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LITERACY DESIGN COLLABORATIVE 2016–2017 EVALUATION REPORT FOR THE NEW YORK CITY DEPARTMENT OF EDUCATION

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Executive Summary

The Literacy Design Collaborative (LDC) was created to support teachers in implementing Common Core State Standards (CCSS) in order to teach literacy skills throughout the content areas. The LDC Investing in Innovation (i3) project focuses on developing teacher competencies through job-embedded professional development and the use of professional learning communities (PLCs). Teachers work collaboratively with coaches to further develop their expertise and design standards-driven, literacy-rich writing assignments within their existing curricula across all content areas.

Engaged in the evaluation of LDC tools since June 2011, UCLA's National Center for Research on Evaluation, Standards, and Student Testing (CRESST) is the independent evaluator for LDC's federally funded Investing in Innovation (i3) validation grant. The 2016–2017 school year was the first year of implementation, following a pilot year during which the implementation plan, instruments, data collection processes, and analytical methodologies were refined.

This annual report presents an initial look at LDC implementation in the first cohort of 29 schools in the New York City Department of Education (NYCDOE) during their first year of implementation. The early results suggest the following:

- Participants across all groups reported positive attitudes toward LDC. All measures of satisfaction or improvement were rated positively by more than half of respondents. Two thirds of teachers expressed interest in learning more about how to lead LDC implementation at their schools, and over 80% of project liaisons and administrators anticipated that their teachers would continue with LDC the following year.
- Participants perceive a positive impact on student outcomes. Over two thirds of teachers and over 90% of administrators agreed that LDC helped improve students' literacy performance.
- Individuals leading and supporting the LDC implementation at all levels received highly positive ratings. LDC coaches were rated by 95% of teachers as providing appropriate

and timely feedback. Project liaisons were overwhelmingly reported to be highly approachable, effective, and knowledgeable. Almost all teachers reported that their administrators encouraged LDC participation in schools. A large majority of project liaisons and administrators had positive interactions with LDC staff and were able to receive appropriate resources and support when needed.

- At this point, there is insufficient quantitative evidence to suggest a positive LDC impact on student test scores either at the elementary or middle school level. This finding should not be surprising given the early stage of intervention, with teachers having only completed one year of the two-year implementation process.
- The LDC intervention appears to have differential results for teachers in different content areas. It seems to be a better fit for English language arts and history/social studies teachers than for science and math teachers. Teacher feedback and level of engagement with CoreTools indicated that science and math teachers were less engaged with the material.
- This district's implementation did, on average, appear to have met LDC's participation expectations for high implementation. The ideal is that PLC members meet weekly for at least 60 minutes. Almost two thirds of teachers reported meeting at least once a week or more. Over half reported that meetings lasted 45 minutes to an hour, and 30% reported they lasted longer than an hour. Almost three quarters of teachers agreed that their PLC was given sufficient time to meet, although many teachers who provided open-ended responses asked for more protected, paid time.
- Analyses of module artifacts suggest that both elementary and secondary teachers were moderately successful at creating an effective writing task. Secondary teachers were moderately successful at aligning to standards. Modules did not reflect success in fidelity to LDC, quality instructional strategies, coherence and clarity, and overall impression.

As an ongoing multiyear intervention, the LDC implementation will continue to evolve year to year as participants provide feedback and LDC program managers make refinements. Thus, we anticipate that further significant changes to the course material and the delivery system that are already in progress for Year 2 will likely result in continued and possibly increased positive feedback. Related, we posit that further support for science and math teachers would likely result in higher levels of success and satisfaction for those teachers. Finally, as teachers return for a second year and achieve greater experience with the LDC model, it is likely that their ability to apply their learning in increasingly productive ways will become more evident in their self-reports, module quality, and engagement with the LDC platform.

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1.0 Introduction

The Literacy Design Collaborative (LDC) was created to support teachers in implementing Common Core State Standards (CCSS) in order to teach literacy skills throughout the content areas. The LDC Investing in Innovation (i3) project focuses on developing teacher competencies through job-embedded professional development and the use of professional learning communities (PLCs). Teachers work collaboratively with coaches to further develop their expertise and design standards-driven, literacy-rich writing assignments within their existing curriculum across all content areas. LDC is a national community of educators providing a teacher-designed and research-based framework, online tools, and resources for creating both literacy-rich assignments and courses across content areas. Used by individual teachers, schools, and districts in 40 states for the past four years, LDC also is a statewide adopted strategy for Common Core implementation in Kentucky, Colorado, Louisiana, and Georgia.

UCLA's National Center for Research on Evaluation, Standards, and Student Testing (CRESST), in collaboration with its partner Research for Action (RFA), engaged in the evaluation of the implementation and impact of LDC tools on student learning and teacher effectiveness starting in June 2011, via two parallel research studies funded by the Bill and Melinda Gates Foundation. Those studies included an examination of LDC implementation in eighth grade social studies and science classrooms in Kentucky and Pennsylvania and a districtwide implementation in sixth grade advanced reading classes in a large district in Florida. Results for the studies are available in two technical reports (Herman et al., 2015a; Herman et al., 2015b), as well as a journal article published by AERA Open (Herman, Epstein, & Leon, 2016).

Currently, CRESST serves as the independent evaluator for LDC's federally funded Investing in Innovation (i3) validation grant. The LDC i3 study is examining the implementation and impact of LDC in two large school districts: New York City Department of Education and a large school district on the West Coast. The evaluation study is a comprehensive mixed-methods evaluation to understand the impact of LDC on student learning using a quasi-experimental design, as well as to document impact on teacher skills and practices. Specifically,

the evaluation study addresses a rich range of questions about program characteristics, conditions, and program impacts in the context of two large urban school districts. The study will draw on data from two cohorts of schools, with each school housing a professional learning community (PLC) of teachers engaging in professional learning about LDC and implementing LDC mini-tasks and modules in their classrooms. We will measure teacher implementation and skill improvement via teacher surveys, analysis of analytic data from LDC's online CoreTools module building platform, and artifact analysis. While we will document the core strategies of the LDC model as implemented and provide support for LDC improvement, the central focus of our comprehensive mixed-methods evaluation is examining the impact of LDC on teacher practices and student learning using a quasi-experimental design.

The first i3 evaluation cohort of schools began implementing LDC during the 2016–2017 school year. This annual progress report examines LDC implementation during the 2016–2017 school year in the New York City Department of Education (NYCDOE). A parallel progress report focuses on implementation in a large district on the West Coast. The current annual progress report presents results from (a) analyses describing how LDC participants interacted with the CoreTools module building platform; (b) scoring by CRESST of instructional modules created by LDC participants; (c) surveys of classroom teachers, LDC project liaisons, and school administrators; and (d) student outcome analyses using the quasi-experimental design.

These results provide a window into how LDC was implemented in 2016–2017, the perceived utility and effectiveness of various program components, and the perceived impact of LDC on both teacher and student skills and knowledge. A preliminary test of the effectiveness of LDC in increasing student learning is also included in the report.

1.1 Logic Model

The logic model includes four key intervention components that were predicted to be the drivers of change in teacher practice and student learning (see Figure 1.1). These are a coach-supported **Professional Learning Community (PLC)** formed to implement the LDC intervention at the school site and provide a space for teacher collaboration; **asynchronous support from coaches** in the form of feedback in CoreTools through comments and peer review; **implementation activities** completed by participating teachers including module development and classroom implementation; and **leadership support** at different levels. Note that the model also indicates LDC's implementation expectations in each area.

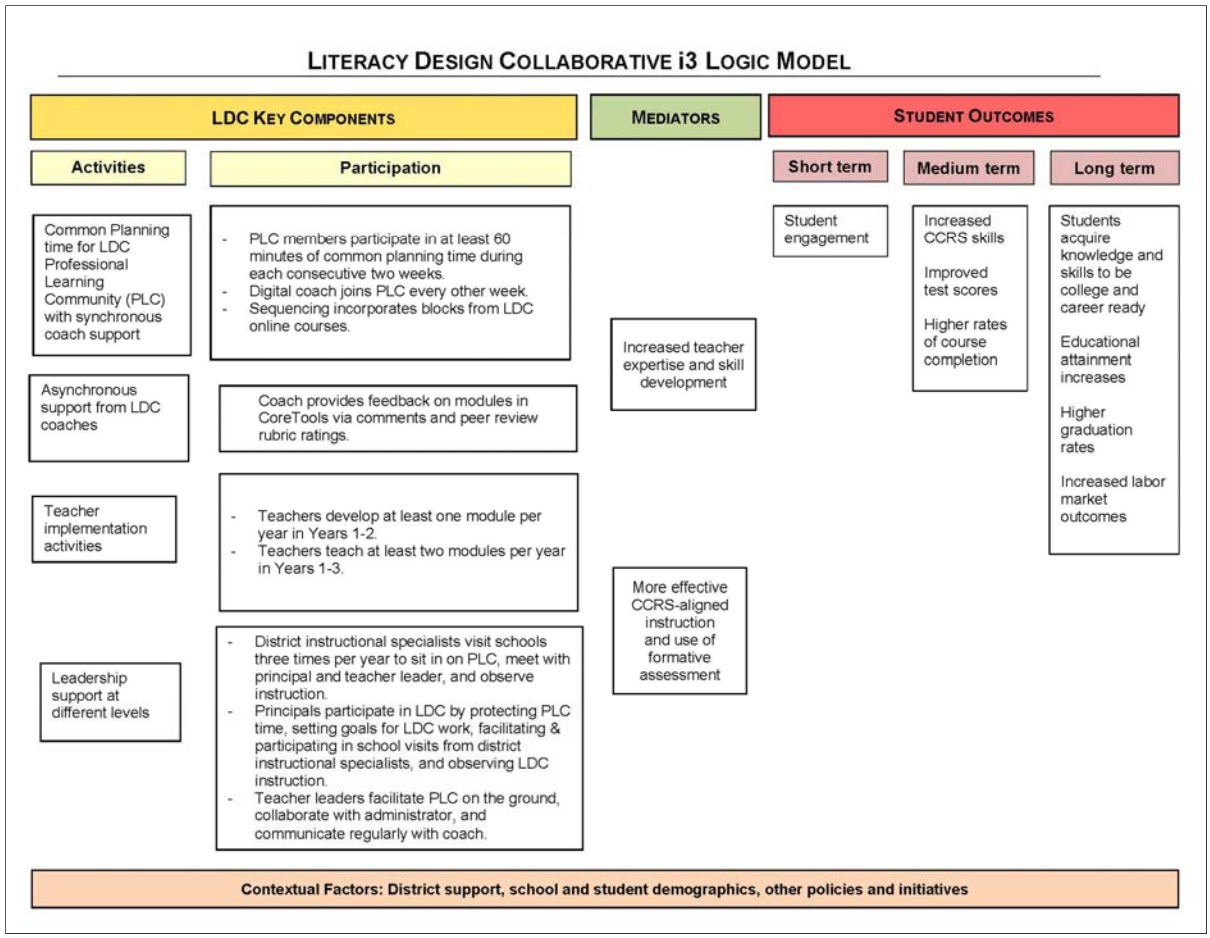

Figure 1.1. LDC i3 logic model.

The logic model predicts that the four key components will lead to increased teacher expertise and skill development and more effective Common Core aligned instruction which incorporates ongoing formative assessment. In turn, increased teacher capacity and more effective instruction will lead to increased student engagement in the short term; increased student skill acquisition, higher test scores, and higher rates of course completion in the medium term; and improved college and career readiness, education attainment, graduation rates, and labor market outcomes in the long term.

Note that the logic model has been revised based on refinements to the program in response to learning from the pilot year (2015–2016) and the first year for implementation cohort 1 (2016–2017). The logic model presented here is current as of winter 2018.

Note also that Figure 1.1 refers to *teacher leaders*, but this report will refer to *project liaisons*. That distinction reflects an update to the model; starting in 2017–2018, teacher leaders are being identified in the first year that a school implements LDC, and those teacher leaders will receive a stipend in their first year. This change was not yet in effect during the

2016–2017 school year, and we therefore refer to teachers playing a leadership role in LDC as project liaisons in this report.

1.2 Evaluation Questions

Our evaluation questions focus on addressing three main areas: program characteristics and implementation, contextual factors and implementation, and program impacts. This progress report provides findings on many, but not all, of the evaluation questions. In particular, given that the evaluation is still in its early stages, there is limited information available regarding program impacts. This report provides a first *exploratory* look at how the refined LDC model is impacting student learning. The first *confirmatory* analysis will be conducted at the end of two years of participation for the teachers.

1. Program Characteristics and Implementation
    a. Who are the participating teachers and schools? Are they representative of the teacher/school populations of the respective district on years of teaching, education level, prior student performance, etc.?
    b. How is the LDC program implemented in each district? What are the core components (e.g., training, tools, on-site or other direct support) and who are the key participants? In what ways did the LDC implementation align with the intended model?
    c. In what ways do teachers implement the LDC tools in their classrooms? To what extent do teacher practices align with intended LDC practices?
    d. How are teachers utilizing the online LDC system (including online tools, exemplars, collaborative work spaces, and technical assistance) in terms of frequency and use of key features? Does this vary by teacher characteristics? What are teachers' perceptions of the value and quality of the online LDC system?
    e. What types of LDC professional development opportunities are offered to and utilized by teachers at each school/district? Are teachers and schools satisfied with the LDC professional development opportunities they received?
2. Contextual Factors and Implementation
    a. What factors facilitate or hinder successful implementation of the LDC model at the teacher, school, and district levels?
    b. How can implementation of the model be improved at the teacher, school, and district levels?
    c. What other educational reforms are being implemented in the participating schools and districts? What are their influences on the LDC adoption in the schools and districts? Are schools able to align reform efforts?
    d. What are the roles of school and district leadership in shaping the LDC implementation?

3. Program Impacts
    a. What is the impact of LDC on the academic performance of participating students as measured by the state assessments?
    b. Do the academic impacts vary by student subgroup including prior achievement, race, ethnicity, socioeconomic status, gender, language proficiency, and/or disability? Does LDC help close the achievement gap between student subgroups?
    c. Do the academic impacts vary by student grade level or subject?
    d. What is the impact of LDC on teacher skill improvement and learning as measured by CoreTools and by the quality of LDC modules they produce? What is the self-reported impact of LDC on teacher learning?
    e. To what extent do teachers report changes in their practice (e.g., teaching strategy, collaboration with others) and changes in their comfort in implementing CCSS during and after the LDC intervention?
    f. What is the relationship between the fidelity of implementation, fidelity of intervention, and student learning? What are the conditions and contexts under which LDC tool use is most effective?
    g. To what extent do Cohort 1 participating schools and teachers continue their LDC-influenced practices in the 2019–2020 school year after the LDC support ends? What contributed to their decision to continue or stop? What factors contributed to their levels of continued implementation? How does Cohort 1's actions align with their previously stated intentions for continuation of LDC-influenced practices as reported in spring 2017? To what extent do Cohort 2 participating schools and teachers plan to continue their LDC-influenced practices after the LDC support ends?

2.0 Study Methodology

In this chapter we provide an overview of the methodology behind this early look at LDC in 2016–2017. We begin by describing the various instruments and data sources for the analyses, including (a) analytic data from LDC's CoreTools platform; (b) module artifacts including samples of student work; (c) surveys of classroom teachers and project liaisons participating in PLCs and administrators overseeing the implementation; and (d) administrative data on students and teachers used for outcomes analyses. We then describe the sample of educators and schools for each of these data sources. Finally, we discuss the methodological approaches for the various analyses we conducted.

2.1 Data and Instruments

We describe below each of the data instruments and the elements they contain. Most variables are measured at the teacher level, which is the unit at which the LDC intervention is being implemented. Administrative data for the analysis of the impact of LDC on student learning will include school-, teacher-, and student-level variables.

LDC CoreTools. The CRESST team received the LDC program data on i3 participants' interactions with the CoreTools module building platform. The data files captured three key activities related to the module building platform: document page viewing, document editing, and document commenting.

Specifically, the data contained date- and time-stamped records of participants' activities in each of these areas, and we analyzed variation in the number of times the participants performed these activities across the school year. We generated descriptive statistics (minimum, maximum, mean, standard deviation) for the number of times participants viewed a document page, edited a module document, and commented on a module document. We also produced descriptive statistics on these behaviors for various roles (teacher, project liaison, administrator), school level (elementary, middle, high) and content area subgroups. Finally, we examined the difference in average engagement in these key activities between teachers whose completed modules we rated in Chapter 4 of this report and those teachers who did not complete a module.

Modules. Our existing rubrics, developed for our prior LDC evaluation work (Herman et al., 2015a), were adapted to examine the quality and coherence of the LDC modules and to address the quality of both content and literacy development materials (e.g., template task, student work samples, and descriptions of the pacing and goals of the modules).[1] The six dimensions examined for this study included the following: (1) effective writing task; (2) alignment to CCSS and local and state literacy and content standards; (3) fidelity to LDC module

[1]See Reisman, Herman, Luskin, and Epstein (2013) for a summary of the original generalizability study conducted using the CRESST-developed rubrics. We excluded three dimensions that focused on issues of text quality as texts selected by teachers were not readily available in CoreTools for the analysis.

instruction; (4) quality of instructional strategies; (5) coherence and clarity of module; and (6) overall impression. Three additional dimensions that focused on issues of text quality were excluded since submissions did not include copies of the materials used by the teachers. Each dimension was rated using a 5-point scale with anchor points for the first five dimensions ranging from *not present or not realized* to *fully present or fully realized* and anchor points for the final dimension ranging from *inadequate* to *advanced* LDC module implementation. Detailed definitions of each dimension and descriptions for what constitutes ratings of 1, 3, and 5 on each dimension can be found in the rubric in Appendix A.

Surveys (teachers, project liaisons, and administrators). In collaboration with LDC, CRESST made substantial revisions to pilot year (2015–2016) surveys. Revisions address lessons learned from administration and analysis of the pilot surveys, adjustments to the program model made during and subsequent to the pilot year, and a desire to yield more robust information on teacher skills and practices. Items were also added to help understand in which grades and classes teachers were implementing LDC and to help identify the modules teachers were spending their time and energy on. Similar to the pilot year, CRESST designed five surveys to capture data on the experience of LDC participants playing three different roles: teacher, project liaison, and administrator. Some project liaisons were also administrators or teachers. Thus, five versions of the surveys were administered in spring 2017: (1) teacher, (2) teacher/project liaison, (3) project liaison, (4) administrator, and (5) administrator/project liaison.

The surveys were designed to capture multiple perspectives on key aspects of LDC's logic model[2] (see Figure 1.1), and to provide data to answer the evaluation's research questions presented earlier. Survey questions targeted at the three roles fall under the domains and subdomains in Table 2.1. Domains were selected to align with the LDC i3 logic model and with the CRESST evaluation questions. Note that most domains cover multiple subdomains, constructs, and survey questions. *Professional Learning Community/Teacher Collaboration,* for example*,* captures the intensity, frequency, and collaborative environment of common planning time; *LDC Training and Support* includes quality of online courses, utility and effectiveness of coach support, etc.; and *LDC Implementation* encompasses module creation, classroom implementation of modules, and module peer review*.*

[2]The survey domains were aligned to this version of the logic model for the pilot year. The logic model has since been revised to align with the revised LDC implementation plan.

Table 2.1

Survey Domains for Three Respondent Groups

Domain	Teacher	Project liaison	Administrator
LDC Participation	X	X	X
Professional Learning Community and Teacher Collaboration	X	X	X
LDC Training and Support	X	X	X
LDC Implementation			
Module Creation	X	X	
Classroom Implementation	X		
Module Peer Review	X		
Alignment		X	X
Leadership Support			
Project Liaison Support	X		
School Administrator Support / Classroom Observation	X	X	X
Project Liaison Leadership Role	X	X	X
District Support		X	X
Impact			
Impact on Teacher Practice and Learning	X		X
Impact on Student Learning	X		X
Scale-Up and Sustainability		X	X
Facilitators and Barriers	X		
Areas of Improvement	X	X	X

Teachers and administrators were asked to reflect on both LDC's *Impact on Teacher Practice and Learning* and *Impact on Student Learning.* Questions within a number of domains further asked respondents to reflect on conditions and supports that may potentially impact LDC's implementation. These domains included teachers' perceptions of *Facilitators and Barriers* to implementation and perceptions regarding leadership roles and support for LDC at different levels. Project liaisons and administrators were also asked for their perceptions regarding if and how LDC would be sustained and expanded within the school. Finally, all respondents were asked open-ended questions regarding *Areas of Improvement* for LDC implementation. Teacher, project liaison, and administrator surveys can be found in Appendices B, C, and D.

Administrative data used in student outcomes analysis. Student-level variables utilized in the outcomes analysis included race/ethnicity, gender, poverty status, special education status, English language proficiency, gifted status, grade, and prior achievement in math and ELA and outcome year achievement in ELA on state assessments. Teacher-level indicators obtained and utilized included years of teaching experience and teacher attendance. We also requested and received roster files that establish a link between teachers and students via specific courses.

2.2 Sample

Twenty-nine Cohort 1 schools began implementing the LDC program in the 2016–2017 school year, with 217 classroom teachers participating and 48 administrators overseeing the work (see Table 2.2). The 29 schools included two elementary, four K–8, 17 middle, three 6–12, and three high schools. Participants taught across all grade levels from K to 12. Most secondary teachers taught ELA, social studies/history, or science, with a smaller number teaching math.

As can be seen in Table 2.2, across the different measures data were available for a large majority of participants. Ninety percent of teachers consented to participate in the study, with 85% of all teachers completing the survey in spring 2017. The consent rate (75%) and survey response rate (67%) for administrators were a little lower than the corresponding rates for teachers. The CoreTools dataset, which was delivered to CRESST directly by LDC and did not depend on teachers' individual study consents, captured a slightly larger number of teachers and administrators than those that consented to the CRESST survey.

In addition to the CoreTools analytic files, we also received module artifacts from LDC for an analysis of the quality of module design. We restricted our analysis to modules created during the 2016–2017 school year that included original uploaded student work samples, because these samples were required for module scoring. That restriction yielded a sample of 115 modules that were authored or coauthored by 122 teachers (over half of all participating teachers) and three administrators. Given the presence of uploaded student work, these are modules that we are confident were implemented in the classroom. It should be noted, however, that as described in Chapter 4, almost 90% of teachers made at least one edit to a mini-task or module in CoreTools. The 115 modules are therefore part of a larger universe of modules worked on by participating teachers, some of which were likely implemented in the classroom despite the absence of uploaded student work.

The school district required individually signed consent forms before releasing teacher data and teacher/student rosters, so for the outcomes analysis, we only received data on teachers who consented to participate in the study. The sample was further restricted by the need for student achievement data for both the outcome year (2016–2017) and the prior year (2015–2016). As a result, participants teaching either high school or lower elementary grades (K-3) could not be included in the student outcome analysis. These restrictions accounted for about half of the reduction in the sample from 217 consenting teachers to 118 teachers in the outcomes analysis. Specifically, 45 high school teachers and seven K–3 teachers were excluded.

In addition, 10 teachers from one school in District 75, which serves special needs, were excluded. Another 37 teachers were excluded because they taught math or noncore content subjects, or were not associated with students with prior achievement and outcome year achievement scores in administrative data files.

Table 2.2

Number of Participating Schools and Teachers in NYC and Sample Size for Different Instruments

	Number of classroom teachers	Number of administrators	Number of schools in which teachers and administrators practice
Participated in LDC	217	48	29
Consented to CRESST study	196	36	29
Completed survey	184	32	28
Present in CoreTools dataset	202	33	29
Author/coauthor of module with student work uploaded	122	3	25
Included in outcomes analysis	118	NA	23

2.3 Module Scoring Process

LDC requirements intended that all teachers implement two modules over the course of the year, with the first spanning one week based on one text and the second spanning across multiple weeks and using multiple texts. Modules could be developed as original units of work or could be adapted from existing modules within the LDC CoreTools Library. Modules could also be either developed or adapted solo or collaboratively with other teachers within the PLC.

Modules included in this analysis were collected from elementary and secondary teachers who participated during the 2016–2017 school year. As noted earlier, all modules were retrieved from LDC's CoreTools online platform and examined during summer 2017. Artifacts that included both a completed module template and at least one student work sample, as determined by the evaluation team and/or expert raters, were then included in the analysis. As a result, 114 modules were rated and analyzed for teachers who participated in the i3 study. Additional modules that were missing a significant number of components or that were later found ineligible for the study were dropped after the rating sessions.

Expert raters with experience teaching in the targeted grade spans and content areas were recruited from schools in Los Angeles County. The panel included two elementary school teachers, two secondary science teachers, two secondary social studies teachers, and three secondary English language arts (ELA) teachers. A greater number of raters was included for ELA since the number of modules eligible for analysis was greater for this content area.

Separate trainings were conducted for teachers from each grade span/content area. These trainings each lasted approximately one half-day, and were conducted by a member of the evaluation team with expertise on the Common Core and the rating of student and teacher artifacts. Each training session included an overview of the LDC goals, template task, the structure of the modules, and the CRESST rating dimensions. These dimensions were each rated using a 5-point scale and focused on (a) the effective writing task, (b) alignment to the CCSS and local and state literacy and content standards, (c) fidelity to LDC module instruction, (d) quality instructional strategies, (e) the coherence and clarity of the module, and (f) the raters' overall impression (see Appendix A for full descriptions of the dimensions).

Once the training was complete, calibration was conducted by having teachers individually score and then discuss their ratings for one module in the content area in which they were focusing. Scoring was then conducted on subsequent days with each module individually rated. All modules that were rated by at least two expert teachers were then discussed, with the goal, but not the requirement, to reach consensus (see Carlson & McCaslin, 2003). All discussions were facilitated or supervised by the same member of the evaluation team who conducted the initial training.

Because of the speed at which panelists were able to calibrate, while we initially planned for one third of the modules to be analyzed by more than one rater, the final rate of crossover was 55 or 48.2% of modules. It should also be noted that eight of these modules were rated by all three members of the Secondary ELA panel as part of their calibration activities.

Table 2.3 presents a brief overview of modules rated. More specifically, 18% of the modules were at the elementary level with the remaining 82% of modules spanning middle school and/or high school. Both elementary and secondary modules were primarily focused on ELA. Most modules that were rated were regular modules, with only about one fifth being of the "one week, one text" format. Teachers at both grade spans were far more likely to adapt a module and most submitted their work with only one author listed. Elementary modules almost always included a student background section and, in addition, most included an extension and/or teacher reflection statement. In contrast, secondary teachers were more likely to provide a teacher reflection and were very unlikely to provide an extension.

Table 2.3

New York Modules—Background Variables for all Modules Rated (N = 114)

Variables	Elementary		Secondary		Total	
	#	%	#	%	#	%
Module type						
One week, one text	4	20.00	17	18.09	21	18.42
Multiweek, multitext	16	80.00	77	81.91	93	81.58
Origin						
Adapted	15	75.00	63	67.02	78	68.42
Original	5	25.00	31	32.98	36	31.58
Author count						
Coauthored	5	25.00	32	34.04	37	32.46
Sole	15	75.00	62	65.96	77	67.54
Subject						
ELA	14	70.00	61	64.89	75	65.79
Science	3	15.00	16	17.02	19	16.67
Social studies	3	15.00	13	13.83	16	14.04
Other	0	0.00	4	4.26	4	3.51
Module components						
Student background	19	95.00	50	53.19	69	60.53
Extension	12	60.00	31	32.98	43	37.72
Teacher reflection	14	70.00	60	63.83	74	64.91
Total	20	17.54	94	82.46	114	100.00

2.4 Survey Recruitment and Administration

We began recruitment for the study by attending and soliciting consent forms at LDC Launch Days at the beginning of the 2016–2017 school year. The consent forms included language stating that the study was voluntary, all data would be protected, and that by signing the form, participants gave their consent to be emailed an electronic survey in spring 2017 and their permission for CRESST to request district data that linked the teacher to students. Directly compensating educators for participation in research is not permitted in New York state. We therefore offered instead a $300 gift card to the school to be used for school supplies to directly benefit students. The gift card was given to the school if the school's project liaison and

at least five teachers participating in the PLC completed the survey. The $300 gift card represented an increase in the incentive from the pilot year, when schools were given a gift card equal to $20 per teacher or project liaison who completed the survey. The higher incentive award, as well as refinements to recruitment and survey completion protocols described below, raised the overall survey response rate to 81%, up from 52% the prior year.

