

THE SHAPE OF DEEPER LEARNING

Strategies, Structures, and Cultures in Deeper Learning Network High Schools



SEPTEMBER 2014

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Abstract

The *Study of Deeper Learning: Opportunities and Outcomes*—funded by the William and Flora Hewlett Foundation—is a proof-of-concept study, the purpose of which was to determine whether students attending high schools with a mature and at least moderately well implemented approach to promoting deeper learning actually experienced greater deeper learning opportunities and outcomes than would have been likely had they not attended these schools. In this report—our first in a series of three—we provide a picture of the strategies and supporting structures in our study sample of schools.

This analysis focuses on the strategies implemented in 19 high schools across 10 school networks participating in the Foundation’s Deeper Learning Community of Practice. We also include some comparative information collected from 11 comparison high schools. While we collected a wide range of data for this study, the analysis in this first report relies primarily on qualitative data from interviews and focus groups with school administrators, teachers, students, and network leaders and support providers, supplemented with relevant data from a survey of teachers in both network and comparison schools.

Key findings include the following:

- 1. Across the three deeper learning domains, sampled network schools used a range of strategies to develop deeper learning competencies—most commonly project-based learning, internship opportunities, collaborative group work, and longer term cumulative assessments.**
 - In the cognitive domain, all but one network school (18 of 19) employed project-based learning (PBL) to some degree to develop mastery of core academic content knowledge and critical thinking skills. PBL was integral to daily instruction in slightly over a third of these schools and used more sporadically in others.
 - Also in the cognitive domain, three quarters of the network schools (14 of 19) provided connections to the real world through internship opportunities for students. At two schools, internships were considered central to learning and occurred two or three days per week across all four years. The remaining 12 schools incorporated internships for a portion of students at some point in their school career to provide career-related experience, boost life skills, or help with the transition from high school to college and careers.
 - In the interpersonal domain, collaboration and communication skill development was an explicit goal reported by staff at a majority of network schools (11 of 19), which they addressed through collaborative group work and longer term assessments (such as portfolios and exhibitions, where students had to present and defend their work).
 - In the intrapersonal domain, almost half of the network schools (9 of 19) reported having explicit goals related to intrapersonal competencies (learning how to learn and academic mindsets) for students and they used a variety of strategies to encourage the development of these skills, including study groups and student participation in decision making. Three schools focused on individualized learning as a way to develop independent learning and self-management skills.
- 2. Most network schools supported the implementation of instructional approaches aligned with deeper learning through the development of specific structural and cultural elements,** including advisory classes (16 schools), alternative scheduling (14 schools), and personalized learning environments (all schools). However, these structures and cultures looked different across the schools. For example, advisory classes had different numbers of students (from 15 to 30 students), ran for different amounts of time (between 30 and 60 minutes), and happened with different frequencies (from every day to once or twice a week), depending on the school.
- 3. Comparisons between the network and non-network school principal interview data suggest that the network schools employed strategies to foster the deeper learning competencies to a greater extent than did the non-network schools,** particularly in the areas of project-based learning, internship opportunities, collaborative group work, longer term cumulative assessments, and development of intrapersonal skills. Network schools also employed advisory classes and alternative scheduling to a higher degree than the non-network schools.

Introduction

In the past few years, a veritable movement for “deeper learning” has emerged on the United States’ educational scene, based on decades of development work by educators, support from the philanthropic community, and the interest and engagement of national and local policymakers. This is the first in a series of three research reports on the strategies, opportunities, and outcomes of a set of high schools explicitly organized to promote deeper learning among their students. In this introductory section, we discuss the concept of deeper learning, describe the study’s approach, and outline the focus of this report.

What Is Deeper Learning and Why Is it Important?

Failure of the No Child Left Behind Act (2001) to produce the levels of proficiency and college preparedness anticipated by its authors has sparked considerable discussion and debate in the past six years about what today’s students really need to know and be able to do to be successful both in school and in their lives and work after graduation. Much of the policy focus has been on the need for students to develop deeper content knowledge and an ability to apply their knowledge and skills to novel tasks and situations inside and outside of school (Alliance for Excellent Education, 2011). The recently developed Common Core State Standards (CCSS) in English Language Arts (ELA) and mathematics and the Next Generation Science Standards reflect this dual focus on high levels of academic learning and real-world application.

Yet many of even the staunchest supporters of the new standards believe that the goals of education must reach further. For decades, it has been recognized that academic knowledge and skills are themselves insufficient for enabling students to successfully navigate a rapidly changing world, participate in a complex and increasingly diverse democracy, and engage fully in the ever evolving 21st century workplace. Students also need to be able to communicate their ideas through a variety of media and to a variety of audiences, work together with others to solve problems, think creatively, and manage their own learning (Autor, Levy, & Murnane, 2003; National Research Council [NRC], 2008; Carnevale & Desrochers, 2003). They need to develop dispositions—or mindsets—that empower them to confront new challenges, take initiative, and persevere through difficulties and setbacks (Dweck, 2006; Finegold & Notabartolo, 2010). Taken together, this combination of a deeper understanding of core academic content, an ability to apply that understanding to novel problems and situations, and a range of competencies related to human interaction and self-management has been encapsulated under the term “deeper learning” in education policy and reform circles.

Deeper learning as a goal for students is an evolving concept, the dimensions of which are labeled and described in varying ways. Based on extensive interviews with experts in the field and a review of the relevant literature, the William and Flora Hewlett Foundation identified six dimensions of

deeper learning, which have collectively become the focus of a national initiative to promote deeper learning in schools. These dimensions are:

- Mastery of core academic content
- Critical thinking and problem solving
- Effective communication
- Ability to work collaboratively
- Learning how to learn
- Academic mindsets (William and Flora Hewlett Foundation, 2013; Chow, 2010; Trilling, 2010).

Taking a slightly different approach, a recent review of theory and research across an array of disciplines led a National Research Council panel (NRC, 2012) to define deeper learning as “the process through which an individual becomes capable of taking what was learned in one situation and applying it to new situations (i.e., transfer).” The panel distinguished this process from the specific “21st century competencies” it produces. The NRC grouped these competencies into three domains: the cognitive domain, the interpersonal domain, and the intrapersonal domain. These domains subsume neatly the six dimensions identified by the Hewlett Foundation, providing a compatible framework for the purposes of both research and practice.

Competencies Associated With Deeper Learning (Hewlett Foundation and NRC Frameworks)

Cognitive Domain	Deep content knowledge
	Critical thinking and complex problem solving
Interpersonal Domain	Collaboration
	Communication
Intrapersonal Domain	Learning-to-learn competencies
	Academic mindsets

Assumptions Underpinning the Deeper Learning Initiative

The concept of deeper learning has gained momentum among educators and policymakers as a means of better preparing students for college and career. Underlying this movement are several fundamental assumptions relating educational approaches to desired student outcomes:

1. Educators can design/redesign schools’ instructional strategies, structures, and cultures to explicitly focus on deeper learning; the strategies, structures, and cultures may take different forms in different schools, but they will be collectively distinct from more traditional educational approaches, particularly at the high school level.

2. Students in schools thus designed—including those from traditionally underserved groups—will experience greater opportunities to engage in deeper learning than they would have otherwise.
3. These opportunities, in turn, will lead to transferable competencies needed for success in college, career, and civic life.

At its most basic, the theory of action for this reform direction might be depicted as follows:



This report focuses on the first of these assumptions—that is, it describes the approaches that a group of schools with a focus on deeper learning have taken, including the instructional goals and strategies they have put in place and the structures and cultures designed to support these strategies. (Subsequent reports in this series will address the other two assumptions.)

The Study of Deeper Learning: Opportunities and Outcomes

While political and educational interest in deeper learning has grown considerably in just a few years, the research base has lagged behind and to date has provided only weak empirical support for the assumptions above. Early evaluation studies of schools participating in deeper learning-focused networks suggested positive effects, but they had a number of limitations relating to their research design, samples, data, measures, or analyses (Yuan & Le, 2010). More recent evaluations (Collins et al., 2013; Guha et al., 2014; Nichols-Barrer & Haimson, 2013) indicate positive program effects on indicators such as grade point average (GPA), progress to graduation, and state test results, but these studies are either primarily descriptive in nature or have focused on demonstrating the effectiveness of specific instructional programs or strategies aligned with the goals of deeper learning. In its review of the literature, the previously cited NRC panel noted the limitations of existing (primarily correlational) research in establishing linkages between 21st century/deeper learning competencies and long-term outcomes for students, recommending that foundations and federal agencies support further research in this arena (NRC, 2012). As a result of this limited empirical base, there has recently been increased interest in rigorous research that evaluates whether approaches focused on deeper learning—which take many forms in practice—are associated with improved educational experiences and outcomes for students from all backgrounds.

