Evaluation of the College, Career, and Community Writers Program: Findings from the i3 Scale-up Grant. Technical Report.

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Introduction

Developed by the National Writing Project (NWP), the College, Career, and Community Writers Program (C3WP) seeks to improve students' argument writing by building teachers' understanding of and skill in teaching source-based argument writing.[1] The program features intensive professional development (PD), a set of instructional resources, and formative assessment tools designed to help teachers bring C3WP into their classrooms.

Under a 2012 Investing in Innovation (i3) Validation grant from the U.S. Department of Education, the NWP national office developed initial program features based on their experiences with prior programs and refined these features with their local Writing Project site affiliates. As part of the 2012 grant, a research team from the Education Division of SRI International (SRI) conducted a two-year, random-assignment evaluation of the program in 44 rural districts across 10 states (serving approximately 25,000 students in grades 7–10), delivered by 12 Writing Project sites. Our evaluation found that C3WP was implemented with a high degree of fidelity and had a positive, statistically significant effect on students' argument writing. C3WP students demonstrated greater proficiency in the quality of reasoning and use of evidence in their writing (Gallagher et al., 2017). A smaller study of a 1-year version of the program focused on rural and urban grade 7–8 teachers also found positive impacts on students' argument writing (Arshan et al., 2018).

The NWP received a 2016 i3 Scale-up grant to expand C3WP to new rural districts and grades 4–5. Our research team designed a study to evaluate the implementation and outcomes of C3WP. The expanded study sought to assess the impact of C3WP on student argument writing after 1 and 2 years of program implementation in grades 7–10 (in 2018–19 and 2019–20) and 1 year of implementation in grades 4–5 (in 2019–20).

The i3 grants required evaluators to preregister design documents. These design documents required evaluators to describe the design, data, and analysis plans for (1) confirmatory (i.e., primary) impact questions, (2) implementation fidelity, and (3) scaling indicators. The terms of the awards required grantees to produce and publish a public and permanent final report containing the results of these preregistered analyses through the Department of Education's Education Resources Information Center database (for example). This technical report is designed to meet this final reporting requirement.

This report reflects a substantial change from our original design. The COVID-19 pandemic interrupted implementation of the program and prevented the collection of student outcomes in spring 2020. As a result, we provide impact estimates for the effects of only 1 year of C3WP

[1] The program was initially called the College-Ready Writers Program. NWP renamed the program to the College, Community, and Career Writers Program to better reflect the goals of the program.

implementation on grade 7–9 students.[2] While program delivery was disrupted during spring 2020, this report presents results of program implementation fidelity and scaling indicators relative to NWP goals for the grant without consideration of disruptions from COVID-19 and related school closures. Specifically, the report answers the following research questions.

Impact

- What is the effect of 1 year of exposure to C3WP on grade 7–9 students' writing, compared to the business-as-usual condition?

Implementation and scaling

- Did C3WP meet targets for implementation fidelity?
- Did C3WP meet targets for scaling?

This technical report begins with a description of the NWP, C3WP's program design and components, and C3WP's intended outcomes. Then, it describes the research design, study sample, data, and methods. Finally, this report provides findings related to program scaling, implementation, and student learning.

C3WP History and Program Design

NWP is a network of about 175 regionally based local Writing Projects sites located at institutes of higher education across the U.S. and territories that support teacher PD and leadership with the goal of improving writing instruction. A small national office supports local sites by designing programs and developing resources for local sites and facilitating communications and relationship-building among sites. Local Writing Project sites vary widely in size, structure, and the types of projects they choose to engage in.

The Common Core State Standards (CCSS) and other college-and career-ready standards, rolled out beginning in 2010, placed greater emphasis on writing argumentative and informational pieces using source materials relative to existing standards. Initially, many states lacked the training and PD to help teachers shift their instruction to achieve these outcomes. Within this context, the NWP national office received a 2012 Investing in Innovation (i3) Validation grant from the U.S. Department of Education to support these instructional shifts. At the time, NWP designed the program, known as the College-Ready Writers Program (CRWP) as a 2-year program to support both argument and informational writing in grades 7–10. The program was initially based on widely agreed-upon characteristics of high-quality PD without an explicit connection to instructional resources or formative assessment. Local Writing Project sites were asked to provide intensive PD (90 hours over 2 years); secure collective participation (at least 80% of English Language Arts teachers); focus on specific content (at least 18 hours

[2] Some high schools in our study population were designed to teach ELA in semester schedules (i.e., students take ELA in either fall or spring). We therefore collected outcome data from approximately half of the grade 9 students in 11 of the 47 study districts. As this rate of attrition represents a substantial degradation of the original study design, we omitted those findings from this report.

on argument and informational writing); and use strategies designed to support classroom implementation (at least 8 hours of demonstration lessons, coaching, designing tasks and assignments, and analyzing student work). Within those broad directives, local Writing Project sites had substantial flexibility in designing programs based on their own expertise and their understanding of their district partners' needs.

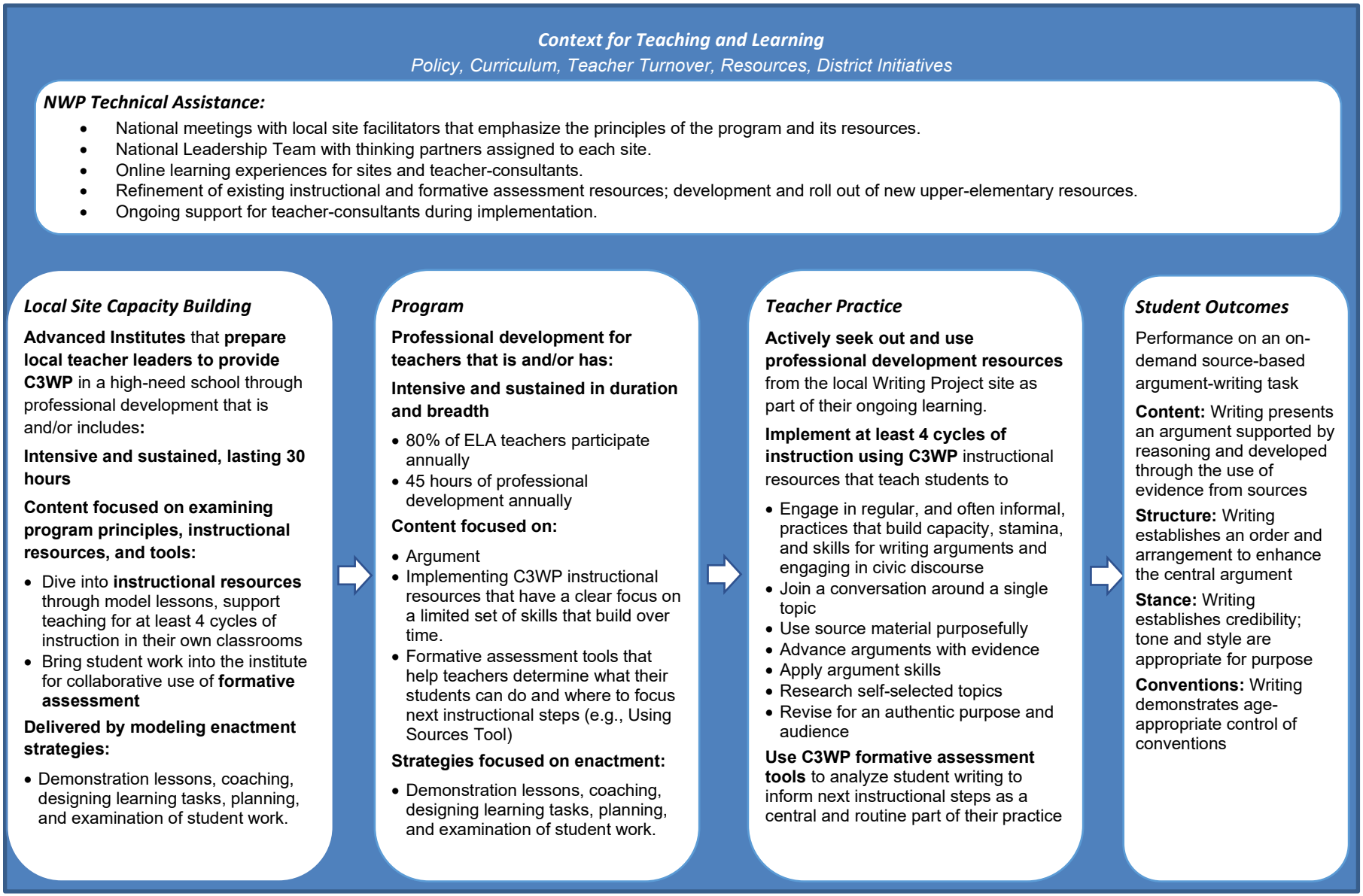
Over the course of Year 1, NWP carefully monitored CRWP program implementation through site visits and regular check-in calls, examined early indicators of progress, and requested formative feedback from their external evaluators. Through this process, NWP recognized that teachers would need additional and focused support to ensure meaningful transfer to the classroom within the 2 years allotted for the program.