Most LDC participants were unable to attend the Launch Days at the beginning of the year so CRESST used other methods to recruit and collect consent forms. With LDC staff assistance, a CRESST staff member participated in a common planning session for each PLC either in person or via videoconference. For sessions joined via videoconference, consent forms were mailed to project liaisons in advance and project liaisons returned completed consent forms in a prepaid envelope or by scanning and emailing them back to CRESST. CRESST staff joined common planning sessions from October 2016 through June 2017. CRESST also followed up with individual participants to collect consent forms, but this method was less successful than recruitment during launch days and PLC sessions.

Surveys were administered in late spring 2017. CRESST coordinated with LDC staff and coaches to administer the online surveys during common planning sessions. Multiple email reminders were sent to participants who were not present at the common planning session or who otherwise did not complete the survey. The teacher survey was closed at the end of the school year in June 2017. Administrator surveys were left open until early August when LDC staff met with administrators to plan for the 2017–2018 school year.

2.5 Analytical Approaches

Multiple analytic procedures, including both quantitative and qualitative analytic methodologies, were applied to the data to answer evaluation questions about how LDC was implemented, conditions affecting implementation, and program impacts. The following sections describe the methodological approaches used to analyze the collected data.

Surveys. Descriptive statistics were generated for multiple-choice survey questions. Open-ended responses were reviewed for key themes and summarized. We collected responses from three groups of survey respondents: teachers, project liaisons, and administrators. Individuals who played more than one role are represented in the results for both roles. Therefore, the samples for the different analyses are not mutually exclusive. Generally, we report the number and percentage of respondents who selected different multiple-choice options. In a few cases where responses are numerical rather than categorical, we present means rather than proportions.

Means and frequencies for all multiple-choice responses are presented in full in Appendix B for teachers, Appendix C for project liaisons, and Appendix D for administrators. Responses are organized by domain and specific questions are identified by question number. For example, the domain of LDC participation is summarized in one section, but relies on information from four questions. We preface teacher questions with “T,” project liaison with

"PL," and administrator questions with "A"; please refer to the corresponding appendices for complete results on all items.

LDC CoreTools. The first stage of our analysis examined the proportion of all participants who created CoreTools user accounts, and engaged in three key behaviors: viewing, editing, and commenting on modules. We then analyzed each of the three key measures of participants' interaction with the LDC online tools, and reported means and/or frequencies as measures of participants' engagement with the online LDC system. We calculated and presented total, average, maximum, minimum, and standard deviation for each of the measures in the dataset. In addition to reporting the overall results, we also provided results by the content subject the teacher taught (ELA, social studies/history, etc.), by participant role (project liaison or teacher), and school level (elementary, K–8, middle, 6–12, and high) whenever feasible. Finally, we explored the difference in CoreTools engagement between two groups of teachers: those that completed and taught modules and those that did not complete the design and implementation process.

Modules. We used descriptive statistics (means, standard deviations) to analyze overall and subgroup performance for each content area/grade span on each of the six dimensions. Additionally, for the secondary ELA modules, which had a moderate sample size, we used generalizability theory (G theory) to examine potential sources of error during the rating process to help determine the validity of the scores as well as the construct validity of the rubrics (see Shavelson & Webb, 1991). Principal components factor analysis was also conducted to determine whether the six dimensions examined together represent one dominant or underlying trait for the secondary ELA sample. Finally, teacher comments during the debriefings for both elementary and secondary module ratings were examined to determine other potential issues with the rubrics and/or rating process.

Generalizability theory is a statistical framework for examining multiple sources of potential error during the scoring process. For the secondary ELA sample, we first modeled score variability across all six dimensions using a two-faceted design, whereby we estimated variance components for module by rater by dimension ($t \times r \times d$). The goal here was to separate true variation in the quality of modules from other potential sources of measurement error. The main effects reflect true variation across modules ($\sigma 2t$) and error variance across raters ($\sigma 2r$) and dimensions ($\sigma 2d$), while the error term ($\sigma 2trd,e$) reflects unexplained residual error in the model. To disentangle the sources of potential error further, we also used a single-faceted design to examine potential error within the scoring of each dimension. As with the first set of models, the main effect reflects true variation across teachers ($\sigma 2t$) and error variance across raters ($\sigma 2r$).

Student outcomes. We employed a quasi-experimental design to examine the effect of LDC on the New York State ELA assessment scores of students in the participating LDC elementary and middle schools in 2016–2017. Before conducting the analysis, we used a two-

step matching process to identify a reduced pool of comparison students and teachers at schools with similar characteristics to the schools in the intervention sample.

To accomplish this, we first identified the five most similar control schools for each intervention school based on a Euclidian distance measure, by using the nearest neighbor analysis option in SPSS 24.0 (see Fix & Hodges, 1951; Wang, Neskovic, & Cooper). The variables used in this process were the percentage of students eligible for free or reduced price lunch, the percentage of African American students, mean prior student achievement in ELA, mean prior student achievement in math, the average attendance rate of teachers, the percentage of teachers with three or fewer years of teaching experience, and the school grade span where feasible. Once the pool of comparison schools was identified, their students and teachers were also identified and student-level matching was conducted so that the resulting sample would resemble the type of sample one would expect to obtain through random assignment.

The student-level matching technique we employed was coarsened exact matching (CEM) (Iacus, King & Porro, 2011). CEM is a flexible matching approach with many favorable properties, and allows the researcher to specify the precise conditions under which students are matched. For categorical variables, such as race/ethnicity or free or reduced price lunch status, this can entail exact matching, while for continuous measures, such as prior individual student achievement and aggregate class level achievement, cut-points for matching can be specified. With this approach we were able to set precise cut-points on the most important prior indicators, such as prior academic achievement, to ensure that where possible every treatment student was matched with a suitable comparison. Student matching variables we used in CEM included Hispanic, Black, poverty status, female, English language proficiency (English language learner), special education status, gifted status, mean prior achievement in math and ELA, and grade level.

During matching we also included a few variables capturing information on the teachers and peers to which students were exposed. These variables included mean prior ELA achievement of the student's peers in her core content classes, and the average years of teaching experience of student's core content teachers.

The typical structure of course taking at the middle school level involves students potentially being exposed to multiple teachers, with each responsible for a different core content class. Specifically, middle school students in the study had exposure opportunities across three content areas taught by intervention teachers (ELA, social studies/history, and science). As a result, students were not necessarily nested under individual teachers, but instead were likely to have connections to multiple teachers in the available time period prior to each testing outcome (students at the elementary school level were also sometimes exposed to multiple teachers but to a lesser extent). Therefore, LDC effects were estimated using an extension of the standard multilevel modeling framework known as multiple membership multiple classification (MMMC) models (Browne, Goldstein, & Rasbash, 2001).

These models can account for complex classification structures, such as the LDC context, in which students are nested within schools but are also members of multiple classes led by different teachers who may or may not be implementing LDC. MMMC has the flexibility to account for this type of complex nesting structure in which students are hierarchically nested under schools but may have one-to-many relationships with teachers. As can be seen in Figure 2.1, there are three classification levels in the models we employ: students, teachers, and schools. In the MMMC modeling approach, each observation at the lowest level represents one student. The double arrows linking students to teachers in Figure 2.1 signifies the possibility of one student being exposed to multiple teachers. The single arrow from teachers to schools signifies that teachers were nested with schools.

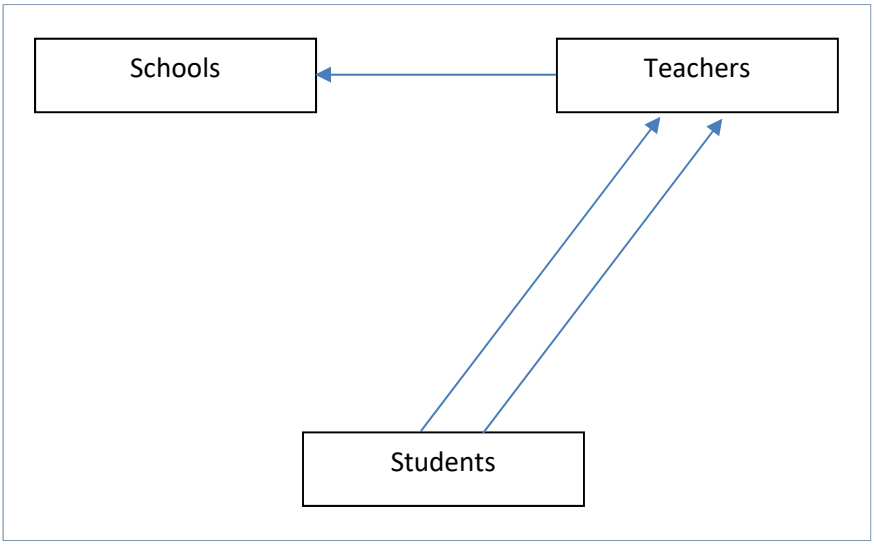

Figure 2.1. Multiple membership multiple classification structure.

In the MMMC modeling approach, each observation at the lowest level represents one student. The weight each teacher receives with respect to each student is dependent on the student's exposure to his or her teachers in each of the three core content areas. The total student exposure adds to a unity (i.e., a possible total exposure of 1) across their courses in the three content areas in a given school year. While this general weighting approach applies to both elementary and middle schools, the course structure of the datasets required us to use different weighting procedures in elementary and middle school.

In both the elementary and middle school datasets, students were linked to teachers through statewide course identifiers and accompanying beginning and ending dates specifying the time each student was enrolled in a given course under a specified teacher. Students could potentially have data records connected to multiple teachers covering varying time periods in the same course. For each of the three core content courses we then collapsed the links into a single measure of the days of potential content exposure preceding the assessment period. The codes aligning with the three core content areas of interest for our study were based on the

SCED code handbook. In elementary school, in the event that a student was exposed to more than one teacher, each content area was given equal weight in distributing teacher/student exposure. For example, if a student was enrolled for both ELA and social studies/history under one teacher, then that teacher was coded as .67 for having contributed to two thirds of the students' core curriculum exposure. If the same student enrolled in science with a different teacher than the one who was linked to their course marks in ELA and social studies/history, then that science teacher would have been coded as .33 and all other teachers in the sample would have been coded as zero. This would then result in the student's exposure adding to a unity (1).

In middle school, students' exposure to teachers at the course level in the three core content areas was coded in the same manner as in the elementary grades based on enrolled time preceding the assessment period. A difference in our middle school coding process was that we did not force each core content area into equal weighting. Instead each core content area exposure contributed to a core content area total sum which formed the basis from which the weights were proportioned. Most commonly a student had equivalent days of core instruction exposure in each of the three content areas (often 214 days in each content area). In that scenario, if a student had exposure to three different teachers, then each teacher would contribute one third (.33) of the overall core curriculum exposure and all other teachers in the sample would be coded as zero. However, in addition to the typical core science course, extra core science courses were also included in the LDC analysis (for example a Grade 8 student taking biology), which made it possible then for a student to accumulate more units in science than in the other two content areas. The weighting in middle school was always distributed as a proportion of the total exposure days in the three content areas. Therefore, if a student accumulated 300 science days (across two courses), 200 social studies days, and 200 ELA days, the base number of instruction days would be 700 days. If, using that same scenario, the same teacher taught both the typical core and biology courses then that teacher would contribute three-sevenths (.43) of the overall core curriculum exposure with the social studies and science teachers contributing two-sevenths (.285) each, again resulting in the student's exposure adding to a unity (1). Tabular versions of the above examples can be seen in Appendix E.

For this study, we modeled the treatment intervention variable as a fixed effect at the student level in two different ways. The first dosage-dependent approach takes into account the students' level of exposure to the intervention teachers. In this approach, the treatment was structured as a continuous response variable, coded as zero for comparison students and coded as a positive value for treated students, albeit never exceeding one. The positive value assigned to treated students in the dosage-dependent approach was simply the sum of the intervention teacher weights linked to the treated student. The second approach was dosage independent and classified any student exposed to an intervention teacher via at least one course as a treated individual. In this approach the treatment variable was dichotomous (coded as one for treated students and zero for comparison students).

As with other multilevel models, MMMC models account for the nonindependence of observations within cluster by adjusting the inferences on parameter estimates for the correlations between responses in a cluster. This modeling approach, however, becomes computationally cumbersome using traditional frequentist estimation methods. As recommended by Browne et al. (2001) we instead employed Bayesian methods using Monte Carlo Markov chain (MCMC) techniques to best address this issue. Multilevel models incorporate demographic and achievement variables used in the matching design as covariates, making the findings "double robust" (characteristics controlled for in both matching and outcomes analysis stages). Student demographic and prior achievement variables that were used in the matching process were also included as covariates in the MMMC model. In the elementary analysis, variables for ELL students, students with disabilities, and gifted students were not significant contributors to the models so they were not included in the final elementary models. The full specifications for both models can be found in Appendix E.

3.0 Survey Analysis

Five groups of participants were surveyed: (1) teacher, (2) teacher/project liaison, (3) project liaison, (4) administrator, and (5) administrator/project liaison. Twenty-nine schools began implementing LDC in the 2016–2017 school year, with 217 classroom teachers participating and 48 administrators overseeing the work (see Table 3.1). The 29 NYC schools included two elementary, four K–8, 17 middle, three 6–12, and three high schools. Two of the schools had two PLCs, while the remaining 27 schools had one PLC. Participants taught across all grade levels from K to 12. Most secondary teachers taught ELA, social studies/history, or science, with a smaller number teaching math.

Table 3.1

Survey Consent and Response Rates: 2016-2017

Participant type	Number of participants	Number of consents	Number of survey responses	Consent rate	Response rate
Teacher	188	168	159	89%	85%
Teacher/project liaison	29	28	25	93%	83%
Total teachers	217	196	184	90%	85%
Project liaison	1	1	0	100%	0%
Administrator	42	33	29	79%	69%
Administrator/project liaison	4	1	3	25%	75%
Total administrators[a]	48	36	32	75%	67%
Total participants	265	232	216	88%	82%

[a]We categorize the coaches and coordinators who completed the project liaison survey as administrators.

Table 3.1 presents the study consent and survey response rate information. As shown, survey consent and response rates were different for teachers who implemented LDC in their classrooms and administrators. Compared to administrators, teachers had a considerably higher consent rate (90% compared to 75%) and survey response rate (85% compared to 67%). Teachers who were project liaisons were more likely to consent to participate in the study but no more likely to complete the survey. Overall, consent and response rates were quite high and were markedly improved from the pilot year of the study.

We discuss survey results according to the domains listed in Table 2.1. We also include specific questions covered in each domain for easier reference. For example, LDC Participation (T1–4) indicates that teacher questions 1–4 are used to provide information on LDC participation. Multiple choice survey questions and descriptive results (frequencies and means) are presented in full in Appendix B for teachers, Appendix C for project liaisons, and Appendix D for administrators. As noted earlier, these three samples are not completely mutually exclusive

(i.e., some teachers and administrators also acted as project liaisons). Results are organized by domains and question numbers. For example, the domain of LDC participation is summarized in one section, and relies on information from four different questions. We preface teacher questions with "T," project liaison with "PL," and administrator questions with "A."

Survey results are presented here in four sections. The first section summarizes teachers' responses. The second section summarizes project liaisons' responses, and the third section summarizes administrators' responses. Whenever we felt a comment from an open-ended response might clarify, illustrate, or corroborate a finding, we included that comment in the appropriate section. The fourth section summarizes open-ended responses from all participants, who answered the same three questions about program efficacy and improvement. We end with a summary of results.

3.1 Teacher Survey Results

A total of 184 teachers at 28 schools completed the survey (see Table 3.2). One participating middle school did not return any surveys. Of the 184 teachers who responded to this survey, 5% taught in two elementary schools, 23% in four K–8 schools, 54% in 16 middle schools, 13% in three 6–12 schools, and 18% in three high schools. Twelve teachers (7.5%) indicated they had not participated in a professional learning community in the 2016–2017 school year. Therefore, they did not receive most of the survey questions.

In addition to producing descriptive statistics on the whole teacher sample, we also produced results for elementary and secondary level teachers. We highlight important differences between the two subgroups, when they are apparent. Note, however, that the elementary sample included just 19 teachers, and therefore comparisons should be interpreted with caution.

Table 3.2

Schools and Teachers Completing the Survey in 2016–2017

School type	Number of schools	Number of teachers	% of teachers
Elementary schools	2	10	5%
K–8 schools	4	23	13%
Middle schools	16	95	52%
6–12 schools	3	23	13%
High schools	3	33	18%
Total	28	184	100%

LDC participation (T1–4). Almost all teachers (90%) reported that this year was their first experience with LDC in questions T1-4. The remaining 19 teachers who had prior experience

with LDC reported that they had taught 0 to 6 modules (*M* = 1.2) or 0 to 8 mini-tasks (*M* = 1.2) outside of modules. Nine of these 19 teachers taught zero modules, and 12 of these teachers taught zero mini-tasks.

Among the 184 teachers who completed the survey, 15 of them taught in elementary grades, and 169 taught secondary grades. Secondary teachers reported teaching 1 to 15 classes (*M* = 3.7); in these classes, they used LDC materials in 0 to 5 classes (*M* = 2.4). Five out of the 166 teachers who provided information about their content area implemented modules in two or three content areas, resulting in 172 content area implementations. "Humanities" includes teachers who taught both ELA and history/social studies. ELA includes teachers who taught English as a New Language (see Figure 3.1).

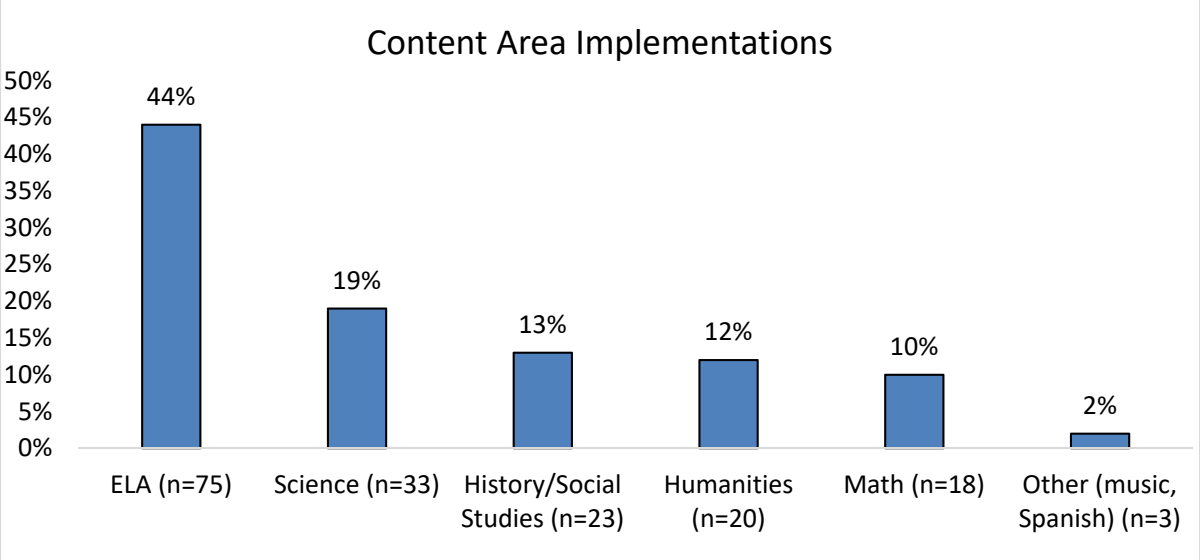

Figure 3.1. Secondary teachers' content area implementations.

Professional learning community and teacher collaboration (T5–9, T30, T37). Almost all teachers (93%) participated in a PLC that was at least partly focused on implementing LDC. Of the 12 teachers who had not participated in a PLC, nine teachers (75%) reported they had used LDC tools in their planning or instruction, primarily CoreTools to access existing modules or to design modules.

Almost two thirds (65%) of teachers reported meeting in their LDC PLC at least once a week or more. About a quarter (26%) met every other week, and 9% met once a month. The most common reason cited for not meeting weekly was that PLC members had other priorities (57%). Interestingly, secondary teachers on average met in PLC meetings less frequently than elementary teachers. About 10% of secondary teachers reported meeting once a month or less frequently while no elementary teachers reported such infrequent meetings. Likewise, all elementary teachers met weekly or more as recommended compared to about 60% of secondary teachers.

According to teachers, LDC PLC meetings generally lasted 45 minutes to an hour (54%). Almost a third of teachers (30%) reported that they lasted longer than an hour, and 17% less than 45 minutes. Most teachers (74%) agreed or strongly agreed that their PLCs were given sufficient time to meet. Secondary teachers were more likely to report meeting for an hour or more (about a third did so) than elementary teachers (7%).

Almost half (49%) of teachers said they had informal discussions about LDC with their colleagues once a week or more; 22% every other week; 11% once a month; and 19% less than once a month. As with formal meetings, secondary teachers met less frequently than elementary teachers; for example, two thirds of elementary teachers met informally twice a week or more compared to just 17% of secondary teachers. Over two thirds (70%) of teachers agreed or strongly agreed that they were more likely to collaborate with other teachers on designing instruction after participating in LDC, and 72% reported that LDC participation helped them develop working relationships with teachers in different grades or subjects.

LDC training and support (T10–T13). Teachers evaluated the three main types of LDC training and support: professional learning community (PLC), online course materials, and virtual coach support during and outside of PLCs.

Teachers found PLCs to be moderately effective to very effective in the following ways: creating an environment in which teachers were comfortable working with each other (79%); allowing space for shared problem solving (77%); helping teachers learn to develop modules (75%); fostering an environment where teachers shared instructional plans with colleagues (74%); and demonstrating the usefulness of LDC (65%) (see Figure 3.2). Elementary teachers were particularly positive in their responses, with 100% reporting that their PLC was effective in each way.

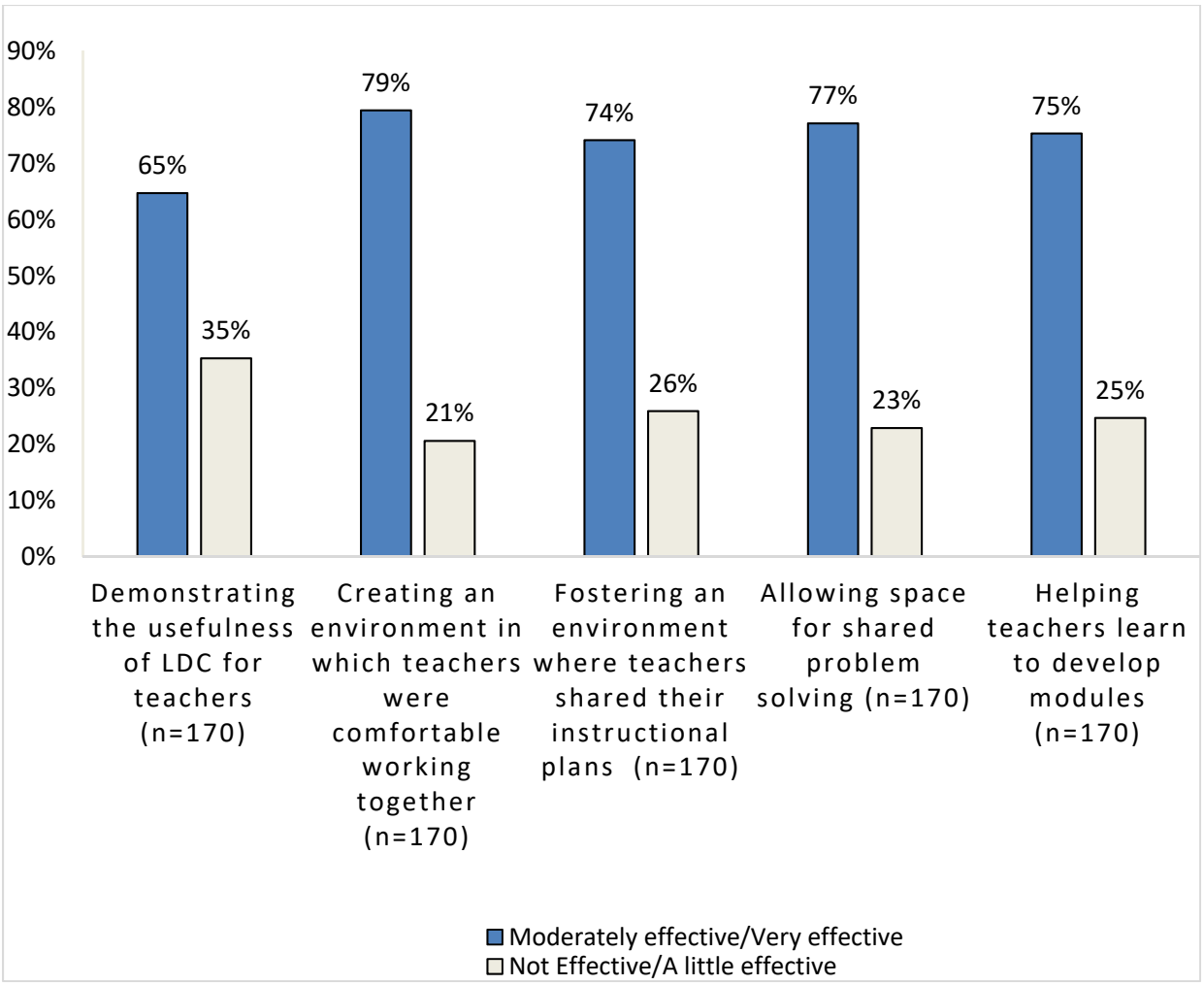

Figure 3.2. The effectiveness of teacher's PLC (T10).

All aspects of the online course materials were rated by a majority of teachers as good or excellent (see Table 3.3): clarity of information presented (68%); relevance of information (68%); usefulness of resource documents such as the LDC Pitfall Checklist (62%); helpfulness in creating modules (62%); opportunity to extend learning (62%); ease of use (61%); and usefulness of videos (57%). Again, elementary teachers were even more positive, with 100% rating all of these features as good or excellent.

Table 3.3

Rating Online Course Materials (n = 170)

How would you rate each of the following aspects of the online course material (in the Learn tab in LDC CoreTools) that your coach used or directed you to use?	Poor	Fair	Good	Excellent
Clarity of information presented	7%	26%	47%	21%
Relevance of information presented	9%	23%	41%	27%
Ease of use	13%	27%	44%	17%
Usefulness of resource documents (e.g., LDC Pitfall Checklist, CCSS Mental Markers, etc.)	8%	31%	43%	19%
Usefulness of videos	10%	33%	45%	12%
Degree to which course material helped me to create and/or adapt LDC modules	11%	27%	45%	17%
Opportunity to extend learning when needed or desired	11%	28%	38%	24%

Almost all teachers (95%) said they were able to get the feedback and support they needed from their LDC coach and that coaches provided written feedback in a timely manner (95%). The following types of coach support were found to be moderately or very helpful: written feedback in CoreTools (69%; 8% did not use); individual Zoom conference (61%; 15% did not use); facilitated discussion on Teaching Channel Teams (54%; 23% did not use); and email or phone communication (53%; 29% did not use).