The *Study of Deeper Learning: Opportunities and Outcomes*—funded by the Hewlett Foundation—aimed to determine whether students who attended high schools with a mature and at least

moderately well implemented approach to promoting deeper learning actually experienced greater deeper learning opportunities and outcomes than would likely have been the case had they not attended these schools. In contrast to an evaluation of a particular program or instructional strategy, this *proof-of-concept* study focused on providing evidence about whether schools can promote deeper learning across a variety of reasonably well implemented approaches and a diversity of students. The research team aimed to address the evidence gap related to deeper learning by using a rigorous quasi-experimental design¹ to examine a set of high schools (hereafter referred to as “network” schools) associated with 10 established networks from across the country that embrace the goals of deeper learning, promote instructional practices they believe are likely to lead to deeper learning competencies, and participate in the Hewlett Foundation’s Deeper Learning Community of Practice. To examine whether students in these high schools experienced improved opportunities for deeper learning and greater outcomes than they would have in other schools, we also included students from a set of comparison schools (hereafter referred to as “non-network” schools) that served similar student populations and were located in the same geographic locales as the network schools.

The Deeper Learning Community of Practice: In 2011–12, the Hewlett Foundation selected 10 school networks to participate in what would become the Deeper Learning Community of Practice. (See Box 1.) The purpose of the Community of Practice is to share strategies, tools, and lessons that both contribute to the work of the networks themselves and build the broader knowledge base about deeper learning. The main criterion for selecting networks to participate in this Community of Practice was simple: They needed to have experience in, and an explicit focus on, promoting a deep understanding of content and the kinds of competencies reflected in the Hewlett Foundation’s identified dimensions of deeper learning, and they needed to do this across whole schools serving diverse populations of students (rather than targeting only certain portions of the students or teachers in a school). The collection of selected networks was not meant to be exhaustive. The fact that they varied in terms of both structure and emphasis was intentional. For example, some networks operate K–12 schools (e.g., Big Picture, Expeditionary Learning, High Tech High) while others include only high schools (e.g., Envision, Internationals, New Tech). Some networks work at the district level (e.g., ConnectEd works with districts to implement high school career pathways), while others focus on schools serving particular underserved populations of students (e.g., Internationals Network for Public Schools focuses on recent immigrants). Some emphasize the use of technology as part of the learning process (e.g., New Tech, High Tech High); for others, technology is less central. Networks also differ in the types of schools they include. The majority of schools in these networks are part of traditional public school districts, but two networks (Envision and High Tech High) operate only charter schools, and 90 percent of the schools in the EdVisions network are also charters. Despite these differences, all 10 networks

¹ A quasi-experimental design estimates the effect of a “treatment,” program, or intervention by comparing outcomes for people who chose or were selected to participate and those who did not, rather than by randomly assigning participants (see Shadish, Cook & Campbell, 2002).

have a well-established history of promoting deeper learning, and they all share an emphasis on providing educational opportunities for minority students and students from low-income families to prepare them for college and career.

The Hewlett Foundation's emphasis on involving *networks* of schools stemmed from its recognition that schools need support and connections with like-minded educators to refine and sustain their approaches over time. All networks involved in the Deeper Learning Community of Practice thus offer a range of assistance to their affiliated schools, though this assistance varies from network to network. The most common supports mentioned by network and school respondents in this study included the development of curriculum and instructional materials, leadership and management support, and the provision of a variety of professional learning opportunities for teachers.

Box 1: Networks Participating in the Hewlett Foundation's Deeper Learning Community of Practice

Asia Society – <http://asiasociety.org/international-studies-schools-network>

Big Picture Learning – <http://www.bigpicture.org/>

ConnectEd – <http://www.connectedcalifornia.org/>

EdVisions Schools – <http://www.edvisions.com/>

Envision Schools – <http://www.envisionschools.org/>

Expeditionary Learning – <http://elschools.org/>

High Tech High – <http://www.hightechhigh.org/>

Internationals Network for Public Schools – <http://internationalsnps.org/>

New Tech Network – <http://www.newtechnetwork.org/>

New Visions for Public Schools – <http://www.newvisions.org/>

The Schools in This Study: Because the *Study of Deeper Learning: Opportunities and Outcomes* is a proof-of-concept study, it was important to select schools that provided reasonably strong examples of the deeper learning concept. The networks in the Deeper Learning Community of Practice provided a promising pool from which to draw our main sample of schools, which we identified by first asking each network to suggest candidates that they considered to be moderate or high implementers of the network model or approach. We sought schools that were implementing their approach to deeper learning schoolwide and at a high enough level for us to examine whether an explicit focus on deeper learning—when done well—*can* result in improved opportunities and outcomes across a broad spectrum of students and teachers. To ensure that we collected data from sufficient numbers of students to conduct a valid analysis, we limited the sample to high schools that enrolled at least 200 students (at least 30 percent of whom were eligible for free or reduced-price lunch). To examine postsecondary outcomes, we selected schools that had been in

existence since at least the 2007–08 academic year to ensure that they had graduated at least one class by the start of the study. Finally, we limited the sample to schools with nonselective admissions to ensure that the students included in the study reflected a range of prior achievement levels. Our final sample of 20 network schools included three schools from the High Tech High network, one school from the EdVisions network, and two schools from each of the remaining eight networks. (See Box 1.) Most of the schools were located in either California or New York, with the exception of three schools located in Massachusetts, Maine, and Minnesota. Seven of the 20 network schools were non-selective charter schools.

To identify a *non-network comparison school* within the district or local geographic area of each network school, we used data from the Common Core of Data (CCD), as well as aggregated student-level district data. This allowed us to match schools based on student demographic and socioeconomic characteristics, as well as incoming student test scores. We successfully recruited a total of 12 non-network schools, none of which was a charter school. We chose all non-network schools using criteria for demographics, years in operation, and selectivity that were similar to those used to select network schools. While the comparison schools shared the goal of preparing students well for college and career, they did not necessarily emphasize deeper learning competencies and were not members of the Hewlett Foundation’s Deeper Learning Community of Practice.²

As shown in Exhibit 1, the network and non-network schools were comparable with respect to poverty, race, and the percentage of English language learners. However, the network schools tended to be smaller, on average, than the non-network schools because comparable, smaller comparison schools did not exist in certain districts.

Exhibit 1: School Demographics for Select Network and Non-Network Schools, 2012–13³

	Network Schools (19)	Non-Network Schools (11)
Number of Students	Average: 386	Average: 1,340
	Range: 187–681	Range: 434–2,529
Percent Free/Reduced Lunch	Average: 70%	Average: 67%
	Range: 36%–100%	Range: 41%–100%
Percent African American	Average: 23%	Average: 16%
	Range: 1%–82%	Range: 0%–40%

² We intended to recruit a non-network school for each network school, but in eight cases we were unable to locate a comparison school that fit our criteria and was willing to participate.

³ We included 20 network schools and 12 non-network schools in our sample, but we were not able to collect complete data from one school in each category due to a lack of responsiveness. Thus, the table reflects the demographics of 19 network and 11 non-network schools. In addition, these data might differ slightly from the other reports in this series (see Bitter et al., 2014, and Zeiser et al., 2014) because demographics for school selection were drawn from the Common Core of Data (CCD).

	Network Schools (19)	Non-Network Schools (11)
Percent Hispanic	Average: 44%	Average: 51%
	Range: 3%–98%	Range: 19%–99%
Percent Asian	Average: 9%	Average: 9%
	Range: 0%–65%	Range: 0%–29%
Percent English Learners	Average: 18%	Average: 23%
	Range: 0%–89%	Range: 1%–94%

Data sources: California, Maine, Massachusetts, Minnesota, and New York Department of Education websites.