For Year 2 of CRWP, NWP decided to concentrate exclusively on argument writing and to design instructional resources and a formative assessment tool to support teachers' transfer of ideas from PD to their classrooms. They asked local sites to focus at least half of their Year 2 PD on supporting teachers' enactment of these materials and tools. The resulting second year was similar in design to the C3WP program under current study. It centered around three core components: 1) a set of instructional resources designed to develop students' skills in argument writing; 2) ongoing, teacher-led, just-in-time PD focused on shifting classroom practice by using the instructional resources; and 3) regular use of formative assessment tools designed to assess students' argument-writing skills and guide teachers' next instructional steps. Local Writing Project sites retained responsibility for implementing the training and support for their regional district partners with ongoing and focused support from the national office. Our evaluation of CRWP, a district-randomized controlled trial of 44 rural districts in 10 states, ultimately found positive and statistically significant effects on both teacher practice and student source-based argument-writing achievement (Gallagher et al., 2017). In particular, CRWP students demonstrated greater proficiency in the quality of reasoning and use of evidence in their writing.

After the initial evaluation showed positive results on student writing, NWP won a 2015 Supporting Effective Educator Development (SEED) grant from the U.S. Department of Education to expand the newly rebranded C3WP teacher leader PD model to 90 local Writing Project sites across the country. The SEED grant funded a study of a 1-year version of the program focused on rural and urban middle school teachers, which also found positive impacts on students' argument writing (Arshan et al., 2018).

In 2016, NWP was awarded an i3 Scale-up grant aimed at testing the replication and expansion of C3WP. Through this grant, NWP replicated C3WP in secondary grades in new rural districts and extended the program to teachers in grades 4 and 5. They also executed strategies designed to scale the program. The logic model (Exhibit 1) lays out the key programmatic elements and intended outcomes of C3WP, which are described in detail below.

Exhibit 1. College, Career, and Community Writers Program Logic Model



To describe the logic model in detail, we begin with an overview of the technical assistance provided to local Writing Project sites to implement this program with partner districts in their local service areas. We next describe the local Writing Project sites' work, which included the development of local "teacher leaders" and the implementation of the program in treatment districts with the support of these teacher leaders. We follow with a description of the teacher practices and student outcomes C3WP aims to influence, and finish by describing how the state and district context of teaching and learning mediates the impact of the program.

National Writing Project Technical Assistance. Provided by a small national leadership team, the National Writing Project technical assistance was designed to build the local Writing Project site leaders' capacity to understand and implement C3WP so they could train and support treatment districts in implementing the program. The C3WP national leadership team (hereafter known as "the national leadership team") comprised a subset of staff from the NWP national office and selected leadership staff from local Writing Project sites. The national leadership team was responsible for overseeing the grant administration; developing and refining program materials; monitoring the health and progress of the C3WP work at individual sites; and facilitating communications and relationship-building between sites to support innovation, cross-pollination, and resource-sharing.

Specific supports offered by the national leadership team included bi-annual national site and district-partner meetings with online learning experiences in between, the development and roll-out of new upper elementary instructional resources, and the refinement of existing secondary instructional and formative assessment resources. Members of the national leadership team also served as "thinking partners" to local Writing Project site leaders to provide ongoing support during implementation. These thinking partners provided feedback that allowed NWP to understand variation in implementation across sites. This role allowed the thinking partners to support local Writing Project site leaders who were struggling to achieve a faithful implementation and to disseminate information about successful innovations across sites.

Local Site Capacity Building. Once local Writing Project site leaders received introductory training and resources from the national leadership team, they became responsible for identifying and training local teacher leaders who could train partner districts to implement C3WP. Teacher leaders were predominately current or recent teachers who had previous involvement with local Writing Project sites. NWP's theory of action posits that teacher leaders need to deeply understand the program principles and instructional resources so they can effectively help other teachers implement the approach in the classroom. Further, the program posits that the most effective way to understand the program principles and resources is direct experience teaching C3WP to students, with the opportunity to plan and reflect on the experiences collaboratively. Each local Writing Project site hosted two intensive, ongoing PD experiences called Advanced Institutes one the year before starting work with grades 7–10 teachers and another the year before starting work with grades 4–5 teachers. The Advanced Institute included the following features:

- 30 hours of intensive and sustained PD that typically included a summer session held over 1–2 weeks and sessions throughout the school year to support teacher leaders while they implemented four cycles of C3WP instruction (defined below) in the classroom.
- Content covering C3WP program principles, resources, and PD strategies aimed at supporting classroom enactment.
- Collaborative use of C3WP formative assessment tools to examine student work following each cycle of instruction.

The national leadership team expected that each local Writing Project site would continue building its pipeline of teacher leaders to deliver the program as dictated by their local needs and continue running local Advanced Institutes as new teacher leaders were recruited.

C3WP Components.[3] C3WP has three, key interwoven program components to support classroom implementation: intensive PD, instructional resources, and formative assessment. When implemented in a cyclical sequence, these three elements are known as a cycle of instruction. A C3WP cycle of instruction is an iterative process that involves several steps: 1) teachers engage in PD to learn how to implement an instructional resource; 2) teachers implement the instructional resource in their own classroom, resulting in student writing; 3) teachers use the students' writing to assess student progress; and 4) teachers select the next instructional resource based on students' needs. Step 4 starts the next cycle of instruction.

- **Intensive professional development to support classroom implementation.** To effectively support implementation, C3WP PD was designed to be sustained, job-embedded, and focused on classroom enactment; that is, evidence-based PD strategies that support shifts in teacher practice (Darling-Hammond et al., 2017). These evidence-based PD strategies included demonstration lessons, co-teaching, and co-planning. Teacher leaders supporting the treatment teachers operationalized a core NWP principle: teachers who are well informed and effective in their practices can successfully teach other teachers (Gray, 2000; Lieberman & Friedrich, 2010; Lieberman & Wood, 2003). The C3WP approach called for PD to be on-going and intensive in duration.
- **Content focused on the use of instructional resources and argument.** C3WP's instructional resources are designed to guide classroom implementation. With these resources, the national leadership team aimed to operationalize abstract ideas and transfer new content knowledge into teacher instruction, while the PD provided critical scaffolds for rapid implementation of complex and often new approaches to instruction. The core of the instructional resources are multi-day units focused on developing specific argument skills. These multi-day units are designed to build on each other, beginning with writing a claim and progressing to more advanced skills that may depend on the earlier units, such as revising claims or ranking evidence. These multi-day, skill-based resources include text sets:

[3] NWP provides program description and links to all instructional resources at https://sites.google.com/nwp.org/c3wp/home

approximately four nonfiction sources representing multiple points of view on a single topic. While these multi-day, skill-based resources serve as the core of C3WP instruction, the program also provides three other types of resources to supplement, reinforce, and extend the program's reach. These resources include:

  - Supplemental scaffolds, including short lessons used to revisit or reinforce a particular skill, or individual resources such as graphic organizers.
  - Routine Argument Writing, which are regular, skill-based writing exercises that can be implemented between cycles of instruction. They are designed to take 5–7 minutes each and build students' understanding of argument and stamina with argument writing.
  - More advanced multi-day resources on independently chosen topics of interest to support students' bringing together multiple argument skills (e.g., writing an op-ed on an issue of local importance).