LDC implementation (T14–28, T30). This domain covers questions on module creation (T14–17), module peer review (T27–28), and classroom implementation (T18–26, T30).

Module creation (T14–17) and module peer review (T27–28). Teachers adapted or created two types of LDC instructional products: mini-tasks are short, generally taking one period, and focus on a specific skill; modules are longer, more complex units composed of multiple mini-tasks, ending in a culminating "teaching task."

Using existing LDC templates and exemplars, among the 145 teachers who answered this question, 25 teachers (17%) adapted zero modules, 109 teachers (75%) individually or collaboratively adapted between one and three modules during the year, 10 teachers (7%) adapted four to seven modules, and one teacher (1%) reported adapting 20 modules. The mean number of modules teachers adopted is 1.9 modules. When asked about creating modules from scratch, 30 teachers (21%) reported zero modules, 110 teachers (76%) individually or collaboratively constructed one to three modules, and five teachers reported (3%) either four or five modules. Among these 145 teachers, the mean number of modules they created is 1.6

modules. Elementary teachers chose to adapt modules more often than secondary teachers, while secondary teachers were more likely to create new modules from scratch.

Majorities of teachers reported creating modules individually (61%) and as part of a team (63%) (the choices were nonexclusive). A minority of teachers (11%) reported creating modules with the PLC as a whole (this collaboration structure was more common among elementary teachers with over a third reporting that modules were created in this way). Among the 170 teachers who answered the question on submitting modules for LDC National Peer Review, 88 teachers (52%) did not submit any modules for LDC National Peer Review, 71 teachers (42%) reported submitting one or two modules for review, seven teachers (4%) reported submitting three modules, and the remaining four teachers (2%) submitted either four or five modules. Of the 82 teachers who reported submitting modules for peer review, nine (11%) found the process very helpful, 30 (37%) moderately helpful, 26 (32%) a little helpful, and 17 (21%) not helpful.

Teachers were generally confident in their ability to create effective LDC modules and mini-tasks: 85% felt they had been able to select a set of focus standards for a writing task to a moderate or great extent; 84% felt they had been able to create a standards-driven writing assignment task; 82% said they had identified the skills students need to develop in order to complete the writing assignment; 79% reported they had created a writing assignment that allowed students to engage with the material; 75% said they selected high-quality texts and other materials to encourage deeper learning; 71% made connections to previous or future learning to make the task relevant; 69% created daily lessons to teach skills needed to complete the writing assignment; and 65% were able to plan a variety of methods to assess student progress. Please see Table 3.4 below for more detailed information. Elementary teachers were particularly confident with 90 to 100% reporting that they were able to accomplish each of the tasks listed in Table 3.4.

Table 3.4

Rating on Teacher Skills Associated with Creating LDC Modules and/or Mini-Tasks (n = 170)

Please indicate to what extent you were able to do each of the following when creating LDC modules and/or mini-tasks.	Not at all	A little bit	A moderate extent	A great extent
Select a set of focus standards for a writing assignment	1%	14%	35%	51%
Create a standards-driven writing assignment task	2%	15%	31%	53%
Select high-quality, complex texts and other materials that allowed students to engage in deeper learning	6%	19%	39%	37%
Create a writing assignment that provided multiple opportunities for students to engage with the material	5%	16%	42%	38%
Identify the skills students need to develop in order to complete a writing assignment	4%	14%	42%	40%
Create daily lessons to teach the skills a student needs to complete a writing assignment	8%	23%	41%	28%
Plan for a variety of methods to assess student progress (e.g., mini-task scoring guides)	7%	28%	42%	24%
Make connections to previous or future learning that make a writing assignment relevant for students	8%	21%	41%	31%

Classroom implementation (T18–26). After creating their modules, teachers implemented modules in their classrooms and reflected on their progress. Teachers implemented 0 to 8 modules (*M* = 2.4) and implemented from 0 to 35 mini-tasks (*M* = 3.6) that were not part of modules. Table 3.5 presents the number of modules and mini-tasks teachers implemented per their reporting. The majority of the 170 teachers, 51% or 86 teachers, reported implementing two modules in their classrooms, and 34% or 57 teachers reported implementing three or more modules in their classrooms. Meanwhile, 22% or 37 teachers reported implementing zero mini-tasks outside of modules.

Table 3.5

Number of Modules and Mini-Tasks Implemented (n = 170)

Numbers of modules or mini-tasks implemented in 2016–2017	Number of teachers implementing modules	Number of teachers implementing mini-tasks
0	3	37
1	24	15
2	86	37
3	38	21
4	14	13
5		11
6	2	8
7	1	3
8	2	4
9		3
10		13
11		1
12		1
15		1
16		1
35		1

Teachers reflected on their ability to provide instruction through the modules. Across all six dimensions, the distribution of teachers who felt they were able to implement effective instructional strategies through the modules was high: 85% felt they had engaged students in productive struggle to a moderate or great extent; 79% differentiated instruction; 77% located performance of standards in student work; 76% used evidence of learning to modify instruction; 76% provided feedback to students using shared expectations of learning; and 73% systematically collected information about student learning. Also across all six dimensions, the percentage of teachers who felt they had accomplished these strategies to a great extent averaged 32% (range 27–34%), indicating that about a third of teachers felt very confident about their ability to implement high-quality instructional strategies using LDC modules. Again, elementary teachers exhibited a high degree of confidence, with 90 to 100% reporting they were able to implement each of the instructional strategies listed above.

The One-Text One-Week module was introduced as a first step toward module creation. As its name indicates, the module highlighted one text that was examined closely over one week. About half of teachers (51%) taught a One-Text One-Week module. Of those teachers, 72% created the module from an LDC template, while the remaining 28% copied and adapted another teacher's module from the LDC online library.

Following the One-Text One-Week modules, teachers typically worked on a longer term instructional module. About a third of teachers (34%) copied and adapted another teacher's module from the LDC online library, while 67% created a module from an LDC template. Most teachers (82%) taught this module during the school year, while 8% planned to teach it before the current school year ended, 6% planned to teach it the following school year, and 4% had no plans to teach the module.

Teachers submitted 0 to 5 modules (*M* = 0.8) for LDC National Peer Review. Of the 82 teachers who reported submitting modules for peer review, nine (11%) found the process very helpful, 30 (37%) moderately helpful, 26 (32%) a little helpful, and 17 (21%) not helpful.

Leadership support (T32–36). This domain covers questions on project liaison support and administrator support (T32–33) and teacher leadership role in LDC (T36).

Project liaison support (T32). Project liaisons were school staff (participating LDC teachers, school administrators, or coaches) who provided logistical support to the PLCs. Almost all teachers were very satisfied with the level of project liaison support. The project liaisons were approachable (93% agreed or strongly agreed); effectively supported the PLC meetings (92%); effectively invited teachers to join LDC (90%); had a strong grasp of LDC (88%); gave useful feedback (86%); and helped teachers align LDC to broader school goals (85%).

School administrator support (T33–35). School administrators were principals, assistant principals, or other instructional leaders who observed teachers in action and provided other leadership, such as protecting time for PLCs to meet. In questions T33–35, we asked teachers to provide feedback about the support they received from their school administrator. Almost all teachers (93%) agreed or strongly agreed that their administrator encouraged LDC participation. According to teachers, most administrators were able to ensure PLCs had time to meet (86%); communicate how LDC supported school initiatives and goals (76%); and had a firm understanding of LDC (72%). Most administrators also made formative assessment a priority (88%) as reported by teachers. Over half of teachers reported that their administrator had provided feedback about LDC planning and instruction (58%). A minority of teachers reported that administrators expressed concern that LDC was taking time away from other instructional priorities (42%).

The involvement of school administrators was varied. About a quarter (26%) of teachers reported their administrators attended three quarters or more of their PLC meetings. On the other hand, 42% reported their administrators attended less than one quarter of meetings. The

remaining teachers reported that administrators attended one quarter (18%) or one half (15%) of meetings. Administrator attendance was on average higher in elementary school PLCs. A large minority of teachers (44%) reported never being observed by an administrator while teaching an LDC mini-task. About a third (32%) reported being observed once; 12% were observed twice; and the remaining 13% were observed three or more times. Again, on average elementary teachers reported being observed a greater number of times than secondary teachers.

Teacher leadership role (T36). The role of teachers in LDC extends beyond the classroom. As leaders in their schools, LDC teachers are pivotal in driving LDC implementation. Most teachers agreed or strongly agreed that LDC helped them create writing assignments within their current curriculum (78%). Substantial proportions of teachers felt they were able to affect the direction of LDC at their site by having the opportunity to work with the project liaison and administrator (59%); setting instructional goals for LDC work (62%); and being involved in discussions about expanding LDC implementation in future years (48%). Almost two thirds of teachers (65%) expressed interest in learning more about facilitating LDC implementation at their schools. Elementary teachers were much more likely to report feeling empowered by the LDC program; 90 to 100% agreed that they were able to play a leadership role in each of the ways listed above.

LDC impact (T29–31). This domain covers questions on LDC impact on teacher practice and learning (T29–30) and student learning (T31).

Impact on teacher practice and learning (T29–30). We asked teachers about LDC's impact on a number of teacher skills. Specifically, we asked them to focus on the change between the beginning and end of the current school year's work with LDC. We also asked them to provide more information about the impact of LDC on their instructional practice, including their use of LDC tools and their level of collaboration with colleagues.

Over all eight items about change in ability during the year, about two thirds of teachers rated themselves as having improved moderately or a great deal. Specifically, the areas for which the greatest number of teachers reported a moderate or great impact involved instructional planning: identifying skills needed to complete an assignment (67%); selecting focus standards (69%); and creating high-quality writing tasks (70%). The other areas of impact on teacher practice and learning that received slightly lower ratings concerned collecting and using student data to inform instruction: assessing student progress (65%); using evidence of student learning (66%); identifying student misconceptions (63%); and tracking and analyzing student progress (62%). Elementary teachers were more likely to report change in their abilities than secondary teachers, with over three quarters reporting moderate or great change on each of the eight items.

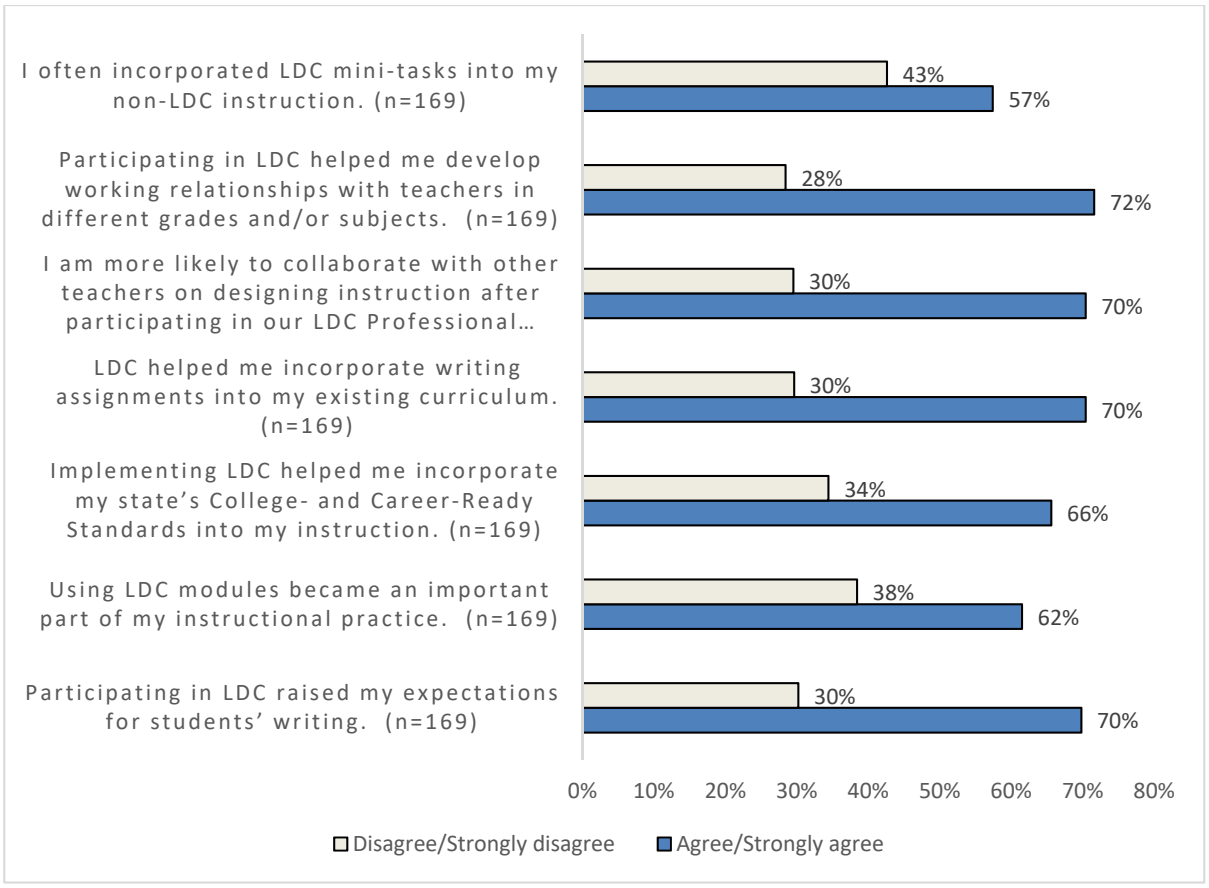

Figure 3.3. Impact on teacher practice and learning (T30).

The areas of impact on teacher practice most commonly reported by teachers (see Figure 3.3) included development of relationships with teachers outside grade or subject (72% agreed or strongly agreed); incorporation of writing assignments into existing curricula (70%); likeliness of collaboration with other teachers (70%); and raising expectations for student writing (70%). LDC also had slightly less but still apparent impact in the following areas: incorporation of state standards into instruction (66%); use of LDC modules as a part of existing instructional practice (62%); and incorporation of LDC mini-tasks into non-LDC instruction (57%). Again, elementary teachers reported positive impacts on teacher practice more frequently than secondary teachers.

Impact on student learning (T31). Teachers were asked to evaluate the effect of LDC on student learning (see Table 3.6). The majority of teachers agreed or strongly agreed that LDC supported student learning. The two areas for which the greatest number of teachers reported impact involved writing: supporting students to complete writing assignments (74%) and increasing student capacity to analyze components of the writing task (74%). According to teachers, LDC supported skills needed for college and career readiness (72%) and overall helped literacy performance (70%). LDC also reportedly improved quality of writing (69%), reading skills (69%), and content knowledge (69%). Finally, LDC helped students develop speaking and

listening skills (65%). Again, elementary teachers were particularly confident in the impact of LDC on student learning, with over 90% reporting a positive impact on nearly every skill area.

Table 3.6

Impact on Student Learning (n = 144)

Please indicate the degree to which you agree or disagree with the following statements.	Strongly disagree	Disagree	Agree	Strongly agree
LDC helped students develop reading skills.	10%	21%	56%	13%
LDC was effective in improving students' content knowledge.	10%	22%	53%	16%
LDC modules effectively supported students in completing writing assignments.	8%	18%	57%	17%
LDC was effective in improving the quality of students' writing.	10%	22%	51%	17%
LDC supported students' development of skills needed for college and career readiness.	10%	17%	57%	15%
LDC increased students' capacity to analyze and understand the components of a writing assignment task.	8%	18%	54%	20%
LDC helped students develop speaking and listening skills.	10%	26%	51%	14%
Overall, LDC helped improve students' literacy performance.	10%	21%	54%	16%

Facilitators and barriers (T37). Successful implementation of LDC depends on a number of factors. We asked teachers to weigh in on the effect of these factors on implementation (see Figure 3.4). Over three quarters (79%) agreed or strongly agreed that their school had adequate technology to support teachers' use of LDC. Most teachers (74%) felt their PLC was given sufficient time to meet. Teachers were able to easily find and adapt LDC mini-tasks indicating that they were able to use the CoreTools online platform successfully (71%). Most teachers (71%) felt adequately prepared to implement modules in the classroom. About half of teachers (52%) found it challenging to find content-rich texts to use with LDC modules.

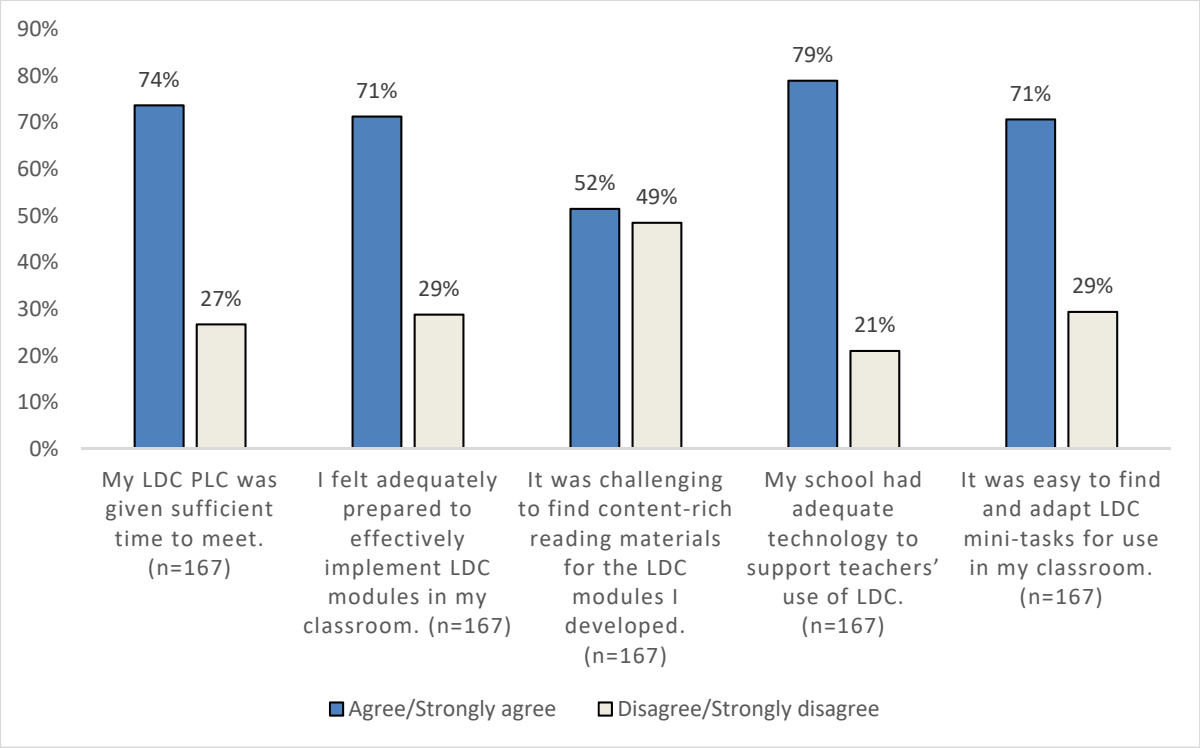

Figure 3.4. Facilitators and barriers (T37).

3.2 Project Liaison Survey Results

At each school, the project liaison coordinated PLC meetings with LDC coaches. Project liaisons were participating teachers, school administrators, or other school support staff. A total of 30 project liaisons responded to the survey.

LDC participation (PL1–2). Of the 30 project liaisons who responded, 26 (87%) reported that they did not have prior experience with LDC. Of the four who had prior experience, one reported having taught six modules, two reported teaching two modules, and one reported having taught no modules.

Professional learning community and teacher collaboration (PL3–6). Nearly three quarters (73%) of project liaisons reported that their PLCs met once a week or more frequently. Of the eight project liaisons whose PLCs did not meet weekly, three said PLC members had competing priorities and two reported that the primary barrier was that time was not protected. Other reasons given were that coach-led meetings were biweekly; it was difficult to schedule common planning time because it was a small school; and it was difficult to schedule time because the school was closing.

Over a third of project liaisons (37%) said these meetings lasted 45 to 59 minutes, which corresponds with the available planning period of 45 minutes. A quarter (27%) said meetings were less than 45 minutes, 27% said they were 60–74 minutes, and 10% reported longer than

75 minutes. Almost half (47%) reported that they had informal discussions about LDC with teachers once a week or more.

LDC training and support (PL7–12). Project liaisons evaluated the effectiveness of the various training and support methods provided during LDC implementation. These included PLC meetings, online course material, and coach support.

Project liaisons overwhelmingly reported that the PLC meetings were effective. Nearly all (94%) felt PLC meetings were moderately or very effective in creating an environment in which teachers were comfortable working with each other; 90% said the PLC allowed space for shared problem solving; 90% thought the meetings helped teachers learn to develop modules, 84% felt they fostered an environment where teachers shared instructional plans with colleagues; and 67% thought they demonstrated the usefulness of LDC to teachers.

Online course materials used by the coaches during PLC meetings also received high ratings from the project liaisons. Most project liaisons (87%) rated the relevance of information as good or excellent; 87% for clarity of information; 80% for helpfulness to teachers in creating modules; 73% for usefulness of resource documents; 73% for ease of use; 73% for usefulness of videos; and 73% for opportunity to extend learning when needed or desired.

LDC coaches were highly regarded by project liaisons. Nearly all (97%) reported that they were able to get the feedback and support they needed from LDC coaches, and that the coaches provided written feedback on modules in a timely manner. Other types of coach support were rated by the majority of project liaisons as moderately or very helpful. These supports were written feedback in CoreTools (87% helpful; 3% did not use); email or phone communication (83% helpful; 3% did not use); individual video conferencing with coaches (80% helpful; 3% did not use); and coach-facilitated discussions on Teaching Channel (67% helpful; 7% did not use). All project liaisons (100%) agreed or strongly agreed that their LDC coach was knowledgeable and provided high-quality guidance; 97% thought their coach was easy to work with; 97% said their coach responded quickly; 93% reported being able to reach their coach with questions; 87% said coaches connected them with additional resources when needed; and only 30% of project liaisons reported that it was challenging to structure PLC time with the coaches.

Project liaisons had the opportunity to attend LDC professional development meetings, both in person and online. The average number of meetings attended was 3.4, with a range of 0 to 15. The majority (55%) participated in two or three meetings; 15% attended no meetings.

Finally, project liaisons provided feedback about non-coach LDC support. Almost all (90%) project liaisons believed LDC offered sufficient professional learning opportunities to help them lead the initiative at their school, and 80% agreed that LDC provided adequate technical support for issues with the CoreTools online platform.

LDC implementation (PL 13–16, PL20). This domain covers questions on module creation (PL13–16) and alignment (PL20).

Module creation (PL13–16). Project liaisons reported the ways in which modules were created in their PLCs and judged the extent to which they were able to embed targeted instructional practices while creating the modules.

Project liaisons were asked how many LDC modules were created by their PLC members, either individually or collaboratively by adapting them from existing modules created in a prior year or found in the LDC Library in CoreTools. Answers ranged from 0 to 4, with a mean of 1.2.

In general, project liaisons were extremely confident in their ability to display evidence of the targeted instructional practices while creating their modules. All project liaisons (100%) felt they were able, to a moderate or great extent, to select focus standards for the writing assignment and identify skills necessary for students to complete the assignment. Nearly all (97%) felt they were able to create a standards-based writing assignment task; 90% provided multiple opportunities for students to engage with the assignment; 86% were able to select high-quality texts and other materials; 86% made connections to previous or future learning to make the assignment relevant for students; 76% created daily lessons to teach the necessary skills; and 72% planned for a variety of ways to assess student progress.

Alignment (PL20). Project liaisons were asked how LDC aligned with other instructional priorities and programs at their schools. Alignment was generally perceived to be quite high as reported in Figure 3.5. Nearly all (93%) agreed or strongly agreed that LDC helped teachers create writing assignments to use within their existing curricula; 86% believed LDC complemented other initiatives at the school; 86% viewed LDC as a strategy for implementing statewide college and career-ready standards; 79% thought LDC helped prepare students for state assessments; 79% reported their school connected LDC to specific school goals; and only 41% reported that time spent on LDC interfered with other initiatives. Notably, however, almost three quarters (72%) believed that it was difficult for teachers to focus on LDC because of other competing priorities at the school.

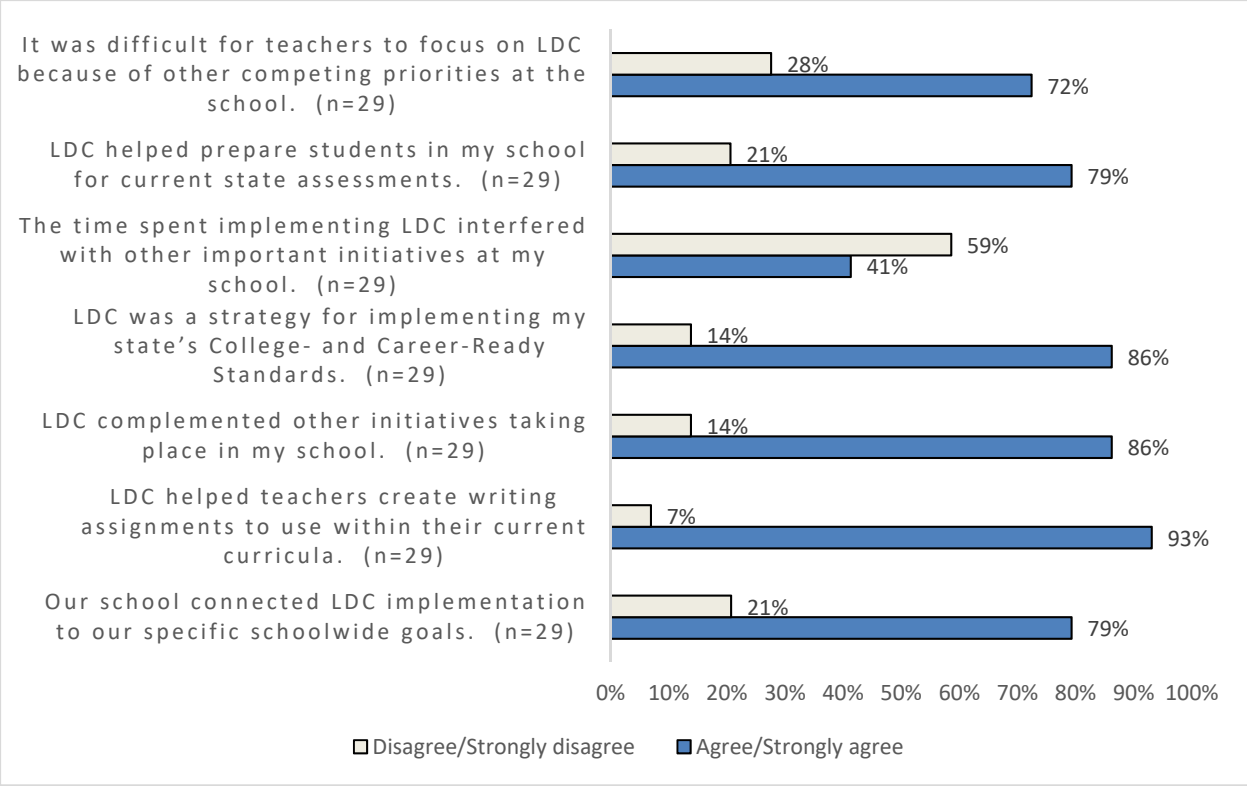

Figure 3.5. LDC alignment (PL20).

Leadership support (PL17–19, PL22). This domain covers questions on school administrator support (PL17–18), project liaison leadership role (PL19), and district support (PL22).

School administrator support (PL17–18). Project liaisons reported on school administrators' involvement with LDC. Almost half (48%) reported their administrators attended less than a quarter of PLC meetings; 15% about a quarter; 19% about half; 7% about three quarters; and 11% more than three quarters.

