majority of Long Term English Learners (LTELs) in many states (Olsen, 2010), have sufficient proficiency to benefit from strategy instruction (Echevarria, Short & Vogt, 2008; Short & Fitzsimmons, 2007) because they possess the language proficiency required to use the types of cognitive strategies that will provide them access to the higher order cognitive reading and writing tasks encountered in regular content instruction. Explicitly teaching strategic reading and writing behaviors to ELs can help them engage with complex texts and convey those interpretations in well-reasoned essays to meet the CCSS-ELA and other state-adopted standards (August & Shanahan, 2006; Bunch, Kibler & Pimentel 2012; Fitzgerald, 2017).

Although research-based practices for developing cognitive strategies are recommended as the “pathway for literacy reform in middle and high schools” (Conley, 2008, pp. 84-85), very little of this type of instruction occurs in school, especially for ELs (Block & Pressley, 2002; Graham & Perin, 2007; Kong & Pearson, 2003; Vaughn & Klingner, 2004). In his book, *Getting Ready for College, Careers, and the Common Core*, David Conley identifies cognitive strategy use as the key to student success in entry-level credit bearing college courses and, increasingly, in occupational training programs that lead to careers. However, he laments that the more demanding tasks in college such as interpreting, synthesizing, evaluating, and reflecting upon multiple sources of information “require cognitive strategies that are not generally developed in a

typical secondary school education” (Conley, 2014, p.71). According to a Carnegie Corporation report, inadequate educator capacity and the limited use of research-based instructional practices prevent ELs from learning academic English at a level necessary to meet content standards in English language arts (Short & Fitzsimmons, 2007). This negatively impacts their ability to participate meaningfully in educational programs, successfully complete coursework, and achieve the academic outcomes of which they are capable. **The Pathway Project represents an exceptional approach to Absolute Priority 1 because the UCIWP has a 20-year track record of strong evidence of developing high-quality, technology-supported professional development (PD) geared toward enhancing ELD and ELA teachers’ classroom practices to affect academic outcomes positively for mainstreamed ELs in Grades 6-12. Four studies demonstrating its effectiveness for improving student outcomes meet WWC standards with reservations and one study meets WWC standards without reservations. The Pathway Project also represents an exceptional approach to Absolute Priority 2 – Field-Initiated Innovations – General because the project has already successfully taken the intervention to scale on a regional level through four National Writing Project sites in California. Through the infrastructure of the National Writing Project and the Council of the Great City Schools, the Pathway Project is poised to take to scale this entrepreneurial evidence-based innovation to improve student achievement and attainment for high-need students, especially ELs, in both rural and urban contexts.** The cognitive strategies approach, curriculum materials, assessments, and technology tools developed for the Pathway intervention have been repeatedly field-tested and are constantly updated, with the input of classroom teachers, to meet national and state standards as well as district initiatives. The Pathway Program has exhibited an entrepreneurial, field-based approach since its initiation in 1997. To start the

program, the principal investigator built a collaborative relationship with the Santa Ana School District to create and refine the Pathway Project to improve student achievement for high-need student. The program has reached out to additional districts first in Orange County and then in Southern California more broadly to expand the reach of a successful, proven, research-based approach to raising the achievement of English Learners. Each time the intervention has been scaled, the research results have been replicated through rigorous randomized control trials.

## **B. Strategy to Scale**

### **1.) Unmet Demand for the Practice that will Enable Applicant to Reach the Level of Scale**

The paucity of empirical studies on effective practices for teaching text-based academic writing to ELs reveals that this research area is nearly untapped (August & Shanahan, 2006; Graham & Perin, 2007; Fitzgerald, 2017). Most of the studies are small in size and qualitative in nature. Fitzgerald and Amendum (2007), for example, report no empirical studies of grade 6-12 writing instruction in their meta-analysis that involved 1988-2003 research studies of the K-12 writing instruction for ELs in the United States, and emphasize the growing need to investigate effective practices for teaching writing to adolescent ELs. This lack of research leaves the teachers of over 4.8 million EL students largely to speculate about how best to teach their students. How can they teach them to meet rigorous standards when they have so little training in how to diversify instruction in order to meet the needs of ELs, especially given that writing instruction is one of the least addressed areas in teacher preparation (Kiuahara, Graham, & Hawken, 2009; Enright, 2013)? In 2013, the Council of the Great City Schools teamed up with McKinsey & Company to conduct a national survey of teachers and student (EL) characteristics, instructional practices, and perceived quality of instructional materials for ELs. Respondents from the CGCS member districts and other networks, including the Association of Latino

Administrators and Superintendents and Teach for America, included EL teachers/specialists (46%), EL district coordinators (13%), general education teachers (10%), school principals (2%), and other school-based and district staff (2%). Over 50% of the respondents felt only “somewhat prepared” or “not prepared” at all to implement instructional shifts required by the Common Core. Additionally, 82% of respondents indicated that the curriculum materials they are currently using in EL instruction either only “somewhat” or “not at all” reflected the rigor of the Common Core. Respondents also noted that finding good materials can be difficult and time consuming (34%), and that they do not have the resources to purchase them (29%). As a follow-up to the questionnaire, respondents were asked to rate a list of practices according to the impact they would have on ELs’ performance. Over 57% ranked – “Train more general education and content area teachers EL strategies” as their highest priority. Based on this survey, the CGCS generated three recommendations: 1) Improve the quality of instructional materials for ELs; 2) Develop high-quality PD for general education and ESL teachers in EL strategies that are aligned to meet the Common Core State Standards; 3) Ensure that high-quality EL instructional materials are readily accessible for general education and ESL teachers. (CGCS, 2013, p.2).

Clearly, the Council’s national survey highlights both the need and the unmet demand for PD, strategy instruction, and rigorous curriculum materials for teachers of ELs. The *Pathway to Academic Success Project* aims to respond to that unmet demand by replicating and scaling up an intervention with strong prior evidence of efficacy to a national level. As discussed in the Significance section, the *Pathway to Academic Success Project* has already been scaled up to the Southern California region through an i3 Validation grant involving four California Writing Project sites and has been deemed by the external evaluator, SRI, to have replicated the intervention effectively. **We now seek to replicate and scale up the project to a national level**

**via the infrastructure of the National Writing Project and the Council of the Great City Schools.** Originally established at UC Berkeley in 1974 and expanded to the nation in 1991, the National Writing Project (NWP) is a network of 180 sites serving all 50 states, the District of Columbia, Puerto Rico, and the US Virgin Islands. Co-directed by faculty from universities and K-12 schools, the NWP focuses on enhancing the knowledge, expertise and leadership of the nation's educators in order to improve writing and learning for all educators. Sites work in partnership with area school districts to offer high-quality professional programs and research opportunities for educators reaches 80,000 educators each year. The NWP has also made concerted efforts to address persistent educational problems in rural schools throughout the United States through their i3 College, Career, and Community Writers program (formerly known as College Ready Writers) through both their Validation project and their EIR Expansion project. The National Writing Project's College, Career, and Community Writers Program (C3WP) provides professional development along with instructional and formative assessment resources focused on teaching young people how to engage in respectful argumentative discourse. The program helps teachers and students read critically, explore multiple points of view, and finally take a stand on important issues. With funding from two Investing in Innovation grants, NWP will reach approximately 65,000 students in 93 high-need, rural districts in 21 states served by 24 local Writing Project sites. NWP is further expanding C3WP using funding from the Supporting Effective Educator Development program. To date, NWP has engaged a total of 96 local Writing Project sites in 41 states in C3WP. Many of these sites are taking an entrepreneurial approach to spreading the work, and securing contracts with district and school partners to offer rich professional development. Brown University's Education Alliance cites that 44% of ELs live in rural communities (2003) where their numbers do not

qualify their schools to provide additional support to them which means these students are particularly underserved. Established in 1956, the Council of the Great City Schools (CGCS) brings together the nation's largest urban public school systems in a coalition dedicated to the improvement of education for children in inner cities. America's urban schools serve more than 26% of the nation's ELs. The CGCS includes 70 member districts located in cities with populations over 250,000 and student enrollments over 35,000 as well as school districts located in the largest city of any state, regardless of size. Together, these 70 districts employ over 423,000 teachers in over 1,200 schools serving 7.3 million students, 70% of whom are on Free and Reduced Price Lunch. The CGCS worked with the U.S. Department of Education on EL accountability guidance under ESSA, provides strategic support team reviews of EL programming in member districts, and has created a PD platform for teachers working with high-need students who are below grade level in reading as well as instructional materials in mathematics for ELs and other students with language-related needs.

Coburn (2013) has identified four dimensions of scaling up: depth, sustainability, spread, and a shift in reform ownership. Our partnership with the NWP and the CGCS will be invaluable in addressing each of these components of our Expansion grant. We propose to first replicate the Pathway intervention in eight NWP sites in seven states that serve high percentages of ELs to expand the populations of ELs served and demonstrate the efficacy of the Pathway intervention in new contexts. This will enable us to focus on the key factors in achieving depth (long-term changes in teachers' practices and beliefs) and reform ownership by NWP site directors, participating school district personnel, classroom teachers, and students. Our focus on spread (increased users) and sustainability to ensure the continuation of intervention effects will involve broad dissemination efforts through not only the eight NWP sites but also through Pathway PD

hosted by both the NWP and the CGCS to serve a national audience of both rural and urban teachers of ELs and other high-need students. In short, the *Pathway Project* meets the market demand for high-quality professional development designed to enhance the academic outcomes of high-need students who are at risk for educational failure or otherwise in need of special assistance and support, such as students who are living in poverty, who are English learners, who are academically far below grade level, or who are students with disabilities, all of whom are at risk of not graduating with a diploma on time.