- **Formative assessment to inform instruction.** A key feature of C3WP's design was regular analysis of student work to show teachers how students were progressing and help teachers plan for future lessons. NWP designed two C3WP formative assessment tools to support teachers with analyzing student work: the Using Sources Tool and the Claim, Evidence, and Reasoning Protocol. These tools generated rapid-cycle feedback on student learning and focused teachers on aspects of writing specific to the skills and approaches emphasized in C3WP resources. The Using Sources Tool, by far the more commonly used of the two tools, asks teachers to rate and describe the writing's claim (e.g., if the claim is nuanced and/or debatable) and the use of source material (e.g., describing how students connected the source material to their claim) (Harris, 2006).

These three components are designed to reinforce each other by supporting the development of teachers' content knowledge and scaffolding the development of new instructional practices. As implemented, these components typically work together; local Writing Project sites often provide in-classroom supports for teachers implementing the instructional resources (e.g., co-teaching, coaching). Teachers typically bring resulting student work to PD sessions, where formative assessment takes place collaboratively as the local Writing Project site leaders help teachers understand the data and plan the next steps for instruction.

Variation is central to NWP's program model. While committing to the three key program components described above, local Writing Project site leaders had flexibility in implementing C3WP based on their own expertise and sense of their district partners' needs. Thus, local Writing Project sites conducted annual needs assessments and solicited partner districts' input on their PD plans. By promoting adaptation of the core model, NWP set out to tailor the program to the local context and foster commitment to reform.

Teacher Practices. The program calls on teachers to implement at least four C3WP cycles of instruction to build students' argument-writing skills, with the assumption that each cycle will

incorporate one of the multi-day units. Throughout the year of C3WP implementation, teachers are asked to engage students in Routine Argument Writing.

Student Learning Outcomes. C3WP aims to improve students' ability to write arguments that effectively use evidence from nonfiction source material to support a claim. The program breaks the argument-writing process into discrete skills, such as identifying and responding to arguments, organizing evidence, selecting and annotating evidence, and crafting a claim with evidence. The expectation is that students who learn these skills will perform better on source-based argument-writing tasks. C3WP also seeks to help students develop new habits of mind, including "reading critically, exploring multiple points of view, and taking a stand on important issues" (Friedrich et al., 2018, p.19).

Context for Teaching and Learning. C3WP was implemented in diverse districts across the country with varying contexts for teaching and learning. As represented across the top of the logic model (Exhibit 1), various contextual factors are expected to influence the work. Important factors at the policy level include the state standards, presence of writing and argument-writing on state and local assessments, school accountability, and teacher-evaluation systems. At the district level, curriculum, teacher turnover, availability or lack of resources, and framing around C3WP PD in relation to competing priorities shapes teachers' attitudes and practices.

Scaling

NWP's approach to scaling aimed to build a national infrastructure to enable the spread of the program to new schools and districts while maintaining the integrity of the program. NWP had four main strategies for scaling the program: 1) expanding NWP's national leadership capacity; 2) developing and refining instructional and formative resources; 3) investing in regional leadership; and 4) developing site certification and micro-credentialing systems. For each of these strategies NWP set goals as indicators to ensure they reached those goals. We describe each of the strategies in more detail below.

Expand NWP National Leadership Capacity. As described above, the national leadership team designed C3WP technical assistance to support the development of local capacity, with the expectation that sites could implement C3WP PD independently at the grant's conclusion. In addition to this site-capacity building, NWP looked to ensure program strength and continuity through the development of a leadership pipeline by providing local Writing Project site leaders opportunities to lead cross-site development (e.g., lead a C3WP training at an NWP national meeting, serving as a thinking partner for a new site, or collaborating on resource development). Through capacity-building efforts, NWP aimed to develop a cadre of new leaders experienced in leading C3WP work at the national level. Part of the capacity-building approach was to establish a marketing strategy and professionally designed website to support the dissemination of C3WP.

Develop/Refine Instructional and Formative Assessment Resources. The national leadership team developed and refined C3WP design principles and instructional and formative

assessment resources. The following instructional resource design principles operationalize C3WP's approach to argument-writing instruction:

- Focus on a specific set of skills or practices in argument writing that build over the course of an academic year;
- Provide text sets that represent multiple perspectives on a single topic, beyond pro and con;
- Engage students in iterative reading and writing practices that build knowledge about a conversation focused on a single topic;
- Support the writing of recursive claims that emerge and evolve through the reading and writing process;
- Support students in creating intentional organizational structures that are designed to advance the argument, not based on formulas (e.g., five-paragraph theme); and,
- Provide formative assessment opportunities embedded in classroom practice and professional conversations that identify areas of strength and inform the next steps for teaching and learning.

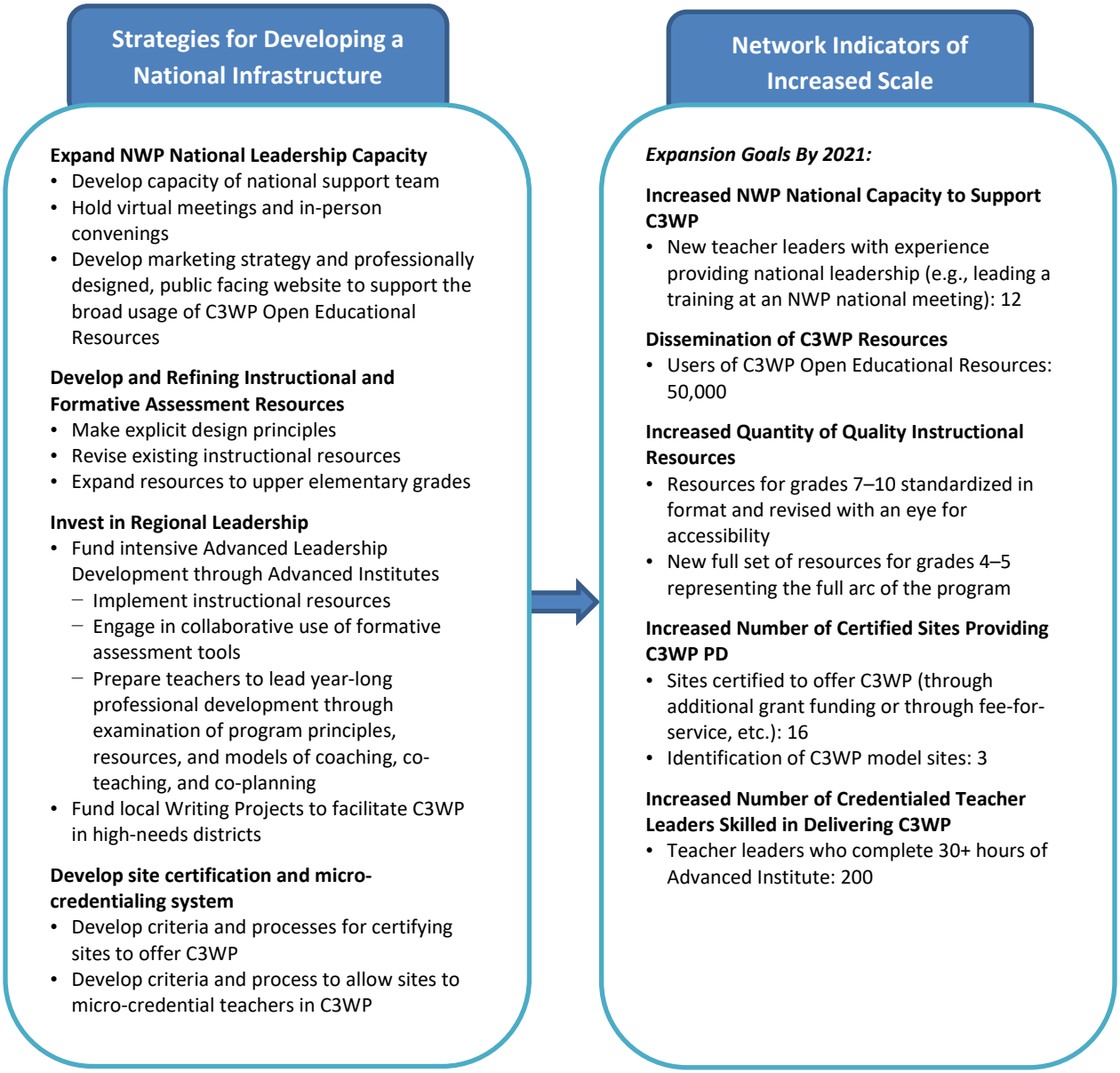
This process was designed to ensure that high-quality materials were available to support the teaching of argument writing and ensure that adaptations to program materials would have clear guidelines to support program fidelity.