The Focus of This Report

This is the first report from this proof-of-concept study. In this report, we focus on the first assumption outlined above (i.e., that educators can design/redesign schools’ instructional strategies, structures, and cultures to explicitly focus on deeper learning), and our goal is primarily descriptive—to provide a picture of the strategies and structures the adults in the sampled network schools used to foster deeper learning. To create this picture, we analyzed qualitative data collected from 19 network schools and 11 non-network schools. (See footnote 3.) We also report survey data from teachers in 12 pairs of schools.⁴ (See Box 2 and the separate Technical Appendix for details on the methodology used in this study.) Our focus here is primarily on network schools because we collected more extensive qualitative data from our site visits to these schools. (See Box 2.) We begin by detailing the instructional approaches to deeper learning adopted in the network schools—with subsections on the cognitive, interpersonal, and intrapersonal domains—and we then describe the school structures and cultures developed to facilitate those approaches. At the end of the report, we outline the key contrasts between the approaches of the network and non-network schools, based on interviews with principals in the non-network schools and teacher survey data.

The remaining two reports from this study address the second and third assumptions that underpin the deeper learning initiative, using data from student surveys, assessments, graduation records, and records of postsecondary matriculation and persistence. In the second report in the series—*Providing Opportunities for Deeper Learning* (Bitter, Taylor, Zeiser, & Rickles, 2014)—we explore whether students in the sampled network schools in fact experienced greater *opportunities* to engage in deeper learning than similar students in matched comparison sites. The third report—*Evidence of Deeper Learning* (Zeiser, Taylor, Rickles, Garet, & Segeritz, 2014)—reports on *student outcomes* in the network and non-network schools, including interpersonal and intrapersonal skills, performance on an assessment of complex problem-solving skills, state test scores, graduation, and postsecondary enrollment and persistence.

⁴ One non-network school was large enough to serve as a comparison for two network schools.

Box 2: Study Methods

The research team collected data from a variety of sources, including interviews with principals and network personnel, site visits to schools, teacher and student surveys, work that teachers assigned to students (teacher assignments), assessments of student learning, district data on graduating, and National Student Clearinghouse data on postsecondary matriculation and persistence. For the purposes of this first report, we draw primarily on qualitative data from phone interviews and site visits, with additional references to teacher and student survey results, as appropriate. (For more details on the study methods related to this report, see the separate Technical Appendix.)

Based on the Hewlett Foundation's theory of action for the deeper learning initiative and on theoretical and empirical literature on learning and school organization, the study team developed a conceptual framework and a list of key constructs to guide our data collection and analysis activities.

For the qualitative data collection, the study team developed a total of 10 semi-structured interview protocols, based on the constructs of the conceptual framework. All site visitors and interviewers received training on the purpose and conceptual framework of the study, the case study data collection process, and the purpose of each interview protocol. Two site visitors (one senior researcher and one junior researcher) carried out two-day site visits at each network school. Data collection activities included phone interviews with all principals in network schools in spring 2012; phone interviews with 10 network leaders and two network technical assistance providers in winter/spring 2013; site visits to all network schools in spring 2013, which resulted in interviews or focus groups with over 160 staff and 240 students; and two phone interviews with all principals in non-network comparison schools (one in spring 2012 and one in spring 2013).

Each interview was audio recorded and transcribed by a transcription service. Senior researchers analyzed the transcript data by summarizing the prevalence of major themes within schools based on a report outline that resulted in a 20-page case report capturing (in comprehensive detail) the main findings from each site visit. We then summarized the main findings from each case report into a matrix organized by construct, which included data from non-network school interviews to facilitate comparisons of findings across network and non-network schools. When reporting findings from network schools, we provide examples of major themes that illustrate a common sentiment or a common approach at a given network school based on the perceptions of multiple respondents in most cases. It should be noted that we collected only principal interview data for the 11 non-network schools, and therefore these data are not as comprehensive as the data collected for the network schools.

We also administered surveys to all core content teachers and Grade 11 and 12 students in all network and non-network schools in spring 2013. The surveys included modified items from existing validated surveys. Teacher surveys included questions about school features (e.g., teacher collaboration and instructional leadership of the principal) and the school's instructional culture (including measures such as academic press and commitment to individual students). The student survey included questions related to opportunities for engaging in deeper learning competencies and school culture. The surveys were piloted prior to administration to test the validity of the scales. Overall, we achieved response rates of 81 percent and 76 percent for the teacher and student surveys, respectively. Subsequently, we calculated scale scores for the survey constructs using a Rasch analysis.* These Rasch scores were standardized using the mean and standard deviation among non-network students so that the results could be presented as effect sizes.

* Rasch analysis is a method of generating scale scores on a survey or test based on responses to individual items.

Strategies to Promote Deeper Learning in Network Schools

The William and Flora Hewlett Foundation (2013) defined six interconnected deeper learning competencies that support students' use of "knowledge and skills in a way that prepares them for real life." We used these six competencies (all of which are described in greater detail below) to organize the deeper learning strategies across the sampled schools into three domains (NRC, 2012):

1. The cognitive domain: strategies for developing mastery of core academic content and critical thinking skills
2. The interpersonal domain: strategies for developing communication and collaboration skills
3. The intrapersonal domain: strategies for developing academic mindsets and learning how to learn

In the sections that follow, we provide descriptions of the deeper learning strategies across these three domains.

Cognitive Domain: Strategies to Promote Mastery of Core Academic Content and Critical Thinking Skills

Two of the deeper learning competencies defined by the Hewlett Foundation focus on the development of cognitive knowledge and skills: mastering core academic content knowledge and developing critical thinking skills. The Hewlett Foundation defines student mastery of core academic content as the ability to "develop and draw from a baseline understanding of knowledge in an academic discipline and ... to transfer knowledge to other situations" (William and Flora Hewlett Foundation, 2013). In other words, students can process and transfer information in a meaningful way in new contexts to address new problems. Mastering core academic content means that students understand the key principles and relationships associated with a content area; have learned and can recall relevant facts from a content area; have procedural knowledge of a content area; can use the language specific to a content area; and can apply core knowledge to new tasks and situations in other academic subjects, to real-world situations, and in non-routine ways. The Hewlett Foundation argues that to foster this development, students should be given multiple opportunities in their education to draw on their knowledge to complete a wide range of challenging tasks (William and Flora Hewlett Foundation, 2013).

The Hewlett Foundation defines students' critical thinking skills as the ability to "apply tools and techniques gleaned from core subjects to formulate and solve problems." A student who has developed strong critical thinking skills is familiar with and can effectively use the tools and techniques specific to a content area; can formulate problems and generate hypotheses; can

identify, evaluate, and analyze multiple sources of data and information to solve problems; and can reason and create justifiable arguments in support of a hypothesis (William and Flora Hewlett Foundation, 2013).

Our examination of case study data provides rich descriptions and detail related to the curricular and instructional strategies and approaches schools used to provide opportunities for the development of content knowledge and critical thinking skills. These data also convey information on how schools engaged students in challenging work, including less traditional instructional strategies such as project-based learning and assessment strategies tied to specific learning goals and standards.

Cognitive Domain: Main Findings

Overall, we found that the following main goals and strategies were used to develop mastery of core content and critical thinking skills:

- **Explicit Goals:** An emphasis on developing cognitive goals was reported by staff from all schools, and developing higher order and critical thinking skills was specifically mentioned by staff at three quarters of the schools (14 of 19).
- **Curriculum:** Teachers at most schools reported basing their curricula on specific sets of standards, including the Common Core State Standards (CCSS), state standards, or network curriculum frameworks. Staff at more than half of the schools (11 of 19) noted that the CCSS were being phased in as a contributor to the curriculum. In almost all schools (16 of 19), the curriculum was teacher-developed.
- **Instruction:** To provide connections to the real world, staff from three fifths of the schools (12 of 19) reported integrating real-world connections into instruction and three quarters (14 of 19 schools) provided internship opportunities for students. In addition, all but one network school integrated project-based learning (PBL) to develop mastery of core academic content knowledge and critical thinking skills. Staff from two thirds of the schools (13 of 19) also reported differentiating or personalizing instruction through project work or homework assignments.
- **Assessment:** Three fifths of the schools (12 of 19) used longer term assessments, such as portfolios and exhibitions. Additionally, all but two schools (17 of 19) reported using formative assessment practices in the form of exit slips and teacher check-ins.

Below, we provide greater detail on each of these findings.