## **2.) Description of the Intervention, Strategies to Address Barriers to Scaling Up, Logic Model, Scaling Targets, and Cost Analysis**

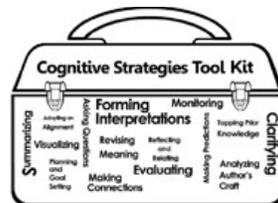
### **Description of the Intervention**

The treatment is an intensive 40-hour PD program (via five 6-hour released days interspersed throughout the school year and five 2-hour after-school sessions) in which secondary teachers learn how to integrate cognitive strategy instruction into process writing to improve students', specifically high-need students and mainstreamed ELs', interpretive reading and text-based academic writing. This is done by: 1) using a cognitive strategies approach to reading and writing instruction; 2) instructing students to revise a pre-test on-demand writing assessment into multiple draft essays; and 3) receiving ongoing support from experienced Pathway teachers who serve as coaches to teachers in the experimental condition.

### **Cognitive Strategies Tool Kit and Curriculum Materials**

Strategy instruction in this intervention occurs within the context of teaching reading and writing as a process and involves pre-reading, during reading, and post-reading activities as well as prewriting, planning, drafting, sharing, revising, and editing activities. The Pathway Project and its year-long, five full-day PD schedule constantly evolve as standards are updated and new

research becomes available. During the first two PD days, teachers are introduced to a model of the cognitive strategies that make up a reader's and writer's mental tool kit in Figure 2. These thinking tools or acts of mind directly map on to the CCSS-ELA Anchor Standards for College and Career Readiness in Reading and Writing and other state standards prioritizing text-based academic writing.



**Figure 2**

To reinforce the tool kit concept, teachers receive wall posters with visuals representing the cognitive strategies, and students receive bookmarks as well as 8½” x 11” copies of cognitive strategies sentence starters that illustrate what goes on in the mind of a reader or writer in the act of meaning construction. For example, a sentence starter for revising meaning is “At first I thought—but now I...” and a starter for reflecting and relating is, “So, the big idea is...” To build students’ declarative knowledge of what cognitive strategies are, teachers presented scaffolded lessons called “tutorials” (Bruner, 1978) in which they introduce each of the tools in the tool kit to students within the context of reading and writing about high-interest literary or nonfiction texts. To enhance their procedural knowledge of how to implement the strategies, students receive instruction on how to make marginal annotations to interpret complex texts, and keep reading logs with key quotes from the texts they are reading and commentary on those quotes.

Finally, to foster conditional knowledge of when to use a cognitive strategy, which strategy to use, and why, students are taught to think aloud in response to complex texts while a partner records their responses and then labels their strategy use, as well as write metacognitive reflections describing the cognitive strategies they use in order to form interpretations about texts

and write analytical essays. The Pathway Project provides a wide array of teacher-tested and easy-to-use paper and computer-based materials as models of curriculum and instruction. Because these materials are designed for students across the grade levels (7-12) and with varying degrees of language proficiency, teachers are given time to meet in grade-level groups and as school teams to discuss how to modify the materials to meet their specific students' needs. Teachers are encouraged to withdraw gradually the instructional scaffolding embedded in the materials as students demonstrate their ability to implement cognitive strategies in reading and writing more independently (Pearson & Gallagher, 1983).

### **Formative Assessment and Revision of Pre-test**

Second, teachers learn how to use results from the on-demand analytical writing pre-test (the Academic Writing Assessment—AWA) to provide instruction in text-based analytical writing. To that end, the PD focuses on preparing students to read, make inferences, and form interpretations about complex literary and nonfiction texts and to convey interpretations in thoughtful, well-organized essays that present a clear thesis supported with appropriate textual evidence. The centerpiece of the Pathway Project is an extensive set of materials shared during Days 3 and 4 of the PD program, focused on the revision of the students' pre-test writing assessment (a text-based analytical essay) into a multiple draft essay. Student performance on this timed, on-demand pre-test essay is used to inform the Pathway Project as teachers engage in analyzing students' work and identifying students' strengths and areas for growth (Biancarosa & Snow, 2004; Black & Wiliam, 1998).

Pre-test essays are used for both formative and summative purposes. Based on the teachers' analysis of students' pre-test essays, lessons are implemented to address student needs. One very common shortcoming in ELs' pre-test essays is the over-reliance on summarizing. As has been widely reported, ELs who have been in English Language Development programs often

receive instruction that focuses primarily on literal comprehension. Consequently, they tend to rely on retelling when writing a text-based analytical essay as a way to prove that they understood what they read rather than offering interpretation and commentary to support their argument. One way to help students move from knowledge-telling to knowledge-transformation (Scardamalia & Bereiter, 1987) is to help them make their thinking visible after they have composed a first draft of an essay using a color-coding process. Teachers designate three colors for the types of assertions that comprise a text-based analytical essay – yellow for summary, green for evidence, and blue for commentary. They then model the process of color coding. After students are introduced to the color-coding system, they practice coding sample essays that are marginal/not pass (1-3 on a 6 point scale) and adequate to strong pass (4-6 on a 6 point scale). Starting with the weaker paper, students notice that most of the sentences fall into the yellow category whereas the stronger paper has a balance of yellow, green and blue. Students then apply the color-coding strategy to their own first drafts to see graphically whether they had simply summarized or whether they had provided ample textual evidence and commentary. The coded draft then becomes a visible guide for revision. This color coding strategy, along with detailed feedback the students receive from trained readers, has a powerful impact on their revised drafts and prepares them for the post-test. At PD meeting #5, teachers review students' post-tests before submitting them for scoring, and look for evidence of growth between pre-test and post-test. While papers are de-identified and scored by the NWP with their generic Analytic Writing Continuum for Literary Analysis rubric (AWC-LA), papers are also scored at each site with a prompt-specific rubric. These results are shared with teachers each Fall in a sealed envelope and provide concrete evidence of the impact of Pathway on student writers. This evidence often prompts teachers who have been low implementers of the intervention in the first year to become

high implementers in the second year.

### **Coaching**

The third core component of the Pathway Project involves coaching. Teachers receive ongoing support from a veteran teacher who has previous exposure to the project. Pathway Project coaches attend professional development trainings along with the school team to whom they are assigned and assist teachers in integrating interpretive reading and analytical writing instruction using the cognitive strategies approach into the lessons in their textbook. Research indicates that when coaching is combined with professional development, teachers are more likely to implement innovations in their classroom (Buly, Coskie, Robinson, & Egawa, 2006; Joyce & Showers, 2002; Olson & Land, 2008).

### **Strategies to Address Barriers to Scaling Up**

In the i3 Validation Pathway Project, all of the sites were within driving distance of one another. Therefore, the UCIWP site was able to model each professional development day with the three other site Directors and their Teacher/Consultant (T/C) trainers present prior to their delivery of the PD themselves. This approach is not feasible in a multi-state project. To address this barrier, we propose to hold a three-full-day site Director and T/C meeting at UCI in August of each year and two full-days at a mid-point in the country in late January or early-February.

Further, we propose that each site bring two T/Cs to the meeting who are classroom teachers and can implement the Pathway approach, and curriculum, and pre/post assessments in 2019 – 2020. This will give them first-hand experience of the intervention, preparing them to be trainers called Site PD Teacher Leaders in 2020-21 and beyond. During 2019-20, the UCIWP will also launch the PD for Tustin Unified School District **one year ahead of the other site partners**. Each of these sessions will be professionally videotaped and given to each site as a

training tool.

Another barrier to scaling up is how to provide appropriate coaching. In California, it was possible to hire veteran retired Pathway teachers to visit the classes of treatment teachers implementing the intervention to provide support. In the scale up model, we propose to address this barrier as follows: 1) Seven retired highly trained, UCIWP T/Cs (such as a former principal of a high-need school, a district office literacy specialist, a county office literacy specialist, etc.) will each become a Thinking Partner for each Site Director and implementation team. They will attend their partner site's PD throughout the year and provide assistance. The UCIWP has also requested a Thinking Partner from the NWP to benefit from their experience with scaling up their College, Career, and Community Writers Program, which serves rural schools and teachers. 2) At least two T/Cs from each site will experience the intervention first-hand (a Training of Trainers model) and become the NWP Site PD Teacher Leaders; and; 3) One teacher per school will be groomed by the Site PD Teacher Leaders as a Pathway School Team Leader during the two-year RCT and serve as the Pathway Coach when the control teachers receive the PD in the year after the RCT is complete. Further, to provide individual teachers with additional support, we plan to work with the Council of the Great City Schools to videotape excellent Pathway teachers in Anaheim, Norwalk-La Mirada, and Tustin School Districts teaching specific Pathway tutorials and implementing Pathway materials.

In order to address the potential barrier posed by serving EL populations in new contexts who are not Spanish speakers, Dr. Robin Scarcella, a linguist, and Director of UCI's Program in Academic English, will design specific mini-lessons geared toward different EL populations and how to overcome the language challenges that they face. For example, Minnesota has large Hmong and Somali populations, Texas has large Vietnamese and Arabic-speaking populations,

Nevada has a large Tagalog-speaking population and so forth. Finally, in order to address the barriers posed by the distance between the sites and teacher interaction, Dr. Rebecca Black, from the UCI Department of Informatics, will continue to add to the array of anytime, anywhere technology tools and social media platforms already developed for the i3 Pathway Project. These include an interactive wikispace, a revision highlighter tool, instructional videos, and a student sentence fluency tool (A description of the current technology tools is provided in Appendix G). Our unique partnership with the NWP and the CGCS in the dissemination phase of our project will also enable us to address an additional barrier to scaling up – cost. We plan to codify the Pathway materials into training modules that will be offered to both member and non-members of the CGCS at a reasonable cost, plans for digital badging and academic credit through UCI Division of Continuing Education (UCIDCE) at a reduced cost, and plans for making new Pathway materials available to the public at no cost via an Open Source Outlet platform. UCI Applied Innovation, an entrepreneurial entity on campus, has also provided us with services and resources to strategize and disseminate our work by helping manage our copyrighted materials, by connecting us with potential donors, and by offering staff training to be innovative and entrepreneurial. Additionally, they have events that can showcase our work, provide proof of product services, and connect us with successful entrepreneurs. (See Dissemination Plan for more details.)