The national leadership team also aimed to develop a set of resources for grades 4–5 that taught a progressive set of argument-writing skills similar to the set for grades 7–10. In addition, they refined the resources for grades 7–10 so they reflected the design principles.

Invest in Regional Leadership. NWP invested in the development of regional leadership by funding local Writing Project sites to hold Advanced Institutes through which they trained teacher leaders to implement and provide PD for C3WP. NWP also funded local Writing Project sites to offer C3WP PD in partner districts, which served to scale up and increase the number of districts involved and build the capacity of local Writing Project sites to facilitate PD. The local Writing Project sites received ongoing technical assistance and support from NWP and learned through practice.

Develop Site Certification and Micro-Credentialing System. To cultivate the depth of change needed to support and sustain local C3WP implementation, NWP developed a certification and micro-credentialing process to identify sites qualified to offer C3WP and credentials. NWP developed criteria and processes for certifying sites to offer C3WP and to award micro-credentials to teachers. The three-level micro-credentialing system designated a teacher leader's required level of experience to provide C3WP PD. By investing in regional leadership development and the new certification and micro-credentialing system, NWP hoped to certify local Writing Project sites to offer C3WP, identify model sites, and provide teacher leaders with a micro-credential in C3WP at one of the three levels.

Exhibit 2. C3WP Scaling Strategy and Indicators



Research Design

Overview

The study employed a district-level cluster, randomized, controlled trial to assess the impact of C3WP on students' source-based argument-writing achievement. As initially designed, the study intended to measure the impact of 2 years of C3WP on grade 7–10 student outcomes (in the 2018–19 and 2019–20 school years), and 1 year of C3WP on grade 4–5 student outcomes (in the 2019–20 school year). In March 2020, the COVID-19 pandemic interrupted the study's data collection plans. Student outcome data could not be fully collected in spring 2020 from

secondary students completing their second program year or from elementary (4–5) students completing their first program year.[4] This report focuses only on implementation fidelity over the full study period, the one-year impacts of the program on students in grades 7–9, and indicators of scale.[5]

Recruitment, Randomization, and the Counterfactual Condition

NWP invited 17 local Writing Project sites to participate in this evaluation. Each site recruited one or more pairs of districts in their service area as partners for the study. To be eligible to participate, districts had to have a majority of rural schools according to the guidelines issued by the i3 grant funding the project (i.e., having a federal locale code 32, 33, 41, 42, or 43). Local Writing Project sites were directed to recruit pairs of districts of similar size, prior achievement, and demographics, with the understanding that one district in each pair would be assigned to treatment, the other to control.

Such blocked randomization has several benefits. First, local Writing Project sites can control how many districts they serve in a year. Second, blocked randomization provides better balance across treatment conditions (accounting for prior achievement, local policy, etc.) than randomization without regard to blocks.

Before random assignment, districts committed to participating in data collection and remaining in the randomly assigned study condition. Specifically, district leaders committed to supporting teacher participation in C3WP PD and use of C3WP materials in the classroom if randomized into the treatment condition. If randomized into the business-as-usual group, districts also committed: 1) to continue typical instructional practice and PD programming (as if they had not heard of C3WP), 2) not to seek out similar PD (i.e., with a focus on argument writing, 3) to wait until after the study to use any C3WP tools, materials, or strategies. Control districts received an incentive of $2500.00 each year of the study and offered C3WP the year following the experiment during the 2020–21 school year.

In spring 2018, the research team randomized one of each recruited pair of districts into treatment and assigned the other to the control condition. Districts randomly assigned to treatment received C3WP training in 2018–19 and 2019–20. Secondary (grade 7–10) teachers in the treatment districts received 2 years of C3WP support, beginning in summer of 2018. Upper elementary (grade 4–5) teachers in the treatment districts received 1 year of C3WP support, beginning in summer of 2019.

The study as designed, executed, and described in this technical report closely mimics the design pre-registered as part of the National Evaluation of i3 with one notable exception: we designated student outcomes from spring 2020 (impacts of 2 years of C3WP on secondary

[4] A small number of secondary prompts were collected from students who took ELA during the first semester.
[5] The full evaluation included a number of additional components, including teacher instructional logs and surveys to understand treatment-control contrast and impacts on teacher practice, and qualitative data collection to understand program scaling. These data sources, research methods, and resulting findings are reported elsewhere.

students and 1 year of C3WP on elementary students) as our two confirmatory impacts. As these data were not collected due to COVID-19-related school closures, we report impacts on secondary students after 1 year of C3WP. While our pre-registered design is not publicly available, the project proposal is publicly available and may serve a similar purpose in providing transparency in research design.[6]

Study Samples (WP, District, Schools, Teachers, Students)

Writing Project Site and District Samples

NWP recruited 17 local Writing Project sites with histories of providing in-service development to schools and districts. The local Writing Project sites spanned 16 states: Alabama, California, Idaho, Kentucky, Michigan, Mississippi, Missouri, Nebraska, Ohio, Oklahoma, South Carolina, Tennessee, Texas, Virginia, Washington, and Wisconsin. To be eligible to participate, all districts had to meet the federal definition of rural districts. The randomized sample comprised 48 school districts. According to the 2016–17 Common Core of Data (CCD) from the U.S. Department of Education, study district enrollment ranged from 147 students to 5,817 students. The majority of students at 45 of the 48 were eligible for free or reduced-price lunch.[7] The populations in seven of the study districts were majority African American, one was majority American Indian/Alaskan native, six were majority Hispanic, and thirty were majority White. At the remaining four districts, no single racial or ethnic group comprised a majority of the student population. Exhibit 3 shows the student demographics averaged at the district-level. Exhibit 4 shows the student demographics averaged at the student-level. One district attritted in spring 2018, after being randomized into the treatment condition. The attrition occurred before either program implementation or baseline data collection began.

[6] NWP and SRI's proposal is available by request from the authors or at: https://www2.ed.gov/programs/innovation/awards.html

[7] As of 2016-17, between 32.7% and 95.5% of students in sample districts had students who were eligible for free and reduced-price lunch (CCD 2016-17).

Exhibit 3. District Demographics in 2016–17, District-level Averages

	Treatment	Control	Overall
Total Enrollment	1628	1789	1709
% Free or Reduced-Price Lunch	68.1	71.1	69.6
% English Language Learners	8.7	4.9	6.8
% American Indian/Alaska Native	4.9	1.9	3.4
% Asian	0.4	0.5	0.4
% Black, Non-Hispanic	16.9	14.7	15.8
% Hawaiian Native/Pacific Islander	0.1	0.1	0.1
% Hispanic	13.9	16.6	15.3
% Two or More Races	4.3	2.6	3.5
% White, Non-Hispanic	59.4	63.7	61.6

Note. This table counts each district as one and averages them.