Almost all (97%) reported their administrators made formative assessment a priority at their school; 93% said they received feedback about their LDC leadership; 93% reported their administrators encouraged teachers to participate; 89% felt planning time for LDC was protected; 85% said their administrator communicated how LDC supported other school goals and initiatives; 78% of school administrators were said to have a firm understanding of LDC; and only 41% of project liaisons reported that their administrators expressed concern that LDC was taking time away from other instructional priorities.

Project liaison leadership role (PL19). Project liaisons reflected on their leadership role in LDC implementation at their school sites. Overall, results were very positive and indicated that the majority of project liaisons felt engaged by and invested in the LDC implementation at their school. Almost all (93%) agreed or strongly agreed that they met regularly with their LDC coach

to manage the work plan; 67% met regularly with their school administrator; 85% felt they were able to build capacity as an instructional leader as a result of their LDC leadership role; 78% were involved in planning how to meet teacher learning needs by differentiating LDC implementation; 78% discussed how to expand LDC implementation in future years; 78% helped set instructional goals for LDC implementation; and 59% believed their role as LDC project liaison helped them advocate for additional resources on their campus.

District support (PL22). By and large, project liaisons were unaware of the nature and extent of district support for LDC. Typically about half of project liaisons reported "don't know" in response to the following statements about district participation and support, while, on average, about a third agreed or strongly agreed: district leaders supported LDC implementation (38%); district leaders had a firm understanding of LDC (31%); district leaders were interested in spreading LDC to more schools (28%); district professional development efforts aligned with LDC (31%); and district leaders visited schools to discuss LDC (38%).

Scale-up and sustainability (PL21). Regarding the future of LDC implementation, most project liaisons (83%) agreed or strongly agreed that they expected most teachers to continue with LDC the following year; 76% felt teachers and administrators were committed to sustaining the initiative; and 62% expected their LDC PLC to increase in size the following year (see Figure 3.6). Generally, however, they did not believe LDC had yet reached beyond the PLC, with just 21% reporting that non-LDC teachers used LDC resources, such as the planning process or CoreTools.

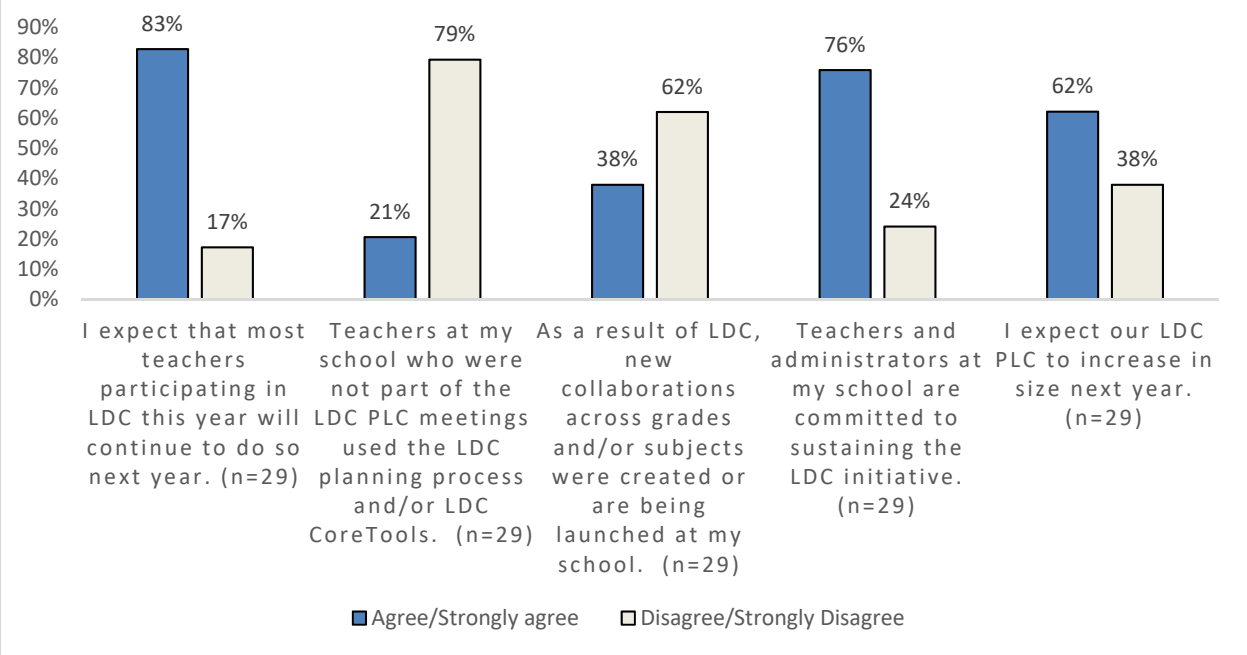

Figure 3.6. Scale-up and sustainability (PL21).

3.3 Administrator Survey Results

This section presents the survey results from school administrators.

LDC participation (A1) and professional learning community (A2). Of the 32 school administrators who responded to this survey, 18 (56%) identified as principals, 13 (41%) identified as assistant principals, and one (3%) identified as the LDC liaison. In some schools, more than one administrator was involved in overseeing the LDC work.

Administrators reported that they attended relatively few sessions of LDC PLCs, with 44% attending less than one quarter, 19% attending about one quarter, and 13% attending about a half. Another 13% reported attending three quarters, and 13% attended more than three quarters. These numbers align with teachers' reports of their administrators' attendance at PLCs.

Training and support (A3–4). Administrators had the opportunity to attend professional development sessions, either online or in person, such as Launch Day and administrator meetings. Two thirds of administrators attended one (40%) or two (27%) of these meetings. The average was 2.7.

Interactions with LDC were overwhelmingly positive. Almost all administrators agreed or strongly agreed that LDC offered sufficient professional development for project liaisons (97%); their school had adequate technology to access LDC (97%); they were able to reach LDC staff with questions (93%); there were sufficient professional development opportunities for administrators (90%); and LDC staff were able to connect them to additional resources (87%).

Classroom observation (A5–6). Almost half (45%) of administrators reported observing teachers implementing LDC three to five times during the year, while 35% observed one to two times, 17% observed six or more times, and 3% did not observe at all. These figures corroborate teachers' reports of being infrequently observed, with 44% of teachers reporting that they were not observed at all during the school year, and 32% of teachers reporting one observation. In general, classroom observation was not a frequently used support structure.

Almost all administrators (93%) believed that LDC modules were moderately or very effective in developing students' literacy skills.

Impact on teacher practice (A7). Administrators observed significant improvement in certain areas of teacher practice: 100% believed teachers had improved moderately or a great deal in selecting focus standards; 100% in identifying necessary skills to complete the writing assignment; 93% in creating standards-driven writing tasks; and 82% in assessing students' progress as they completed the writing task.

The majority of administrators believed teachers had improved on the following practices: 75% in creating daily lessons to teach writing skills; 72% in using evidence of student

performance to shape instructional decisions; 68% in tracking and analyzing student progress in a systematic way; and 64% in identifying patterns of student understandings or misconceptions.

These findings were similar to teachers' self-reports of their own improvement in practice in that the two areas of most difficulty involved analyzing evidence of student progress. Areas of improvement most commonly reported by both groups involved selecting appropriate standards and skills.

Impact on student learning (A8). Administrators were almost universally positive about the effects of LDC on students. Almost all (97%) agreed or strongly agreed that LDC helped students develop reading skills; LDC modules effectively supported students' writing (97%); LDC supported students' college and career-ready skills (96%); LDC improved students' content knowledge (93%); LDC improved students' writing quality (93%); LDC helped students understand components of the writing task (93%); LDC helped students' overall literacy performance (93%); and LDC helped students develop speaking and listening skills (86%).

Administrator leadership role (A9). Almost all administrators felt they played an active role in LDC implementation: 96% agreed or strongly agreed that they made changes to school schedules to accommodate LDC PLC time; 92% met regularly with the LDC project liaison; 89% were able to shape LDC implementation at their schools; and 71% led discussions about how to expand LDC implementation in future years.

Alignment (A10). Administrators reflected on how well LDC aligned with other school initiatives, programs, and curricula (see Figure 3.7). Almost all (97%) agreed or strongly agreed that their school connected LDC to specific schoolwide goals; LDC helped teachers create writing assignments to use within current curricula (96%); LDC helped students prepare for state assessments (96%); LDC complemented other initiatives at the school (93%); and LDC was a strategy for implementing state college and career-ready standards (89%). Less than half (43%) believed that the time spent on LDC interfered with other initiatives, and 50% reported that it was difficult for teachers to focus on LDC because of other competing priorities.

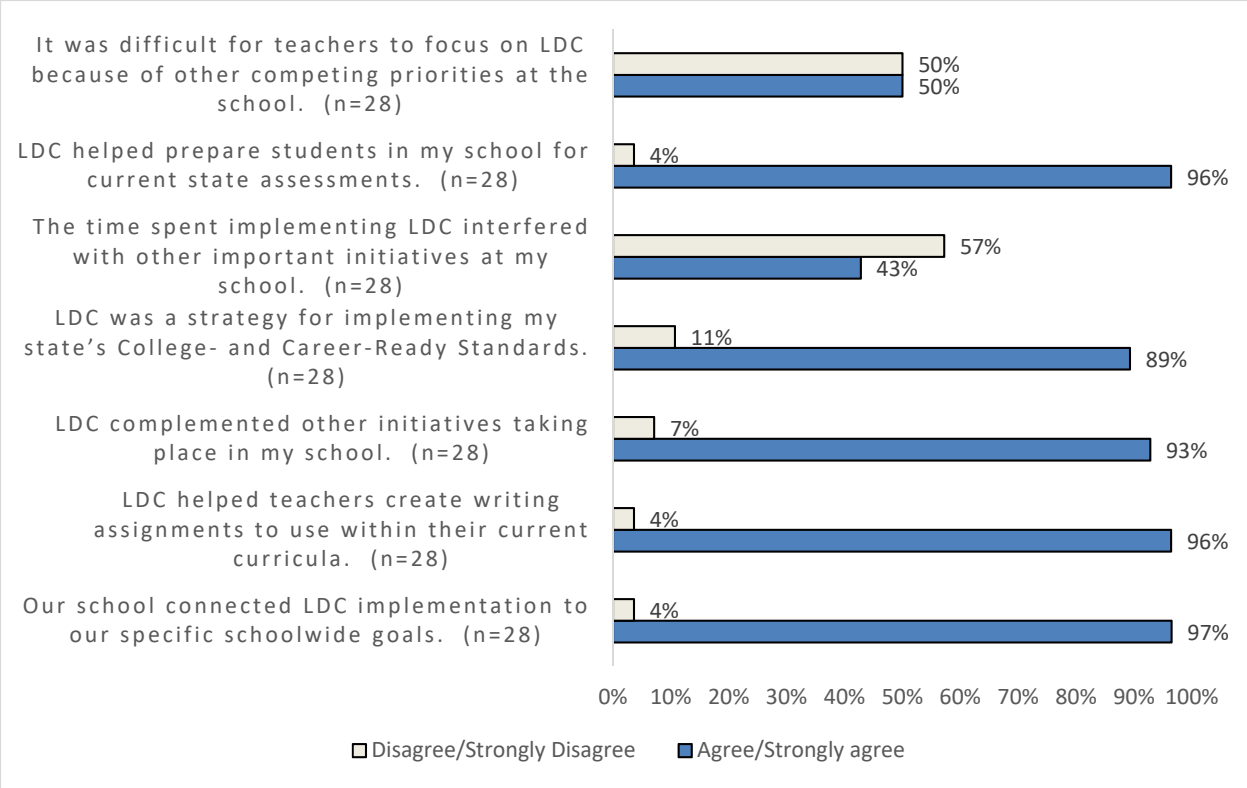

Figure 3.7. LDC alignment (A10).

Scale-up and sustainability (A11). The outlook for LDC implementation in future years was generally positive, according to administrators as reported in Figure 3.8. Almost all (93%) agreed or strongly agreed that teachers and administrators were committed to sustaining LDC; 89% expected most teachers to continue the following year; and 75% expected the LDC PLC to increase in size. Notably, 79% of administrators observed new collaborations across grades and/or subjects, while only 38% of project liaisons reported the same. Almost half of administrators (39%) observed teachers who were not in LDC using the LDC planning process and tools, while only 20% of project liaisons observed this.

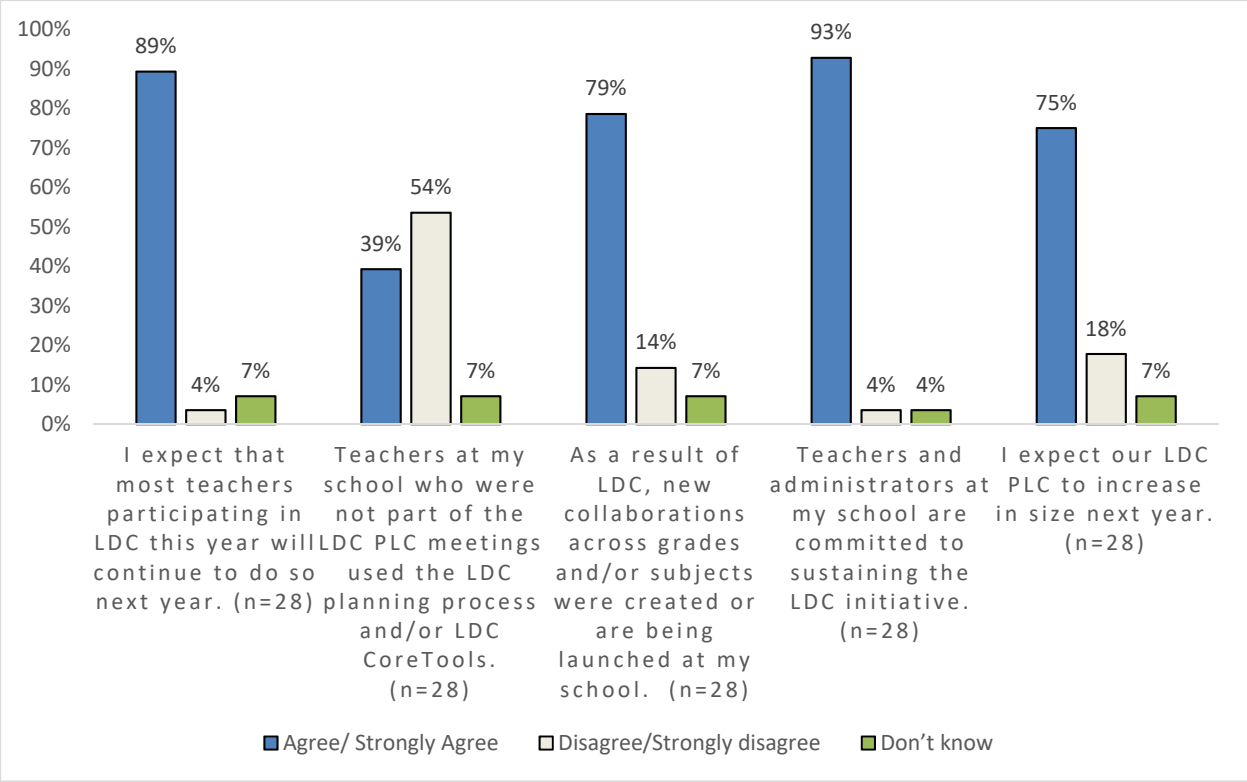

Figure 3.8. Scale-up and sustainability (A11).

District support (A12). Administrators' perceptions of district support for LDC were almost evenly divided between seeing support and not having knowledge of whether or not the district supported LDC. Over half of administrators (57%) agreed or strongly agreed that district leaders supported implementation of LDC; 46% said district leaders were interested in spreading LDC to additional schools; 43% reported district leaders had a firm understanding of LDC; 39% felt district professional development efforts were aligned with LDC; and 39% observed that district leaders visited the school to discuss LDC.

3.4 Open-Ended Responses for All Participants

Each survey respondent had the opportunity to provide open-ended feedback in response to three questions: (1) What supports did you find the most useful and why? (2) What supports were not helpful and why? and (3) In what ways could LDC implementation be improved in your school in the future?

Below are the summary findings across all three groups of respondents, including 162 teachers (including 25 project liaisons), 27 administrators (including two project liaisons), and two project liaisons who were neither teachers nor principals. Thirty-nine teachers (24%) reported they found all supports helpful, as did 15 administrators (56%). It is important to note that the majority of responses to all survey questions was positive; the specific concerns

described below belong to a minority of respondents who felt strongly enough to elaborate in the open-ended response section.

Professional learning community. Weekly meetings with the LDC PLC received 12 positive and two negative mentions. The two negative comments were that combining subject areas and grades was not an efficient use of time. Positive comments were all about appreciating the opportunity to collaborate with other teachers.

The most common suggestion for improving LDC implementation in the future was to provide more protected time for the PLC. Time was mentioned at least 54 times, which included requests for more time and support to both plan and implement modules (not necessarily within the PLC time) as well as suggestions about pacing and implementation. In particular, 11 teachers specifically requested support in watching others implement modules or being provided with "co-teachable opportunities" to provide peer feedback about implementation.

About a dozen comments were made about needing an earlier start or more support to get the implementation off the ground. A handful of teachers specifically requested summer training and earlier start dates.

Math and science teachers would prefer to have their own PLC, as they felt much of the ELA content was not relevant to them. In general, there was a sense that more specialized groups within PLCs would be more helpful. Several teachers commented that combining subject areas and grade levels contributed to boredom and disengagement because a good portion of the content was not relevant to them.

Another common request mentioned by 25 respondents was to add more teachers to the initiative: across disciplines, grade levels, the entire school, and new teachers.

The use of technology during and outside of the PLC was mentioned negatively 30 times, almost always about the difficulty of using the Zoom software. When the videoconferencing software and hardware did not function properly (whether it was on the school side or the coach side) participants felt it was a waste of time, awkward, and "painful." There were further difficulties with technology specific to CoreTools, which are detailed in that section.

Coach (in-person). In-person coaching encompassed several support types, including virtual coaches' site visits and assistance from the district liaison and LDC liaison. A few teachers also included support from project liaisons in this category. One administrator mentioned paying for additional coach visits and felt it was well worth the cost. There were 45 comments indicating that in-person coaching was one of the most useful supports, and 31 comments indicating that it was insufficient. These negative comments were universally that the PLC did not receive enough or any in-person coaching, not about the quality of the in-person coaching. On the positive side, several respondents said there was no substitute for in-person support. For at least a handful of respondents, in-person coaching was a necessary component of

successful LDC implementation. Those that were more specific asked for help with seeing model lessons implemented in real time and in-person, individualized support.

Many respondents applied their positive comments to both virtual and in-person coaching supports. One teacher wrote

> I found the virtual coaching and in-person coaching the most useful because my coach was able to help me reshape or retool my modules to fit my classes. Whenever I had a question or concern, my coach helped me find a clear path to helping my students meet high expectations on difficult writing assignments.

Whether in person or virtually, teachers felt strongly about receiving feedback, which was mentioned 25 times. Teachers appreciated feedback in any format, whether via individual Zoom conferences, during PLC conferences, via email, or in the CoreTools and Teaching Channel platforms.

Coach (virtual). LDC coaches were the most frequently mentioned item, with 70 comments that they were one of the most useful supports and 31 comments that they were not helpful. These included comments about Zoom videoconference meetings with the entire PLC, individual Zoom meetings with coaches, email contact, and written feedback via CoreTools and Teaching Channel. Negative comments about virtual coaching that focused purely on technical issues were included in the PLC technology section, and not duplicated in this category.

Among the positive mentions, respondents praised coaches' feedback and guidance in navigating LDC website materials like CoreTools, the library of modules, and the online courses. They appreciated the ability to ask questions and receive immediate feedback. They also appreciated one-on-one videoconferences with coaches and written feedback via CoreTools, Teaching Channel, and via email.

Negative comments included that the coaches were unengaging, impersonal, uninformed about local standards, or mismatched by grade or subject matter. The meetings went too fast, and several respondents just felt uncomfortable with the medium and preferred in-person, more traditional methods. Notably, among suggestions for improvement, 14 comments were made about requesting more in-person coach visits, while only one participant requested more video chats.

CoreTools. The most common reaction to CoreTools was exemplified by this comment: "I really enjoyed using CoreTools once I learned how to use it." CoreTools had 71 positive comments and 52 negative comments.

Even among the positive comments, there was an acknowledgment that the learning curve was steep and barriers had to be overcome. The three most common barriers to mastering use of CoreTools were time to explore, guidance on features, and ability to navigate

easily. A handful of teachers did not find it useful for their specialties due to lack of content for their subject or student group: lower grades, mathematics, Spanish, English language learners, and students with disabilities. Specific features of CoreTools that were reviewed positively were the ability to receive coach feedback, help with aligning standards to tasks, and the "well planned information architecture."

Among suggestions for improvement, nine teachers felt the LDC module creation process was too fragmented and the interface too difficult. They requested more support, especially at the beginning. On the other hand, a small group of teachers protested that the templates were too simplistic ("basic checklists," "cookie-cutter," "filling in the blanks") and would prefer "more complex tasks."

Another distinction between participants that came through in suggestions for improvement to CoreTools was the disparity in comfort with technology. It was frustrating for teachers who had higher facility with the website to sit through basic navigation tutorials. It was frustrating for teachers with lower technological knowledge to be rushed through the material.

A small but vocal number of teachers were unhappy with the lack of materials on the website that related directly to their contexts; these included teachers who taught math, science, English language learners, younger students, and students with disabilities.

Online courses. Online courses received seven positive comments and 22 negative comments. The single positive commenter who elaborated said that she appreciated the ability to go at her own pace. Among the many negative elaborations, the most common issues were that course content was difficult to navigate, too time consuming, redundant, "too broad to be helpful," and difficult to read ("walls of text"). The embedded videos did not work for everyone due to school security measures.

Teaching Channel. Teaching Channel resources, including videos and discussions, were mentioned four times as helpful and seven times as unhelpful. A few teachers provided their reasons: engaging teachers was difficult because of competing initiatives; there was confusion about using two different websites (Teaching Channel and CoreTools); and their school curricula were already aligned to Common Core and so they had no need for Teaching Channel discussions.

3.5 Summary of Results

This survey captured the responses of 81% of all participants in the district's first year of implementation. In addition to answering closed-ended questions, most of the respondents also provided narrative comments about aspects of the program they felt were useful as well as those that could use improvement. Generally, respondents provided positive feedback. Overall, the survey results suggest the following:

- Across all participant groups, survey responses showed positive attitudes toward LDC. All measures of satisfaction or improvement were rated positively by more than half of respondents.
- Seventy percent of teachers and 93% of administrators agreed that LDC helped improve students' literacy performance.
- LDC coaches received almost unanimous positive feedback, with 95% of teachers reporting that their coaches gave them appropriate and timely feedback and support. But there are a few negative comments about coaches in the open-ended responses.
- Project liaisons were almost universally reported as very approachable, effective, and knowledgeable. Almost all teachers reported that their administrators encouraged LDC participation at the school, though only 58% of teachers reported receiving feedback from administrators about LDC and 44% reported never being observed while teaching an LDC task.
- Almost three quarters of teachers felt they had sufficient time to meet during professional learning community (PLC) sessions and 86% reported that administrators protected that time. However, the most frequently requested modification for future years was for more protected time during and outside of PLCs to plan modules, implement, and receive feedback about implementation.
- Almost two thirds of teachers expressed interest in learning more about how to lead LDC implementation at their schools. Over 80% of project liaisons and administrators expected their teachers to continue with LDC the following year. Both groups observed that teachers at the school who did not participate in the LDC PLC generally did not adopt LDC methods or materials on their own.
- While 79% of teachers agreed that their school had adequate technology to support LDC implementation, a common complaint by participants was the difficulty in successfully conducting Zoom meetings.
- With regard to creating modules, teachers were most likely to report success with selecting focus standards, creating the writing assignment, identifying skills, and providing multiple opportunities to engage students with the materials. They were less likely to report success with selecting texts, making connections to previous or future work, creating daily lessons, and planning a variety of assignments.
- With regard to implementing LDC in the classroom, teachers were most likely to report success with engaging students in productive struggle, differentiating instruction, and locating evidence of progress in student work. They were slightly less likely to report success in using evidence to modify plans, providing feedback, and systematically collecting information about student learning.
- When asked about LDC impact on students, teachers reported positive impact on writing quality, college and career readiness skills, overall literacy performance, reading skills, content knowledge, and speaking and listening skills.

This year's survey responses were constantly positive across all dimensions and participant groups. Suggestions and recommendations provided in this report were primarily about adapting to and ameliorating district constraints, such as protected time for meetings and technological limitations.

4.0 Analyses of LDC CoreTools Data

In the following section, we report on how participants interacted with LDC's CoreTools online system. We begin in Section 4.1 by presenting participation rates for key CoreTools activities, including creating a user account, viewing modules and mini-tasks, editing modules and mini-tasks, and commenting on modules and mini-tasks. In Section 4.2, we dig deeper into CoreTools viewing, editing, and commenting by sharing descriptive statistics for all i3 CoreTools users followed by results broken down by key subgroups (including LDC role, school level, and content area taught). In Section 4.3, we compare the level of engagement for i3 CoreTools users who completed and taught a full-length module to those users who did not complete and teach a module during the school year.

4.1 CoreTools Activity Participation Rates

The four key CoreTools activities we examined are creating a user account, viewing modules and mini-tasks, editing modules and mini-tasks, and commenting on modules and mini-tasks. Among the 265 CoreTools users, 218 were teachers, and 47 of them were administrators, with some individuals in each category acting as project liaisons. As seen in Table 4.1, nearly all participants used CoreTools to at least some degree. Eighty-nine percent of all participants created a user account, 83% of participants viewed modules or mini-tasks, 77% edited modules or mini-tasks, and 45% of them commented on modules or mini-tasks.

Table 4.1

CoreTools Feature Participation Rates: 2016–2017

Participant type	Number of participants	Number and % of participants with user accounts	Number and % of participants who viewed a module or mini-task	Number and % of participants who edited a module or mini-task	Number and % of participants who commented on a module or mini-task
Teacher	188	175 (93%)	171 (91%)	166 (88%)	104 (55%)
Teacher/project liaison	30	27 (90%)	27 (90%)	27 (90%)	14 (47%)
Total teachers	218	202 (93%)	198 (91%)	193 (89%)	118 (54%)
Project liaison[a]	1	1 (100%)	1 (100%)	0 (0%)	0 (0%)
Administrator	42	28 (67%)	19 (45%)	8 (19%)	1 (2%)
Administrator/project liaison	4	4 (100%)	3 (75%)	3 (75%)	0 (0%)
Total administrators[a]	47	33 (70%)	23 (49%)	11 (23%)	1 (2%)
Total participants	265	235 (89%)	221 (83%)	204 (77%)	119 (45%)

[a]We categorize the coaches and coordinators who completed the project liaison survey as administrators.

In addition to displaying participation rates on key CoreTools activities for all i3 participants, Table 4.1 also displays subgroup results for participants playing different roles in the i3 implementation. These subgroups mirror the five groups to whom we administered surveys: teachers, project liaisons, administrators, teacher/project liaisons, and administrator/project liaisons. Teachers had higher participation rates than the administrators, as expected.

Nearly 90% of participants created a CoreTools user account. Significantly, even administrators who did not play a project liaison role created user accounts in high numbers (two out of three did so). This suggests that the vast majority of administrators overseeing LDC PLCs had at least some familiarity with the online platform.

Likewise, large majorities of PLC teachers and project liaisons (between 75% and 100% depending on the participant role) viewed modules and/or mini-tasks in CoreTools. Administrators who did not play a project liaison role were considerably less likely to engage in this way, although almost half still viewed at least one module or mini-task.