### **Logic Model**

As the Logic Model in Figure 3 demonstrates, the theory of action underlying the Pathway Project is that research-based guidance delivered by project partners via various cognitive-strategy-based Pathway curriculum materials is delivered as outputs over two-full years and implemented by treatment teachers. This results in increased instructional time on

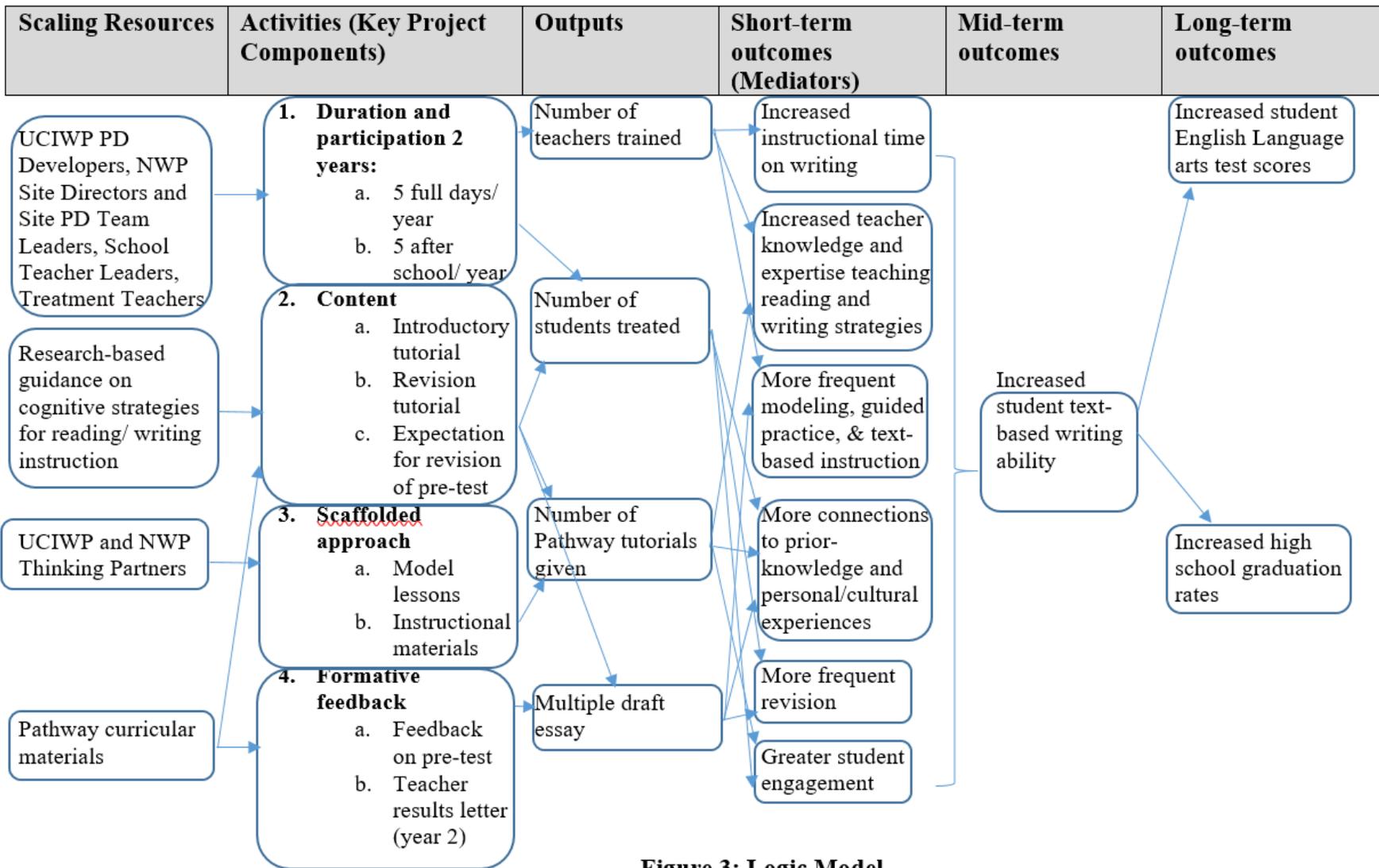


Figure 3: Logic Model

writing, teacher knowledge of evidence-based practices and expertise in teaching reading and writing strategies as well as more frequent explicit instruction in strategies for reading and writing, modeling, guided practice, text-based instruction, connections to prior knowledge and personal/cultural experience, and more frequent revisions of academic writing. A mid-term outcome includes increased student text-based writing ability. Ultimately, the long-term outcomes are increased English language arts test scores for all students, but especially high-need students, including ELs, and increased high-school graduation rates for those students.

### **Scaling Targets and Cost Analysis Numbers of Total Students to Be Served Each Year**

The *Pathway to Academic Success Project* will train 240 teachers, 30 by each of the National Writing Project sites. Teachers will be randomly assigned to treatment and control conditions. 120 treatment teachers will receive PD for two years. After the RCT is complete, 120 control teachers will receive the PD for one year. Both treatment and control teachers will receive stipends as incentives to participate. Each teacher will administer the pre/post writing assessments in two focal classes ( $120 \times 2 \times 35 = 8,400$ ). Thus, 8,400 students will be served directly each year. However, teachers will use Pathway strategies in all their classes ( $120 \times 3$  additional periods  $\times 35 = 12,600$ ). Therefore, a total of 21,000 students will be served each year (8,400 directly served; 12,600 indirectly served). We also consider a sub-set of these students as high needs, an estimate of 60% who qualify for free or reduced price lunch and 35% who are English Learners.

### **Targets for Total Number of Students to Be Served by the Project and Cost Per Student**

In the first two years of the RCT, 42,000 students will be served. In the year after the RCT when the control teachers receive the treatment, an additional 21,000 students will be served for a total of 63,000 students. After the third year of implementation, all eight NWP sites will then conduct an Advanced Pathway Institute for teachers from other schools in their service

area. Hence, an additional 28,000 students will be served (20 teachers x 8 sites x 5 classes x 35 students) **for a total of 91,000 students. Cost per student:** Based on our estimated numbers of students served by this project, the per-student cost is \$595 for those directly served and \$165 for those directly and indirectly served. Per-student cost to reach 100,000 students is \$150; 250,000 students is \$60; and 500,000 students is \$30. These costs compare favorably to the estimated per-student of \$717 to \$967 for Read 180, another literacy intervention (<http://evidenceforessa.org/programs/reading/middlehigh-school/read-180>). In the next section, in our description of the dissemination plan, we will provide per-student cost estimates for the dissemination products that will be developed with grant funds.

### **3.) Dissemination Plan for Proposed Project to Enable Others to Use the Information and Strategies**

In preparation for scaling up, the PD developer, Dr. Carol Booth Olson, and the UCIWP Director of Research, Dr. Huy Chung, participated as members of an i3 Scale Up and Sustainability Planning Cohort lead by Tom DeWire from EdScale. Our aim was to learn strategies for scaling up and dissemination and to benefit from lessons learned by other projects that had successfully expanded to a national level. Strategizing with DeWire, we identified as our best option for scale-up and dissemination, the infrastructure of the National Writing Project, of which we are a site. We relied on the NWP to identify the NWP sites serving the largest numbers of ELs in ways to expand our contexts and populations served.

In order to engender buy-in from the NWP Site Directors, we shared sample materials such as the tutorial on Malala Yousafzai, an advocate for children's rights to education, and the article "What is a Role Model: Five Qualities that Matter to Teens" by Dr. Marilyn Price-Mitchell, a description of which is in Appendix G. In order to create reform ownership, we

explained that while there are some non-negotiables in Pathway such as the introductory cognitive strategies tutorial, the revision tutorial, and revising the pre-test into a multiple draft essay, we encourage Site Directors and Site PD Teacher Leaders to modify Pathway materials to suit their audiences and we encourage treatment teachers to do the same. Our experience is that with teacher innovation comes depth of implementation. We not only shared evidence of the effectiveness of Pathway, but also provided a case study of “Joel” to humanize the impact of Pathway and engender buy-in. At the beginning of the school year in the i3 grant in the Norwalk-La Mirada Unified School District, Joel, an eighth grader, was reading at the fourth grade level and was a little disruptive in class. His teacher fully embraced Pathway and Joel blossomed. By the end of the year, he was reading at the eighth grade level and went from a score of 2 (not passing) on his pre-test to a score of 4 (passing) on his post-test. Appendix G includes an article about the Pathway Project called “On The Right Path” that discusses Joel’s transformation and contains a link to the Pathway Literary Magazine funded with a matching donation from AT&T that we produced to showcase the students’ writing. This is another dissemination tool. It is our intention by the end of the EIR Expansion project to certify these NWP sites as Pathway Training Sites (bringing the number of Pathway sites to 11, including the three CWP i3 sites). These sites, in turn, will host Advanced Pathway Institutes and certify Pathway Teacher Trainers.

To devise a scaling strategy that includes a plan for sustainability from Day 1, we are partnering with the NWP and the CGCS. These organizations both possess the infrastructure to help us expand our reach far beyond our initial eight NWP sites and seven states to make our training, resources, and strategies available to a wide variety of communities, including rural and urban areas. As mentioned previously, the NWP’s 180 sites train 80,000 teachers and 1.4 million students annually. The CGCS has 70 member urban districts serving over 423,000 teachers and

7.3 million students. Our work with the CGCS will begin in Year 1 of the grant as we collaborate to design 10 course modules on *Helping English Learners to Write: The Pathway to Academic Success* to be housed on CGCS’s Professional Learning Platform. Pathway developers will work with CGCS staff to co-develop content for these modules, packaging the course content using the CGCS learning resources including videos and web-based guides, based on the inaugural courses on Complex Communication and Thinking in ELA and Mathematics, developed by the CGCS.