Exhibit 4. District Demographics in 2016–17, Student-level Averages

	Treatment	Control	Overall
Total Enrollment	1628	1789	1709
% Free or Reduced-Price Lunch	76.4	73.7	75.0
% English Language Learners	9.1	3.6	6.2
% American Indian/Alaska Native	2.1	0.6	1.3
% Asian	0.5	0.4	0.4
% Black, Non-Hispanic	26.1	22.5	24.2
% Hawaiian Native/Pacific Islander	0.1	0.1	0.1
% Hispanic	7.2	10.8	9.1
% Two or More Races	3.3	2.2	2.7
% White, Non-Hispanic	60.7	63.4	62.1

Note. This table counts each student.

Teacher Samples

To be eligible for inclusion in the study, teachers had to be a core ELA teacher in grades 4–5 or 7–10 in one of the study districts. For secondary grades, a core ELA teacher was a teacher who taught an ELA class used to meet graduation requirements. Excluded teachers were those who taught only elective classes, such as journalism, self-contained special education classes, and classes designed for English learners who are not tested in English on the state assessment.

For upper elementary grades, used for the implementation study only, we included the primary classroom teachers or the teachers responsible for ELA if the grade was departmentalized.

Across the entire teacher sample, we excluded co-teachers, paraprofessionals, and associate teachers.

Student Samples

Study districts completed the baseline student writing assessment within the first five weeks of the 2018–19 school year. These baseline student assessments determined student eligibility for the study-assigned sample. We excluded from the assigned or analytic sample students joining a district after the baseline student writing assessments were collected. Both the assigned and analytic student samples only include students from non-attrited schools.

To provide an unbiased sample and provide an estimate of student attrition, we randomly sampled students from the pretest student population into an assigned sample whether or not they completed post-test writing. The analytic sample, therefore, provided an unbiased sample of students who remained in the district (and completed both the pretests and posttests) between the beginning and end of the 1-year implementation.

To achieve the desired analytic sample size in the summer of 2020 (after the posttest), we added to the assigned sample until we had 15 students per district, per grade in the analytic sample (i.e., with both pretest and posttest student writing). Students in the assigned sample without posttest writing were considered attritions.

$$Attrition = \frac{N_{assigned_sample} - N_{analytic_sample}}{N_{assigned_sample}}$$

Student attrition was 48.8% overall, 49.9% in the treatment group and 47.6% in the control group (Exhibit 5). This combination of overall and differential attrition meets the What Works Clearinghouse's optimistic boundary for attrition (What Works Clearinghouse, 2020), indicating that bias from attrition is unlikely to degrade the quality of the study's internal validity.

Exhibit 5. Impact Study Attrition, Grade 7–9 Impacts of 1 Year of C3WP

	Assigned District Sample	Analytic District Sample	District Attrition	Assigned Student Sample	Analytic Student Sample	Student Attrition
Treatment	24	23	4.2%	1,861	932	49.9%
Control	24	24	0.0%	1,763	924	47.6%
Overall	48	47	2.1%	3,624	1,856	48.8%
Differential			2.1%			2.3%

NWP was unable to score 113 baseline papers (due to, e.g., papers being completed or scanned in a way that scorers could not read or being misplaced during storage or transportation). We imputed missing baseline data for these records using a constant (the sample mean) and an indicator equal to 1 for students whose baseline score was imputed. Such an approach is unlikely to introduce bias in a randomized controlled trial design when used for baseline data (What Works Clearinghouse, 2020).

Data and Methods

We used various data sources, including administrative program data, teacher surveys, and an on-demand writing assessment, to examine scaling, program implementation, and student outcomes.[8] The following information describes these measures in additional detail.

Program Implementation Fidelity

We assessed two aspects of program implementation as part of our evaluation: development of the local Writing Project sites' capacity to deliver C3WP PD in the 2017–18 and 2018–19 school years and the implementation of the program in treatment districts in the 2018–19 and 2019–20 school years. The implementation fidelity measures and thresholds reflect the metrics found in sufficient dosage to impact student outcomes (Gallagher et al., 2017). For each of the four components, thresholds were set at the teacher, district, and/or site level and rolled up to assess implementation at the overall program level. The first component, which measures capacity building, was measured in the 2017–18 and 2018–19 school years. The latter three components, which measure implementation of the program in treatment districts, were measured in the 2018–19 and 2019–20 school years. Each component is described below.

Local Writing Project Capacity Building

Sites developed local capacity by holding Advanced Institutes to prepare teacher leaders to provide PD in C3WP in the year prior to starting work with the treatment district. To meet implementation fidelity for the local capacity building component, sites had to meet thresholds for three elements in the 2017–18 and 2018–19 school years: (1) Duration and breadth of participation, (2) use of formative assessment tools, and (3) exposure to C3WP instructional resources. Exhibit 6 itemizes the implementation fidelity measures and thresholds at the site level. To meet program level implementation fidelity, 75% of sites had to reach each site-level threshold.

[8] Teacher instructional practice measures were also collected through teacher instructional logs, but teacher outcomes were not a focus of this report.

Exhibit 6. Component 1: Implementation Fidelity Local Capacity Building Metrics

Key Element	Operational Definition of the Indicator	Site-Level Threshold	Years Measured
Duration and breadth of participation	At least 5 teacher leaders participated in 28+ hours of AI	5 teacher leaders met threshold	2017–18 and 2018–19 school years
Use of formative assessment tools	Site submits student work analysis via NWP's UST on 2 occasions in AI	Site submits student work analysis via NWP's UST on 2 occasions in AI	2017–18 and 2018–19 school years
Exposure to C3WP instructional resources	At least 5 teacher leaders experience 4 C3WP instructional resources in AI	4 C3WP instructional resources covered in AI	2017–18 and 2018–19 school years

Note. AI stands for "Advanced Insitute" and UST stands for "Using Sources Tool." Measured across two AI's, across the 2017–18 school year and the 2018–19 school year. Target teacher leaders were teachers who do not work in the study districts. This capacity buiding was intended to prepare teacher leaders to support C3WP PD delivery in treatment districts in the 2018–19 and 2019–20 school years.

C3WP District Implementation

Implementation fidelity metrics also assessed the extent to which the C3WP PD local Writing Project sites' delivery of C3WP PD in treatment districts in 2018–19 and 2019–20 aligned with the program's key components: intensive PD to support classroom implementation, content focused on argument, C3WP instructional resources, and formative assessment.

Duration and breadth of PD. During the first year of PD, sites were expected to provide 45 hours of PD to treatment districts' grades 7–10 ELA teachers. In the second year, sites were expected to provide an additional 45 hours to treatment districts' grades 7–10 ELA teachers and 45 hours to treatment districts' teachers responsible for ELA in grades 4–5. Exhibit 7 lays out the implementation fidelity measures and thresholds for the 2018–19 and 2019–20 school years.

Content of PD. C3WP PD was expected to focus primarily on argument writing, include use of the C3WP instructional resources, and include formative assessment of student work. This component included three elements:

- *Focus on argument writing.* The expectation was for 80% of teachers to participate in 36 hours of argument-writing PD annually.
- *Use of C3WP instructional resources.* Sites were expected to cover at least four of the multi-day C3WP resources in PD annually.
- *Use of formative assessment tool*. Sites were expected to use the Using Sources Tool in PD with teachers at least twice each year.

Exhibit 8 lays out the implementation fidelity measures and thresholds for the content of PD delivered to treatment districts' teachers in the 2018–19 and 2019–20 school years.

Enactment-focused PD strategies. C3WP's approach to PD focused on supporting teachers to shift their classroom practice by using the instructional resources and formative assessment

tools. Fifty percent of PD events were expected to use enactment-focused strategies, such as in-class demonstrations with students or planning for classroom implementation. Exhibit 9 lays out the implementation fidelity measures and thresholds for the strategies used to deliver C3WP PD to treatment districts' teachers at the teacher- and district-level thresholds.