We consider editing modules and mini-tasks to be the key indicator of deep engagement with the CoreTools module building platform. Eighty-nine percent of participating teachers edited at least one module or mini-task. Administrators were much less likely than teachers to edit materials in CoreTools with less than a quarter having done so.

Overall, adding comments to modules or mini-tasks was a much less common activity, with about half of teachers having commented and only one administrator having done so. This perhaps should not be surprising, as the i3 model set an expectation that coaches provide feedback to teachers via comments, but did not require teachers to comment back or reflect on peers' work.

4.2 Engagement With Key CoreTools Activities

In this section, we describe participants' level of engagement with three key CoreTools activities: viewing modules and mini-tasks, editing modules and mini-tasks, and commenting on modules and mini-tasks. Descriptive statistics are reported for all participants, as well as a number of subgroups. Those subgroups capture the role the individual played in LDC (teacher, project liaison, and administrator), the level of the school at which the participant worked (elementary, K–8, middle, 6–12, or high), and in the case of teachers, the content area taught (elementary/multiple subjects, secondary ELA, secondary history/social studies, secondary science, secondary math, special education, and English as a second language). As noted earlier, some participants played multiple roles in the intervention, so the teacher, project liaison, and administrator groups overlap to some degree as they do in our survey analysis. Descriptive statistics are only reported for groups with five or more members. Finally, note that for each of the three analyses below, participants who did not engage in the activity are excluded from the analysis (i.e., the analyses do not include any observations with zero views, edits, or comments). As such, in each case, the results describe the behavior of participants who

engaged in the particular activity at least once. The samples for the viewing, editing, and commenting analyses are 221, 204, and 119 respectively (see bottom row of Table 4.1).

Module/mini-task viewing. In Table 4.2, we present descriptive statistics on how many times i3 participants viewed modules and mini-tasks, both overall and by subgroup. We present the minimum number of views, the maximum number of views, the mean number of views, the standard deviation, and the sum of total views across all participants. Overall the average participant viewed modules or mini-tasks over 54 times, while the range was from one view to 481 views. The standard deviation of 61.9 suggests that about two thirds of all participants viewed modules or mini-tasks between 0 and 115 times (with the remaining third viewing a greater number of times).

Table 4.2

Descriptive Statistics for the Number of Times a Participant Viewed a Module or Mini-Task in CoreTools, by Participant Subgroup

Subgroup	*n*	Min	Max	*M*	*SD*	Sum
All participants	221	1	481	54.5	61.9	12046
Participant role						
All teachers	198	1	481	59.3	63.5	11744
All project liaisons	31	2	246	63.9	55.7	1982
All administrators	23	1	57	13.1	15.8	302
School level						
Elementary school level participants	12	10	341	110.9	83.7	1331
K–8 school level participants	24	1	481	70.2	99.3	1684
Middle school level participants	119	1	196	43.2	36.3	5141
6–12 school level participants	27	3	353	87.9	95.3	2373
High school level participants	39	2	197	38.9	35.8	1517
Content area taught						
Taught elementary/multiple subjects	23	11	341	85.3	72.7	1962
Taught secondary ELA	72	6	481	72.8	80.5	5244
Taught secondary social studies/history	33	8	481	73.4	84.9	2423
Taught secondary science	37	2	129	41.1	32.2	1519
Taught secondary math	14	14	129	48.4	31.9	677
Taught special education	23	1	222	68.9	54.6	1584
Taught ESL	8	2	66	35.6	25.4	285

As would be expected, project liaisons on average had the greatest number of views, while administrators viewed the least number of times. Teachers viewed only slightly fewer modules and mini-tasks than project liaisons. There was considerable variation in viewing behavior across participant subgroups within these categories. Participants in elementary, K–8, and 6–12 schools viewed considerably more modules and mini-tasks on average than their middle and high school peers. Elementary school teachers on average viewed a greater number of modules and mini-tasks than their secondary teacher peers. At the secondary level, ELA and social studies/history teachers viewed more modules and mini-tasks than math and science teachers. ESL teachers showed the least engagement of the content area subgroups.

Module/mini-task editing. On average, participants who engaged in editing modules or mini-tasks did so 32 times over the course of the school year. There was a wide range of engagement from editing once to making 241 edits to modules and mini-tasks. Two thirds of participants edited between zero and 64 times. Table 4.3 reports the descriptive results.

Table 4.3

Descriptive Statistics for the Number of Times a Participant Edited a Module or Mini-Task in CoreTools, by Participant Subgroup

Subgroup	*n*	Min	Max	*M*	*SD*	Sum
All participants	204	1	241	31.6	32.2	6438
Participant role						
All teachers	193	1	241	32.9	32.6	6353
All project liaisons	30	5	123	40.5	33.6	1214
All administrators	11	1	20	7.7	5.9	85
School level						
Elementary school level participants	11	10	118	51.6	39.3	568
K–8 school level participants	21	1	241	43.2	52.1	908
Middle school level participants	109	1	123	22.9	21.5	2499
6–12 school level participants	25	1	158	52.9	39.6	1322
High school level participants	38	3	135	30.0	26.8	1141
Content area taught						
Taught elementary/multiple subjects	23	6	118	40.1	33.3	922
Taught secondary ELA	71	1	241	38.6	41.5	2739
Taught secondary social studies/history	33	1	241	39.1	46.2	1291
Taught secondary science	35	1	82	21.2	18.0	741
Taught aecondary math	14	5	48	20.5	14.3	287
Taught special education	22	7	122	44.7	30.5	984
Taught ESL	7	3	33	19.4	11.7	136

As with page viewing results, project liaisons edited more than teachers, and administrators edited much less than teachers. Differences between participant school-level groups in the number of edits also followed similar patterns to module/mini-task viewing, with elementary, K–8, and 6–12 participants making a greater number of edits than their middle and high school level peers. Secondary ELA and social studies/history teachers edited more than

secondary math and science teachers. Again, ESL teachers exhibited the lowest level of engagement. Despite mean differences, there was great variation across participants within each of the subgroups.

Module/mini-task commenting. Only 119 participants, representing less than half of all participants, commented on modules or mini-tasks in the past school year. Within that highly engaged group, participants commented between one and 43 times, and on average five times. All but one of the commenters were teachers, and a little over 10% of the group were project liaisons as well. Those participants who played a project liaison role commented more on average than teachers not playing that role. Differences between subgroups followed similar patterns to viewing and editing, with elementary level teachers making the highest number of comments among school-level groups, and secondary ELA and social studies/history teachers commenting more than secondary math and science teachers.

Table 4.4

Descriptive Statistics for the Number of Times a Participant Commented on a Module or Mini-Task in CoreTools, by Participant Subgroup

Subgroup	*n*	Min	Max	*M*	*SD*	Sum
All participants	119	1	43	5.3	6.5	625
Participant Role						
All teachers	118	1	43	5.3	6.5	620
All project liaisons	14	1	43	8.5	11.3	119
School Level						
Elementary school level participants	11	1	43	10.8	14.8	119
K–8 school level participants	13	1	26	5.3	7.2	69
Middle school level participants	46	1	19	4.0	4.3	183
6–12 school level participants	24	1	18	6.9	5.2	166
High school level participants	25	1	8	3.5	2.3	88
Content area taught						
Taught elementary/multiple subjects	17	1	43	7.7	12.5	131
Taught secondary ELA	47	1	26	5.6	5.4	265
Taught secondary social studies/history	19	1	26	6.1	7.4	115
Taught secondary science	17	1	11	3.4	3.0	58
Taught secondary math	6	1	6	2.8	2.2	17
Taught special education	19	1	18	5.1	4.9	97

4.3 CoreTools Engagement as an Implementation Variable

To evaluate the validity of CoreTools engagement as an indicator of LDC implementation, we examined the relationship between the three CoreTools engagement measures and module implementation. As described in the next chapter, CRESST identified full-length modules that i3 participants created and/or adapted and taught in their classrooms. We took the presence of uploaded student work as evidence of teachers having taught the module in their classrooms. This parameter yielded a sample of 169 modules, associated with 122 teachers and three administrators. Figure 4.1 displays the mean number of CoreTools views, edits, and comments for the 122 teachers who completed and taught full-length LDC modules and their 96 peers for whom we do not have evidence of full module implementation. As shown, teachers who completed and taught full-length LDC modules exhibited over twice as much viewing and editing activity as their peers, and over five times the commenting activity. The results suggest that participants who engage deeply with the module building platform are more likely to complete and teach LDC modules.

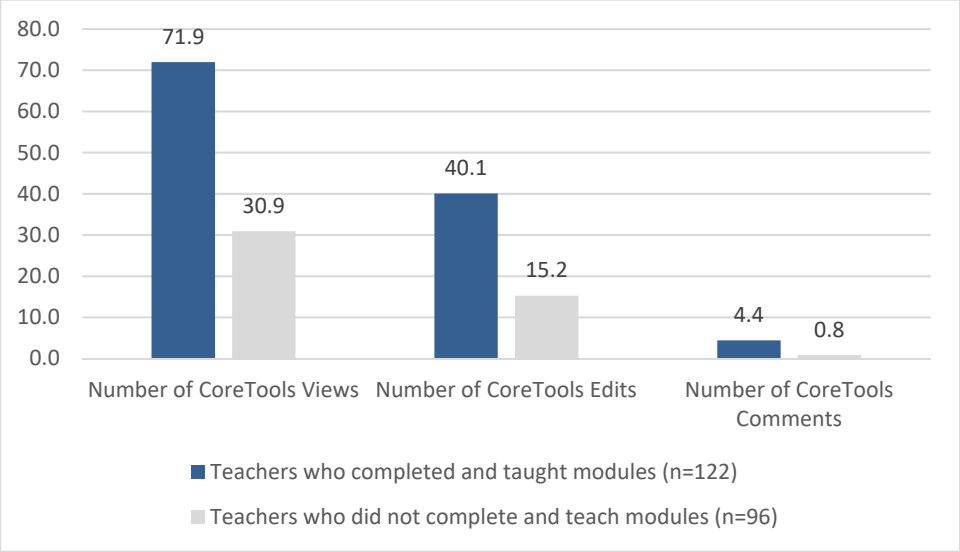

Figure 4.1. Mean number of CoreTools views, edits, and comments made by teachers who did and did not complete and teach modules.

5.0 Module Artifact Analysis

Table 5.1 presents mean scores and standard deviations for all modules analyzed. Among the 114 modules scored, 20 were at the elementary level, and 94 were at the secondary level. As previously stated, each module was rated using a 5-point scale to measure (a) the effectiveness of the writing task or objective(s) for the module, (b) the module's alignment to the standards, (c) fidelity to the four stages of LDC instructional practice (i.e., preparation for the task, reading process, transition to writing, and writing process), (d) the quality of the instructional strategies, (e) coherence and clarity of the module, and (f) the overall quality of the module (see Appendix A for full descriptions of the dimensions).

Table 5.1

Means by School Level

	Elementary		Secondary		All modules	
Dimension	*n*	*M (SD)*	*n*	*M (SD)*	*n*	*M (SD)*
1. Effective writing task	20	3.7 (1.4)	94	3.5 (1.1)	114	3.5 (1.1)
2. Standards alignment	20	2.8 (1.6)	94	3.3 (1.2)	114	3.2 (1.3)
3. Fidelity to LDC module instruction	20	2.4 (1.8)	94	2.8 (1.5)	114	2.7 (1.6)
4. Quality instructional strategies	20	2.4 (2.0)	94	2.5 (1.5)	114	2.4 (1.6)
5. Coherence and clarity of module	20	2.1 (2.0)	94	2.5 (1.5)	114	2.5 (1.6)
6. Overall impression	20	2.4 (1.6)	94	2.6 (1.4)	114	2.6 (1.5)

As can be seen, modules at the secondary level received somewhat higher mean ratings than did the modules at the elementary level on nearly all of the dimensions. More specifically, mean ratings for the secondary modules were in the 3s for Dimensions 1 and 2, which focused on the effective writing task and standards alignment, but were in the mid to high 2s for the remaining dimensions. In contrast, the only dimension in which elementary modules had a mean greater than 3 was for the effective writing task. All of the remaining dimensions ranged from the low to high 2s. In other words, teachers were moderately successful in regards to Dimension 1, and Dimension 2 when teaching at the secondary level. Otherwise, dimensions were on average only barely present.

For the remainder of this report, we present results for the elementary and secondary modules separately. This will include further descriptive results, results from generalizability theory analyses, as well as factor analyses for the elementary modules. Because of the small sample sizes, reported findings are limited to descriptive results for the elementary modules as well as the secondary science and social studies modules; generalizability and factor analyses

for these subsamples will be conducted at a later time once a larger sample of eligible modules has been collected.

5.1 Elementary Module Results

Table 5.2 presents descriptive results for the elementary modules by content area. A few comparative observations can be made. First, when looking across content areas, modules tended to receive the highest ratings on Dimension 1, concerning the effective writing task. While the number of modules was very small, it also appears that science and social studies modules were more successful than ELA modules with regard to most dimensions; science modules received on average ratings of 3 or greater for all dimensions; and social studies modules received similar ratings on average for all dimensions (with the exception of coherence and clarity of the module). In contrast, ELA modules tended to receive mean ratings from the high 1s to the mid 2s, which indicates that these dimensions were not or were barely present or realized. Again, given the very small subsamples, these results should be interpreted with caution.

Table 5.2

Descriptive Statistics for the Elementary Modules by Content Area

	ELA		Science		Social studies	
Dimension	*n*	*M (SD)*	*n*	*M (SD)*	*n*	*M (SD)*
1. Effective writing task	14	3.4 (1.6)	3	4.7 (0.6)	3	4.0 (1.0)
2. Standards alignment	14	2.4 (1.6)	3	3.3 (1.2)	3	3.7 (1.5)
3. Fidelity to LDC module instruction	14	2.0 (1.5)	3	3.3 (2.1)	3	3.0 (2.7)
4. Quality instructional strategies	14	1.9 (1.8)	3	4.0 (1.7)	3	3.0 (2.7)
5. Coherence and clarity of module	14	1.8 (1.8)	3	3.0 (2.7)	3	2.7 (2.5)
6. Overall impression	14	2.1 (1.4)	3	3.3 (2.1)	3	3.0 (2.0)

5.2 Secondary Module Results

Table 5.3 presents descriptive results for the secondary modules by content area. While some of the subgroups are small (math in particular), some general observations can be made. First, modules tended to receive higher ratings for Dimensions 1 and 2, which focus on the effective writing task and standards alignment, with mean ratings of 3 to 4. This indicates that these two dimensions were often moderately to sufficiently present or realized. Second, ratings were generally low for Dimensions 3 through 6, with means primarily in the 2s, which indicates that these traits were on average barely present. Furthermore, the few math modules submitted received very low means which indicates that Dimensions 3 through 6 were not

present or realized. These results seem in line with comments made by raters during debriefings stating that the potential of the module, as seen in "Section 1: What Task," was not always realized through the remainder of the writeup covering the instructional ladder. Furthermore, expert teachers who rated the few math modules indicated that the LDC module structure was not well aligned to the content area.

Table 5.3

Descriptive Statistics for the Secondary Modules by Content Area

	ELA		Math		Science		Social studies	
Dimension	*n*	*M (SD)*	*n*	*M (SD)*	*n*	*M (SD)*	*n*	*M (SD)*
1. Effective writing task	61	3.4 (1.0)	4	3.5 (1.0)	16	4.0 (1.1)	13	3.4 (1.1)
2. Standards alignment	61	3.2 (1.1)	4	3.8 (1.5)	16	4.0 (1.3)	13	3.0 (1.3)
3. Fidelity to LDC module instruction	61	2.9 (1.5)	4	1.0 (0.8)	16	3.1 (1.6)	13	2.7 (1.7)
4. Quality instructional strategies	61	2.6 (1.5)	4	0.8 (1.0)	16	2.4 (1.5)	13	2.7 (1.7)
5. Coherence and clarity of module	61	2.6 (1.5)	4	0.5 (0.6)	16	2.6 (1.6)	13	2.5 (1.8)
6. Overall impression	61	2.7 (1.4)	4	1.3 (1.0)	16	2.8 (1.5)	13	2.5 (1.8)

Generalizability theory. As previously noted, generalizability analyses were limited to the secondary ELA sample because of issues with small sample sizes. Tables 5.4 and 5.5 present results from the two-faceted and one-faceted models, which examine error across and within dimensions respectively. As would be the goal of any rating session, most of the variation found in the secondary ELA ratings seems to be due either directly to the modules created by the teachers (44%) or to differing quality across the modules by dimensions (40%). Furthermore, less than 3% of the variation could be attributed either directly to the raters or to an interaction between raters and dimensions or modules. What is of concern, though, is that 8% of the variation for the ELA ratings was unexplained.

Table 5.4

Generalizability Study of the Secondary ELA Module Ratings Across Dimensions

Source	Var.	%
Module (σ2t)	0.79	44.4
Rater (σ2r)	0.02	0.9
Dimension (σ2d)	0.08	4.6
Module × Dimension (σ2td)	0.71	39.8
Rater × Dimension (σ2rd)	0.03	1.9
Module × Rater (σ2tr)	0.00	0.0
Error (σ2trd,e)	0.15	8.5

Note. Negative estimates of variance were changed to zero in order to calculate percentages (see Shavelson & Webb, 1991).

As previously mentioned, we also used a one-faceted design to further disentangle the variance that was due either directly or through an interaction with the dimensions (see Table 5.5). As we would hope, the vast majority of the variation in most of the dimensions could be attributed directly to the modules created by the secondary teachers. In this case, more than 90% of the variation for Dimensions 3 through 6 were due to differences in the modules created by the teachers. In contrast, about two thirds of the variation for Dimensions 1 and 2, which focus on the effective writing task and standards alignment, were attributable to the modules. For Dimension 1, the remaining variation was primarily due to differences amongst raters (12%) or differences in raters across modules (11%). For Dimension 2, almost all of the remaining variation was due to differences in raters across modules (32%). It is difficult to know whether this result is an artifact of having the raters for the secondary ELA panel only partially crossed—that is only eight of the 55 modules that were used for calibration purposes were rated by all three expert teachers—or was the result of issues with training and/or anchor points concerning standards alignment.

Table 5.5

Generalizability Studies of the Secondary ELA Module Ratings for Each Dimension

Dimension	Module (σ2t)		Rater (σ2r)		Module × Rater (σ2tr)		Error (σ2trd,e)	
	Var.	%	Var.	%	Var.	%	Var.	%
1. Effective writing task	0.70	70.9	0.12	12.0	0.11	11.2	0.06	5.9
2. Standards alignment	0.88	67.0	0.02	1.3	0.42	31.8	-0.16	0.0
3. Fidelity to LDC module instruction	1.96	94.0	0.03	1.4	0.02	1.0	0.08	3.7
4. Quality instructional strategies	1.95	90.4	0.04	2.0	0.14	6.4	0.03	1.2
5. Coherence and clarity of module	1.90	90.5	0.10	4.5	0.05	2.5	0.05	2.5
6. Overall impression	1.68	92.6	0.07	3.8	0.06	3.5	0.00	0.1

Note. Negative estimates of variance were changed to zero in order to calculate percentages (see Shavelson & Webb, 1991).

Factor analysis. Table 5.6 presents the principal component solutions extracted from the teacher scores for each dimension for the secondary sample. The model for the secondary ELA sample loaded on two factors, with the first factor accounting for more than half of the variance in ratings across modules (56.76%). The analysis suggests that there were two factors or underlying traits, with the first consisting of Dimensions 1 and 2 and the second consisting of Dimensions 3 through 6.

Table 5.6

Principal Component Analysis of the Secondary ELA Module Ratings (n = 61)

Dimension	Factor 1	Factor 2
1. Effective writing task	0.42	0.71
2. Standards alignment	0.43	0.72
3. Fidelity to LDC module instruction	0.77	0.02
4. Quality instructional strategies	0.88	-0.26
5. Coherence and clarity of module	0.89	-0.22
6. Overall impression	0.94	-0.21

5.3 Qualitative Results

Expert raters were asked to participate in debriefings in an attempt to shed light on their ratings and suggest potential ways to improve ratings in the future. These debriefings were conducted at the end of each set of rating sessions (e.g., elementary, secondary ELA, etc.). The following presents key findings concerning Dimensions 1 through 5, as well as our expert raters' overall impressions.

Dimension 1: Effective writing task. While this was often the highest scoring category, few teachers took full advantage of the opportunity to explain their writing task. Many teachers simply filled in mandatory sections of the teaching task, without providing the optional questions allowed at the beginning. Furthermore, many provided limited information or none at all in the optional student background section. Our expert raters felt strongly that this additional information was necessary to know what was expected of students and to determine what the expectations were for higher order thinking.

Dimension 2: Standards alignment. Teachers were inconsistent in their specification of standards for the modules. First, some modules included standards primarily in the designated area in the "What Task" section of the module creator, other modules included them with the mini-tasks, and yet others included information on standards in more than one location. This inconsistency caused raters to spend more time trying to disentangle issues of alignment. It also should be noted that raters felt that teachers often lacked focus in specifying their standards, with some providing too many and others providing too few. In some cases, this was hypothesized to be an artifact of teachers adapting rather than completing original modules.

Dimension 3: Fidelity to LDC module instruction. While ratings concerning fidelity to LDC module instruction varied greatly in quality, especially among the secondary modules, raters generally felt that teachers were more successful in the early rather than the later parts of the instruction. Students were given less instruction than considered necessary for the transition to writing and writing process skills. Furthermore, teachers used default mini-tasks that showed little adaptation or that did not align with the teaching task.

Dimension 4: Quality instructional strategies. Feedback on the quality of instructional strategies tended to mimic what was discussed concerning Dimension 3. Raters believed that artifacts showed little or no evidence of how teachers were scaffolding critical thinking. Many of the modules used the same mini-tasks, the writing task as specified often did not match the task template or the student work samples, and many modules felt like they were "cut and pasted" together.

Dimension 5: Coherence and clarity of module. As one of our raters noted, coherence and clarity of the modules were "almost always either great or terrible." Raters noted a disconnect between the instructional strategies and what students produced. Furthermore, they considered it difficult to rate this dimension in cases where teachers provided little

student work. In the end, though, modules that raters felt that they could take and implement directly in their own classrooms tended to receive the highest ratings for this dimension.

Dimension 6: Overall impressions. Original modules were typically thought to be of much higher quality than those that were adapted. These modules were easier to understand, seemed to be more thought out, and had fewer mismatches across the task sections. Raters also felt that because they lacked understanding of what actually was changed or customized in the adapted modules, they had a limited ability to judge the quality of the work. Our expert teachers suggested that if more teachers had completed the student background and teacher reflection sections, and had included more student work samples, this would have greatly helped in the rating process. In addition, raters suggested that the addition of a section to provide details about the students, such as information about English language learners or prior achievement, would have been helpful in determining the appropriateness of the task template and mini-tasks.

5.4 Summary of Results

While the elementary sample and science and social studies subsamples for the secondary module ratings were fairly small, and should therefore be interpreted with caution, some trends did emerge across modules. First, teachers were generally more successful regarding Dimensions 1 and 2 than they were with the other Dimensions. With the exception of Dimension 2 for the elementary ELA modules, all content area subgroups received ratings in the 3s for these two dimensions, which indicates that the effective writing task and standards alignment were moderately present or realized. Second, results of the generalizability study provide evidence that secondary ELA raters did a good job, with most variation due directly to differences in quality across the modules (44.38%) or to differing quality across the modules by dimension (39.82%). Likewise, generalizability study results showed that almost all variation in ratings for Dimensions 3 through 6 were due to differences in the secondary ELA modules themselves (90.42% to 93.95%). In contrast, while the majority of variation for Dimensions 1 and 2 were also due to differences in the secondary ELA modules (70.92% and 66.95%, respectively), moderate amounts of variation were also found by rater for Dimension 1 (12.01%) and for an interaction between module and rater for Dimensions 1 and 2 (11.15% and 31.80%). This echoed results from the factor analysis, with Dimensions 1 and 2 loading on one factor and Dimensions 3 through 6 loading on another factor. In total, both factors accounted for 56.76% of variation across the secondary ELA modules.

6.0 Student Outcome Analysis

This section presents the student outcome analysis we conducted to evaluate LDC's impact on student learning in the 2016–2017 school year. We begin by describing the process we used to define the LDC student sample and to construct a matching comparison sample. We then present descriptive statistics for the treatment and comparison groups. Finally, we report the estimated impact of LDC on students as measured by the New York State assessment scores in English language arts (ELA).

6.1 LDC Sample and the Matching Process

As described earlier, our LDC teacher sample included both elementary and middle school teachers in the study district. Separate sampling and analyses were conducted for these two groups of teachers, as described in Section 2.5 of this report (Analytical Approaches).

Elementary sample. The eligible LDC student sample for elementary includes all students who were enrolled for a minimum of two thirds of the overall school days preceding the 2016–2017 school year test administration under the instruction of at least one of the participating LDC teachers, and who had available data both for prior and current year achievement scores and demographic characteristics.

The comparison sample was selected via a multistage process. In the first stage, we identified comparison schools for each of the participating LDC schools, based on similarity in both prior achievement and demographics. Then within these comparison schools, we selected comparison students who were similar to each of the LDC students. We used the following variables to identify similar comparison schools: the percentage of students eligible for free or reduced price lunch, the percentage of African American students, mean prior student achievement in ELA, the attendance rate of teachers, the teachers' active years of teaching experience, and the school grade span. At the student level, we used CEM and matched students exactly on grade level as well as whether they were categorized as Asian. We also matched closely on variables for Black, Hispanic, White, other ethnicity, free or reduced price lunch status, special education status, and on prior individual student achievement and the mean prior achievement of students' core content class peers. Finally, students also were matched on the average years of teaching experience of their core content teachers.

The 2016–2017 elementary sample prior to the CEM process included five schools, the 15 elementary teachers who consented to participate in the evaluation study, and their 273 students. After the student-level matching, our final elementary LDC sample included 234 elementary students and retained nearly the same number of teachers and schools (see Table 6.1).

Prior to matching, the potential elementary comparison sample consisted of 781 schools, 10,106 teachers, and 123,307 students. This comparison sample was substantially reduced during the first stage of matching, which identified the five schools that most closely resembled

each of the five LDC elementary schools. After student-level CEM, a workable analytic comparison sample consisted of 19 schools, 100 teachers, and 234 students (see Table 6.1).

Table 6.1

Before and After Matching Sample Sizes: Elementary School Analysis

	LDC sample			Comparison sample		
	School	Teacher	Student	School	Teacher	Student
Stage 1						
Before matching	5	15	273	781	10,106	123,307
After matching	5	15	273	25	474	4,979
Stage 2						
After matching	5	14	234	19	100	234

Middle school sample. The eligible LDC student sample for middle school was more challenging to identify than the elementary school sample because students were taught by multiple teachers of different subjects, each of whom did or did not participate in LDC. Our first step in sampling was to define at each school the potential sample of LDC students. These were all students at the school who enrolled in core content courses for at least two thirds of the overall school days preceding the assessment period. We began by classifying core content classes in the three core content areas (ELA, social studies/history, and science) based on the statewide course catalog (SCED). In addition, to be part of the sample, prior and current achievement scores needed to be available for each student as they were used for selecting the middle school sampling.

The resulting LDC sample included 20 schools, 104 teachers, and 3,562 students prior to the CEM process. After the CEM student-level matching, our final secondary LDC sample was reduced to 3,214 students, with all schools and teachers being retained (see Table 6.2).