We plan to begin videotaping and developing the course modules in Years 1 and 2 of the grant, finalize the course modules in Year 3, pilot the course in five member districts in Year 4, and go national with dissemination by the CGCS in Year 5 and in subsequent years after the grant funding terminates. The CGCS will charge member districts a subscription fee which includes a Training of Facilitators program on how to deliver the content. The CGCS’s current pricing system is as follows:

Package 2K - \$15,000	Package 4K - \$25,000	Package 10K - \$50,000
<ul style="list-style-type: none"> <li>• 2,000 subscriptions</li> <li>• 2 facilitators</li> <li>• Technical support</li> </ul>	<ul style="list-style-type: none"> <li>• 4,000 subscriptions</li> <li>• 3 facilitators</li> <li>• Technical support</li> </ul>	<ul style="list-style-type: none"> <li>• 10,000 subscriptions</li> <li>• 5 facilitators</li> <li>• Technical support</li> </ul>

(Note: The courses are also available to non-member districts. See Appendix G for a description of the Council of the Great City Schools’ Professional Learning Platform.). To meet the educational needs of individual teachers within these districts for optional academic credit, Pathway developers will collaborate with the UCI Division of Continuing Education (UCIDCE) to obtain academic credit (4 quarter units) as well as provide alternative digital credentials (digital badges) for each of the course modules. (For a description of UCIDCE’s digital badging program, see Appendix G.). UCIDCE charges \$800 for a 4 unit course. As matching, they will reduce this fee by 50% to \$400, and remit \$200 of that fee to the UCI Writing Project as resource sharing, enabling the UCIWP to continue to develop further intervention materials. To comply

with EIR's **Open licensing requirements**, all copy-righted deliverables that are created with Department grant funds will be housed on the UCIDCE's Open Source Outlet Platform as a matching contribution. From April 5, 2018 to May 4, 2018, there were 54,000 page views of the California Subject Examinations for Teachers (CSET) Preparation resource which is provided as a public service on this platform. The UCIDCE will place a link on this site to the CGCS Pathway course modules as well as promote the program participants in their Reading Certificate Program. Once Pathway developers and the CGCS create their Training of Facilitators program, the NWP will provide this training to 30 NWP Site Directors from rural areas who are involved in the EIR Expansion program, the College, Career, and Community Writers Program. As with the original eight NWP sites, we will certify these sites' Pathway Teacher Trainers. All sites receiving training will be encouraged to: 1) embed Pathway training in their annual NWP Summer Institutes; 2) design fee-for-service PD programs on Pathway as part of their in-service offerings. In order to help the UCIWP, NWP, and the CGCS to become more **entrepreneurial, not unlike a business**, the UCIDCE will assist us with developing and implementing a marketing plan. This assistance, provided as matching, will include search engine optimization, social media advertising, digital ad placement, email marketing, and web design. Together, they have pledged a support package that amounts to \$750,000. We also plan to publish journal articles and present our research results and Pathway strategies at conferences such as the National Council of Teachers of English (NCTE), Teaching English as a Second Language (TESOL), the Literary Research Association (LRA), and the American Educational Research Association (AERA).

### **Updated Cost per Student with Dissemination Efforts**

In the previous section we stated that our per-student cost is \$595 for those directly

served and \$165 for those directly and indirectly served through our intervention work. With the addition of our dissemination population, we are adding more students through the CGCS curriculum roll out (5 districts x 365 teachers x 4 classrooms x 25 students=182,500) and the NWP rural districts training (30 sites x 10 teachers x 5 classrooms x 35 students=52,500) our per-student cost is \$109 for those directly served and \$46 for those directly and indirectly served through both our intervention and dissemination work.

### **C. Project Design and Management Plan**

#### **1.) Goals, Objectives, Performance Measures, Activities, Start/End Dates, Responsible Personnel**

The chart in Figure 4 describes our goals, objectives, performance measures, activities, start/end dates, and responsible personnel for each phase of the project.

#### **2.) Adequacy of the Management Plan to Achieve Project Objectives**

##### **Five-Year Project Plan**

Our plan to scale up the *Pathway to Academic Success Project* has five phases involving planning, capacity building of NWP site partners, demonstration of the intervention, replication and expansion of Pathway, development and piloting of the CGCS course modules, and broad dissemination. In Phase One (10/1/18 – 9/30/19), we plan to codify our Pathway curriculum materials, enhance our technology tools and video training materials, work with NWP sites to generate buy-in at their local districts, and launch a three day Training of Trainers session for NWP Site Directors and their two Professional Development T/Cs who will implement Pathway strategies in their classrooms (including delivering the pre-test and post-test). The UCIWP will launch the first year of the RCT one year in advance of all other sites and professionally videotape all PD sessions for use as a training tool. We will also partner with CGCS staff on development of the Pathway course modules and videotaping of exemplary teachers. In Phase

**Figure 4: Project Design and Management Plan of the Pathway Project**

Goals	Objectives	Measures	Activities	Start Date	End Date	Responsible Personnel
<b>Phase 1: Planning and Capacity Building</b> (NWP: National Writing Project; PD: Professional Development; UCIWP: UC Irvine Writing Project; RCT: Randomized Control Trial; NWPD: National Writing Project Directors; PDTL: PD Teacher Leaders); Fall: October to December; Winter: January to March; Spring: April to June; Summer: July to September); CGCS: Council of Great City Schools						
1. Codify intervention materials for scale up and build capacity of NWP Site Directors and PD Teacher Leaders to deliver the Pathway intervention	1.1 : Codify intervention materials for scale up 1.2 : Enhance technology and video training tools 1.3 : Generate buy-in at local districts at all sites 1.4 : NWP Site Directors and PD Teacher Leaders will attend a 3 full day Training of Trainers session 1.5 : UCIWP begins first year of RCT in the Tustin Unified School District 1.6 : Make videotapes of PD sessions available for training purposes 1.7 : Develop Course Modules	1.1 a: Intervention materials are ready for scale up 1.2 a: Technology tools are usable on all formats 1.3 a: All sites have interested and committed partners 1.4 a: NWP Site Directors and PD Teacher Leaders are able to replicate Pathway and deliver the PD 1.5 a: RCT and PD meetings are held on scheduled dates 1.6a: NWP Site Directors and PD Teacher Leaders will have access to professional videotapes of 5 full day & 5 after school sessions to use as models each year 1.7a: Develop usable course modules	1.1.1 to 1.6.1: Monthly planning meetings	Yr. 1 Fa	Yr. 5 Su	UCIWP Project Director, Coordinator, and Affiliates (e.g., Dr. Black for technology, LC Productions for videotaping sessions; CGCS for course modules)
			1.1.2: Refinement of curriculum materials	Yr. 1 W	Yr. 5 Fa	
			1.2.2: Enhance technology tools	Yr. 1 W	Yr. 5 Fa	
			1.3.2: Recruitment of teacher participants	Yr. 1Sp	Yr. 3 Fa	
			1.4.2: Three day training for NWPDs & PDTLs	Yr. 1 Su	Yr. 1 Su	
			1.4.3: Site Leadership Meetings	Yr. 1 Fa	Yr. 5 Su	
			1.5.2: UCIWP holds RCT Y1 PD session 1	Yr. 1 Su	Yr. 1 Su	
			1.6.2: Videotape sessions for training purposes	Yr. 1 Su	Yr. 3 Sp	
			1.7.1: Develop usable course modules	Yr. 1 Fa	Yr. 3 Sp	
<b>Phase 2: Demonstration</b>						
2. Demonstrate and model intervention strategies to maximize intervention success of replication and expansion	2.1 : UCIWP completes first year of RCT including formative assessment of the pre-tests 2.2 : UCIWP will launch second year of RCT 2.3 : NWP sites will recruit teachers 2.4 : NWP sites will begin first year of RCT 2.5 : Site Directors and PD Teacher Leaders will continue with Training of Trainers sessions	2.1a; 2.2a: Formative assessment of student pre- tests for all years of the RCT 2.1b; 2.2b: Tustin Year 1-3 scoring results will be shared as evidence of intervention efficiency 2.3 a: 30 teachers from each NWP site will participate in the RCT 2.4 a: RCT and PD meetings are held on scheduled dates 2.5a: Five days of Training of Trainers will be held (two days in the Winter; three days in the Summer)	2.1.1: Train readers to provide feedback	Yr. 2 W	Yr. 5 W	UCIWP Project Director and Coordinator
			2.1.2: Holistic scoring	Yr. 2	Yr. 5	
			2.1.3: UCIWP RCT Y1 PD sessions 2-5	Yr. 2 Fa	Yr. 2 Sp	
			2.1.4: UCIWP After-school sessions 1-5	Yr. 2 Fa	Yr. 2 Sp	
			2.1.5: School-site coaching	Yr. 2 Fa-Sp	Yr. 4 Fa-Sp	
			2.2.1: UCIWP RCT Y2 PD session 1	Yr. 2 Su	Yr. 2 Su	
			2.3.1: NWP sites recruit schools and teachers	Yr. 2 W	Yr. 2 Sp	
			2.4.1: NWP sites hold RCT Y1 PD session 1	Yr. 2 Su	Yr. 2 Su	
			2.5.1: Two day training for NWPDs & PDTLs	Yr. 2 W	Yr. 2 W	
			2.5.2: Three day training for NWPDs PDTLs	Yr. 2 Su	Yr. 2 Su	