Cognitive Development Goals

All networks incorporated a focus on deep cognitive development in their mission or vision, including the closing of achievement gaps, the development of critical thinking skills, academic preparation for postsecondary opportunities, the creation of ideas, and the application of knowledge to real-world problems. When asked in interviews and focus groups what they hoped their students would know and be able to do when they graduated, teachers and principals across the network

schools emphasized that being prepared for college and career was an important goal. As part of this preparation, developing higher order or critical thinking skills was among the most commonly reported goals related to cognitive development (explicitly emphasized by leaders and/or multiple staff at 14 out of 19 schools). This included building an understanding of how content relates to the real world, how to find and use information, how to solve problems and think critically, how to differentiate fact from fiction, and how to reason and analyze an issue.

Representative of the types of responses we heard on this topic was that of an English Language Arts teacher in response to our query about his learning goals for students: “[I want my students to cultivate] the habits of mind... like, can you show connections? Can you show significance? Can you show the evidence behind that?” Similarly, a teacher at another school said: “[I want them] to be able to access information, to be able to analyze the information and synthesize it and put it back together themselves, so that they’re able to make decisions for themselves.” A respondent at yet another school stated:

As a history teacher, it's great if they know all the historical facts that I taught them, but that doesn't really matter as much as them being able to think historically and analyze documents and be able to look at something critically to decide, really decipher what the real meaning is... And I think in all the subjects that's the crucial part.

One student captured particularly well the level of thinking expected of students at her school:

[The teachers] give us time to think about how something works. You have to think and figure out why, you have to think it out, how it works, and figure out the answer by yourself in different ways as much as you can... Sometimes you figure it out by yourself and sometimes with other students. Once you figure it out, it's kind of exciting.

What we heard in schools reflected what staff reported on the teacher survey with respect to their beliefs about instruction. On average, teachers agreed that instruction should focus on higher order thinking skills and allow opportunities for student-directed learning (mean = 3.49 on a four-point scale). For this measure, teachers indicated the extent to which they agreed that a teacher’s role is to facilitate students’ own inquiry, that students learn best by finding solutions to problems on their own, that students should be allowed to think of solutions to practical problems themselves before the teacher shows them how they are solved, and that thinking and reasoning processes are more important than specific curriculum content.

Additional schoolwide goals related to cognitive development reported by respondents included acquiring knowledge in a content area (five schools), developing writing skills (four schools), developing language and/or literacy (four schools), preparing for statewide tests (two schools), and building basic skills (two schools).

Developing a Deeper Learning Curriculum

Teachers at most schools reported basing their curricula on specific sets of standards, including the CCSS, state standards, or network curriculum frameworks. In New York, staff at two schools

noted that the New York Regents Examinations influenced the content of their curriculum. At the time of our data collection, the CCSS had become a particular focus in many schools, with respondents at 11 schools reporting that the standards were being phased in as a contributor to curriculum. Staff and administrators across schools reported a variety of approaches to rolling out implementation of these standards. For example, three schools started with Grade 9 in the 2012–13 academic year and integrated the standards for each grade, year by year. At another school, a literacy consultant was spearheading the integration of these standards, providing training and one-on-one coaching for teachers. Several other schools used their project-based learning model as a strategy for implementing the CCSS, with teachers designing CCSS-aligned projects. Staff from a subset of schools (five schools) expressed that they were a step ahead with CCSS implementation because teachers were already focused on the deeper learning associated with the standards before they were put in place. At one school for example, the principal noted that their network “was right out in front in modeling their graduate performance system around ... the Common Core standards. As we began to align our curriculum maps to that, using them and looking at the Common Core, we were ahead of the game...” At another school, the 11th grade history teacher said, “When I reflect on my work, and I have to apply Common Core standards to it, I say, ‘oh, it’s already there, so great.’ Analyzing primary sources..., I think, is one of the specifics on the Common Core, and we do that. [They focus on] ... different viewpoints and forming your viewpoint based on multiple sources for information—integrating it into your writing.”

In contrast, the CCSS were not yet a strong focus among staff at four schools. In these cases, staff had typically just attended professional development related to the CCSS and were preparing for implementation.

To meet the goals they established for their students, staff from most network schools (16 schools) reported that their curricula were primarily teacher-designed. In many cases, it was necessary to develop curriculum to implement the instructional model of the school and the network with fidelity. For example, staff from the schools in one network—which incorporated long-term projects with real-world connections—created personalized project plans to cover the relevant content standards and learning goals that incorporated students’ interests and/or local resources. Schools in another network, which primarily serves English language learners, developed curricula that were both project-based (to align with the network’s instructional tenets) and scaffolded (for the specific needs of English language learners). Teachers worked independently or together to develop projects that would align with these goals. In a subset of schools (five in total), teachers discussed curriculum development as a collaborative process, working together to design projects or build on other teachers’ project designs or curricular units. In one school, for example, teachers reported spending time together during the summer developing long-term projects (or “expeditions”) for the year. Teachers in at least six schools noted the extensive time required to develop projects and activities, teach, and provide additional support to students.

In three schools across two networks, curriculum development was closely tied to the schools' approaches to individualized learning. In these schools, students worked with advisors to develop individualized learning plans based on specific learning goals. Students' personalized learning plans often incorporated individual projects, internships, and classwork. Teachers worked closely with students to design projects that would help them to meet their individual learning goals. These plans are discussed further in the section entitled "Intrapersonal Domain: Strategies to Develop Academic Mindsets and Learning-to-Learn Competencies."

Deeper Learning Instructional Strategies

The network schools engaged in several different instructional strategies to develop deeper learning cognitive skills, including integrating project-based learning and real-world connections into instruction, providing internship opportunities outside of school, and differentiating and personalizing instruction to ensure that all students developed these skills.

Promoting Transfer of Knowledge Through Project-Based Learning and Internships

Project-based learning: Project-based learning was one of the core features (albeit in various forms) of the network schools' instructional strategies for developing deeper learning cognitive skills. In a subset of seven schools, staff and administrators considered project-based learning to be integral to daily instruction, with virtually all instruction delivered in this manner. Staff at all but one of the remaining network schools reported project-based learning as a feature of instruction, along with other, more traditional instructional strategies. In some cases, projects were integrated into a subset of subject areas. In other cases, projects were used more by some teachers than others.

Project-based learning, as described by school staff and leaders, creates connections across what students are learning in different disciplines, and between what they learn in school and situations they may encounter in the real world. As such, this approach seems to align with the type of problem solving, deep understanding, and transfer and application of knowledge associated with deeper learning. In addition to the development of content knowledge and critical thinking skills, teachers reported that projects undertaken in groups helped to develop collaboration skills, and that the authentic assessments that were often implemented as part of these projects (such as presentations to local community members) helped to develop more varied and advanced communication skills.

Projects took different forms at different schools. Within one network model, for example, students completed a few long-term (e.g., semester-long) projects each year, which included a range of fieldwork, instructional activities, independent work, and assessments that involved presenting to community members. Juniors at one school in this network engaged in an in-depth study of a West

Virginia coal mining disaster—a case study that tied into a year-long focus on the impact their generation could have on the world. They explored the implications of this one incident and related policies and resources before launching into a study of the United States’ dependence on fossil fuels. Students picked a particular issue related to energy use and completed a public policy research paper and presentation, which often involved collecting original data and analyzing them to support their arguments. They also wrote a white paper and made presentations to local experts (such as university professors, politicians, or nonprofits in the sector). This portion of the project integrated both group work and an opportunity to pursue an individual passion. To complement the focus on energy, students also studied West Virginia history, the Great Depression, and related literature and music (e.g., bluegrass). Finally, the project included a trip to coal country in West Virginia, where students immersed themselves in local culture, interviewed local residents, and completed a Habitat for Humanity project. Following the trip, students created multimedia oral histories of the people they interviewed and then showed the compilation at a local gallery, as well as in West Virginia.