Table 6.2

Before and After Matching Sample Sizes: Middle School Analysis

	LDC sample			Comparison sample		
	Schools	Teachers	Students	Schools	Teachers	Students
Stage 1						
Before matching	20	104	3,562	519	10,131	161,047
After matching	20	104	3,562	100	2,304	29,375
Stage 2						
After matching	20	104	3,214	85	1,423	3,214

Prior to matching, the potential comparison sample consisted of 519 schools, 10,131 teachers and 161,047 students. This comparison sample was substantially reduced during the first stage of matching, which identified the five schools that most closely resembled each of the 20 LDC schools. After student-level CEM, an analytic comparison sample of 85 schools, 1,423 teachers, and 3,214 students was constructed (see Table 6.2).

6.2 Descriptive Results on the Matched Analytic Samples

Tables 6.3 and 6.4 present the student characteristics for the LDC student and comparison students, based on the final analytical samples for the elementary and secondary analyses respectively. Treatment and comparison samples matched very closely on all variables. Exact matching was achieved on some variables, and all demographic variables were within 4 percentage points. For the prior achievement matching variable, we standardized students' 2016 New York State assessment scale scores at each grade level relative to district performance, based on the district mean and standard deviation for the ELA test at each grade level. Standardizing scores in this way enables us to easily compare our samples' performance relative to the district and to compare scores across grades and years more easily. A standardized scale score of zero, for example, indicates that the student scored at the mean for all other students in the district who took the same test. A standardized scale score of 1.0 meant that the student scored one standard deviation higher than the district mean. Conversely, a standardized scale score of -1.0 indicated that the student scored one standard deviation lower than the district mean.

The final LDC elementary student sample after matching was composed largely of Black, Asian, and Hispanic students, with more than one third being of Black ethnicity, almost one third Asian, and about slightly over one quarter Hispanic (see Table 6.3). The sample was composed of fourth and fifth grade students and mostly of students with low socioeconomic status (88.5%). English language learners, special education students, and gifted students each

represented between 10 and 15% of the sample. Mean performance on the prior year academic assessment was very close to the districtwide performance levels in math and ELA.

As shown in Table 6.4 the final LDC middle school student sample included a large proportion of Black and Hispanic students (87.2%), and a similarly large proportion of students with low socioeconomic backgrounds (86.1%). The sample was composed of sixth (16.1%), seventh (41.1%), and eighth grade students (42.8%). Special education students and gifted students each represented slightly less than one quarter of this sample, while there was about one half that many English language learners (12.8%). In addition, mean performance on the prior year academic assessment was somewhat lower for LDC students as compared to districtwide performance levels in math and ELA.

Table 6.3

Student Characteristics of Elementary School Treatment and Comparison Groups After Coarsened Exact Matching, 2016–2017 School Year

Student characteristic	LDC sample: Elementary (*n* = 234)	Comparison sample: Elementary (*n* = 234)
Race/ethnicity		
Hispanic (%)	25.6	27.8
Black (%)	38.0	34.6
Asian (%)	30.8	30.8
White (%)	3.0	4.3
Other (%)	2.6	2.5
Female (%)	47.9	48.7
Special programs status		
Poverty (%)	88.5	90.4
English language learner (%)	12.4	8.5
Special education (%)	14.1	12.8
Gifted (%)	14.5	13.2
Student prior achievement		
Mean prior year math Z score	-0.01	-0.03
Mean prior year ELA Z score	0.01	0.02
Class and teacher characteristics		
Mean prior ELA Z score of current peers	0.02	-0.02
Teacher years of experience	11.49	11.85
Grade level		
Grade 4 in 2016–2017 (%)	62.4	62.4
Grade 5 in 2016–2017 (%)	37.6	37.6

Table 6.4

Student Characteristics of Middle School Treatment and Comparison Groups After Coarsened Exact Matching, 2016–2017 School Year

Student characteristic	LDC sample: Secondary (*n* = 3,214)	Comparison sample: Secondary (*n* = 3,214)
Race/Ethnicity		
Hispanic (%)	56.1	57.1
Black (%)	31.1	29.8
Asian (%)	5.2	6.4
White (%)	6.7	5.7
Other (%)	0.9	0.9
Female (%)	51.8	48.9
Special programs status		
Poverty (%)	86.1	86.4
English language learner (%)	12.8	13.5
Special education (%)	23.6	25.8
Gifted (%)	24.1	26.3
Student prior achievement		
Mean prior year math Z score	-0.40	-0.44
Mean prior year ELA Z score	-0.38	-0.37
Class & teacher characteristics		
Mean prior ELA Z score of current peers	-0.41	-0.37
Teacher years of experience	8.7	8.4
Grade level		
Grade 6 in 2016–2017 (%)	16.1	16.1
Grade 7 in 2016–2017 (%)	41.1	41.1
Grade 8 in 2016–2017 (%)	42.8	42.8

6.3 Outcome Analysis Results: Elementary Sample

As with middle school students, elementary students were typically associated with more than one core content teacher; the average treatment student was linked to 2.3 core content teachers and the average comparison student was linked to 2.6 teachers. For this reason, and to be consistent with the larger middle school analysis, we employed a multi-membership multiple classification (MMMC) design for the elementary analysis. Two different approaches

were used to model the LDC treatment intervention variable as a fixed effect at the student level. The first model was dosage dependent, which took into account some variation in elementary students' level of exposure to LDC teachers. In this approach the treatment variable was structured as a continuous response variable between zero and one, based on exposure to LDC teachers for ELA, social studies/history, and/or science. In contrast, the second approach was modeled as dosage independent and considers any student exposed to any LDC intervention teacher via at least one subject as a treated individual. In this latter approach, the treatment variable was dichotomous, coded as one for LDC treated students and zero for comparison students. The outcome variable for both models was students' 2017 New York State assessment scores in ELA. For technical reasons of evaluating effect sizes, New York State assessment scale scores were standardized to the study sample.

Table 6.5

2016–2017 LDC Elementary School Effect Estimates on NYS ELA Performance, Dosage-Dependent Model

Variables	Model coefficient (*SE*)
LDC teacher treatment	0.072 (0.157)
Student characteristics	
Hispanic	-0.136 (0.160)
Black	-0.195 (0.150)
Asian	-0.141 (0.146)
Other ethnicity	-0.300 (0.208)
Poverty	-0.049 (0.065)
Female	0.180 (0.052)*
Grade 5	-0.119 (0.106)
Teacher years of experience	0.000 (0.010)
Mean prior ELA Z score of current peers	0.162 (0.093)
Prior year math Z score	0.173 (0.044)*
Prior year ELA Z score	0.543 (0.051)*

Note. Since the average treatment student received a 0.724 treatment dosage we could estimate an average treatment on the treated (ATET) at 0.724 * 0.072 = 0.052. This effect was not statistically significant. Inclusion rules led to removal of ELL students, students with disabilities, and gifted variables from the model.
*p = .05.

The dosage-dependent effect of having an LDC teacher on elementary students' ELA performance in 2016–2017 is shown in Table 6.5, and the dosage-independent effect is shown

in Table 6.6. Most treated students were only exposed to one teacher (the LDC intervention teacher); thus the average treated student in this sample received a 0.72 treatment dosage. Model results show no statistically discernible LDC effect on student outcomes. Similarly, the dosage-independent model revealed no statistically significant effect for LDC. In other words, both analyses revealed no evidence that students taught by LDC teachers scored dissimilarly on the ELA test to their matched peers in the comparison group.

The effects of the covariates on student performance also were similar under both models and were in the expected directions. Prior ELA performance was the strongest predictor and prior math performance also helped explain the outcome. In addition to prior achievement, one demographic variable (gender) helped predict performance. Females performed at significantly higher levels than males.

Table 6.6

2016–2017 LDC Elementary School Effect Estimates on NYS ELA Performance, Dosage-Independent Model

Variables	Model coefficient (*SE*)
LDC teacher treatment	-0.066 (0.129)
Student characteristics	
Hispanic	-0.138 (0.160)
Black	-0.192 (0.150)
Asian	-0.143 (0.145)
Other ethnicity	-0.294 (0.207)
Poverty	-0.046 (0.065)
Female	0.178 (0.052)*
Grade 5	-0.124 (0.106)
Teacher years of experience	0.000 (0.010)
Mean prior ELA Z score of current peers	0.156 (0.092)
Prior year math Z score	0.174 (0.044)*
Prior year ELA Z score	0.542 (0.051)*

Note. Inclusion rules led to removal of ELL, students with disabilities, and gifted variables from the model.
*p = .05.

6.4 Outcome Analysis Results: Middle School Sample

Similar analyses were conducted at the middle school level, where the norm was student exposure to multiple teachers. Students could be exposed to anywhere between 0 and 17

different LDC teachers in the 2016–2017 school year. Using a multiple membership multiple classification (MMMC) design, each observation at Level 1 represented one student, which was linked to the ELA, social studies/history, and science teachers that the student was exposed to during the year. Weights across teachers for each student summed to a unity (1).

As with the elementary sample, we present results of models that are both dosage dependent and dosage independent. The dosage-dependent effect of being exposed to LDC teachers in ELA, social studies, and science on middle school students' ELA performance in 2016–2017 is shown in Table 6.7, and the dosage-independent effect of having at least one LDC teacher is shown in Table 6.8. Model results show no statistically discernible LDC effect on student outcomes for either model. In other words, both analyses showed that students taught by LDC teachers scored similarly on the ELA test to their matched peers in the comparison group.

The effects of the covariates on student performance were also similar in direction to those in the elementary school model, although due to the larger sample size more demographic variables were significant in the middle school analysis. Prior ELA and math performance, as well as ELL status, special education status, Black ethnicity, other ethnicity, and gender were significant predictors of ELA performance. In secondary schools, the average prior achievement of a student's peers was also a significant predictor of ELA performance in the expected direction.

Table 6.7

2016–2017 LDC Middle School Effect Estimates on NYS ELA Performance, Dosage-Dependent Model

Variables	Model coefficient (*SE*)
LDC teacher treatment	-0.017 (0.065)
Student characteristics	
Hispanic	-0.070 (0.036)
Black	-0.127 (0.038)*
Asian	0.047 (0.045)
Other ethnicity	-0.170 (0.082)*
Poverty	-0.039 (0.022)
Female	0.093 (0.015)*
English language learner	-0.101 (0.027)*
Special education	-0.258 (0.084)*
Gifted	0.113 (0.083)
Grade 7	0.045 (0.032)
Grade 8	0.089 (0.035)*
Teacher years of experience	-0.004 (0.003)
Total content weeks	-0.003 (0.002)
Mean prior ELA Z score of current peers	0.154 (0.029)*
Prior year math Z score	0.179 (0.012)*
Prior year ELA Z score	0.658 (0.013)*

Note. Since the average treatment student received a 0.506 treatment dosage we could estimate an average treatment on the treated (ATET) at 0.506 × -0.017 = -0.008. This effect was not statistically significant.
*p = .05.

Table 6.8

2016–2017 LDC Middle School Effect Estimates on NYS ELA Performance, Dosage-Independent Model

Variables	Model coefficient (*SE*)
LDC teacher treatment	-0.019 (0.040)
Student characteristics	
Hispanic	-0.070 (0.036)
Black	-0.127 (0.038)*
Asian	0.047 (0.045)
Other ethnicity	-0.170 (0.082)*
Poverty	-0.039 (0.022)
Female	0.093 (0.015)*
English language learner	-0.101 (0.027)*
Special education	-0.258 (0.084)*
Gifted	0.113 (0.083)
Grade 7	0.045 (0.032)
Grade 8	0.089 (0.035)*
Teacher years of experience	-0.004 (0.003)
Total content weeks	-0.003 (0.002)
Mean prior ELA Z score of current peers	0.154 (0.029)*
Prior year math Z score	0.179 (0.012)*
Prior year ELA Z score	0.658 (0.013)*

*p = .05.

6.5 Summary of Results

Quasi-experimental design analyses of the impact of LDC on 2016–2017 student test scores in elementary and secondary schools produced two measures of impact effect at each school level. One impact effect measure took into account the dosage of LDC exposure while the other reflected any exposure to an LDC teacher and was thus dosage independent. Our 2016–2017 analysis results did not reveal any statistically significant intervention effects. This finding should not be surprising given the early stage of intervention, with teachers having only completed one year of implementation.

7.0 Summary of Findings

This annual report presents an initial look at LDC implementation in the first cohort of 29 schools in the New York City Department of Education during their first year of implementation. We summarize these results organized by the three categories of evaluation questions we listed in Chapter 1 of this report.

7.1 Program Characteristics and Implementation

All participant groups in this district were generally positive about LDC characteristics and implementation at their sites. Questions about program quality and impact received positive responses from a majority of respondents. A quarter of survey respondents took the time to specify in open-ended responses that they found all LDC supports helpful.

Teachers valued the collaborative nature of the initiative, as evidenced by their participation in regular PLC meetings and informal discussions. A large majority of teachers credited LDC with making them more likely to collaborate with other teachers, not only in their grade levels and content areas but outside of them as well. In addition to peer feedback, teachers valued coach feedback greatly. Positive ratings of LDC coaches were nearly universal.

Online course material was revised sufficiently following pilot teachers' feedback that it became a strength of the program this year. Most teachers rated the online courses as highly useful, helpful, and relevant. A small number of users found the courses difficult to navigate and read, redundant, and not specific enough to be helpful.

There were 184 teachers over multiple content areas across all grade levels, and some of these teachers did not feel well supported by the available resources, particularly in science and math.

Module quality suffered when teachers simply adapted existing modules without making significant changes or providing insight about their reasoning for instructional decisions. Although the module building platform provides optional areas where teachers provide such reasoning and reflection after the fact, most teachers did not utilize these areas. In addition, few teachers provided student work. Without either student work or teacher reflection, it was difficult for raters to evaluate whether or not instructional goals were met. Teachers who implemented modules and provided evidence of the implementation engaged more deeply with the LDC platform.

7.2 Contextual Factors and Implementation

The people who supported teachers in the LDC implementation—project liaisons, administrators, LDC coaches, and LDC staff—received extremely positive responses for helpfulness, timeliness, and level of knowledge. Questions about the quality of support that participants received often had universal or nearly universal agreement. The effectiveness of the people involved was the most notable facilitating factor in implementation.

The most common suggestion to improve implementation was to provide more time, which included more time and support to both plan and implement modules, not necessarily during scheduled PLC meetings. Other suggestions included starting earlier in the school year or during the summer.

Related to time was the problem of technology. This issue had two points. First, the logistics of Zoom meetings were difficult at some sites. This was perceived as a frustrating waste of time. These open-ended responses stood in contrast to the finding that most teachers thought their school's technology was adequate for LDC implementation. This indicates that although the Zoom meetings worked for the majority of participants, failed meetings resulted in highly negative perceptions for those affected. The second problem with technology was that some teachers needed far less time and support to understand CoreTools and other teachers need far more. In general, however, the complexity of CoreTools and the need to use multiple sites like The Teaching Channel was a significant barrier for those teachers who were affected. Thus, the most effective use of limited teacher and coach time during PLC meetings were constrained by the different technology needs of the sites and of the participating teachers.

The issue of differentiation among teachers touches on many factors in addition to technology, such as content area as described above, and as the initiative progresses, the level of experience and knowledge about the LDC model. As the pool of teachers both deepens and widens, the ability of the program to differentiate will likely affect participants' experience to a great extent.

7.3 Program Impacts

Based on survey results, LDC was perceived to have positive impacts on both teacher practice and student learning. Administrators were particularly enthusiastic, with a large majority believing that LDC helped students in multiple facets of literacy and skills acquisition. Teachers were slightly more cautious but still positive.

Teacher self-reports of change in their own ability over the year indicated that they felt they had improved most in areas related to instructional planning, which aligned with the primary content of LDC sessions. Slightly fewer teachers reported positive change in areas involving collecting and using student data to inform instruction, which again corresponded to the lower number of teachers who implemented modules.

Module analysis showed teacher strengths in creating an effective writing task and aligning to standards.

Our preliminary analysis of the 2016–2017 student data did not reveal any statistically significant intervention effects. This finding should not be surprising given the early stage of intervention, with teachers having only completed one year of implementation while LDC implementation is a two-year process.

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Appendix A:
LDC Module Rating Dimensions

Each module was rated on six dimensions. All of these were rated using a 5-point scale. With the first five, anchor points ranged from not present or realized to fully present or realized. In contrast, the overall dimension ranged from inadequate to advanced.

Dimension 1

Effective Writing Task

Definition

Degree to which teaching task makes effective use of the template task's writing mode (i.e., argumentation or explanation); requires sustained writing and effective use of ideas and evidence to substantiate claims; and is feasible for most students to complete (i.e., appropriate for the grade-level and subject matter).

Main Sources of Information

Module Creator Handout (Task)

- Read and evaluate the teaching task, student background/prior knowledge, and summary information.
- Evaluate the difficulty or ease students may encounter trying to answer the question.
- Compare module teaching task to teaching task template options.

Anchor Points	Description
5 Fully Present or Realized	The teaching task and performance expectations for the module are explicit and clear, require students to engage in higher-order thinking and writing, and are appropriate for the grade-level and subject matter.
4 Sufficiently Present or Realized	
3 Moderately Present or Realized	Clear module teaching task and performance expectations are available, but do not require students to engage in higher-order thinking and writing and/or are not appropriate for the grade-level and subject matter.
2 Barely Present or Realized	
1 Not Present or Realized	There is minimal evidence of an effort to identify an explicit and clear teaching task and performance expectations that provide opportunities for students to think critically and are appropriate for the grade-level and subject matter.

Dimension 2

Alignment to CCSS, Local, State Literacy and Content Standards

Definition

Extent to which module addresses content essential to the discipline, as well as reading comprehension and writing standards informed by local and state standards.

Main Sources of Information

Module Creator Handout (Task)

- Read and evaluate the standards included in the module.
- Module should include ELA as well as subject matter CCSS/state standards.
- Compare and contrast the standards the module includes with those that could have been included.
- Particular attention to content standards (CCSS History/Social Studies, Science, and Technical Subjects); State Standards; Specific Reading, Writing, Speaking/Listening, Language Skills

Anchor Points	Description
5 Fully Present or Realized	Module specifically addresses content essential to CCSS and local or state standards in science or social studies, as well as reading comprehension and writing. All standards are well aligned to the topic and teaching task.
4 Sufficiently Present or Realized	
3 Moderately Present or Realized	Module broadly addresses content essential to CCSS and local or state standards in science or social studies and reading comprehension and writing. Standards are sufficiently aligned to the topic and teaching task.
2 Barely Present or Realized	
1 Not Present or Realized	Minimal evidence that module addresses content essential to the discipline and literacy standards. Standards are poorly aligned to the topic and teaching task.

Dimension 3

Fidelity to LDC Module Instruction

Definition

Degree to which module instruction, activities, and teaching task address each of the four stages of instructional practice (preparation for the task, reading process, transition to writing, writing process).

Main Sources of Information

Module Creator Handout (Instruction) and Information Sheet

- Evaluate for distribution of activities and time spent on each of the four stages of instructional practice.

Anchor Points	Description
5 Fully Present or Realized	The module instruction, activities, and teaching task reflect deliberate attention and fidelity to the four discrete stages of LDC module instruction. Classroom materials reflect demonstrable effort to develop instructional scaffolding within and across each stage of instruction.
4 Sufficiently Present or Realized	
3 Moderately Present or Realized	The module instruction, activities, and teaching task reflect moderate attention and fidelity to the four discrete stages of LDC module instruction. Classroom materials reflect sufficient effort to develop instructional scaffolding within and across each stage of instruction.
2 Barely Present or Realized	
1 Not Present or Realized	The module instruction, activities, and teaching task reflect poor attention and lack of fidelity to the four discrete stages of LDC module instruction. Classroom materials reflect inadequate effort to develop instructional scaffolding within and across each stage of instruction.

Dimension 4

Quality Instructional Strategies

Definition

Degree to which the module provides clear instructional strategies aimed at helping students develop literacy skills and successfully complete the teaching task. In addition, the degree to which module instruction and activities scaffold critical thinking and performance in a way that is meaningful within the context of a given field or subject matter.

Main Sources of Information

Module Creator Handout (Instruction), Classroom Handouts, and Student Work

- Evaluate extent to which the module activities scaffold critical thinking and student performance within the context of the subject matter at the core of the teaching task.
- Evaluate extent to which instructional strategies guide student learning in literacy and ability to complete the teaching task.

Anchor Points	Description
5 Fully Present or Realized	Module provides clear and targeted instructional strategies and activities that scaffold student learning and promote critical thinking in social studies or science. There is explicit attention to helping students develop an accurate understanding of the topic and teaching task, and literacy skills necessary to complete the writing task successfully.
4 Sufficiently Present or Realized	
3 Moderately Present or Realized	Instructional strategies and activities are available to support adequate student learning and critical thinking in social studies or science. There is moderate attention to helping students develop an understanding of the topic and teaching task, and literacy skills necessary to complete the writing task.
2 Barely Present or Realized	
1 Not Present or Realized	Limited instructional strategies and activities are available to support student learning and critical thinking in social studies or science. Insufficient attention to helping students develop an understanding of the topic and teaching task, or literacy skills necessary to complete the writing task.

Dimension 5

Coherence and Clarity of Module

Definition

The degree of logical alignment found between the teaching task and the goals of the module with the readings, mini-tasks, and instructional strategies.

Main Sources of Information

Module Creator Handout (Instruction), Classroom Handouts, and Student Work

Anchor Points	Description
5 Fully Present or Realized	Strong alignment between the teaching task and goals of the module—including the CCSS and local and state literacy and content standards—with the readings, mini-tasks, student work, and instructional strategies.
4 Sufficiently Present or Realized	
3 Moderately Present or Realized	Moderate alignment between the teaching task and goals of the module—including the CCSS and local and state literacy and content standards—with the readings, mini-tasks, student work, and instructional strategies.
2 Barely Present or Realized	
1 Not Present or Realized	Poor alignment between the teaching task and goals of the module—including the CCSS and local and state literacy and content standards—with the readings, mini-tasks, student work, and instructional strategies.

Dimension
6

Overall Impression

Definition

A holistic assessment of the LDC Module.

Main Sources of Information

Module Creator Handout, Classroom Handouts, and Student Work

- To what extent does this module contribute to student college readiness and development of advanced literacy skills?

Anchor Points	
5	Advanced LDC Module Implementation
4	Proficient LDC Module Implementation
3	Adequate LDC Module Implementation
2	Marginal LDC Module Implementation
1	Inadequate LDC Module Implementation

Appendix B:
Teacher Survey and Responses

2016–2017 LDC Teacher Survey: NYCDOE

1 LDC Participation

T1. Please select your school from the drop down box.
Teachers are skipped to T3 if they teach in an elementary school.

T2a. In the current school year (2016-17), how many classes did you teach?

☐ classes N = 169, Mean = 3.67, Range: 1-15

T2b. In how many of these classes did you use LDC modules and/or mini-tasks?

☐ classes N = 169, Mean = 2.35, Range: 0-5

T2c. In what content areas did you use LDC modules and/or mini-tasks?

_____

T2d. In what grades did you use LDC modules and/or mini-tasks?

_____

T3. Prior to the current school year (2016-17), did you have any experience with LDC?

(N = 184)

☐ Yes 19 teachers (10.3%)

☐ No ↓ Skip to T5a 165 teachers (89.7%)

T4. How many of the following did you teach prior to the current school year (2016-17)?

☐	LDC modules	N = 19, Mean = 1.21, Range: 0-6
☐	LDC mini-tasks, outside of modules	N = 19, Mean = 1.21, Range: 0-8

2 Professional Learning Community and Teacher Collaboration

T5a. Did you participate this year in a Professional Learning Community (PLC) at least partly focused on implementing LDC in your school?

(N = 159)

☐ Yes	Skip to T6	147 teachers (92.5%)
☐ No		12 teachers (7.5%)

T5b. Did you use any LDC tools in your instructional planning or classroom instruction this year?

(N = 12)

☐ Yes	Skip to 5d	9 teachers (75.0%)
☐ No		3 teachers (25.0%)

T5c. Why did you choose not to use any LDC tools in your instructional planning or classroom instruction this year?

[Survey ends here for respondents answering question T5c]

T5d. What LDC tools did you use during the current school year? Select all that apply.

	(N = 9)
☐ CoreTools online platform to access existing modules or mini-tasks	5 teachers (55.6%)
☐ CoreTools online platform to design modules or mini-tasks	7 teachers (77.8%)
☐ LDC online courses	1 teachers (11.1%)
☐ Modules or mini-tasks given to me by other teachers in my school	3 teachers (33.3%)
☐ Other (please specify) _____	0 teachers (0%)

[Survey ends here for respondents answering question T5d]

T6. About how often did your LDC PLC meet?

		(N = 172)
☐ Less than once a month		1 teachers (0.6%)
☐ Once a month		15 teachers (8.7%)
☐ Every other week		45 teachers (26.2%)
☐ Once a week	Skip to T8	100 teachers (58.1%)
☐ Twice a week or more often	Skip to T8	11 teachers (6.4%)

T7. What were the primary barriers preventing your LDC PLC from meeting weekly? Select all that apply.

	(N = 61)
☐ PLC time was not protected.	11 teachers (18.0%)
☐ PLC members had limited interest in attending meetings.	5 teachers (8.2%)
☐ School administrator did not make it a priority.	7 teachers (11.5%)
☐ Project liaison did not provide sufficient organizational support.	1 teachers (1.6%)
☐ Not enough teachers participated.	3 teachers (4.9%)
☐ PLC members had other priorities that compete with LDC participation.	35 teachers (57.4%)
☐ Other (please specify) _____	19 teachers (31.1%)

T8. About how often did you have informal discussions (as opposed to scheduled meetings) about LDC with teachers in your LDC PLC?

	(N = 172)
☐ Less than once a month	32 teachers (18.6%)
☐ Once a month	18 teachers (10.5%)
☐ Every other week	37 teachers (21.5%)
☐ Once a week	50 teachers (29.1%)
☐ Twice a week or more	35 teachers (20.3%)

T9. On average, how long did your school's LDC PLC meetings typically last?

	(N = 172)
☐ Less than 45 minutes	29 teachers (16.9%)
☐ 45 to 59 minutes	92 teachers (53.5%)
☐ 60 to 74 minutes	32 teachers (18.6%)
☐ 75 minutes or more	19 teachers (11.0%)

3 LDC Training and Support

T10. How effective was your LDC PLC in the following areas?

	Not effective	A little effective	Moderately effective	Very effective
Demonstrating the usefulness of LDC for teachers (N = 170)	22 (12.9%)	38 (22.4%)	65 (38.2%)	45 (26.5%)
Creating an environment in which teachers were comfortable working together (N = 170)	11 (6.5%)	24 (14.1%)	65 (38.2%)	70 (41.2%)
Fostering an environment where teachers shared their instructional plans with colleagues (N = 170)	8 (4.7%)	36 (21.2%)	67 (39.4%)	59 (34.7%)
Allowing space for shared problem solving (N = 170)	13 (7.6%)	26 (15.3%)	77 (45.3%)	54 (31.8%)
Helping teachers learn to develop modules (N = 170)	10 (5.9%)	32 (18.8%)	73 (42.9%)	55 (32.4%)

T11. How would you rate each of the following aspects of the online course material (in the Learn tab in LDC CoreTools) that your coach used or directed you to use?