**Figure 4: Project Design and Management Plan of the Pathway Project**

Goals	Objectives	Measures	Activities	Start Date	End Date	Responsible Personnel
<b>Phase 3 and 4: Replication and Expansion (EL: English Learners)</b>						
<p>3. Improve teachers’ practice on the teaching of academic writing to all students, but especially high-need students and ELs*</p> <p>*By the end of all years of PD treatment, teachers will implement the Pathway cognitive strategy approach, introductory and revision tutorial, and revision of the pre-test with fidelity</p>	<p>3.1 : UCIWP completes second year of RCT</p> <p>3.2: UCIWP begins delayed treatment PD (third year)</p> <p>3.3 NWP sites complete first year of RCT</p> <p>3.4: NWP sites begin second year of RCT</p> <p>3.5 : Training of Trainers sessions will be held</p>	<p>Across all sites and objectives 3.1 to 3.4 treatment teachers will demonstrate increased: a) strategy use and instruction; b) modeling, guided practice and text-based instruction; c) connections to personal and cultural experience; d) instructional time spent on writing; and e) more frequent revision of writing</p> <p>3.5a: Five days of Training of Trainers will be held (two days in the Winter; three days in the Summer)</p>	3.1.1: UCIWP RCT Y2 PD sessions 2-5; After- school sessions 1-5	Yr. 3 Fa	Yr. 3 Spr.	UCIWP & NWP Project Directors and Coordinators
			3.2.1: UCIWP Y3 PD session 1	Yr. 3 Su	Yr. 3 Su	
			3.3.1: NWP sites hold RCT Y1 PD sessions 2-5; After-school sessions 1-5	Yr. 3 Fa	Yr. 3 Sp	
			3.4.1: NWP sites hold RCT Y2 PD session	Yr. 3 Su	Yr. 3 Su	
			3.5.1: Two day training for NWPDs & PDTLs	Yr. 3 W	Yr. 3 W	
			3.5.2: Three day training for NWPDs & PDTLs	Yr. 3 Su	Yr. 3 Su	
<p>4. Improve students’ academic writing achievement**</p> <p>**By the end of the two-year RCT at each site, 7 – 11th grade students in the treatment will demonstrate greater engagement, and increased use of cognitive strategies reading and writing about complex texts</p>	<p>4.1: UCIWP completes delayed treatment PD</p> <p>4.2: NWP sites complete second year of RCT</p> <p>4.3: NWP sites begin delayed treatment PD</p> <p>4.4: NWP will score all papers from RCT</p> <p>4.5 : Training of Trainers sessions will be held</p> <p>4.6 : UCIWP will hold an Advanced Institute</p> <p>4.7 : CGCS will pilot the Pathway course modules</p>	<p>Across all sites and objectives 4.1 to 4.4 treatment students will a) outperform control students on measures of academic writing and b) have higher English language arts test scores and c) higher pass rates on high school exit exams</p> <p>4.5 a: Five days of Training of Trainers will be held (two days in the Winter; three days in the Summer)</p> <p>4.6 a: A two week Advanced Institute will take place for 20 new teachers</p> <p>4.7 a: Course Modules will be piloted across 5 districts</p>	4.1.1: UCIWP Y3 PD sessions 2-5; After-school sessions 1-5	Yr. 4 Fa	Yr. 4 Sp	UCIWP
			4.2.1: NWP sites hold RCT Y2 PD sessions 2-5; After-school sessions 1-5	Yr. 4 Fa	Yr. 4 Sp	NWP Sites
			4.3.1: NWP sites Y3 PD session 1	Yr. 4 Su	Yr. 4 Su	
			4.4.1: NWP scoring	Yr. 4 Su	Yr. 4 Su	NWP
			4.5.1: Two day training for NWPDs & PDTLs	Yr. 4 W	Yr. 4 W	
			4.5.2: Three day training for NWPDs & PDTLs	Yr. 4 Su	Yr. 4 Su	UCIWP
			4.6.1: Advanced Summer Institutes	Yr. 4 Su	Yr. 4 Su	
			4.7.1: Piloting of Course Modules	Yr. 4 Fa	Yr. 4 Su	CGCS
<b>Phase 5: Broad Dissemination</b>						
<p>5. To increase the depth, spread, and sustainability of the Pathway instruction*</p> <p>*7 new NWP sites (+3 in California from the i3 Validation grant) will be certified as Pathway Training Sites</p>	<p>5.1: NWP sites complete delayed treatment PD</p> <p>5.2: NWP sites will hold their Advanced Institutes</p> <p>5.3: Training of Trainers sessions will be held</p> <p>5.4: UCIWP will develop plans for sustainability</p> <p>5.5: CGCS will launch course modules</p> <p>5.6: NWP will train rural district partners</p>	<p>5.1a: All participants complete the training</p> <p>5.2a: Pathway expands to teacher of high-need students</p> <p>5.3a: Two days of Training of Trainers</p> <p>5.4a: Offering of fee-for- service professional development</p> <p>5.5a: Offering digital badging and or UCI extension credits</p> <p>5.6a: Training 30 district partners</p>	5.1.1: NWP sites Y3 PD sessions 2-5; After-school sessions 1-5	Yr. 5 Fa	Yr. 5 Sp	NWP Sites
			5.2.1: Advanced summer Institutes	Yr. 5 Su	Yr. 5 Su	
			5.3.1: Two day training for NWPDs & PDTLs	Yr. 5 W	Yr. 5 W	UCIWP
			5.4.1: Offer PDs on Pathway Project topics	Yr. 6+	Yr. 6+	
			5.5.1: Course roll out to the public	Yr. 5+	Yr. 5+	CGCS
			5.6.1: Rural partners receive Pathway training	Yr. 5 Su	Yr. 5 Su	NWP

Two (10/1/19 – 9/30/20), the UCIWP will continue to complete the Year 1 training for treatment teachers and will launch Year 2 in September 2020. We will also continue to partner with CGCS on Pathway course module development. Meanwhile, the other NWP sites will recruit teachers for their Year 1 of the RCT, and participate in two days of Pathway training in February 2020 and three additional days in August 2020. They will launch their Year 1 RCT in September 2020; while the UCIWP launches Year 2 with the treatment teachers in Tustin. In Phase Three (10/1/21 – 9/30/22), the UCIWP will complete the training of treatment teachers in Year 2 while the NWP sites complete their Year 1 cycle. A total of five days of Training of Trainers sessions will again occur in February and August. In September, the UCIWP will begin training the control teachers who will now receive the PD. Meanwhile, the other NWP sites will begin Year 2 of the RCT. In Phase Four (10/1/21 – 9/30/22), the UCIWP will complete the PD for the control teachers while the NWP sites complete Year 2 of the RCT with the treatment cohort. Another total of five days of Training of Trainers will again take place. In the summer, the NWP will score all the papers in the RCT. (Note: Each summer, the UCIWP and other NWP sites will also score that year's paper set using a prompt-specific rubric.) The CGCS will pilot the Pathway course modules with five member districts. The UCIWP will also design and launch a two week Advanced Summer Institute for Writing Project T/Cs not from Tustin that will be used as a model for the other NWP sites. NWP Directors will convene at UCI for the three day Training of Trainers and in September they will begin training the control teachers in their projects. In Phase Five (10/1/22 – 9/3/23), the NWP sites will complete their training of the control teachers, will attend the two-day Winter Training of Trainers session, and will host a two-week Advanced Pathway Institute for Writing Project teachers not from their partner district. During this year, the CGCS will formally launch the course modules for *Helping English Learners to Write: The*

*Pathway to Academic Success* on their Professional Learning Platform and the NWP will provide Pathway Training for NWP Rural Sites Directors. All NWP Directors and PD Teacher Leaders will participate in dissemination efforts at national conferences. Additionally, the National Writing Project will work with Principal Investigator Carol Booth Olson and 10 leaders from the 7 participating Writing Project sites to design and implement a dissemination conference. This three-day event will: 1) introduce Writing Project leaders to Pathway OERs (Open Educational Resources); 2) actively engage Writing Project leaders learning the cognitive strategies and assessment tools that form the core of Pathway's successful instructional approach; and 3) offer time to plan how they might engage rural educators in professional development related to the Pathway program using course materials developed by CGCS. All sites receiving training will be encouraged to: 1) embed Pathway training in their annual NWP Summer Institutes; and 2) design fee-for-service professional development programs on Pathway as part of their in-service offerings. The National Writing Project will recruit pairs of Writing Project leaders from 30 sites, with preference given to those sites that have participated in C3WP and serve high-poverty rural districts. Please see Figure 4 for goals, objectives, measures, sequence of activities, suggested dates, and responsible personnel.

### **3.) Procedures for Ensuring Feedback and Continuous Improvement**

#### **Pathway Project Leadership**

The Pathway Project's Leadership Team will include the Principal Investigator/Project Director, Co-PIs, Literacy Coaching Director, and Project Manager from UCI, our Thinking Partner from NWP, the Site Directors of the seven other NWP sites, and CGCS staff. In addition to the five full day meetings conducted in August and February of each year, the Leadership Team will meet at the National Convention of Teachers of English (NCTE) Convention in

November and participate in monthly conference calls. Each NWP site will also convene a Site Leadership Team, including the Site Director, PD Teacher Leaders, District Assistant Superintendent of Secondary Education, District Literacy Specialists, District Data Management Specialist, and School Site Principals. Principals' Leadership Teams will include the Assistant Principal, School Site Counselor, and Pathway School Team Leader. NWP Site Directors will meet with district leadership.

### **Leadership Feedback**

To ensure feedback and continuous improvement, the NWP Thinking Partner will provide assistance to the Project PI and the Project Leadership Team. Seven UCIWP Thinking Partners will each be assigned to support one NWP Site Director. The UCIWP Literacy Coaching Director will support the PD Teacher Leaders, and they in turn, will support the District Literacy Specialists and School Team Leaders.

### **Pathway Intervention Feedback**

All PD sessions will be evaluated and teacher responses will be used to improve the program. Additionally, SRI will survey teachers and provide continuous feedback on project effectiveness. They will provide semi-annual briefings to the Leadership Team. At the end of each year, teachers will be interviewed in school-based focus groups regarding program strengths and areas for improvement. Teachers will also fill out a detailed reflection sheet including the degree to which they did or did not implement each aspect of the intervention and provide comments or suggestions for improvement. Students will also be queried regarding the aspects of the Pathway Project they find most helpful and its impact on their educational aspirations.

### **Formative Assessment Feedback**

As mentioned previously, the centerpiece of the intervention involves having students

revise their pre-test into a multiple draft essay. Trained readers provide detailed feedback on each essay. Teachers review these comments and make notes on student strengths and areas for improvement prior to returning the pre-test essays to students. Students then use the feedback to revise their pre-tests, thus preparing them for the post-test. Since the Pathway Project has such a long history, it is part of the ethos of the intervention to continually evolve and improve as standards change, new research becomes available, and populations diversify.