In other schools, shorter term projects were typical. For example, staff in one school reported that projects were typically organized into units that lasted anywhere from one week to several weeks. According to the principal, teachers were responsible for approximately three or four specific projects per semester on average, for a total of between eight and ten projects per year. As such, project-based learning formed the foundation of all instruction at this school, prompting one teacher to observe: “I’ve lost sight of what it’s like to teach without a project.” As an example, the Grade 11 humanities teacher at this school described a unit on the reconstruction era. Students were asked to analyze several reconstruction plans to determine what was successful and what could have worked, which was “challenging for students because it involve[d] analysis, critical thinking.” Students were also asked to analyze five primary sources from the time period to determine whether African Americans were free during reconstruction, and they were then required to present the information in a debate. Similarly, the Grade 12 history teacher described a project within her six-week unit on World War II where students were asked to put President Harry Truman on trial. For this project, groups of students conducted research, gathered evidence, and formulated an argument about the use of nuclear bombs to end World War II. They chose people within their team to be the lawyers and witnesses. After the trial, they completed a final reflection on their own opinion on the use of nuclear bombs and the existence of nuclear bombs today.

In a few cases, teachers indicated that project-based learning was not implemented evenly across all disciplines. Specifically, mathematics teachers in four schools noted that the need to cover content limited the use of a project-based approach and suggested that mathematics instruction took a more traditional form than did other subjects. A mathematics teacher at one school that was grounded in project-based learning noted that her instruction was “not really project-based learning, but they are doing a project.... It’s just not driving the instruction.” She explained that the projects she had done were more contrived than authentic, noting: “Everybody seems to think

[project-based learning] is kind of hard in math.” At another school, a teacher reflected on the challenge of teaching algebra with a project-based approach: “I need to do more math projects.... I think that math teachers really have it hard [when it comes to] algebra. If you look at algebra, algebra teachers need to teach the [state] test. There’s also a district algebra test that students need to pass.” The principal of this school concurred: “We plug in project-based work where we can. But in many cases, an algebra class is an algebra class.”

Real-world connections in instruction: In most network schools, creating *connections to the real world* was deemed an important way to facilitate the transfer of knowledge from what students learn in school to what they will encounter outside of school and once they graduate. Staff from more than half of the schools (12) reported integrating real-world connections into classroom instruction, including opportunities to present to an authentic audience (as noted in the West Virginia project example described above). Freshmen at one school, for example, completed a semester-long project focused on sustainability. Students visited local companies that had taken steps to become more environmentally conscious or sustainable and then chose a sustainability issue that affected their school or city. They gathered data (e.g., on electrical use at the school) and examined the topics through multiple lenses, including an ecological perspective, an economic perspective, and an equity perspective. They then made a final presentation to students, parents, and community members. As part of this project, students competed to obtain grant money to take action and address the sustainability issue they studied.

At a second school serving a large immigrant population, students engaged in a media arts project that involved making online videos aimed at undocumented young people, in which they talked about “knowing your rights.” This project was undertaken in collaboration with a legal aid assistance group. Students conducted background research, reviewed legal documents to determine what young people should know, and created the videos. Teachers at this school described how this type of authentic project work meant that students were learning with purpose, because their learning actually related to what they were experiencing in their lives. At another school, a biology teacher shared a project entitled “Media Saves the Beach,” which students completed after changes to the state budget eliminated some of the funding for water testing. For this project, students worked with two outside organizations to learn how to do basic water testing, identify relevant local locations to do water testing, and test for four indicator bacteria. After completing the tests, students generated a variety of “non-fiction products,” such as newspaper articles published in local newspapers, articles published on the collaborators’ websites, and documentary videos. Finally, at yet another school, the dean of students described how one mathematics teacher had her students “play the game of life.” Students were each dealt a series of circumstances—including different occupations, education, and debt—and then had to navigate how to manage within those circumstances.

Internships: School staff and students also reported that internships provided students with real-world learning experiences. Within one network’s schools, internships were considered central

to learning, and students participated in internships in all four years, for two or three days a week throughout the year. These internships offered students the opportunity to explore an area they were passionate about, be exposed to career options, and do authentic work. The students and internship mentors designed and implemented projects that incorporated academic learning goals. Students switched internships each year or semester so they could experience between four and eight internships over the course of their high school education. One student at this school described how the program encouraged students to understand themselves and to embrace their community and culture as a means of supporting learning. Another student described the school's emphasis on developing one's interests as a learning support, explaining:

It's having something to fall back on when your grades are going bad or you are having hardships in your social life, you always have your passions to fall back on... Those two days a week at my internship gave me motivation to want to pick my life up again and get my grades up.

Many other network schools (12 of 19) incorporated internships for a portion of students at some point in their school career to provide career-related experience, boost life skills, or help with the transition from high school to college and career. For example, one network school had several internship programs related to bioscience careers facilitated by two internship coordinators. All students in Grades 11 and 12 at this school were required to conduct internships and were expected to incorporate their internship work into their senior exhibition (a graduation requirement). One internship program at this school was a selective three-year program (from Grade 10 through Grade 12) at a local children's hospital that eased students into working in this environment. They also offered internships with other local hospitals, as well as an internship with a local radio/television station that focused on how to construct public health announcements and report a health-related story.

Learning Supports

Staff at the network schools described the supports they provided to students, both in and out of the classroom, to ensure that *all* students developed the cognitive skills necessary to be well prepared for college and career.

Inside the classroom, teachers from 13 (of 19) network schools described strategies for differentiating or personalizing instruction. Differentiation was particularly important because most schools had heterogeneous classes with students of varying abilities. For example, a teacher at one network school reported that she offered differentiated homework assignments to students based on their ability levels, and students who needed additional challenges were given opportunities to complete additional projects and earn honors credit. A biology teacher at this school explained that project-based learning allowed for differentiation because "ideally, a project should provide some different access points for students."

Teachers also discussed differentiating instruction through project and group work. For example, the resource specialist at a school with a full inclusion model described how project-based learning allowed for differentiation and was helpful to the students she served, explaining:

One of the great things with projects is [that students] really have the ability to get in there and have their strengths shown. And so they always feel much more part of the group, much more part of the class, even though content-wise they might be lower than peers.

She described how one teacher, when teaching *The Picture of Dorian Gray*, brought in audio books and a graphic version of the novel to address specific students' learning needs. The teacher of this class explained that his primary objective in doing so was to expose his students—regardless of their level—to Oscar Wilde's language and to show them how writing can be poetic.

Teacher survey data highlighted the network schools' focus on personalized supports and instruction. On average, teachers agreed that teachers in their school were committed to every individual student (mean = 3.21 on a four-point scale). For this measure, teachers indicated the extent to which they agreed that teachers at their school paid attention to what motivated each student, adjusted instruction to meet the needs of each student, tried to make progress with even the most difficult and motivated students, provided extra assistance to any student who needed it, and identified challenging yet achievable goals for each student.

This differentiated approach to instruction formed the basis of the instructional program at three schools that provided mainly individualized education. (See the section below titled "Intrapersonal Domain: Strategies to Develop Academic Mindsets and Learning-to-Learn Competencies".) In one of these schools, students spent a significant amount of time in advisory, where they focused on implementing individualized learning plans as well as group projects. Students participated in internships several days a week that focused on their interests. Another school, which served students who had dropped out of traditional schools, provided flexible learning opportunities to meet the needs of students who preferred to work independently or who were unable to attend class on a regular basis. To earn credits, students could choose to take traditional courses, complete individual projects, or engage in online learning opportunities. The option for individual project work was designed to provide opportunities for students to follow their interests and further engage them in school while meeting credit requirements. Multiple options for earning credits allowed students to work at their own pace and around their own schedules.

Outside the classroom, teachers reported that supports for students included additional support classes, tutoring opportunities, and teacher office hours during, before, or after school. A consistent theme across respondents and schools was that teachers provided extra help to students when needed.

Assessing for Deep Content Knowledge

Staff at the network schools described a range of assessment strategies that were used to monitor and ensure that students gained deeper learning cognitive skills to prepare them well for college and career. These included longer term assessments, such as exhibitions or portfolios, which allowed students to demonstrate their cumulative knowledge and skills and their readiness to move on to new stages of education or work (e.g., to move from one grade to the next, or to graduate). Teachers also described more frequent assessments to gauge students' understanding of concepts, as well as more traditional summative assessments, such as tests.