	Poor	Fair	Good	Excellent
Clarity of information presented (N = 170)	11 (6.5%)	44 (25.9%)	80 (47.1%)	35 (20.6%)
Relevance of information presented (N = 170)	16 (9.4%)	39 (22.9%)	70 (41.2%)	45 (26.5%)
Ease of use (N = 170)	22 (12.9%)	45 (26.5%)	75 (44.1%)	28 (16.5%)
Usefulness of resource documents (e.g., LDC Pitfall Checklist, CCSS Mental Markers, etc.) (N = 170)	13 (7.6%)	52 (30.6%)	73 (42.9%)	32 (18.8%)
Usefulness of videos (N = 170)	17 (10.0%)	56 (32.9%)	77 (45.3%)	20 (11.8%)
Degree to which course material helped me to create and/or adapt LDC modules (N = 170)	19 (11.2%)	46 (27.1%)	77 (45.3%)	28 (16.5%)
Opportunity to extend learning when needed or desired (N = 170)	18 (10.6%)	47 (27.6%)	65 (38.2%)	40 (23.5%)

T12a. Overall, were you able to get the feedback and support you needed from your LDC coach (through written feedback in LDC CoreTools, or coaching and modeling in your LDC PLCs) to plan, teach, reflect on, and revise LDC modules)?

(N = 170)

☐ Yes 161 teachers (94.7%)

☐ No 9 teachers (5.3%)

T12b. Did your LDC coach provide written feedback on your module(s) in LDC CoreTools in a timely manner?

(N = 170)

☐ Yes 161 teachers (94.7%)

☐ No 9 teachers (5.3%)

T13. Outside of the PLC meetings with your LDC coach, please indicate whether you used each of the following types of coach support, and how helpful you found these types of support.

	Did not use	Used			
		Not helpful	A little helpful	Moderately helpful	Very helpful
Written feedback in LDC CoreTools from your LDC coach (in the comments areas and/or via the teacher work rubric) (N = 170)	13 (7.6%)	6 (3.5%)	34 (20.0%)	53 (31.2%)	64 (37.6%)
One-on-one Zoom video conference and/or call with your LDC coach (N = 168)	25 (14.9%)	10 (6.0%)	30 (17.9%)	39 (23.2%)	64 (38.1%)
Coach-facilitated discussions on the Teaching Channel Teams platform (N = 167)	38 (22.8%)	7 (4.2%)	32 (19.2%)	42 (25.1%)	48 (28.7%)
Email or phone communication with your LDC coach (N = 170)	50 (29.4%)	5 (2.9%)	25 (14.7%)	40 (23.5%)	50 (29.4%)
Other (please specify) (N = 40) _____	21 (52.5%)	2 (5.0%)	2 (5.0%)	5 (12.5%)	10 (25.0%)

4 Module Creation

T14. During the current school year (2016-17), how many LDC modules did you individually or collaboratively adapt from existing modules (e.g., modules you created in a prior year and/or modules found in the LDC Library in CoreTools)?

☐ Adapted modules N = 145, Mean = 1.85, Range: 0-20

T15. During the current school year (2016-17), how many LDC modules did you create, either individually or with colleague(s)? Only include modules built from scratch, not those adapted from existing modules in the LDC library.

☐ New modules N = 145, Mean = 1.57, Range: 0-5

T16. How did members of your PLC collaborate to create LDC modules? Check all that apply.

	(N = 185)
☐ Modules were created by individual teachers.	112 teachers (60.5%)
☐ Modules were created by teams of two or more teachers.	117 teachers (63.2%)
☐ Modules were created by the PLC as a whole.	20 teachers (10.8%)
☐ Other (please specify) _____	3 teachers (1.6%)

T17. Please indicate to what extent you were able to do each of the following when creating LDC modules and/or mini-tasks.

	Not at all	A little bit	A moderate extent	A great extent
Select a set of focus standards for a writing assignment (N = 170)	1 (0.6%)	24 (14.1%)	59 (34.7%)	86 (50.6%)
Create a standards-driven writing assignment task (N = 170)	3 (1.8%)	25 (14.7%)	52 (30.6%)	90 (52.9%)
Select high quality, complex texts and other materials that allowed students to engage in deeper learning (N = 170)	10 (5.9%)	32 (18.8%)	66 (38.8%)	62 (36.5%)
Create a writing assignment that provided multiple opportunities for students to engage with the material (N = 170)	8 (4.7%)	27 (15.9%)	71 (41.8%)	64 (37.6%)
Identify the skills students need to develop in order to complete a writing assignment (N = 170)	7 (4.1%)	24 (14.1%)	71 (41.8%)	68 (40.0%)
Create daily lessons to teach the skills a student needs to complete a writing assignment (N = 170)	14 (8.2%)	39 (22.9%)	69 (40.6%)	48 (28.2%)
Plan for a variety of methods to assess student progress (e.g., mini-task scoring guides) (N = 170)	12 (7.1%)	47 (27.6%)	71 (41.8%)	40 (23.5%)
Make connections to previous or future learning that make a writing assignment relevant for students (N = 170)	13 (7.6%)	36 (21.2%)	69 (40.6%)	52 (30.6%)

5 Classroom Implementation

T18. How many total LDC modules did you teach during the current school year (2016-17)?

☐ Modules N = 170, Mean = 2.36, Range: 0-8

T19. Outside of modules, approximately how many individual LDC mini-tasks did you teach during the current school year (2016-17)?

☐ Mini-tasks N = 170, Mean = 3.56, Range: 0-35

T20. Please indicate to what extent you were able to do each of the following activities when teaching LDC modules and/or mini-tasks.

	Not at all	A little bit	A moderate extent	A great extent
Engage students in productive struggle through challenging texts, discussion questions, and other instructional supports (N = 170)	4 (2.4%)	22 (12.9%)	87 (51.2%)	57 (33.5%)
Provide support for students to complete the assignment by differentiating instruction (N = 170)	7 (4.1%)	29 (17.1%)	76 (44.7%)	58 (34.1%)
Systematically collect information about student progress (N = 170)	8 (4.7%)	38 (22.4%)	78 (45.9%)	46 (27.1%)
Provide feedback to students using shared expectations for learning (e.g., a mini-task scoring guide) (N = 170)	7 (4.1%)	34 (20.0%)	76 (44.7%)	53 (31.2%)
Locate evidence of performance of standards in student work (N = 170)	5 (2.9%)	34 (20.0%)	74 (43.5%)	57 (33.5%)
Use evidence of student performance of standards to modify instructional plans (N = 170)	9 (5.3%)	31 (18.2%)	74 (43.5%)	56 (32.9%)

T21. Did you teach a One-Text One-Week module?

(N = 170)

☐ Yes 86 teachers (50.6%)

☐ No ↓ Skip to T24 84 teachers (49.4%)

T22. What was the name of the One-Text One-Week module?

_____

T23. Which of these statements best describes how you created the One-Text One-Week module?

(N = 86)

- ☐ I created a module from a template in CoreTools. — 62 teachers (72.1%)
- ☐ I copied and adapted another teacher's module from the LDC Library in CoreTools. — 24 teachers (27.9%)

T24. What module did you work on most heavily during the current school year (2016-17)? This module is typically one you worked on *after* the One-Text One-Week module.

_____

T25. Which of these statements best describes how you created the module named in the previous question?

(N = 170)

- ☐ I created a module from a template in CoreTools. — 113 teachers (66.5%)
- ☐ I copied and adapted another teacher's module from the LDC Library in CoreTools. — 57 teachers (33.5%)

T26. Did you teach this module in your classroom?

(N = 170)

- ☐ Yes, I have already taught this module this year. — 140 teachers (82.4%)
- ☐ No, but I plan to teach this module before the end of the 2016-17 school year. — 14 teachers (8.2%)
- ☐ No, but I plan to teach this module during next school year. — 10 teachers (5.9%)
- ☐ No. I do not currently have plans to teach this module in my classroom. — 6 teachers (3.5%)

6 Module Peer Review

T27. How many modules did you submit online for LDC National Peer Review during the current school year (2016-17)?

☐ Modules If none, skip to T29 N = 170, Mean = 0.82, Range: 0-5

T28. How helpful did you find the National Peer Review process in improving the quality of your module?

	(N = 82)
☐ Not helpful	17 teachers (20.7%)
☐ A little helpful	26 teachers (31.7%)
☐ Moderately helpful	30 teachers (36.6%)
☐ Very helpful	9 teachers (11.0%)

7 Impact on Teacher Practice and Learning

T29. Between the beginning and end of this year's work with LDC, please indicate how much your ability in the following areas has improved:

	Not at all	A little	Moderately	A great deal
Selecting a set of focus standards for a writing assignment (N = 169)	15 (8.9%)	37 (21.9%)	63 (37.3%)	54 (32.0%)
Creating standards-driven writing tasks of sufficient quality and scope to allow students to think deeply about disciplinary content and practice literacy skills (N = 169)	15 (8.9%)	36 (21.3%)	67 (39.6%)	51 (30.2%)
Identifying the skills students need to develop in order to complete a writing assignment (N = 169)	13 (7.7%)	42 (24.9%)	68 (40.2%)	46 (27.2%)
Creating daily lessons to teach each skill a student needs to complete a writing assignment (N = 169)	22 (13.0%)	39 (23.1%)	68 (40.2%)	40 (23.7%)
Assessing students' progress as they work toward completing a writing assignment (N = 169)	23 (13.6%)	36 (21.3%)	66 (39.1%)	44 (26.0%)
Tracking and analyzing evidence about student progress in a systematic way (N = 169)	26 (15.4%)	39 (23.1%)	61 (36.1%)	43 (25.4%)
Identifying patterns of student understandings or misconceptions (N = 169)	24 (14.2%)	38 (22.5%)	63 (37.3%)	44 (26.0%)
Using evidence of student performance of standards to shape future instructional decisions (N = 169)	23 (13.6%)	34 (20.1%)	62 (36.7%)	50 (29.6%)

T30. Please indicate the degree to which you agree or disagree with the statements below.

	Strongly disagree	Disagree	Agree	Strongly agree
Participating in LDC raised my expectations for students' writing. (N = 169)	13 (7.7%)	38 (22.5%)	80 (47.3%)	38 (22.5%)
Using LDC modules became an important part of my instructional practice. (N = 169)	22 (13.0%)	43 (25.4%)	81 (47.9%)	23 (13.6%)
Implementing LDC helped me incorporate my state's College- and Career-Ready Standards into my instruction. (N = 169)	16 (9.5%)	42 (24.9%)	79 (46.7%)	32 (18.9%)
LDC helped me incorporate writing assignments into my existing curriculum. (N = 169)	20 (11.8%)	30 (17.8%)	82 (48.5%)	37 (21.9%)
I am more likely to collaborate with other teachers on designing instruction after participating in our LDC Professional Learning Community. (N = 169)	19 (11.2%)	31 (18.3%)	84 (49.7%)	35 (20.7%)
Participating in LDC helped me develop working relationships with teachers in different grades and/or subjects. (N = 169)	21 (12.4%)	27 (16.0%)	90 (53.3%)	31 (18.3%)
I often incorporated LDC mini-tasks into my non-LDC instruction. (N = 169)	19 (11.2%)	53 (31.4%)	71 (42.0%)	26 (15.4%)

8 Impact on Student Learning

T31. Please indicate the degree to which you agree or disagree with the statements below.

	Strongly disagree	Disagree	Agree	Strongly agree
LDC helped students develop reading skills. (N = 144)	15 (10.4%)	30 (20.8%)	80 (55.6%)	19 (13.2%)
LDC was effective in improving students' content knowledge. (N = 144)	14 (9.7%)	31 (21.5%)	76 (52.8%)	23 (16.0%)
LDC modules effectively supported students in completing writing assignments. (N = 144)	11 (7.6%)	26 (18.1%)	82 (56.9%)	25 (17.4%)
LDC was effective in improving the quality of students' writing. (N = 144)	14 (9.7%)	31 (21.5%)	74 (51.4%)	25 (17.4%)
LDC supported students' development of skills needed for college and career readiness. (N = 144)	15 (10.4%)	25 (17.4%)	82 (56.9%)	22 (15.3%)
LDC increased students' capacity to analyze and understand the components of a writing assignment task. (N = 144)	11 (7.6%)	26 (18.1%)	78 (54.2%)	29 (20.1%)
LDC helped students develop speaking and listening skills. (N = 144)	14 (9.7%)	37 (25.7%)	73 (50.7%)	20 (13.9%)
Overall, LDC helped improve students' literacy performance (N = 144)	14 (9.7%)	30 (20.8%)	77 (53.5%)	23 (16.0%)

9 Project Liaison Support

The following question refers to the LDC project liaison in your school. This is the teacher or administrator leading your Professional Learning Community work.

T32. Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
Our school's LDC project liaison effectively supported our Professional Learning Community meetings. (N = 143)	3 (2.1%)	8 (5.6%)	61 (42.7%)	71 (49.7%)
When I had questions about LDC, I felt comfortable approaching our school's project liaison. (N = 143)	3 (2.1%)	7 (4.9%)	63 (44.1%)	70 (49.0%)
Our project liaison had a strong grasp of LDC. (N = 143)	4 (2.8%)	13 (9.1%)	63 (44.1%)	63 (44.1%)
Our project liaison helped teachers align LDC to broader school instructional goals. (N = 143)	6 (4.2%)	16 (11.2%)	60 (42.0%)	61 (42.7%)
Our project liaison offered useful feedback for the design and revision of LDC modules. (N = 143)	7 (4.9%)	13 (9.1%)	61 (42.7%)	62 (43.4%)
Our project liaison was effective in inviting teachers to join the LDC initiative. (N = 143)	4 (2.8%)	10 (7.0%)	64 (44.8%)	65 (45.5%)

10 School Administrator Support

The following questions refer to the school administrator who oversees the LDC project at your school.

T33. What proportion of PLC meetings focused on LDC did your school administrator attend?

(N = 168)

- ☐ Less than one quarter of LDC PLCs — 70 teachers (41.7%)
- ☐ About one quarter of LDC PLCs — 30 teachers (17.9%)
- ☐ About one half of LDC PLCs — 25 teachers (14.9%)
- ☐ About three quarters of LDC PLCs — 11 teachers (6.5%)
- ☐ More than three quarters of LDC PLCs — 32 teachers (19.0%)

T34. How many times did your school administrator observe you teach an LDC mini-task during the current school year (2016-17)?

	(N = 168)
☐ 0 times	74 teachers (44.0%)
☐ 1 time	53 teachers (31.5%)
☐ 2 times	20 teachers (11.9%)
☐ 3 or more times	21 teachers (12.5%)

T35. Please indicate the degree to which you agree or disagree with the following statements.

My school administrator…	Strongly disagree	Disagree	Agree	Strongly agree
had a firm understanding of LDC. (N = 168)	11 (6.5%)	36 (21.4%)	97 (57.7%)	24 (14.3%)
protected common planning time for our LDC Professional Learning Community to meet. (N = 168)	5 (3.0%)	18 (10.7%)	93 (55.4%)	52 (31.0%)
encouraged teachers to participate in LDC. (N = 168)	4 (2.4%)	7 (4.2%)	104 (61.9%)	53 (31.5%)
expressed concerns that implementing LDC is taking time away from other instructional priorities. (N = 168)	29 (17.3%)	69 (41.1%)	52 (31.0%)	18 (10.7%)
communicated how using LDC's tools supported specific school initiatives and/or goals. (N = 168)	10 (6.0%)	31 (18.5%)	97 (57.7%)	30 (17.9%)
provided me with feedback about my LDC planning and/or instruction. (N = 168)	20 (11.9%)	50 (29.8%)	80 (47.6%)	18 (10.7%)
made formative assessment a priority at my school. (N = 168)	2 (1.2%)	19 (11.3%)	107 (63.7%)	40 (23.8%)

11 Teacher Leadership Role

T36. Please indicate the degree to which you agree or disagree with the following statements about your role in your school's LDC implementation.

	Strongly disagree	Disagree	Agree	Strongly agree
I was involved in setting instructional goals for the LDC work at my school. (N = 143)	15 (10.5%)	40 (28.0%)	68 (47.6%)	20 (14.0%)
I was involved in discussions about how to expand LDC implementation at my school in future years. (N = 143)	24 (16.8%)	51 (35.7%)	49 (34.3%)	19 (13.3%)
I had the opportunity to work with our LDC project liaison and our administrator to help shape LDC implementation. (N = 143)	21 (14.7%)	38 (26.6%)	63 (44.1%)	21 (14.7%)
LDC helped me create writing assignments to use within my current curriculum. (N = 143)	12 (8.4%)	20 (14.0%)	77 (53.8%)	34 (23.8%)
I am interested in learning more about how to lead LDC implementation at my school by facilitating with the virtual coach, providing feedback to my peers, etc. (N = 143)	26 (18.2%)	24 (16.8%)	65 (45.5%)	28 (19.6%)

12 Facilitators and Barriers

T37. Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
My LDC PLC was given sufficient time to meet. (N = 167)	9 (5.4%)	35 (21.0%)	82 (49.1%)	41 (24.6%)
I felt adequately prepared to effectively implement LDC modules in my classroom. (N = 167)	13 (7.8%)	35 (21.0%)	88 (52.7%)	31 (18.6%)
It was challenging to find content-rich reading materials for the LDC modules I developed. (N = 167)	14 (8.4%)	67 (40.1%)	65 (38.9%)	21 (12.6%)
My school had adequate technology to support teachers' use of LDC. (N = 167)	9 (5.4%)	26 (15.6%)	88 (52.7%)	44 (26.3%)
It was easy to find and adapt LDC mini-tasks for use in my classroom. (N = 167)	16 (9.6%)	33 (19.8%)	86 (51.5%)	32 (19.2%)

13 Areas for Improvement

There have been a number of supports for implementation of LDC in your school, including:

- *CoreTools online platform*
- *LDC online courses in the "Learn" section of CoreTools*
- *Virtual coaching*
  - *Zoom meetings, written feedback on teacher work in LDC CoreTools, Teaching Channel discussions, emails, etc.*
- *In-person coaching*
  - *Summer training, in-person support visits from LDC and District Lead, in-person professional development opportunities, etc.*

T38. What supports did you find the most useful and why?

T39. What supports were not helpful and why?

T40. In what ways could LDC implementation be improved in your school in the future?

Appendix C:
Project Liaison Survey and Responses

2016–2017 LDC Project Liaison Survey: NYCDOE

1 LDC Participation

PL1. Prior to the current school year (2016-17), did you have any experience with LDC?

(N = 30)

- ☐ Yes — 4 liaisons (13.3%)
- ☐ No — Skip to PL3 — 26 liaisons (86.7%)

PL2. How many of the following did you teach prior to the current school year (2016-17)?

- ☐ LDC modules — N = 4, Mean = 2.5, Range: 0-6
- ☐ LDC mini-tasks, outside of modules — N = 4, Mean = 2.5, Range: 0-8

2 Professional Learning Community and Teacher Collaboration

The following questions involve the LDC Professional Learning Community (PLC) that you are leading.

PL3. About how often did your LDC PLC meet?

(N = 30)

- ☐ Less than once a month — 0 liaisons (0%)
- ☐ Once a month — 3 liaisons (10.0%)
- ☐ Every other week — 5 liaisons (16.7%)
- ☐ Once a week — Skip to PL5 — 21 liaisons (70.0%)
- ☐ Twice a week or more often — Skip to PL5 — 1 liaisons (3.3%)

PL4. What were the primary barriers preventing your LDC PLC from meeting weekly? Select all that apply.

	(N = 30)
☐ PLC time was not protected.	2 liaisons (6.7%)
☐ PLC members had limited interest in attending meetings.	0 liaisons (0%)
☐ School administrator did not make it a priority.	0 liaisons (0%)
☐ I was unable to provide sufficient organizational support.	0 liaisons (0%)
☐ Not enough teachers participated.	0 liaisons (0%)
☐ PLC members had other priorities that competed with LDC participation.	0 liaisons (0%)
☐ Other (please specify) _____	4 liaisons (13.3%)

PL5. About how often did you have informal discussions (as opposed to scheduled meetings) about LDC with teachers in your LDC PLC?

	(N = 30)
☐ Less than once a month	1 liaisons (3.3%)
☐ Once a month	4 liaisons (13.3%)
☐ Every other week	11 liaisons (36.7%)
☐ Once a week	6 liaisons (20.0%)
☐ Twice a week or more	8 liaisons (26.7%)

PL6. On average how long did your school's LDC PLC meetings typically last?

	(N = 30)
☐ Less than 45 minutes	8 liaisons (26.7%)
☐ 45 to 59 minutes	11 liaisons (36.7%)
☐ 60 to 74 minutes	8 liaisons (26.7%)
☐ 75 minutes or more	3 liaisons (10.0%)

3 LDC Training and Support

PL7. How effective was your LDC PLC in the following areas?

	Not effective	A little effective	Moderately effective	Very effective
Demonstrating the usefulness of LDC for teachers (N = 30)	2 (6.7%)	8 (26.7%)	12 (40.0%)	8 (26.7%)
Creating an environment in which teachers are comfortable working together (N = 30)	1 (3.3%)	1 (3.3%)	14 (46.7%)	14 (46.7%)
Fostering an environment where teachers share their instructional plans with colleagues (N = 30)	1 (3.3%)	4 (13.3%)	14 (46.7%)	11 (36.7%)
Allowing space for shared problem solving (N = 30)	0 (0%)	3 (10.0%)	19 (63.3%)	8 (26.7%)
Helping teachers learn to develop modules (N = 30)	1 (3.3%)	2 (6.7%)	17 (56.7%)	10 (33.3%)

PL8. How would you rate each of the following aspects of the online course material (in the Learn tab in LDC CoreTools) that your coach used or directed you to use?

	Poor	Fair	Good	Excellent
Clarity of information presented (N = 30)	0 (0%)	4 (13.3%)	16 (53.3%)	10 (33.3%)
Relevance of information presented (N = 30)	0 (0%)	4 (13.3%)	14 (46.7%)	12 (40.0%)
Ease of use (N = 30)	3 (10.0%)	5 (16.7%)	16 (53.3%)	6 (20.0%)
Usefulness of resource documents (e.g., LDC Pitfall Checklist, CCSS Mental Markers, etc.) (N = 30)	2 (6.7%)	6 (20.0%)	14 (46.7%)	8 (26.7%)
Usefulness of videos (N = 30)	1 (3.3%)	7 (23.3%)	18 (60.0%)	4 (13.3%)
Degree to which course material helped teachers to create and/or adapt LDC modules (N = 30)	1 (3.3%)	5 (16.7%)	17 (56.7%)	7 (23.3%)
Opportunity to extend learning when needed or desired (N = 30)	0 (0%)	8 (26.7%)	13 (43.3%)	9 (30.0%)

PL9a. Overall, were you able to get the feedback and support you needed from your LDC coach (through written feedback in LDC CoreTools, or coaching and modeling in your LDC PLCs) to plan, teach, reflect on, and revise LDC modules?

(N = 30)

- ☐ Yes — 29 liaisons (96.7%)
- ☐ No — 1 liaisons (3.3%)

PL9b. Did your LDC coach provide written feedback on your module(s) in LDC CoreTools in a timely manner?

(N = 30)

- ☐ Yes — 29 liaisons (96.7%)
- ☐ No — 1 liaisons (3.3%)

PL10. Outside of the PLC meetings with your LDC coach, please indicate whether you used each of the following types of coach support, and how helpful you found these types of support.

	Did not use	Used			
		Not helpful	A little helpful	Moderately helpful	Very helpful
Written feedback in LDC CoreTools from your LDC coach (in the comments areas and/or via the teacher work rubric) (N = 30)	1 (3.3%)	0 (0%)	3 (10.0%)	10 (33.3%)	16 (53.3%)
One-on-one Zoom video conference and/or call with your LDC coach (N = 30)	1 (3.3%)	0 (0%)	5 (16.7%)	9 (30.0%)	15 (50.0%)
Coach-facilitated discussions on the Teaching Channel Teams platform (N = 30)	2 (6.7%)	0 (0%)	8 (26.7%)	11 (36.7%)	9 (30.0%)
Email or phone communication with your LDC coach (N = 30)	1 (3.3%)	0 (0%)	4 (13.3%)	9 (30.0%)	16 (53.3%)
Other (please specify) (N = 3)	1 (33.3%)	0 (0%)	0 (0%)	1 (33.3%)	1 (33.3%)

PL11. How many in-person and/or online LDC professional development offerings for school administrators and project liaisons did you attend during the current school year (e.g., Launch Day [in person], spring Project Liaison Meeting [in person], Bi-Monthly Community Meetings [online], Bi-Monthly Coach Meetings [online])?

☐ Professional development offerings N = 27, Mean = 3.41, Range: 0-15

PL12. Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree	N/A
I was able to reach my LDC coach if I had any questions about LDC. (N = 30)	2 (6.7%)	0 (0%)	4 (13.3%)	24 (80.0%)	0 (0%)
LDC provided adequate technical support for issues with the CoreTools online platform. (N = 30)	0 (0%)	2 (6.7%)	13 (43.3%)	11 (36.7%)	4 (13.3%)
LDC offered sufficient professional development opportunities for me to lead the initiative in my school. (N = 30)	0 (0%)	2 (6.7%)	17 (56.7%)	10 (33.3%)	1 (3.3%)
LDC coaches were able to connect me with additional resources when needed. (N = 30)	0 (0%)	1 (3.3%)	8 (26.7%)	18 (60.0%)	3 (10.0%)
It was challenging to coordinate with our LDC coach on how to structure Professional Learning Community time. (N = 30)	5 (16.7%)	14 (46.7%)	5 (16.7%)	4 (13.3%)	2 (6.7%)
When I reached out to our LDC coach, he or she responded quickly. (N = 30)	1 (3.3%)	0 (0%)	7 (23.3%)	22 (73.3%)	0 (0%)
Our LDC coach was easy to work with. (N = 30)	1 (3.3%)	0 (0%)	6 (20.0%)	23 (76.7%)	0 (0%)
Our LDC coach was knowledgeable and provided high quality guidance. (N = 30)	0 (0%)	0 (0%)	7 (23.3%)	23 (76.7%)	0 (0%)

4 Module Creation

PL13. During the current school year (2016-17), how many LDC modules did your PLC individually or collaboratively adapt from existing modules (e.g., modules created in a prior year and/or modules from the LDC Library in CoreTools)?

☐ Adapted modules N =27, Mean = 1.19, Range: 0-4

PL14. During the current school year (2016-17), how many LDC modules did your PLC create (either individually or in a group)? Only include modules built from scratch, not those adapted from existing modules in the LDC library.

☐ New modules N = 29, Mean = 2.66, Range: 0-9

PL15. How did members of your PLC collaborate to create LDC modules? Check all that apply.

	(N = 30)
☐ Modules were created by individual teachers.	18 liaisons (60.0%)
☐ Modules were created by teams of two or more teachers.	13 liaisons (56.7%)
☐ Modules were created by the PLC as a whole.	1 liaisons (3.3%)
☐ Other (please specify) _____	1 liaisons (3.3%)

PL16. Please indicate to what extent you were able to do each of the following when creating LDC modules and/or mini-tasks.

	Not at all	A little bit	To a moderate extent	To a great extent
Select a set of focus standards for a writing assignment (N = 29)	0 (0%)	0 (0%)	7 (24.1%)	22 (75.9%)
Create a standards-driven writing assignment task (N = 29)	0 (0%)	1 (3.4%)	6 (20.7%)	22 (75.9%)
Select high quality, complex texts and other materials that allowed students to engage in deeper learning (N = 29)	0 (0%)	4 (13.8%)	10 (34.5%)	15 (51.7%)
Create a writing assignment that provided multiple opportunities for students to engage with the material (N = 29)	0 (0%)	3 (10.3%)	10 (34.5%)	16 (55.2%)
Identify the skills students need to develop in order to complete a writing assignment (N = 29)	0 (0%)	0 (0%)	14 (48.3%)	15 (51.7%)
Create daily lessons to teach the skills a student needs to complete a writing assignment (N = 29)	0 (0%)	7 (24.1%)	10 (34.5%)	12 (41.4%)
Plan for a variety of methods to assess student progress (e.g. mini-task scoring guides) (N = 29)	1 (3.4%)	7 (24.1%)	12 (41.4%)	9 (31.0%)
Make connections to previous or future learning that make a writing assignment relevant for students (N = 29)	0 (0%)	4 (13.8%)	14 (48.3%)	11 (37.9%)

5 School Administrator Support

The following questions refer to the school administrator who oversees the LDC project at your school.