#### **4.) Resources to Operate the Project Beyond the Length of the Grant**

All of the partners, the UCIWP, NWP, and CGCS, have resources to sustain the project beyond the length of the grant. The UCIWP was established in 1978, is housed in the School of Education (where the Pathway Project PI has a tenured position), has a long track record of extramural funding, a flourishing self-supporting Summer Youth Program serving 2,000 students per year, and university space and institutional support services. Widely acknowledged as the most successful long-term professional development program in the nation, the NWP has a 44-year history of success, a long track record of extramural funding including an EIR Expansion grant, and a national infrastructure. The CGCS has a 52-year history, is self-supporting based upon district membership fees, and has a self-supporting professional development program. Part of our **multi-year financial and operating model** is to market the Pathway course modules on *Helping English Learners to Write: The Pathway to Academic Success* through the CGCS member and non-member districts in Phase 5 and beyond, after the Phase 4 pilot. Based on their existing course modules on their Professional Learning Platform, the CGCS projects 15 districts will subscribe in Year 5 to the course modules and serve approximately 14,454 teachers, and 144,540 students, generating a subscription fee of approximately \$375,000. Credit fees (estimate 20% of teachers) will generate approximately \$115, 632 (2,890 X \$400) and teachers opting for

Digital Badging for various combinations of the 10 modules will generate additional revenue to enable the continuous improvement and sustainability of the PD. This income will continue to increase beyond Year 5 as the interest in course modules gains momentum. NWP sites also offer fee-for-service programs for districts, enabling dissemination work to be self-supporting. Fee for service PD will be customized to the needs of school districts and multi-year operational plans will be developed. (As an example of such a PD offering, Appendix G includes a current operational budget of \$58,214 for a PD contract between the UCIWP and Lynwood Unified School District for a Pathway inservice implemented over two years.) Like the UCIWP, the other 7 NWP sites are all housed at universities that provide resources and institutional support. Additionally, matching contributions and commitment from the UCI Division of Continuing Education and from corporate partners such as FedEx, Booksource, Houghton Mifflin, Pearson Education, Teachers College Press, LC Digital Production, and a number of other service providers will also enable us to structure our resources as well as provide resources to teachers that will extend beyond the length of the grant. See also a letter of support about a potential contribution from AT&T in Appendix C.

### **Human Resources and Capacity: Project Leadership Profiles**

**Dr. Carol Booth Olson**, a Professor in the UCI School of Education and Director of the UCI Writing Project (UCIWP), will serve as Principal Investigator/Project Director. She has published seven books and numerous journal articles, is the recipient of four state and national research awards, and has been an expert panelist on two WWC Practice Guides. **Dr. Robin Scarcella**, a Professor in the UCI School of Humanities and Director of the Program in Academic English, will serve as Co-Project Director. She contributed to California's ELD Standards, has been an expert panelist on a WWC Practice Guide for ELs, and has written four

books and numerous journal articles. A noted linguist, she will take the lead on the academic English component of the project. **Dr. Rebecca Black**, an Associate Professor in the UCI Department of Informatics in the School of Information and Computer Sciences will serve as Co-Investigator. She has published one book and numerous journal articles on digital literacy and technology tools. She will be responsible for the technology-based components of the project with the assistance of **Emily McCourtney**, Technology Specialist, Tustin Unified School District. **Dr. Huy Chung** will serve as Project Manager. Chung is a graduate of UCI's Ph.D. Program in Education and recently completed a Post-Doc at UC Davis, and is the Research Director of the UCIWP. **Catherine D'Aoust**, a former Director of K-12 Curriculum and Instruction for Saddleback Valley USD and Co-Director of the UCIWP, will serve as the Literacy Training Coach for the NWP PD Teacher Leaders. Directors of the seven other NWP sites include: **Dr. Jessica Early**, Central Arizona Writing Project, Associate Professor of English, Director, English Education at Arizona State University; **Dr. Liz Stephens**, Central Texas Writing Project, Professor Emerita at Texas State University; **Dr. Katherine Smith**, Illinois Writing Project, Associate Professor, Chair, Graduate College Advisory Committee, Facilitator, Secondary Education Programs, Advisor, Secondary MAT and MSI Programs at Northeastern Illinois University; **Stephanie Yoon**, Minnesota Writing Project, Center for Writing at the University of Minnesota Twin Cities; **Dr. Carol Wickstrom**, North Star of Texas Writing Project, Professor, Language and Literacy at University of North Texas; **Dr. Marilyn McKinney**, Southern Nevada Writing Project, Professor of Literacy Education at University of Nevada, Las Vegas; **Dr. Donna Pasternak**, University of Wisconsin-Milwaukee Writing Project, Professor of English Education at University of Wisconsin-Milwaukee. Thinking Partners for the seven NWP sites include: **Dr. Russ Frank**, former Director of Literacy, San

Bernardino County Office of Education; **Esther Severy**, former Principal, McFadden Intermediate, SAUSD; **Todd Huck**, former Instructor of English, Santa Ana College; **Thelma Anselmi**, a former middle school English Teacher and the first National Board Certified Teacher in Orange Country, CA, and UCIWP Associate Director; **Jeff Elsten**, former high school English Teacher, Garden Grove USD and Associate Director, UCIWP; **Sharon Schiesl**, former ELD District Specialist, SAUSD; and **Liz Harrington**, former English teacher, San Gabriel USD. All are UCIWP Teachers / Consultants. District leadership will include the Assistant Superintendents of Secondary Education for all participating districts, district Literacy Specialists, and Principals. Letters of support from NWP Partner Sites and Superintendents of Participating districts are in Appendix C. **Dr. Tanya Baker**, Director of National Programs, NWP, will serve as the NWP Thinking Partner to the UCIWP. **Dr. Linda Friedrich**, Research Director of the NWP, will direct the NWP scoring of the pre-tests and post- tests from all eight sites. **Gabriela Uro**, Director for ELL Policy and Research for the Council of the Great City Schools, and **David Lai**, Special Projects Manager, will direct the development of the Pathway course modules. SRI's team will be led by **Katrina Woodworth**, Ed.D., and **Nicole Arshan**, Ph.D., co-principal investigators of UCIs i3 Pathway Project validation grant. Dr. Woodworth has a long record of research on K–12 school improvement efforts and experience leading large, mixed-methods research studies. Dr. Arshan specializes in causal design and experimental and quasi-experimental evaluation of education interventions. Additionally, three eminent literacy researchers have agreed to serve as advisors to the project: **Dr. P. David Pearson**, Professor of Education, University of California, Berkeley; **Dr. Judith Langer**, Vincent O'Leary Distinguished Research Professor of Educational Theory and Practice and Director, National Center on English Learning and Achievement, State University of New York, Albany; and **Dr.**

**Steve Graham**, Warner Professor, Division of Leadership and Innovation, Teachers College, Arizona State University.

#### **D. Evaluation Plan**

SRI will lead an independent evaluation of the *Pathway to Academic Success Project*, including implementation and rigorous experimental impact analyses. SRI will conduct a school-randomized controlled trial (RCT) to estimate the effect of Pathway on teacher practice and student outcomes and assess UCIWP's scaling strategy. The evaluation will measure and report on all key components, mediators, and outcomes described in the program logic model (Figure 3 on page 22). SRI's evaluation will address the following key questions:

- **Implementation, Replication & Scaling, Sustainability:** Was the Pathway Project implemented with fidelity? What contextual factors enhance or impede Pathway's implementation? How does UCIWP support the expansion sites to replicate and scale Pathway in new contexts and with new populations while maintaining implementation fidelity? To what extent are the expansion sites developing the expertise, sense of ownership, and depth of change required for sustainability?
- **Outcomes:** What impact does Pathway have on teacher practice after 1 and 2 years of the program? What impact does Pathway have on student outcomes after 1 and 2 years of the program? Which, if any, student subgroups benefit the most from the intervention?
- **Mediation:** Which teacher practice outcomes mediate the relationship between the Pathway Project and student writing achievement?
- **Cost Effectiveness:** What is the cost effectiveness of Pathway relative to the control condition? How does Pathway's cost structure change as it scales?

Figure 5 presents an evaluation timeline for both program activities and SRI data collection.

UCIWP	Expansion Sites	Pathway Activity	SRI Data Collection
<b>Planning Year</b>			
N/A	2019-20 School Year	<ul style="list-style-type: none"> <li>Expansion sites observe UCIWP implementation</li> <li>Plan for implementation</li> </ul>	<ul style="list-style-type: none"> <li>Interviews with expansion site leaders</li> <li>Observations of UCIWP implementation (PD for expansion site leaders)</li> </ul>
<b>RCT Year 1</b>			
September 2019	September 2020		<i>Baseline:</i> <ul style="list-style-type: none"> <li>Teacher and student rosters</li> <li>Study-administered student writing assessments</li> <li>Classroom observations</li> <li>Prior year's district student-level demographic and state assessment data</li> <li>Teacher background survey</li> </ul>
			Randomization
2019-20 School Year	2020-21 School Year	<ul style="list-style-type: none"> <li>Treatment school professional development</li> </ul>	<ul style="list-style-type: none"> <li>Professional development monitoring (for fidelity of implementation, FOI)</li> <li>Site visits (interviews and student focus groups) to explain outcomes and scaling strategies</li> <li>Teacher survey (PD experience and program uptake)</li> </ul>
May 2020	May 2021		<i>Y1 Outcome:</i> <ul style="list-style-type: none"> <li>Study-administered student writing assessments</li> <li>State ELA assessments</li> <li>Classroom observations</li> </ul>
<b>RCT Year 2</b>			
2019-20 School Year	2020-21 School Year	<ul style="list-style-type: none"> <li>Treatment school professional development</li> </ul>	<ul style="list-style-type: none"> <li>Professional development monitoring for FOI</li> <li>Site visits (interviews and student focus groups) to explain outcomes and scaling strategies</li> <li>Teacher survey (PD experience and program uptake)</li> </ul>
May 2020	May 2021		<i>Y2 Outcome:</i> <ul style="list-style-type: none"> <li>Study-administered student writing assessments</li> <li>State ELA assessments</li> <li>Classroom observations</li> </ul>
<b>Delayed Treatment</b>			
2020-21 School Year	2021-22 School Year	<ul style="list-style-type: none"> <li>Delayed treatment school professional development</li> </ul>	<ul style="list-style-type: none"> <li>Teacher survey in five pilot CGCS districts (PD experience and program uptake)</li> </ul>

**Figure 5. Data Collection**

## **1.) Design to Meet What Works Clearinghouse Evidence Standards Without Reservations**

SRI's evaluation is designed to provide evidence that will meet WWC group design standards without reservations.<sup>1</sup> SRI will randomize half of the recruited schools in each district into treatment and half into control. Randomization will be blocked by district and by school level (e.g., high schools in a single district will form one block) to provide balance across both grade levels and district contextual factors. To ensure that the study does not include joiners, SRI will collect student and teacher rosters prior to randomization; these rosters will be used to determine the student and teacher samples for the duration of the study (i.e., in year 2, students in in-mover teachers' classrooms will not be included in analysis). Teachers in the control schools will receive the training and support normally provided by their districts during the RCT and will be given a 1-year version of Pathway when the study concludes ("business-as-usual" with delayed treatment control condition).