Teachers and leaders at most network schools (12 schools) reported that students completed longer term assessments such as portfolios or exhibitions. At one network school, for example, students graduated by portfolio. In this school, each teacher mentored three or four seniors to prepare a graduation portfolio in each subject area and to defend their portfolios in front of a panel of evaluators. The evaluators used state-approved rubrics to assess the work, which the students completed in lieu of taking the standardized state exams.⁵ Another network school had both a benchmark portfolio that students completed in Grade 10 and a graduation portfolio. The portfolio process provided multiple opportunities for students to demonstrate mastery. Both portfolios were high stakes, determining whether students would progress on to Grade 11 or graduate. For each of the portfolios, the students had to defend artifacts that they had been working on throughout their academic career at the network school. The portfolios were assessed using a rubric. The Grade 11 science teacher reported that these portfolios encouraged students to focus on “growth and personal reflection” and required them to demonstrate how “they’ve grown personally and academically over their high school experience.” In addition to the two portfolio assessments, most students also took part in multiple exhibitions while attending this school, where they had the opportunity to showcase their learning and demonstrate their knowledge.

These assessment strategies also facilitated further connections to the real world. For example, at one school, a biology teacher and humanities teacher discussed a new six- to eight-week “Food Project” that students were completing, which focused on nutrition. For this project, students chose a particular diet (e.g., carnivore, vegetarian) to study and then identified the nutritional merits of that particular diet. They also learned to cook and prepare a meal based on that diet. As part of the assessment strategy, students contributed to a class book called *The Thinking Person’s Cookbook*, which included recipes and personal narratives. In addition, the students partnered with local organic farmers and food vendors to create a menu and run their own “pop-up” restaurant for one night, which local community members could attend. Students received feedback from the community after they ran the restaurant, and from the chefs with whom they worked in preparation for the event.

⁵ This school was a member of the Performance Standards Consortium in New York—a coalition of small high schools that were approved to use rigorous performance assessments aligned with state standards in place of certain Regents exams.

In addition, teachers commonly reported the use of informal, formative assessment (discussed at 17 network schools) to inform instruction. These included exit slips where students answered a question or prompt at the end of class, teacher check-ins with student groups, questions during class to gauge understanding, or “do now’s.” Teachers reported using these practices to inform the following day’s instruction and to gauge students’ progression towards learning goals.

Three network schools used mastery-based grading for earning credits, whereby teachers set specific learning goals for students aligned with standards, and students demonstrated mastery of those goals to earn credit. Teachers and administrators noted that mastery-based grading helped to ensure that students gained the core academic content knowledge expected for each goal, and that they developed key skills for college and career readiness. The principal at one of these schools reported that students had content-related learning goals as well as “habits of work” goals. If a student demonstrated strong habits of work, he or she was given additional opportunities to revise work to meet the content standards. Staff at several network schools noted that they provided multiple opportunities for students to revise work and demonstrate mastery of concepts. In one school, however, teachers expressed concern that because students were given so many opportunities to demonstrate mastery, they might be unprepared for the different expectations in college.

In summary, staff at the network schools reported a range of strategies for monitoring and assessing students’ learning. Common features included a focus on longer term cumulative knowledge and reflection through the use of portfolios and exhibitions, as well as frequent formative assessment to closely monitor students’ learning and progression on a daily basis.

Interpersonal Domain: Strategies to Develop Communication and Collaboration Skills

Two of the six deeper learning dimensions focus on the development of interpersonal skills considered essential for future success: communicating effectively and working collaboratively.

Based on the Hewlett Foundation’s (2013) definitions of the deeper learning competencies, effective communication is demonstrated when students communicate complex concepts to others in both written and oral presentations; structure information and data in meaningful and useful ways; listen to and incorporate feedback and ideas from others; provide constructive and appropriate feedback to their peers; understand that creating a high-quality final communication requires review and revision of multiple drafts; and tailor a message for the intended audience.

Collaborative work is demonstrated when students cooperate to identify and create solutions to academic, social, vocational, and personal challenges. Specifically, collaborative work encompasses students working with others to complete tasks and solve problems successfully; collectively identifying group goals; participating in a team to plan problem-solving steps and

identify resources necessary to meet group goals; and communicating and incorporating multiple points of view to meet group goals.

Staff at the network schools discussed how their schools' goals aligned with the interpersonal domain, and they described the ways in which their strategies addressed and developed these skills through regular instruction, assessment strategies, and internship experiences.

Interpersonal Domain: Main Findings

Overall, we found that the following main goals and strategies were used to develop communication and collaboration skills:

- **Explicit Goals:** Interpersonal skill development was emphasized by a majority of network schools (11 of 19).
- **Instruction:** To develop collaboration and communication skills, staff in nearly all of the schools reported incorporating at least some collaborative group work into instruction. In the majority of the schools, this group work happened on a consistent, daily basis. Three quarters of schools (14 of 19) also offered internship opportunities as a way to strengthen these skills outside school settings.
- **Assessment:** To develop communication and collaboration skills, staff in more than two thirds of the schools (12 of 19) used longer term assessments (such as portfolios and exhibitions), where students had to present and defend their work, as well as provide feedback to their peers.

Communication and Collaboration Goals

When asked about goals for students, the staff and leaders at a majority of network high schools identified the development of communication and/or collaboration skills as a goal. Respondents described several different aspects of these skill sets as a focus in their classrooms and schools.

Goals for Development of Communication Skills

Staff in over half of the network schools (10 of 19) emphasized that developing students' ability to communicate effectively was an explicit goal. At these schools, communication skills were included in schoolwide goals established by the network or the school itself and confirmed by the principal. For example, "Excellent Communicator" was among the five official goals for students at one of the schools. Similarly, the principal of another school shared that their learning goals centered around four leadership skills, one of which was "communicating powerfully." In this latter school, the principal also noted that the school's assessment goals included communication. He explained that the school's exhibitions and portfolio tasks were not aimed simply at measuring academic competence; they were also designed as a vehicle through which students could learn how to communicate effectively and "powerfully." The principal added that the school's students were "great speakers, just wonderful speakers, they have unbelievable courage and presentation skills

as a result of just having the opportunity so often to present in front of people.” In two schools serving large populations of English language learners, staff and leaders alike discussed how language development was an important goal. For example, a Grade 12 history teacher at one of these schools said: “One of the goals is obviously to ... [develop] the language skills they need to function and to be successful outside of our school once they graduate.”

In a few network schools, interviewed teachers specifically highlighted either *oral* or *written* communication skills as a key learning goal for students. For example, in one school, focus group teachers discussed how they wanted all students to be confident and comfortable speaking in front of an audience and thus provided many opportunities for students to present their work. Teachers at another school wanted their students to be able to form and express opinions and explanations in written form.

Goals for Development of Collaboration Skills

Staff from only 4 of the 19 network schools explicitly emphasized collaboration skills as a goal for students. For example, a teacher from one of these schools explained that one of his goals was for students to become collaborative workers. A teacher from another school shared that his goal was for students to learn how to work both collaboratively *and* independently. The teacher explained:

We get a lot of students from middle schools where they get independence, not necessarily the good form, where they can do whatever they want. When they come here, they have to get into a new mindset. And that takes time. In their freshman year, that is really when we try to break them into trust, respect, and responsibility.

Although teachers at only a few schools discussed collaboration skills as a goal, the instructional activities described at many more schools involved students working together on projects and other assignments and giving feedback to each other, suggesting that collaboration was perhaps a more prominent underlying goal of instruction in the network schools than this number would indicate. (See the section below on “Instructional Activities: Collaborative Group Work and Internships.”)

Our case study data provide rich detail on the nature of the opportunities for collaboration and communication that were evident in network schools, as well as the instructional strategies used to develop these skills. When we asked staff to describe a particular unit they taught, they provided numerous examples of opportunities for students to collaborate with each other (e.g., participate in group projects) and opportunities for written and oral communication of student work (e.g., project presentations).

Instructional Activities: Collaborative Group Work and Internships

To address their goals for the development of communication and collaboration skills, the network schools incorporated strategies to develop these skills into their instructional programs, specifically through the use of group work and internships.

Development of Communication and Collaboration Skills Through Group Work

While two of the study's network models (implemented in three schools) reportedly emphasized individualized approaches to learning, the majority of the networks in this study placed just as much—if not more—emphasis on group work as a critical part of student learning. Staff in nearly all of the network schools reported incorporating at least *some* group work into instruction. In the majority of the schools, this group work happened on a consistent, daily basis. Network school staff cited various reasons for and intended outcomes associated with group work, including the development of communication and collaboration skills

Some staff from network schools reported that one intended outcome was building *communication* skills. For example, two teachers in one school shared that a goal for group work was providing peer support and assessment feedback. A teacher from another school explained that the school's cooperative learning instructional approach was intended, in part, to teach students how to advocate for themselves in preparation for college. At another school, which had a large population of English language learners, heterogeneous groupings enabled students to help each other with language, allowing students with lower language proficiency to learn from peers with stronger language skills.