PL17. What proportion of PLC meetings focused on LDC did your school administrator attend?

(N = 27)

☐ Less than one quarter of LDC PLCs	13 liaisons (48.1%)
☐ About one quarter of LDC PLCs	4 liaisons (14.8%)
☐ About one half of LDC PLCs	5 liaisons (18.5%)
☐ About three quarters of LDC PLCs	2 liaisons (7.4%)
☐ More than three quarters of LDC PLCs	3 liaisons (11.1%)

PL18. Please indicate the degree to which you agree or disagree with the following statements.

My school administrator…	Strongly disagree	Disagree	Agree	Strongly agree
had a firm understanding of LDC. (N = 27)	2 (7.4%)	4 (14.8%)	18 (66.7%)	3 (11.1%)
protected common planning time for our LDC Professional Learning Community to meet. (N = 27)	0 (0%)	3 (11.1%)	16 (59.3%)	8 (29.6%)
encouraged teachers to participate in LDC. (N = 27)	0 (0%)	2 (7.4%)	16 (59.3%)	9 (33.3%)
expressed concerns that implementing LDC was taking time away from other instructional priorities. (N = 27)	4 (14.8%)	12 (44.4%)	10 (37.0%)	1 (3.7%)
communicated how using LDC's tools supported specific school initiatives and/or goals. (N = 27)	1 (3.7%)	3 (11.1%)	17 (63.0%)	6 (22.2%)
provided me with feedback about my LDC planning and/or instruction. (N = 27)	2 (7.4%)	8 (29.6%)	17 (63.0%)	0 (0%)
made formative assessment a priority at my school. (N = 27)	0 (0%)	1 (3.7%)	21 (77.8%)	5 (18.5%)

6 Project Liaison Leadership Role

PL19. Please indicate the degree to which you agree or disagree with the following statements about your role in leading your school's LDC implementation.

	Strongly disagree	Disagree	Agree	Strongly agree
I met regularly with my school administrator to make planning decisions around LDC. (N = 27)	1 (3.7%)	8 (29.6%)	15 (55.6%)	3 (11.1%)
I was involved in discussions about differentiating LDC implementation to meet teacher learning needs. (N = 27)	0 (0%)	6 (22.2%)	16 (59.3%)	5 (18.5%)
I was involved in discussions about how to expand LDC implementation at my school in future years. (N = 27)	0 (0%)	6 (22.2%)	17 (63.0%)	4 (14.8%)
My role as a LDC project liaison allowed me to effectively advocate for additional resources on my campus. (N = 27)	1 (3.7%)	10 (37.0%)	14 (51.9%)	2 (7.4%)
I was involved in setting instructional goals for the LDC work at my school. (N = 27)	0 (0%)	6 (22.2%)	17 (63.0%)	4 (14.8%)
I met regularly with my LDC coach to manage the LDC work plan. (N = 27)	0 (0%)	2 (7.4%)	15 (55.6%)	10 (37.0%)
I feel that my position as an LDC project liaison allowed me to build my capacity as an instructional leader among my colleagues. (N = 27)	0 (0%)	4 (14.8%)	13 (48.1%)	10 (37.0%)

7 Alignment

PL20. Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
Our school connected LDC implementation to our specific schoolwide goals. (N = 29)	0 (0%)	6 (20.7%)	16 (55.2%)	7 (24.1%)
LDC helped teachers create writing assignments to use within their current curricula. (N = 29)	0 (0%)	2 (6.9%)	19 (65.5%)	8 (27.6%)
LDC complemented other initiatives taking place in my school. (N = 29)	0 (0%)	4 (13.8%)	18 (62.1%)	7 (24.1%)
LDC was a strategy for implementing my state's College- and Career-Ready Standards. (N = 29)	0 (0%)	4 (13.8%)	18 (62.1%)	7 (24.1%)
The time spent implementing LDC interfered with other important initiatives at my school. (N = 29)	3 (10.3%)	14 (48.3%)	7 (24.1%)	5 (17.2%)
LDC helped prepare students in my school for current state assessments. (N = 29)	1 (3.4%)	5 (17.2%)	17 (58.6%)	6 (20.7%)
It was difficult for teachers to focus on LDC because of other competing priorities at the school. (N = 29)	0 (0%)	8 (27.6%)	14 (48.3%)	7 (24.1%)

8 Scale-up and Sustainability

PL21. Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree
I expect that most teachers participating in LDC this year will continue to do so next year. (N = 29)	2 (6.9%)	3 (10.3%)	20 (69.0%)	4 (13.8%)
Teachers at my school who were not part of the LDC PLC meetings used the LDC planning process and/or LDC CoreTools. (N = 29)	8 (27.6%)	15 (51.7%)	5 (17.2%)	1 (3.4%)
As a result of LDC, new collaborations across grades and/or subjects were created or are being launched at my school. (N = 29)	3 (10.3%)	15 (51.7%)	9 (31.0%)	2 (6.9%)
Teachers and administrators at my school are committed to sustaining the LDC initiative. (N = 29)	2 (6.9%)	5 (17.2%)	16 (55.2%)	6 (20.7%)
I expect our LDC PLC to increase in size next year. (N = 29)	1 (3.4%)	10 (34.5%)	12 (41.4%)	6 (20.7%)

9 District Support

PL22. Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree	Don't know
District leaders supported the implementation of LDC. (N = 29)	2 (6.9%)	2 (6.9%)	5 (17.2%)	6 (20.7%)	14 (48.3%)
District leaders had a firm understanding of LDC. (N = 29)	1 (3.4%)	2 (6.9%)	2 (6.9%)	7 (24.1%)	17 (58.6%)
District leaders are interested in spreading the use of LDC to additional schools. (N = 29)	2 (6.9%)	2 (6.9%)	2 (6.9%)	6 (20.7%)	17 (58.6%)
District professional development efforts were aligned with the LDC initiative. (N = 29)	2 (6.9%)	1 (3.4%)	5 (17.2%)	4 (13.8%)	17 (58.6%)
District leaders visited my school to discuss the implementation of LDC. (N = 29)	2 (6.9%)	3 (10.3%)	5 (17.2%)	6 (20.7%)	13 (44.8%)

10 Areas for Improvement

There have been a number of supports for implementation of LDC in your school, including:

- *CoreTools online platform*
- *LDC online courses in the "Learn" section of CoreTools*
- *Virtual coaching*
  - *Zoom meetings, written feedback on teacher work in LDC CoreTools, Teaching Channel discussions, emails, etc.*
- *In-person coaching*
  - *Summer training, in-person support visits from LDC and District Lead, in-person professional development opportunities, etc.*

PL23. What supports did you find the most useful and why?

PL24. What supports were not helpful and why?

PL25. In what ways could LDC implementation be improved in your school in the future?

Appendix D:
Administrator Survey and Responses

2016–2017 LDC School Administrator Survey: NYCDOE

1 LDC Participation

A1. What is your role at the school?

	(N = 32)
☐ Principal	18 admins (56.3%)
☐ Assistant Principal	13 admins (40.6%)
☐ Other (please specify) _____	1 admins (3.1%)

2 Professional Learning Community

A2. What proportion of LDC Professional Learning Community (PLC) meetings did you attend during the current school year?

	(N = 32)
☐ Less than one quarter of LDC PLCs	16 admins (43.8%)
☐ About one quarter of LDC PLCs	6 admins (18.8%)
☐ About one half of LDC PLCs	4 admins (12.5%)
☐ About three quarters of LDC PLCs	4 admins (12.5%)
☐ More than three quarters of LDC PLCs	4 admins (12.5%)

3 LDC Training and Support

A3. How many in-person and/or online LDC professional development offerings for school administrators and project liaisons did you attend during the current school year (e.g., Launch Day [in person], February Administrator Meeting [in person], Bi-Monthly Community Meetings [online])?

☐ LDC Professional development offerings N = 30, Mean = 2.67, Range: 0-10

A4. Please indicate the degree to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Agree	Strongly agree	N/A
I was able to reach LDC staff when I had questions about LDC. (N = 30)	0 (0%)	0 (0%)	9 (30.0%)	19 (63.3%)	2 (6.7%)
My school has adequate technology to access LDC online resources. (N = 30)	0 (0%)	1 (3.3%)	13 (43.3%)	16 (53.3%)	0 (0%)
LDC offered sufficient professional development opportunities for LDC project liaisons. (N = 30)	0 (0%)	1 (3.3%)	20 (66.7%)	9 (30.0%)	0 (0%)
LDC offered sufficient professional development opportunities for school administrators. (N = 30)	0 (0%)	2 (6.7%)	19 (63.3%)	8 (26.7%)	1 (3.3%)
LDC staff members were able to connect me with additional resources when needed. (N = 30)	0 (0%)	1 (3.3%)	16 (53.3%)	10 (33.3%)	3 (10.0%)

4 Classroom Observation

A5. How many times during the current school year did you observe <u>teachers</u> implementing an LDC module?

(N = 29)

☐ 0 times	Skip to A7	1 admins (3.4%)
☐ 1-2 times		10 admins (34.5%)
☐ 3-5 times		13 admins (44.8%)
☐ 6or more times		5 admins (17.2%)

A6. On average, how effective were LDC modules in developing students' literacy skills?

(N = 28)

☐ Not effective	0 admins (0%)
☐ A little effective	2 admins (7.1%)
☐ Moderately effective	20 admins (71.4%)
☐ Very effective	6 admins (21.4%)

5 Impact on Teacher Practice

A7. Based on your oversight of the LDC program, please indicate on average how much the teaching practice of LDC PLC members improved in each of the following areas:

	Not at all	A little	Moderately	A great deal
Selecting a set of focus standards for a writing assignment (N = 28)	0 (0%)	0 (0%)	18 (64.3%)	10 (35.7%)
Creating standards-driven writing tasks of sufficient quality and scope to allow students to think deeply about disciplinary content and practice literacy skills (N = 28)	0 (0%)	2 (7.1%)	14 (50.0%)	12 (42.9%)
Identifying the skills students need to develop in order to complete a writing assignment (N = 28)	0 (0%)	0 (0%)	19 (67.9%)	9 (32.1%)
Creating daily lessons to teach each skill a student needs to complete a writing assignment (N = 28)	1 (3.6%)	6 (21.4%)	13 (46.4%)	8 (28.6%)
Assessing students' progress as they work toward completing a writing assignment (N = 28)	0 (0%)	5 (17.9%)	15 (53.6%)	8 (28.6%)
Tracking and analyzing evidence about student progress in a systematic way (N = 28)	2 (7.1%)	7 (25.0%)	14 (50.0%)	5 (17.9%)
Identifying patterns of student understandings or misconceptions (N = 28)	0 (0%)	10 (35.7%)	9 (32.1%)	9 (32.1%)
Using evidence of student performance of standards to shape future instructional decisions (N = 28)	0 (0%)	8 (28.6%)	12 (42.9%)	8 (28.6%)

6 Impact on Student Learning

A8. Please indicate the degree to which you agree or disagree with the statements below:

	Strongly disagree	Disagree	Agree	Strongly agree
LDC helped students develop reading skills. (N = 28)	0 (0%)	1 (3.6%)	22 (78.6%)	5 (17.9%)
LDC was effective in improving students' content knowledge. (N = 28)	0 (0%)	2 (7.1%)	19 (67.9%)	7 (25.0%)
LDC modules effectively supported students in completing writing assignments. (N = 28)	0 (0%)	1 (3.6%)	19 (67.9%)	8 (28.6%)
LDC was effective in improving the quality of students' writing. (N = 28)	0 (0%)	2 (7.1%)	18 (64.3%)	8 (28.6%)
LDC supported students' development of skills needed for college and career readiness. (N = 28)	0 (0%)	1 (3.6%)	21 (75.0%)	6 (21.4%)
LDC increased students' capacity to analyze and understand the components of a writing assignment task. (N = 28)	0 (0%)	2 (7.1%)	19 (67.9%)	7 (25.0%)
LDC helped students develop speaking and listening skills. (N = 28)	2 (7.1%)	2 (7.1%)	17 (60.7%)	7 (25.0%)
Overall, LDC helped improve students' literacy performance. (N = 28)	0 (0%)	2 (7.1%)	18 (64.3%)	8 (28.6%)

7 Administrator Leadership Role

A9. Please indicate the degree to which you agree or disagree with the following statements about your role in leading LDC implementation in your school:

	Strongly disagree	Disagree	Agree	Strongly agree
I was able to shape LDC implementation at my school. (N = 28)	0 (0%)	3 (10.7%)	20 (71.4%)	5 (17.9%)
I met regularly with the LDC project liaison in my school to stay abreast of implementation progress. (N = 26)	0 (0%)	2 (7.7%)	20 (76.9%)	4 (15.4%)
I was involved in discussions about differentiating LDC implementation to meet teacher learning needs. (N = 28)	0 (0%)	5 (17.9%)	19 (67.9%)	4 (14.3%)
I led discussions about how to expand my school's LDC implementation in future years. (N = 28)	1 (3.6%)	7 (25.0%)	17 (60.7%)	3 (10.7%)
I made changes to school schedules to accommodate LDC professional learning time. (N = 27)	0 (0%)	1 (3.7%)	19 (70.4%)	7 (25.9%)

8 Alignment

A10. Please indicate the degree to which you agree or disagree with the following statements:

	Strongly disagree	Disagree	Agree	Strongly agree
Our school connected LDC implementation to our specific schoolwide goals. (N = 28)	0 (0%)	1 (3.6%)	19 (67.9%)	8 (28.6%)
LDC helped teachers create writing assignments to use within their current curricula. (N = 28)	0 (0%)	1 (3.6%)	18 (64.3%)	9 (32.1%)
LDC complemented other initiatives taking place in my school. (N = 28)	0 (0%)	2 (7.1%)	17 (60.7%)	9 (32.1%)
LDC was a strategy for implementing my state's College- and Career-Ready Standards. (N = 28)	0 (0%)	3 (10.7%)	19 (67.9%)	6 (21.4%)
The time spent implementing LDC interfered with other important initiatives at my school. (N = 28)	4 (14.3%)	12 (42.9%)	10 (35.7%)	2 (7.1%)
LDC helped prepare students in my school for current state assessments. (N = 28)	0 (0%)	1 (3.6%)	21 (75.0%)	6 (21.4%)
It was difficult for teachers to focus on LDC because of other competing priorities at the school. (N = 28)	4 (14.3%)	10 (35.7%)	13 (46.4%)	1 (3.6%)

9 Scale-up and Sustainability

A11. Please indicate the degree to which you agree or disagree with the following statements:

	Strongly disagree	Disagree	Agree	Strongly agree	Don't know
I expect that most teachers participating in LDC this year will continue to do so next year. (N = 28)	1 (3.6%)	0 (0%)	17 (60.7%)	8 (28.6%)	2 (7.1%)
Teachers at my school who were not part of the LDC PLC meetings used the LDC planning process and/or LDC CoreTools. (N = 28)	5 (17.9%)	10 (35.7%)	8 (28.6%)	3 (10.7%)	2 (7.1%)
As a result of LDC, new collaborations across grades and/or subjects were created or are being launched at my school. (N = 28)	1 (3.6%)	3 (10.7%)	17 (60.7%)	5 (17.9%)	2 (7.1%)
Teachers and administrators at my school are committed to sustaining the LDC initiative. (N = 28)	1 (3.6%)	0 (0%)	17 (60.7%)	9 (32.1%)	1 (3.6%)
I expect our LDC PLC to increase in size next year. (N = 28)	2 (7.1%)	3 (10.7%)	13 (46.4%)	8 (28.6%)	2 (7.1%)

10 District Support

A12. Please indicate the degree to which you agree or disagree with the following statements:

	Strongly disagree	Disagree	Agree	Strongly agree	Don't know
District leaders supported the implementation of LDC. (N = 28)	2 (7.1%)	1 (3.6%)	13 (46.4%)	3 (10.7%)	9 (32.1%)
District leaders had a firm understanding of LDC. (N = 28)	2 (7.1%)	4 (14.3%)	9 (32.1%)	3 (10.7%)	10 (35.7%)
District leaders are interested in spreading the use of LDC to additional schools. (N = 28)	1 (3.6%)	1 (3.6%)	10 (35.7%)	3 (10.7%)	13 (46.4%)
District professional development efforts were aligned with the LDC initiative. (N =28)	2 (7.1%)	5 (17.9%)	8 (28.6%)	3 (10.7%)	10 (35.7%)
District leaders visited my school to discuss the implementation of LDC. (N = 28)	3 (10.7%)	6 (21.4%)	8 (28.6%)	3 (10.7%)	8 (28.6%)

11 Areas for Improvement

There have been a number of supports for implementation of LDC in your school, including:

- *CoreTools online platform*
- *LDC online courses in the "Learn" section of CoreTools*
- *Virtual coaching*
  - *Zoom meetings, written feedback on teacher work in LDC CoreTools, Teaching Channel discussions, emails, etc.*
- *In-person coaching*
  - *Summer training, in-person support visits from LDC and District Lead, in-person professional development opportunities, etc.*

A13. What supports did you find the most useful and why?

A14. What supports were not helpful and why?

A15. In what ways could LDC implementation be improved in your school in the future?

Appendix E:
Outcome Analysis Methodology

Analysis Model Specification

For our outcome analyses, we used a threshold of $p < .05$ to determine whether there was a statistically significant impact of LDC on ELA achievement. In addition to the LDC treatment indicator, a teacher effect for years of experience was included, as well as an aggregate indicator measuring the mean prior performance of each student's classroom peers. The fixed effects also included student characteristics to identify the matched comparison sample of students, such as baseline achievement, socioeconomic status, demographics, language proficiency, grade level, and participation in special education.

The three-level MMMC model was used to estimate the impacts of the LDC intervention on student learning. This same analytic model will be used to estimate impacts in future years. The general specification for the middle school level MMMC model is shown in the following equation using similar notation proposed by Browne et al. (2001, equation 6) and applied in Tranmer, Steel, and Browne (2014, equation 3).

$$y_i = x_i'\beta + u^{(3)}_{School(i)} \sum_{j \in Teacher(i)} w_{i,j} u^{(2)}_j + e_i$$

$$\mathrm{i} = 1, \ldots, \mathrm{n} \quad \mathrm{Teacher(i)} \subset (1, \ldots, \mathrm{J})$$

$$u^{(3)}_{School(i)} \sim \mathrm{N}\left(0, \sigma^2_{u(2)}\right), \qquad u^{(2)}_j \sim \mathrm{N}\left(0, \sigma^2_{u(2)}\right), \qquad e_i \sim \mathrm{N}(0, \sigma^2_e)$$

In this model y_i is the student achievement score response, X_i is a vector of the fixed covariates and β is the vector of the corresponding fixed effects. $School(i)$ is the school which student i attends, thus the term $u^{(3)}_{School(i)}$ represents the random effects for that level of classification. Within the term $\sum_{j \in Teacher(i)} w_{i,j} u^{(2)}_j$, $u^{(2)}_j$ is the set of j random effects for the teachers included in the selected dataset, and $w_{i,j}$ is the weight which sums to 1 for each student applied in proportion to the instruction time assigned with each teacher. The following presents an example of the full model middle school specification.

$$\begin{aligned} achievement_i = {} & \beta_0 + LDC_i * \beta_1 + priorELA_i * \beta_2 + priorMath_i * \beta_3 + Female_i * \beta_4 + LEP_i \\ & * \beta_5 + SES_i * \beta_6 + Black_i * \beta_7 + Hispanic_i * \beta_8 + Asian_i * \beta_9 + OtherEth_i \\ & * \beta_{10} + SPED_i * \beta_{11} + Grade7_i * \beta_{12} + Grade8_i * \beta_{13} + Gifted_i * \beta_{14} \\ & + priorClassELA_i * \beta_{15} + TeachExp_i * \beta_{16} \\ & + TotalContent_i * \beta_{17} + u^{(3)}_{School(i)} \sum_{j \in Teacher(i)} w_{i,j} u^{(2)}_j + e_i \end{aligned}$$

$$u^{(3)}_{School(i)} \sim \mathrm{N}\left(0, \sigma^2_{u(3)}\right), \qquad u^{(2)}_j \sim \mathrm{N}\left(0, \sigma^2_{u(2)}\right), \qquad e_i \sim \mathrm{N}(0, \sigma^2_e)$$

In this model, $achievement_i$ is the standardized ELA outcome score for student i; In the dosage-dependent model LDC_i is the proportion of core class instruction time taken with an LDC teacher (ranges 0–1); In the dosage-independent model LDC_i is coded as zero for comparison students and as 1 for students receiving any level of LDC teacher exposure.

$Female_i, LEP_i, Black_i, Hispanic_{i,}, Asian_{i,}, OtherEth_{i,} SPED_i, Gifted_i, and\ SES_i$ are student demographic indicators coded 1 if the status is present and 0 if absent;

$Grade7_i$ and $Grade8_i$ are dummy coded 1 when the grade was attended and otherwise as 0, allowing Grade 6 students to serve as the reference group. In the models that combine elementary and middle school students the additional dummy coded grade variables will be included. The elementary school specification would be very similar, with different dummy variables for grades;

$priorELA_i$, and $priorMath_i$ are standardized student achievement scores from the prior year;

$priorClassELA_i$ is the aggregated mean of the prior ELA scores for all the core class peers of student i;

$TeachExp_i$ is the aggregated mean of the years of teaching experience for those teachers which student i was exposed to in her core classes;

$TotalContent_i$ is the aggregated mean weeks of the total ELA, social studies and science content enrolled preceding the NYS assessment date which student i was exposed to;

β_1 is the impact of LDC, the treatment;

β_{12} is the average difference between Cohort 1 and Cohort 2;

β_2 & β_3 are the effects of the prior score covariates;

β_4 … β_{14} are the effects of the demographic covariates;

β_{15} … β_{17} are the effects of the aggregated class level covariates

$u^{(3)}_{School(i)}$, $u^{(2)}_j$, e_i are the error components at the school, teacher, and student level respectively assumed to all have mean 0 and variance, $\sigma^2_{u(2)}, \sigma^2_{u(3)}, \sigma^2_e$ respectively.

Student/Teacher Course Exposure Weighting

Tables E1 and E2 demonstrate how the process of calculating general MMMC teacher weights and LDC treatment weights (for the dosage modeling approach) was conducted respectively for elementary and middle school. In elementary school, in the event that a student was exposed to more than one teacher, each content area was given equal weight in distributing teacher/student exposure. For example, if a student was enrolled for both ELA and

social studies/history under one teacher, then that teacher was coded as .67 for having contributed to two thirds of the students' core curriculum exposure. If the same student enrolled in science with a different teacher than the one who was linked to their course marks in ELA and social studies/history, then that science teacher would have been coded as .33 and all other teachers in the sample would have been coded as zero. This would then result in the student's exposure adding to a unity (1).

In middle school, students' exposure to teachers at the course level in the three core content areas was coded in the same manner as in the elementary grades based on enrolled time preceding the assessment period. A difference in our middle school coding process was that we did not force each core content area into equal weighting. Instead each core content area exposure contributed to a core content area total sum which formed the basis from which the weights were proportioned. Most commonly a student had equivalent days of core instruction exposure in each of the three content areas (often 214 days in each content area). In that scenario, if a student had exposure to three different teachers, then each teacher would contribute one third (.33) of the overall core curriculum exposure and all other teachers in the sample would be coded as zero. However, in addition to the typical core science course, extra core science courses were also included in the LDC analysis (for example a Grade 8 student taking biology), which made it possible then for a student to accumulate more units in science than in the other two content areas. The weighting in middle school was always distributed as a proportion of the total exposure days in the three content areas. Therefore, if a student accumulated 300 science days (across two courses), 200 social studies days, and 200 ELA days, the base number of instruction days would be 700 days. If, using that same scenario, the same teacher taught both the typical core and biology courses then that teacher would contribute three-sevenths (.43) of the overall core curriculum exposure with the social studies and science teachers contributing two-sevenths (.285) each, again resulting in the student's exposure adding to a unity (1).

Table E1

Elementary School Student/Teacher Weighting Based on Course Links

Core content area	NYSED course name	Example student/teacher weighting for use in MMMC (Weight=Subject Days/Total Days)	Example LDC treatment dosage weight
ELA	Language Arts (Grade 4,5)	Student enrolled 214 days Language Arts (Grade 5) with an intervention Teacher: Weight=(214/214)*.333=0.333	Weight=.333
Social studies	Social Studies (Grade 4,5)	Student enrolled 214 days of core Social Studies (Grade 5) with a non-intervention teacher: Weight=(214/214) *.333=0.333	Weight=.0
Science	Science (Grade 4,5)	Student enrolled 214 days Science (Grade 5): Weight=(214/214) *.333=0.333	Weight=.333
Total		Unity: for every student the student/teacher weights sum to 1	Treatment Weight=.667

Note. "Days" refers to core content enrolled days preceding the NYS assessment date.

Table E2

Middle School Student/Teacher Weighting Based on Course Mark Links

Core content area	NYSED course name	Example student/teacher weighting for use in MMMC (Weight=Subject Days/Total Days)	Example LDC treatment dosage weight
ELA	Language Arts (Grade 6,7,8)	Student enrolled 214 days Language Arts (Grade 8) with an intervention Teacher: Weight=200/700=0.285	Weight=.285
Social studies	Social Studies (Grade 6,7,8)	Student enrolled 214 days of core Social Studies (grade 8) with a non-intervention teacher: Weight=200/700=0.286	Weight=.0
Science	Science (Grade 6,7,8) Also: Earth Science Biology Life & Phys Sci—Other	Student enrolled 200 days Science (grade8) and 100 days with a non-intervention teacher: Weight=374/802=0.430	Weight=.0
Other ELA, Social studies, and Science	All other Courses	Not included in weighting, but used at student level in matching and regression.	Teachers not included in analysis
Total		Unity: for every student the student/teacher weights sum to 1	Treatment Weight=.285

Note. "Days" refers to core content enrolled days preceding the NYS assessment date.

Calculation of Effect Size

We calculated student-level effect sizes according to the WWC 3.0 criteria. Specifically, for the impact analysis with treatment status as a dichotomous variable, we calculated Hedges' *g,* the difference in adjusted mean outcomes for the groups divided by the unadjusted pooled within-group standard deviation of the outcome measure in the sample, for all outcomes. The difference in adjusted mean outcomes is estimated by β_1 in the models defined above, as outlined in the WWC standards handbook for computing effect sizes in multi-level frameworks. Specifically,

$$g = \frac{\omega\gamma}{\sqrt{\frac{(n_i - 1)s_i^2 + (n_c - 1)s_c^2}{n_i + n_c - 2}}}$$

where γ is β_1 which is the coefficient from the MMMC for the intervention effect.

Note that in our analyses the outcome measure is standardized within the analytical sample (mean=0, standard deviation=1). As a result, we expected that g would likely be quite similar to the β_1 coefficient from the MMMC Model in the large samples we plan to collect later in the study.

Though it is not standard to use g with a continuous treatment effect, as in the case of our dosage-dependent treatment measure, we have defined and matched populations n_i and n_c where treated students (n_i) could have any positive treatment value<=1, and control students (n_c) had a treatment value of zero. We could therefore calculate *g* in the case of our dosage-dependent treatment measure, and again expect that it would not differ substantially from the β_1 coefficient. It is crucial, however, to note that *g* and β_1 in the dosage-dependent models reflect the effect size projected for a student who would receive exposure to intervention teachers in all of their core classes. Along with this effect we report average dosage received by treated students so that the average treatment effect on treated students could be calculated.

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