SRI will use recruitment and data collection strategies to minimize both overall and differential attrition [e.g., clear communication prior to randomization, financial incentives for all data collection activities (see p. 22), local site research coordinators to support data collection; Roschelle et al., 2014]. For all outcome analyses, SRI will test for baseline equivalence in the analytic sample using a measure aligned to the outcome of interest. SRI will analyze data estimating impacts using HLM models to adjust standard errors associated with the clustering of observations within schools, thus minimizing Type I error associated with nested models

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<sup>1</sup> The proposed design is eligible to meet What Works Clearinghouse standards versions 2.1, 3.0, and 4.0 without reservations for impacts on teachers and students. SRI will analyze data in accordance with whichever version of the standards requested by OII during the grant.

(Raudenbush & Bryk, 2002). Outcome measures are valid, reliable, appropriately aligned to the intervention and will be collected in the same way across treatment and control schools (see below for information on validity and reliability of outcomes measures). No outcome data will be imputed and no significant confounds exist.

## **2.) Guidance about Effective Strategies Suitable for Replication or Testing in Other**

### **Settings**

SRI will document UCIWP's work to replicate Pathway across multiple contexts and with diverse populations through artifact analysis, teacher surveys, observations of training, and site visits. SRI will study (a) the resources UCIWP invests in developing the expansion sites' capacity and the sites' experience with the supports, (b) the expansion sites' developing expertise and sense of ownership of Pathway, and (c) teachers' use of and experiences with project components across sites. For each of these topics, researchers will pay close attention to local contextual factors that support or inhibit successful replication, documenting variation in implementation and adaptation to local needs. Final analysis will triangulate the local site contextual data with site-level implementation fidelity and program uptake data and impact estimates with an eye towards identifying critical project components that can be replicated and sustained in various conditions (see below for more detail on implementation fidelity and impact estimates).

To gather this information, SRI will conduct observations and interviews at key points in time. During Phase 1. Planning and Capacity Building, SRI will observe the 3-day "train-the-trainers" session and interview scale-up Site Directors and PD Teacher Leaders about their experiences with the training and their developing understanding of the model. During Phase 2. Demonstration, SRI will observe the supports the scale-up sites experience (i.e., videos of

UCIWP PD sessions and 5 additional days of Pathway training) and again interview scale-up Site Directors and PD Teacher Leaders about their experiences, level of buy-in, understanding of the model, and confidence in launching the PD with their partner districts.

In Phase 3 and 4. Replication and Expansion, SRI researchers will visit each scale-up site in the spring of each year and conduct interviews with Site Directors and PD Teacher Leaders, school administrators, and participating teachers. Interviews will focus on site-level implementation of the Pathway PD and teachers' use of Pathway strategies and tutorials in their classrooms. SRI researchers will seek to understand how the UCIWP scaling resources, including the tutorials and technology tools, support scale-up and what additional supports may be necessary to sustain sites in their roles as Pathway Training Sites. The SRI team will also investigate any contextual factors (e.g., state or local policies) that may affect replication and scale-up. Finally, the SRI researchers will explore scale-up sites' plans for sustainability, including plans to offer the Advanced Pathway Institute for Writing Project T/Cs. SRI will complement this qualitative inquiry with an annual teacher survey (enabling a quantitative assessment of teachers' experiences with the PD and uptake in their classrooms across the scale-up sites (see p. 40), and formal analysis of implementation fidelity (see p. 48). In Phase 4, we will administer the teacher survey to the CGCS pilot teachers to understand uptake outside of the context of the RCT.

After each round of data collection, SRI will provide briefings to the Pathway Leadership Team, offering an assessment of the scaling supports and formative feedback designed to refine supports. This feedback will inform the development of the modules for the CGCS pilot in Phase 4, and surveys of the CGCS pilot teachers will inform the subsequent Phase 5 rollout. At the conclusion of the evaluation, data will be synthesized and disseminated broadly to contribute to

the knowledge base about scaling effective interventions in education.

### **3.) Methods of Evaluation to Provide Valid and Reliable Performance Data on Relevant**

#### **Outcomes**

To provide a valid, reliable measure of student writing achievement, SRI will administer student writing assessments, and the NWP will conduct an independent scoring using the Analytic Writing Continuum for Literary Analysis (AWC-LA). State assessments and publicly available graduation data will provide data on long-term student outcomes in relevant grades. Classroom observations using the PLATO protocol (see Grossman, Loeb, Cohen, & Wyckoff, 2013) will provide data on teacher outcomes and will also be used in mediation analysis. See Appendix G for information on SRI's protocol for data management, including making the final research data accessible to others and meeting the requirements in the U.S. Department of Education's Plan and Policy Development Guidance for Public Access.

**Study-administered Student Writing Assessments.** The Pathway on-demand, text-based writing performance tasks align to text types and purposes articulated in most “college and career-ready” standards. The NWP will score student responses to these writing assessments using the AWC-LA rubric, which assigns a holistic score and a score for four attributes of writing (Content, Structure, Sentence Fluency, and Conventions). The AWC-LA measures key attributes of writing and, unlike the University of California-designed AWA, does not reference the source text. The AWC-LA, therefore, provides a more independent measure of student achievement, allowing for more ambitious interpretations of program impact (as compared with the AWA; Kane, 2013) while still providing a measure of student writing (as compared with standardized state assessments which typically place more weight on reading and grammar conventions than on the content and organization of students' writing; Arshan & Friedrich, 2017;

May et al., 2009).

The AWC-LA was adapted from the Analytic Writing Continuum, which has a demonstrated record of high inter-rater reliability, test-retest reliability, and internal consistency (Bang, 2013). In a prior study, the AWC-LA demonstrated high inter-rater reliability (agreement across attributes=.87-.91; Woodworth et. al., 2017), and convergent validity (correlation between AWC-LA attributes and Smarter Balanced-English Language Arts assessment  $r = .58-.64$ ; Arshan & Friedrich, 2017).

Given the expense of scoring writing, SRI will choose a random sample of ten students per teacher to score. To provide both an unbiased sample and an estimate of student attrition, SRI will randomly sample students from the pre-test student population (using a number assigned at baseline) into an assigned sample without regard to whether they completed posttest writing. The analytic sample will, therefore, provide an unbiased sample of those students who remained in the study between the beginning and end of the program. Sampling will be stratified within teacher, to aid statistical power for the analyses of teacher-level mediators.

To ensure the independence and impartiality of this outcome data, SRI will administer the writing assessments and strip them of identifying information (e.g., treatment status) prior to NWP's independent scoring.<sup>2</sup> SRI will administer writing assessments to students in 7th-11th grade in fall and spring Year 1 (baseline and Year 1 outcomes) and 8th-11th grade students in

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<sup>2</sup> SRI will return scanned copies of the writing samples back to the local Writing Project sites for site scoring to provide AWA data for use in the program. The National Writing Project will only use scorers with no connection to the local Writing Project sites implementing Pathway.

spring Year 2 (Year 2 outcome).<sup>3</sup> SRI will choose 15% of papers at random to be scored by two independent reviewers to provide data on the scoring's reliability.

**Extant Student Achievement Data.** SRI will collect districts' student-level state ELA achievement data; What Works Clearinghouse standards recognize state assessments as valid and reliable (U.S. Department of Education, 2016). Students' data from the spring prior to Year 1 will provide baseline ELA achievement data, and student ELA achievement test data will serve as long-term outcomes in Years 1 and 2. SRI will also gather demographic data (e.g., home language, English learner status) to enable sub-group analysis.

**Classroom Observations.** To gather valid, reliable data on instructional practices specific to secondary-level English language arts, we will conduct classroom observations in fall 2019 and spring 2020 and 2021 using the Protocol for Language Arts Teaching Observation (PLATO) (Grossman, Loeb, Cohen, and Wyckoff, 2013). We will observe all study teachers, for an estimated total of 240 teachers at baseline and the end of Year 1 and, assuming 20% attrition, 192 teachers at the end of Year 2. To increase precision for the final summative outcome measure, we will conduct two observations per teacher at the end of Year 2, for a total of 384 observations.

The PLATO protocol covers 13 elements of instruction clustered within four instructional

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<sup>3</sup> Writing assessments will be administered in two classes per teacher. To ensure that a sufficient number of students in Year 2 focal classes have pre-test data from Year 1, participating districts have committed to keeping classes intact as scheduling permits so that students who are assigned to focal classes in Year 1 continue in focal classes in Year 2. Each school will have a stipend Pathway counselor who will ensure student assignment in support of the study design.

domains (see Exhibit 1). Each element is scored separately on a 1-4 scale. Many of these elements are particularly well aligned with the Pathway Project. For example, “strategy use and instruction” involves teachers explaining how students can implement learning strategies (i.e., making predictions, using quotes to support an argument), and “modeling” occurs when a teacher visibly enacts the work in which students will engage (Grossman, Cohen & Brown, 2013). In addition, PLATO captures the content of instruction (writing, reading, literature, grammar, vocabulary, research skills) using a binary (0, 1) variable, also in 15-minute intervals, providing a strong description of treatment-control contrast. Because of the centrality of revision to the Pathway Project, SRI will add a field to the PLATO protocol such that, when observers code the content of instruction as writing, they will also indicate whether (0, 1) the student writing involves revision.