To meet the program-level threshold for each component, at least 75% of districts had to meet the district-level thresholds.

Exhibit 7. Component 2: Duration and Breadth of Professional Development Implementation Fidelity Metrics

Key Element	Operational Definition of the Indicator	Teacher-Level Threshold	District-Level Threshold	Years Measured
Duration and breadth of participation	80% of target teachers participate in 45 or more hours of PD annually	A: 35+ hours B: 40+ hours	85%+ of district's target teachers reach teacher-level threshold A **OR** 75% of district's target teachers reach teacher-level threshold B	2018–19 and 2019–20 school years
Duration and breadth of participation over 2 years	80% of 7–10 ELA teachers participate in 90 or more hours of PD over 2 years	A: 70+ hours B: 80+ hours	85%+ of 7–10 ELA teachers reach teacher-level threshold A **OR** 75% of 7–10 ELA teachers reach teacher-level threshold B	2018–19 and 2019–20 school years

Note. Target teachers for 2018–19 included core 7–10 ELA teachers. Target teachers for 2019–20 included core 7–10 ELA teachers and teachers responsible for ELA in grades 4–5.

Exhibit 8. Component 3: Content of Professional Development Implementation Fidelity Metrics

Key Element	Operational Definition of the Indicator	Teacher-Level Threshold	District-Level Threshold	Years Measured
Focus on argument writing	80% of target teachers participate in 36 hours of PD on argument-writing instruction annually	A: 25+ hours B: 30+ hours	85%+ of district's target teachers reach teacher-level threshold A **OR** 75%+ of district's target teachers reach teacher-level threshold B	2018–19 and 2019–20 school years
Use of C3WP instructional resources	80% of target teachers use at least 4 C3WP instructional resources in PD annually	N/A	4 C3WP instructional resources covered in PD	2018–19 and 2019–20 school years
Use of formative assessment tool	Analysis of student work with UST occurs during PD at least twice annually	N/A	Site submits analysis of student work in district via NWP's online UST on 2 occasions by the end of February	2018–19 and 2019–20 school years

Note. UST stands for "Using Sources Tool." Target teachers for 2018–19 included core 7–10 ELA teachers. Target teachers for 2019–20 included core 7–10 ELA teachers and teachers responsible for ELA in grades 4–5.

Exhibit 9. Component 4: Professional Development Strategies Implementation Fidelity Metrics

Key Element	Operational Definition of the Indicator	Teacher-Level Threshold	District-Level Threshold	Years Measured
Focus on classroom enactment	For 80% of target teachers, 50% of PD events focus on classroom enactment annually, including (1) in-class demonstration with students, (2) designing tasks/assignments, (3) planning for classroom implementation, (4) analyzing student work, (5) modeling instruction with teachers, (6) co-teaching/co-planning, or (7) debriefing classroom implementation	50% of PD events	75%+ of district's target teachers reach teacher-level threshold	2018–19 and 2019–20 school years

Note. Target teachers for 2018–19 included core 7–10 ELA teachers. Target teachers for 2019–20 included core 7–10 ELA teachers and teachers responsible for ELA in grades 4–5.

Data

Implementation fidelity data was supplied by NWP and came from two administrative data sources. NWP's Professional Learning Tracker housed information on PD hours, content, and

strategies for each local Writing Project site. Local sites submitted Professional Learning Tracker data three times a year to NWP's national office. NWP created an online platform for C3WP's formative assessment tool, the Using Sources Tool. Teachers were expected to enter data for students after each cycle of writing that would be reviewed in PD.

Scaling

Exhibit 10 shows the measure and minimum threshold for each of the scale-up goals in the C3WP scaling logic model. We assessed the extent to which NWP reached these scale-up goals by February 2021, though NWP continues to work on scaling activities beyond the timeline of this report. Data for each of the measures came from diverse sources and included review of C3WP documents such as meeting agendas, leadership team lists, C3WP website metrics and materials, and the Professional Learning Tracker data.

Exhibit 10. College, Career, and Community Writers Program Scaling Measures and Thresholds by Goal

Scale-Up Goal	Measure	Minimum Threshold
New teacher leaders with experience providing national leadership (e.g., leading a training at an NWP national meeting)	Agendas/programs for national meetings OR Invitations to join C3WP leadership team for individuals not on leadership team during the i3 Validation grant	12 individuals
Users of C3WP Open Educational Resources	Google and website analytics for page views, collected annually by NWP and provided to the research team	50,000 page views
Resources for grades 7–10 standardized in format and revised for accessibility	Number of resources posted on the C3WP website	20 resources
New resources for grades 4–5	Full year arc of resources that shows a progressive set of argument-writing skills posted on C3WP website	1 full set of resources
Identification of C3WP model sites	Local Writing Project sites that co-lead regional C3WP conferences	3 local Writing Project sites
Sites certified to offer C3WP (through additional grant funding or through fee-for-service, etc.)	Local Writing Project sites holds C3WP AIs and lead 2 years of C3WP PD with partner school	16 local Writing Project sites
Teacher leaders who complete 30+ hours of AI	Professional Learning Tracking Form	200 teacher leaders

Note: AI stands for Advanced Institute.

Student Writing Assessment

We used an on-demand writing assessment as our primary outcome.

Data

To measure students' writing ability, the research team worked with study districts' staffs to administer on-demand, source-based, argument-writing assessments in each study district. We collected prompts from the grade 7–9 students in fall 2018 (baseline) and spring 2019 (impacts after 1 year). Students completed the assessment over two days, in 45-minute blocks. On the first day, students were given a packet containing multiple short, non-fiction source texts about a single topic. On day two, students received these source materials back (along with any notes or pre-planning they had conducted) and a prompt to write an argument using evidence from the texts. Students received one of five topics. For example, one prompt presented six texts about the impact dams have on salmon migration, including an informational text introducing the issue, potential solutions, and varying perspectives on the costs and benefits of both the dams and the potential solutions. On the second day, students were tasked with writing an argument about whether the dams on the river should be destroyed to save migrating salmon for the Director of the Army Corp of Engineers, who is responsible for managing the dams.

The student writing was returned to the research team, who de-identified the writing to protect student privacy and blind scorers to treatment condition and administration time. Papers were scored via a virtual scoring conference at the conclusion of the impact study using the Analytic Writing Continuum for Source-based Argument (AWC-SBA).

The AWC-SBA was developed from the NWP's Analytic Writing Continuum (AWC), a valid and reliable measure of student writing (Bang, 2013), to measure source-based argument writing. AWC-SBA retains the AWC's basic structure (rooted in the "six traits" of writing) but focuses on the particular attributes of source-based argument writing. The AWC-SBA measures four attributes: content (quality of reasoning and strength of evidence); structure (organization to enhance the argument); stance (tone, establishment of credibility); and conventions (differentiation of source material from original writing, punctuation, spelling, capitalization, and paragraphing).

Exhibit 11 shows the baseline descriptive statistics by treatment status on the four AWC-SBA components. We did not perform missing imputation of baseline scores to calculate these averages, and the values reflect the analytic sample's baseline raw AWC-SBA component scores.

Exhibit 11. Average Baseline Score on the AWC-SBA, by Treatment Condition

	Treatment			Control					Baseline
Baseline Measure	Mean	SD	*n*	Mean	SD	*n*	Overall Mean	Pooled SD	Equivalence (Hedges *g*)
Content	2.45	1.05	868	2.44	1.05	875	2.44	1.05	0.01
Stance	2.46	1.06	868	2.47	1.08	875	2.47	1.07	-0.01
Structure	2.36	1.04	868	2.38	1.06	875	2.37	1.05	-0.01
Conventions	2.50	1.13	868	2.52	1.12	875	2.51	1.13	-0.02

To estimate reliability, we randomly selected 595 student prompts to be scored by two raters to provide evidence of inter-rater reliability. Exhibit 12 shows the number and percent of student prompts that were double scored and received scores within 1 point (*N*=595) by attribute.