Staff from three schools shared that another intended outcome of group work was fostering *collaboration* and reducing reliance on staff. For example, staff at one such school explained that having students learn when to ask for help and when to work together to address authentic problems was one of the strengths of the school's approach, and that their group projects helped to facilitate the development of those skills. In one school, several students in a focus group commented on how group work had taught them collaboration skills. They noted that they had always preferred to either work independently or had automatically assumed a leadership role in a group, but the school's approach had taught them to occasionally step back and allow others to lead.

Teachers provided many examples of how they used group work to develop students' collaboration skills. At one school, an English teacher described a project in which her entire class had to work together to write and stage a puppet show. She emphasized the high level of collaboration that took place during the creation of the play as well as during the actual production. The same teacher also reported a project where students worked in pairs to publish a research piece in which they mapped out their local city as it related directly to their lives (e.g., showing bicycle lanes with safety issues). The teacher shared that sometimes she lets students pick their partners, but other times she randomizes selection so that students learn how to work with different people. This type of collaborative work was typical of the descriptions we heard in the schools that focused on group work. Indeed, five schools explicitly mentioned using heterogeneous grouping strategies.

In at least four schools, however, group work seemed to happen less frequently or it varied by class and content area. For example, at one of these schools, the government class incorporated

many group projects. As the teacher explained: “That’s what government is—they have to work with other people, and they have to come to consensus or come to an agreement.” Collaborative group work was reportedly not as prominent in other classes, however.

Development of Communication and Collaboration Skills Through Internships

Internships were also a key strategy used by network schools to develop communication and collaboration skills. As described above, students participated in internships in the majority of the network schools. In two of these schools (both of which were members of the same network), internship opportunities were a central part of students’ educational experience because students participated in them during all four years of high school and for two or three days a week.⁶ The network described the internship “as the main root to deepening student learning and academic growth.” However, in most other schools, students’ internships were less frequent and/or took place in the upper grades only. For example, in one school from a different network, students participated in a month-long internship in their junior year and a three-week internship in their senior year.

Regardless of intensity, network school staff reported various expected outcomes of these internships, including the development of specific communication skills. For example, in one school, which had a large percentage of English language learners, all Grade 11 students participated in an internship outside the school for 13 weeks in the spring. The internship coordinator said that language development was one of the key purposes of the experience. Before this school’s students began their internship, they took an “Internship Prep Course,” during which they developed interviewing skills, learned how to let the staff at their internship know when they did not understand something, and obtained firsthand experience navigating new environments. In another school, students were required to interview their mentor at the internship site about the steps the adult took to achieve his or her current job. A biology teacher explained that through this process, students might learn about their mentors’ experiences in college and how those experiences helped them attain their current positions. Another implicit purpose of the student internships was to develop students’ ability to work with others. For example, students in one school interned and worked together with people of different ages and in varied settings, such as hospitals and senior citizen centers.

Assessments: Presentations and Exhibitions

As discussed above in the section “Cognitive Domain: Strategies to Promote Mastery of Core Academic Content and Critical Thinking Skills,” school staff at network schools reported using a range of assessment strategies to ensure that students developed academic content knowledge

⁶ The principal of one of these two schools explained that starting in the 2013–14 academic year, freshmen would not have internships.

and complex problem-solving skills. The strategies used—including presentations and writing prompts—in many cases also targeted the development of collaboration and communication skills.

The majority of network school staff discussed some form of long-term cumulative assessment, such as student portfolios and/or student exhibitions. These exhibitions were often high stakes (i.e., students had to pass them to progress to the next grade or to graduate) and included components that allowed for assessment of oral and written communication skills. These types of assessments aligned with aspects of effective communication as defined by the Hewlett Foundation (e.g., “Students should be able to communicate complex concepts to others in both written and oral presentations” and “Students structure information and data in meaningful and useful ways”).

Many of these portfolios or exhibitions required students to present their work to peers and/or staff and community members. For example, in one school that we described earlier, students were assessed *primarily* through portfolios and oral presentations throughout their time at the school, including an intensive senior year graduation portfolio requirement where students conducted an oral defense in front of a panel of evaluators. In another school, students led conferences at the end of the semester, during which they presented different pieces of work to fellow students, parents, and representatives from the community. Seniors at a third school were required to complete a “senior talk” presentation, during which they reflected on the progress they had made in school, the challenges they had faced, and their plans for the future. In a fourth school, both sophomores and seniors were required to prepare an oral defense—a presentation to defend their research in front of a panel of teachers, community members, and students, where students were rated on a rubric on their presentation skills, among other things.

The portfolios and exhibitions that network school staff described also incorporated student writing. For example, staff from one school reported that their assessments focused on academic writing because they needed to prepare their students for the New York Regents Examinations. In another school, a Grade 10 portfolio consisted of three writing components: a description of students’ internships, an essay or project from their core classes, and a self-reflection piece. In a third school, staff explained that there was a heavy emphasis on revision, both in daily work and long-term project work, where students got input from teachers and peers on their work. A 10th grade social studies teacher said, “There’s a heavy emphasis on revision. That’s really where the learning takes place...”

Peer review was a core component in several of these network schools’ portfolio processes. During presentations, students asked questions about and provided feedback on their peers’ work. This process helped the presenting student learn how to incorporate feedback and ideas from others, while the students in the audience learned how to provide constructive and appropriate feedback. For example, when providing oral feedback on each other’s work, students at one school were reminded to be “helpful, specific, and kind.” In addition, this peer critique—both during

portfolio work and on a more frequent basis in the classroom—was intended to help improve students’ work and contribute to the collaborative focus of the classroom. At one school, two of the four interviewed teachers described how they built peer feedback into their classroom interactions. The ELA teacher explained:

Part of the beauty of projects is the peer critique. And how they teach each other through [those critiques]. It’s like they’re making their project better and better and better and they are getting feedback from their peers and they are actually teaching each other at the same time.

Intrapersonal Domain: Strategies to Develop Academic Mindsets and Learning-to-Learn Competencies

Network schools also adopted explicit strategies to develop academic mindsets and learning-to-learn competencies.

Learning how to learn means that students develop skills to monitor and direct their own learning. They set learning goals and keep track of their progress; they know and apply a range of study skills and strategies; they monitor their comprehension as they learn; they work well independently but ask for help when needed; they reflect on their learning experiences and are aware of their strengths and weaknesses; they seek out learning on their own; they delay gratification and refocus after distractions; they use failures and setbacks as opportunities for feedback; they care about the quality of their work; and they continue to look for new ways to learn challenging material (William and Flora Hewlett Foundation, 2013).

Academic mindsets are the motivational components that influence students’ engagement in learning. Students feel a strong sense of belonging within a community of learners; they understand learning as a social process and actively learn from one another; they readily engage in the construction of meaning and understanding through interaction with peers; they trust their own capacity and competence; they see themselves as academic achievers and expect to succeed in their learning pursuits; they believe that hard work will pay off and are motivated to put in the time and effort needed; they perceive the value of developing content knowledge and skills; they see the relevance of school work to their lives and interests; and they understand how the work they do now will benefit them in the future (William and Flora Hewlett Foundation, 2013).

Intrapersonal Domain: Main Findings

Overall, we found that the following main goals and strategies were used to develop academic mindsets and learning-to-learn competencies:

- **Explicit Goals:** Approximately half of the network schools (9 of 19) reported emphasizing intrapersonal goals (learning how to learn and academic mindsets) for students, such as developing self-motivation and persistence, teaching students self-advocacy skills, and instilling the value of becoming lifelong learners.

- **Instruction:** Schools utilized a variety of strategies to encourage the development of these skills, including study groups and student participation in decision making. Three schools also used individualized learning as a way to develop independent learning and self-management skills.

Academic Mindsets and Learning-to-Learn Goals

When we asked school leaders what they hoped students would know and be able to do when they graduated, about half of the network principals (9 out of 19) explicitly identified goals related to intrapersonal skills, such as developing self-motivation and persistence (four schools), teaching students self-advocacy skills (six schools), and instilling the value of becoming lifelong learners (three schools).