Studies have documented predictive validity of the instrument, estimating significant relationships between PLATO scores and gains in English language arts student achievement (Grossman, Cohen, Ronfeldt and Brown, 2014; Kane and Staiger, 2012) and inter-rater reliability of .82 and higher (Grossman, Cohen and Brown, 2014). To ensure reliable use of the protocols,

**Exhibit 1. Elements of Instruction Measured by PLATO 5.0**

Instructional domain	Element of Instruction
Instructional Scaffolding	1. Strategy use and instruction* 2. Modeling* 3. Guided practice* 4. Accommodations for language learning
Disciplinary Demand	5. Purpose 6. Intellectual challenge 7. Classroom discourse 8. Text-based instruction*
Representing and Use of Content	9. Representations of content 10. Connections to prior knowledge* 11. Connections to personal/cultural experience*
Classroom Environment	12. Behavior management 13. Time management

\*Highly aligned to Pathway Project logic model (Figure 3)

observers complete a rigorous training program and are required to achieve an 80% exact match with a master-scorer on observations of at least five samples of English language arts instruction. Given the duration of the study, SRI observers will also participate in follow up training and re-calibration before each round of data collection. Observers will double-score 15% of classrooms, allowing for calculations of inter-rater reliability within the analytic sample collected for impact analyses.

**Impact Analyses.** To assess the impact of Pathway on student achievement we will estimate a Hierarchical Linear Model (HLM); the effect will be estimated at the school level, and pre-treatment data will be used to check for baseline equivalence between treatment and control groups. The predicted literary analysis writing ability for student  $i$ , in teacher  $j$ , in school  $k$ , in randomization block  $l$  as a function of attending a school assigned to treatment is modeled using as the following Hierarchical Linear Model:

$$Y_{ijkl} = \beta_0 + \beta_1(\text{Pathway}_k) + \beta_2(\overline{\text{Baseline}_i}) + e_{ijkl} + r_{jkl} + \delta_{kl} + \alpha_l.$$

Random effects  $e_{ijkl}$ ,  $r_{jkl}$ , and  $\delta_{kl}$  allow for error at the student, teacher, and school level, respectively.<sup>4</sup> Vector  $\alpha_l$  accounts for fixed effects of randomization blocks. Student-level pre-treatment score will be included as a control to improve precision of the estimate. Baseline and outcome AWC-LA scores will be centered within the student's baseline grade and prompt form taken to account for cohort and prompt effects.  $\beta_1$  provides an estimate of the effect of school assignment to Pathway on student writing ability (the Intent-to-Treat effect). Missing data will not be imputed.

SRI will estimate two confirmatory contrasts: the impact of Pathway on the holistic AWC-LA score on 7th–11th grade student achievement after 1 year of program exposure and on

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<sup>4</sup> The teacher level is modeled to account for the sampling of students within teachers.

8th-11th grade student achievement after 2 years of program exposure. Prior data using the AWC-LA suggests that 7% of variance in the outcome will be at the school level and 20% at the teacher level; baseline scores accounted for 75% of variance in the outcomes at the school level, 65% at the teacher level, and 9% at the student level (Woodworth et al., 2017). MDES is calculated using a three-level model, assuming the top level N is 40 schools, with 6 teachers per school and 10 students per teacher. These empirically-based assumptions predict a Minimum Detectable Effect Size (MDES) of .183 with .8 power; attrition of 20% of teachers would provide an MDES of .195. SRI will use the Benjamini-Hochberg correction to account for two confirmatory comparisons within the same domain.

Exploratory analyses will be run to estimate the effect of Pathway on the same populations using the other four attributes and ELA achievement scores. To ensure that the evaluation generates information about the contexts in which Pathway is most effective, exploratory analyses will also be run separately for subgroups of interest (e.g., by English learner status, special education status, gender, and home language), though with a non-centered indicator for the subgroup of interest and an interaction term between the subgroup indicator and the treatment indicator.

To estimate the impact of the Pathway project on teacher outcomes, SRI will compare PLATO scores on each element of teaching practice using a similar methodology to that used to analyze student-level outcomes, positing a two-level hierarchical linear model clustering observations within schools and adjusting for teacher characteristics, school demographic variables, and school-mean baseline scores to increase the statistical power of the model. Using data from a prior study using CLASS observations, we estimate an ICC of 10% and 27% of the outcome variation explained by baseline observations and school covariates (Wang, et. al.,

2015). Given an average of 6 observations per school in Year 1 and 9 per school in Year 2, across 40 schools, the analysis will be able to detect a MDES of .38 in Year 1 and 0.35 in Year 2 for observation outcomes. Relative to prior observed Pathway student impacts averaging .34, powering for an MDES of .38 in a well aligned mediating variable should provide adequate statistical power to detect an effect on teacher practice if one exists.

All impact estimates will be run not only for all students in the sample, but also separately for each district to provide exploratory analyses describing effects within each site. These findings will provide underpowered estimates of program effectiveness within each site, and the research team will triangulate trends within sites with implementation data to better understand effectiveness within individual contexts. Mediation models are described in greater detail below.

#### **4.) Key Components, Mediators, and Outcomes of the Grant-supported Intervention**

SRI will examine program implementation, as defined by the key project components (see Figure 3), and its relationship with the student and teacher outcomes described above. These analyses will include implementation fidelity, treatment control contrast, mediation, and cost effectiveness.

**Implementation Fidelity.** SRI will collect records of teacher attendance at Pathway PD to measure the duration and breadth of teacher participation (Component 1). Further, SRI will analyze the content of the PD (Component 2), use of a scaffolded approach (Component 3), and formative feedback (Component 4) using artifact analysis (e.g., PD agendas, student pre-test writing with comments) and the teacher survey. Key components and their annual thresholds are provided in Figure 6. To be implemented with fidelity, the project must meet all four components each year.

Key components and indicators	Threshold	Data source
<b>Component 1: Duration and breadth of participation in PD</b> At least 75% of sites reach site-level threshold on both indicators		
Indicator 1.1 Full-day professional development events	90% attend at least 4 events	Attendance trackers
Indicator 1.2. After-school professional development events	90% of teachers attend at least	Attendance trackers
<b>Component 2: Content of PD</b> 100% of sites reach site-level threshold on all three indicators		
Indicator 2.1. Site presents teacher participants with cognitive strategies review tutorial	Once per site	Artifact analysis, teacher survey
Indicator 2.2. Site presents teacher participants with the revision tutorial	Once per site	Artifact analysis, teacher survey
Indicator 2.3. Site asks teacher participants to take students through process of revising their pre-test	Once per site	Artifact analysis, teacher survey
<b>Component 3: Scaffolded approach</b> At least 100% of sites reach site-level threshold on both indicators		
Indicator 3.1. Site includes model lessons showcasing Pathway strategies, including cognitive strategies tutorial & revision tutorial	Twice per site	Artifact analysis, teacher survey
Indicator 3.2. Site distributes key project materials (e.g., cognitive strategies booklets/bookmarks, wall poster, class sets of cognitive strategies and revision tutorial)	Once per site	Artifact analysis, teacher survey
<b>Component 4: Formative feedback</b> 100% of sites reach site-level threshold on all indicators		
Indicator 4.1. Site reads and provides feedback on experimental students' pre-test writing	Once per site	Artifact analysis, teacher survey
Indicator 4.2. Site prepares and distributes Teacher Results Letter (Year 2 only)	Once per site in Year 2	Artifact analysis, teacher survey

**Figure 6: Key Components and Annual Thresholds for Implementation Fidelity**

SRI will supplement this implementation fidelity analysis with both qualitative and quantitative data. Teacher surveys will provide data on program uptake (treatment teachers only), the difference between Pathway PD and the business as usual experience (treatment control contrast) and perceived supports and barriers to implementing Pathway. Analyses of these data will also examine similarities and differences across sites to assess any variation in replication. Finally, data from teacher interviews will provide information on local conditions or contextual factors related to implementation, contamination, and cross-over (if the latter two occurred).

**Mediation.** We will conduct mediation analyses to understand the elements of teacher practice that are critical to Pathway’s effectiveness. We hypothesize that the following elements of teacher practices measured by PLATO are most likely to mediate the effects of Pathway on student achievement: explicit strategy use and instruction; modeling; guided practice; text-based instruction; connections to prior knowledge; connections to personal/cultural experience; and instructional time spent on writing. SRI will use structural equation modeling (SEM) to test mediation effects of the PLATO elements because of its superior ability to more properly address the presence of measurement error within a statistical model than regression models (Iacobucci, Saldanha, & Deng, 2007; Holbert & Stephenson, 2002; Little, Card, Bovaird, Preacher, & Crandall, 2007; Holbert & Stephenson, 2002). These models will estimate the proportion of any estimated Pathway impacts that are mediated through each of the facets of instruction to which Pathway is most closely aligned, allowing for a better understanding of which program components are most critical to Pathway’s success.

**Cost Effectiveness.** SRI will conduct a cost effectiveness study to evaluate the benefit of the proposed intervention against the costs associated with the investment in the intervention. For both the treatment and control groups, SRI will collect cost information using the ingredients

method (Levin & McEwan, 2001). Researchers will identify each program input through a review of program documents and a series of implementation interviews. Based on these data, a master list of program components, or ingredients, will be defined from which to determine costs. Using data collected from individual sites, publicly available data, and resources such as the “Cost Out” tool developed by Columbia’s Teachers College, analysts will determine the value of resources required for implementation. SRI’s analysis will employ cost-effectiveness ratios to compare the cost of program inputs to student-level outcomes that can be achieved for those costs. In order to inform policy decisions, the cost-effectiveness ratio for the Pathway program will be compared to the cost-effectiveness ratio for business as usual, or the control group.

### **Evaluation Resources**

SRI and the NWP have worked together since 2006 on RCTs of NWP professional development. Each organization has a clearly defined role related to its expertise. As the evaluation leader, SRI will supervise the NWP’s scoring process, ensuring student confidentiality and an unbiased and reliable scoring process. SRI and the NWP will follow a detailed work plan that lays out all the tasks needed to accomplish the evaluation objectives, with the associated timeline. Both organizations will meet regularly with Pathway leadership to review progress, problem-solve together about any issues in project implementation and evaluation, and ensure on-time and on-budget evaluation deliverables. The evaluation budget is sufficient to support the substantial effort involved in original data collection, including study-administered assessments, researcher-conducted classroom observations, and scoring of the student writing described. Please see Project Leadership Profiles for brief bios of evaluation leaders and Appendix B for CVs.

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