Exhibit 12. Interrater Reliability by AWC-SBA Attribute

	Number of papers within 1-point agreement	Number of student prompts that were double scored	Percent of scores within 1-point agreement
Content	520	595	87%
Stance	513	595	86%
Structure	513	595	86%
Conventions	502	595	84%

Model

To assess the impact of C3WP on student achievement, we estimated a Hierarchical Linear Model (HLM) to adjust standard errors associated with the clustering of observations within districts (Raudenbush & Bryk, 2002). Models are estimated separately for each of the four attributes scored. The predicted source-based argument-writing score for student *i*, in district *j,* in randomization block *k* as a function of attending a district assigned to treatment is given as

$$Y_{ijk} = \beta_0 + \beta_1(C3WP_j) + (\overline{\boldsymbol{Covariates}_i})\boldsymbol{\beta}_2 + \boldsymbol{\rho_k} + \eta_i + \lambda_j$$

Random effects $\eta_i$and λ_j allow for error at the student and district level, respectively. We include $\boldsymbol{\rho_k}$, a vector of randomization block fixed effects, which we entered as a series of indicator variables and centered within the analytic sample. We include a vector of student-level covariates to improve the precision of the estimate. These covariates include the student's baseline score on each of the four attributes, an indicator variable for the individual who scored their outcome paper, and an indicator variable equal to 1 if the students' baseline scores were imputed using the sample mean. We centered baseline and outcome AWC-SBA scores within each student's grade and prompt form (using, in both cases, overall sample means and standard deviations) to account for cohort and prompt effects. We centered scorer indicators and the missing dummy indicator within the analytic sample. β_1 provides an estimate of the intent-to-treat effect of C3WP on a participating student's writing ability.

At the study outset, we specified the content attribute at the end of program Year 2 as our confirmatory impact estimate for secondary grades. While we were unable to collect the Year 2 impact data, we consider the content attribute for our Year 1 secondary grades to be our equivalent confirmatory estimate. We also acknowledge that, since we wrote this proposal, the What Works Clearinghouse released an adolescent literacy protocol intended to guide review of studies estimating the impacts of programs on grade 4–12 student literacy (What Works Clearinghouse, 2018). According to this protocol, the AWC-SBA attributes would fall under two domains: writing quality (content, structure, and stance) and writing conventions (conventions).

We therefore test the three measures of writing quality against the critical *p*-values determined by the Benjamini-Hochberg multiple comparison correction. Since there are three comparisons within the same domain, we therefore compare the highest of these three *p*-values against .017, the next highest against .025, and the lowest against .050.

Findings

This section presents findings on the extent to which C3WP was implemented as initially intended and describes the impact of the program on grade 7–9 student outcomes.

Implementation

C3WP met its implementation fidelity metrics for all components in each year, except for the intensity of PD in Year 2. The spring of Year 2 coincided with the start of the COVID-19 pandemic, which impacted local Writing Project sites leaders' ability to conduct planned PD activities.

Most local Writing Project sites (76%) met the thresholds for the local capacity-building component, indicating that most sites had prepared a group of teacher leaders to support C3WP PD through their Advanced Institute. Overall, C3WP met the program-level threshold of 75% of sites meeting the three local capacity-building indicators (see Exhibit 13).

Exhibit 13. C3WP Local Capacity-Building Implementation Fidelity

	Component 1: Local Capacity Building		
	Duration and breadth of participation	Use of the formative assessment tool	Use of C3WP instructional resources
Percent of districts reaching district-level threshold	76%	76%	76%
Program-level threshold met	Yes	Yes	Yes

We measured components 2 through 4, which focused on implementation of the key components of the program in each of the partner districts annually, once for the 2018–2019 school year and once for the 2019–2020 school year. In Year 1, C3WP met the overall program fidelity thresholds for intensity (component 2), content (component 3), and strategies (component 4) (Exhibit 14). In the majority of partner districts, most teachers participated in PD that was intensive, included sufficient content focused on argument, C3WP instructional resources, and the formative assessment tool, and used enactment-focused strategies. In Year 2, C3WP met the overall program fidelity thresholds for content of PD (component 3) and strategies (component 4), but it did not meet the thresholds for intensity of PD (component 1) (Exhibit 15). In Year 2, a little over half the districts (57%) met the threshold for number of hours of participation by teachers in C3WP PD. Fewer districts (22%) met the threshold for number of

C3WP hours over 2 years for teachers in grades 7–10. Local Writing Projects sites were halfway through the spring semester of Year 2 when the COVID-19 pandemic began forcing schools to remote learning. The public health emergency impacted local Writing Projects sites' ability to continue planned PD activities. Since C3WP's secondary program was designed to last over 2 years, we also examined to what extent teachers participated over 2 years. Overall, far fewer districts met this threshold.

Exhibit 14. Year 1 C3WP District Implementation Fidelity

	Component 2: Intensity of PD	Component 3: Content of PD			Component 4: PD Strategies
	Duration and breadth of participation	Focus on argument writing	Use of instructional resources	Use of formative assessment tool	Focus on enactment
Percent of districts reaching district-level threshold	82%	91%	100%	100%	100%
Program-level threshold met	Yes	Yes	Yes	Yes	Yes

Exhibit 15. Year 2 C3WP District Implementation Fidelity

	Component 2: Intensity of PD		Component 3: Content of PD			Component 4: PD Strategies
	Duration and breadth of participation in Year 2	Duration and breadth of participation over 2 years	Focus on argument writing	Use of instructional resources	Use of formative assessment tool	Focus on enactment
Percent of districts reaching district-level threshold	57%	22%	78%	78%	100%	96%
Program level threshold met	No	No	Yes	Yes	Yes	Yes

To understand the extent to which early-start teachers implemented C3WP in their classrooms, we administered a survey at the end of years 1 and 2 asking teachers which resources they implemented, how often, and any modifications they made. Exhibit 16 shows the response rate for the grade 7–10 teacher survey, which was administered during the spring of 2019 and 2020. The table includes the total number of eligible teachers we sent the survey to and the number of survey respondents.

Exhibit 16. Grades 7–10 Teacher Survey Response Rate (Treatment Only)

	All Teachers	Respondents	Response Rate
Spring 2019	168	144	86%
Spring 2020	160	126	79%

Treatment teachers were expected to complete at least four C3WP cycles of instruction per year of implementation. Most treatment teachers (83%) reported completing the four required cycles of instruction in Year 1. Just 61% of teachers in Year 2 reported completing at least four cycles, although most teachers (93%) completed at least three when spring 2020 was interrupted by COVID-19. The survey also asked teachers to indicate the instructional resources they used during the year. In Year 1, the top four most used instructional resources focused on connecting evidence to claims (91%), writing and revising claims (89%), writing into the day (63%), and ranking evidence (48%). In Year 2, the top four most used resources focused on writing and revising claims (74%), connecting evidence to claims (74%), writing into the day (57%), and making moves with evidence (57%).

Teachers were also expected to use Routine Argument Writing between the multi-day instructional resources. In Year 1, the vast majority (92%) of teachers reported using Routine Argument Writing regularly or a few times throughout the year. Teachers reported using the Using Sources Tool at high rates overall in Year 1 (94%) and Year 2 (92%). However, fewer teachers reported using the Using Sources Tool four or more times, which would have aligned with the number of cycles of instruction expected each year. We found that 69% of teachers reported using the Using Sources Tool four or more times in Year 1 and 56% reported the same in Year 2).

Scaling

NWP reached the thresholds for six out of seven of the scaling indicators (Exhibit 17). NWP increased their national leadership capacity by increasing the number of experienced teacher leaders with experience providing leadership nationally to 15 and expanding the reach of C3WP through their website. Over the course of 10 months in 2020, the C3WP website exceed the 50,000 minimum threshold for page views. To support scaling, NWP also focused on revising existing 7–10 instructional resources and creating new resources for grades 4–5. C3WP's current website includes 22 standardized instructional resources for grades 7–10. NWP also created a set of instructional resources for grades 4–5 that represents a full arc of skill development from identifying arguments to writing a civic argument.

NWP set up a certification process for sites and a micro-credentialing system for teacher leaders to show that sites and teachers leaders are prepared to provide C3WP PD. Seventeen local Writing Project sites held an C3WP Advanced Institute and completed 2 years of PD with a partner district. A total of 229 teacher leaders completed 30+ hours across all of the Advanced Institutes, exceeding the threshold of 200. NWP has yet to meet the scaling indicator for

regional leadership: three local Writing Project sites holding regional C3WP conferences. Local Writing Projects sites' ability to hold conferences was curtailed by the COVID-19 pandemic, but NWP reported plans for sites to hold conferences in the future. Exhibit 17 reports on the extent to which NWP reached the initial scale-up goals by February 2021.

Exhibit 17. C3WP Scale-Up Measures and Thresholds by Goal

Scale-up Goal	Measure	Minimum Threshold	Indicator
Expand NWP National Leadership Capacity			
New teacher leaders with experience providing national leadership (e.g., leading a training at an NWP national meeting)	Agendas and programs for national meetings OR Invitations to join C3WP leadership team for individuals not on the leadership team during the i3 Validation grant	12 individuals	39
Users of C3WP Open Educational Resources	Google and website analytics for page views on updated website, collected annually by NWP and provided to the research team	50,000 page views	January 1, 2019 – December 31, 209: 91,315 page views January 1, 2020 – December 31, 2020: 69,477,392 page views
Develop and Codify Instructional and Formative Assessment Resources			
Resources for grades 7–10 standardized in format and revised for accessibility	Number of resources posted on C3WP website	20 resources	Secondary Resources: 22 resources posted and standardized
New resources for grades 4–5	Full year arc of resources that shows a progressive set of argument-writing skills posted on C3WP Website	1 full set of resources	Upper elementary resources: 12 resources posted
Invest in Regional Leadership			
Identification of C3WP model sites	Local Writing Project sites that co-lead regional C3WP conferences	3 local Writing Project sites	0
Develop site certification and micro-credentialing system			
Sites certified to offer C3WP (through additional grant funding or through fee-for-service or other funding source)	Local Writing Project sites hold C3WP Advanced Institute and provide 2 years of C3WP PD to partner districts	16 local Writing Project sites	17 sites
Teacher leaders who complete 30+ hours of Advanced Institute	Professional Learning Tracking Form	200 teacher leaders	229 teacher leaders completed at least 30 hours

Impacts on Student Writing

Exhibit 18 provides descriptive statistics for student outcome data by treatment status.

Exhibit 18. Year 1 Student Prompt Outcomes by AWC-SBA Components

	Treatment				Control				Overall	
Outcome	Mean	SD	District *n*	Student *n*	Mean	SD	District *n*	Student *n*	mean	SD
Content	2.85	1.14	23	932	2.65	1.12	24	924	2.75	1.14
Stance	2.88	1.17	23	932	2.69	1.14	24	924	2.79	1.16
Structure	2.79	1.14	23	932	2.61	1.12	24	924	2.70	1.13
Conventions	2.91	1.18	23	932	2.70	1.18	24	924	2.81	1.18

Exhibit 19 shows the estimated effect of 1 year of C3WP on grade 7–9 students' source-based argument writing, as measured by the four attributes measured on the AWC-SBA. The exhibit presents the estimated treatment point estimate and standard error, sample sizes, *p*-value, and significance of treatment effect of the model using standard values. Effect size is calculated as Hedges' *g* (i.e., the covariate-adjusted mean difference minus the treatment coefficient divided by the unadjusted pooled within-group SD). We estimate that C3WP has a positive and statistically significant impact on all four attributes of writing measured.

Exhibit 19. Estimated Impacts of 1 Year of C3WP on Grades 7–9 Students' Source-Based Argument Writing, as Measured by the AWC-SBA

Outcome	Estimated Treatment Effect	SE	Student *n*	District *n*	*p*	Sig	Hedge's G	Adj. Critical *p*-value	Meets Critical *p*-value?
Content	0.19	0.04	1,856	47	0.00	***	0.19	.025	Yes
Stance	0.19	0.04	1,856	47	0.00	***	0.19	.050	Yes
Structure	0.17	0.04	1,856	47	0.00	***	0.18	.017	Yes
Conventions	0.19	0.04	1,856	47	0.00	***	0.19	n/a	n/a

Note: *** $p < .001$. N/A for "not applicable." Adjusted critical *p*-values represent the critical *p*-value to assess the estimate given the Benjamini-Hochberg correction for multiple comparisons within the same domain.

Summary and Discussion

Overall, we find that C3WP was largely implemented with fidelity. Across the 2017–18 and 2018–19 school years, over 75% of local Writing Project sites met fidelity goals to develop local capacity by training teacher leaders to support program implementation in treatment districts. In 2018–19 (study Year 1), nearly all treatment districts received the target amounts, foci, and strategies for implementation. In 2019–20, only 57% of treatment districts received the number of hours of intended PD, most likely due to COVID-19-related school closures. Districts received PD consistent with the intended content and strategies. As a result of C3WP, students

outscored control students on a complex performance task: reading multiple non-fiction sources and writing an argument drawing on these sources. This performance task is well-aligned to college- and career-ready state standards and similar to performance tasks on many state assessments.

This is the third rigorous impact study demonstrating a positive impact of C3WP on secondary students' argument-writing outcomes. The size of the estimated impacts are similar in size and sometimes larger than those observed in the initial i3 Validation study (Gallagher et. al, 2017). Notably, however, the earlier estimates were based on 2 years of program implementation: 1 year when sites had substantial discretion about the PD approach, and 1 year when all sites implemented programs similar to C3WP as it was implemented in this study.

References

Arshan, N. L., Park, C. J., & Gallagher, H. A. (2018). Impacts on students of a short-cycle implementation of the National Writing Project's College, Career, and Community Writers Program. Menlo Park, CA: SRI International. https://www.sri.com/publication/impacts-on-students-of-a-short-cycle-implementation-of-the-national-writing-projects-college-career-and-community-writers-program/

Bang, H.J. (2013). Reliability of National Writing Project's Analytic Writing Continuum Assessment System. *The Journal of Writing Assessment*, 6(1). http://www.journalofwritingassessment.org/article.php?article=67.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective Teacher Professional Development*. Learning Policy Institute.

Friedrich, L., Bear, R., & Fox, T. (2018). For the sake of argument: An approach to teaching evidence-based writing. *American Educator*, 42(1), 18–22.

Gallagher, H. A., Arshan, N., & Woodworth, K. (2017). Impact of the National Writing Project's College-Ready Writers Program in high-need rural districts. *Journal of Research on Educational Effectiveness*, *10*(3), 570–595. https://doi.org/10.1080/19345747.2017.1300361

Gray, J. (2000). *Teachers at the center: A memoir of the early years of the National Writing Project*. National Writing Project.

Harris, J. (2006). *Rewriting: How to do things with texts*. Utah State University Press.

Lieberman, A., & Friedrich, L. (2010). For the sake of argument: An approach to teaching evidence-based writing. *American Educator*, Spring. Teachers College Press.

Lieberman, A., & Wood, D. R. (2003). *Inside the National Writing Project: Connecting network learning and classroom teaching.* Teachers College Press.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Sage Publications.

What Works Clearinghouse. (2020). *What Works Clearinghouse Standards Handbook, Version 4.1.* U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. https://ies.ed.gov/ncee/wwc/handbooks.

What Works Clearinghouse. (2018). *Review Protocol for Adolescent Literacy Interventions Version 4.0*.