At one school, for instance, the school leader noted that he wanted students to graduate from high school and enter college with a strong sense of self-efficacy, resilience, and persistence. He explained that project-based learning and internships helped to build resilience. For example, students might face setbacks that they must learn to overcome during the course of a project, or they might not be accepted for their first choice of internship. Students may build resilience and persistence as they work to secure another placement.

At another school, administrators and teachers explained that their initial goal was to increase college acceptance rates for their students, but that this goal had recently shifted to teaching students the skills they need to *persist through* and *graduate from* college. To this end, teachers mentioned that they focused on instructing their students on how to build resilience and academic independence by encouraging them to form study groups, ask for help from peers as well as teachers, and advocate for themselves. They reported shifting their focus due to the school's high postsecondary attrition rates (their students were enrolling but not graduating from college).

Administrators and teachers at a third school with a substantial population of English language learners identified self-advocacy as a goal for their students. The school had a clear vision of helping students learn how to ask for help when needed, develop the language skills to communicate for self-advocacy, and build the confidence necessary to assert themselves appropriately. One illustration of this was the extent to which the school valued student input in decision making. Describing decision making in the school, a Grade 11 teacher explained that “decisions are made by not just the administration, but everybody has a voice in it. The students have decision-making powers within their classes as well.... I think it's really important for adults as well as students to know that they play a role in the decision making and how things run.”

Finally, a teacher at a fourth school explained that one of their goals was to encourage students to reflect on their learning “to not only get the facts from what they are learning but to reflect back on the process of learning ... how they learn, what was successful about the way that they learned, what they need to work on, and how.”

As these examples suggest, the network schools used a variety of structures and strategies to encourage the development of academic mindsets and an understanding of how to learn, including internships, projects, study groups, and student participation in decision making. In several schools, however, one of the main avenues for developing these competencies was individualized learning.

Instruction: Individualized Learning

Three schools focused primarily on individualized approaches to learning to develop independent learning and self-management skills, with less emphasis on collaborative projects and group work. A school following one of these models, for instance, used individualized learning plans that each student created with the guidance of an advisor, parent(s), and internship mentors. The learning plan identified the student's particular academic and developmental needs, described project work to meet these goals, and outlined expected outcomes and timelines. It was revised as needed and updated at regular learning plan meetings. The framework for the plan included five learning goals: 1) empirical reasoning; 2) quantitative reasoning; 3) communication; 4) social reasoning; and 5) personal qualities.

These learning plans integrated students' interests with learning goals. Each learning plan detailed a series of individual projects, class projects, workshops, and college courses. Each student's plan was unique to his or her own strengths, interests, and challenges. According to school-level respondents, this meant that the issues associated with delivering services to remedial, accelerated, special education, or English language learners were less cumbersome than at a traditionally organized high school. One student at the school explained the focus on individualized learning in the following way:

It's kind of a place that helps you embrace your individuality. You're sort of brought up with group learning where ... you are taught to as a group. And this is the first school I've been to where you're kind of taught to as an individual. We spend a lot of time focusing on our individual interests, like going to the internships two days a week—and really just being singled out for what [we] really need in school and what [we] really want to do.

Another school catered to students who, in most cases, had not met with success in the traditional school system. The school focused on using strong motivational factors (e.g., arts programming) to reengage young people who had dropped out of school, suffered from academic deficiencies, or who had behavior issues. Advisors worked with students to create individualized learning plans, and the advisory system created opportunities for personalized learning and supports for students. The school wanted to give students the opportunity to incorporate their interests into their lives after high school. According to school respondents, they wanted not only for their students to graduate with academic skills, but also with knowledge about how to operate in the world after graduation. They wanted their students to be self-reliant and confident in their ability to face the challenges of life, and to transition smoothly to their post-high school lives.

School Structures and Cultures to Facilitate Deeper Learning

School Structures and Cultures: Main Findings

Most network schools had structures and cultures in place that facilitated the instructional deeper learning strategies discussed above. In this section, we focus on three of these structures and cultures:

- **Advisory classes** were employed by almost all schools (16 of 19) to build relationships between an advisor (usually a teacher) and a group of students who met regularly to foster a personalized and supportive school environment.
- **Alternative scheduling** was implemented by three quarters of the schools (14 of 19) to allow students to spend more time on topics and to accommodate internships, projects, or interventions before or after school.
- **Personalized school cultures** were reported by staff at all schools as a way to engage students in their education and create an environment where students felt supported in their learning through advisory classes, small class sizes, and teacher and student teams.

Advisory Classes

Advisory classes were one of the most frequently mentioned structures used to support opportunities for deeper learning in the network schools. Advisory classes are implemented by schools as a way to strengthen relationships between adults and students and foster a personalized and supportive school culture. Although advisory classes are set up in different ways, they are generally characterized by regular meetings between an advisor and a student or a group of students to provide academic and social support (Education Northwest, 2014).

Almost all of the schools (16 out of 19) used advisory classes, and in all cases teachers served as the advisors. In at least three schools, administrators also served as advisors. Across schools, one of the main purposes of advisory classes, according to network school respondents, was to foster personalization and strong relationships among a group of students and a teacher. Personalization included providing individualized help with college and career preparation, as well as academic support and interventions.

The 16 schools structured their advisory classes somewhat differently, in terms of both grade level composition and the frequency of the classes. Advisory classes had between 15 and 30 students, and about two thirds of the schools (10 out of 16) established these classes in Grade 9 and kept students together in the same advisory groups throughout their high school experience. In the majority of the schools, advisory classes met every day; in others, they convened only once or twice a week. The classes lasted between 30 and 60 minutes, depending on the school. Most

schools did not appear to have a set advisory curriculum, and because of this flexibility, a few struggled with what advisory “should look like.”

At one network school, advisory classes were considered a cornerstone of the school model. In this school, advisory classes functioned “as families,” according to respondents, and students met (in groups of 15) for 30 minutes each day. For the most part, students remained with their advisory class from freshman to senior year. However, students had the option at the end of each year to ask to be placed in another class. The advisory class had many purposes, including delivering student development activities (e.g., building collaboration skills), relationship building, reviewing progress reports and transcripts, and postsecondary planning. Advisory classes were also the platform for student-led conferences, during which students presented a portfolio of work to parents, peers, community members, and school staff; discussed their strengths and weaknesses; and took ownership of their learning. According to one teacher, “the biggest structure in the school is [advisory class, which] helps the students reach their goals because that’s where they do their future planning.”

Freshman students at this school took a wilderness trip with their advisory class to help solidify the group. Junior and senior advisory classes learned about budgeting and made five-year plans. The school also had a Student Advisory Leader Assembly—a student leadership group with a representative from every advisory—that met with the principal to discuss student issues. The school also recently introduced advisory coordinators—seasoned advisory teachers who would coach and support new advisory teachers who were not as familiar with the structure. As a Grade 11 student at the school explained, advisory class is “a little family that a lot of other schools don’t have.... It’s a place you can be comfortable.”

At another network school, advisory classes were “the main portal between communication, advocacy, and counseling for all of our students,” according to the principal. Students at the school were assigned the same advisor all four years of their academic career, and each advisory class consisted of about four or five students from each grade level (Grades 9–12). Students had advisory class four times a week (Monday, Tuesday, Thursday, and Friday) for a 45-minute period, as well as every day for a 15-minute period. Students checked in with their advisors every day at the start of school and then met up again with their advisory class after lunch. The principal noted that the structure of the advisory class allowed for “academic intervention” as well as “community circle” time. For example, students in Grades 11 and 12 mentioned a variety of activities that took place during advisory, such as socio-emotional support, community building activities (including school beautification or inter-advisory competitions), study hall, and sustained silent reading (SSR). The principal further explained that advisors were “responsible for parent conferencing that happens twice during the year.” Additionally, advisors assessed major portfolio defenses in Grades 10 and 12. As the principal explained: “The advisor is one of the key people that is assessing the student’s work.”

As noted above, the advisory classes varied in terms of structure but in most of the network schools, the purpose of the advisory classes was to support the development of a number of different deeper learning competencies, such as the development of content knowledge and communication skills through portfolio presentations, the development of collaboration skills through student relationship building, and the development of intrapersonal skills through leadership skill building and self-reflective learning activities.

Alternative and Flexible Scheduling

Alternative or flexible scheduling is another strategy many network schools employed to enable instruction aligned with deeper learning. For example, five schools used block scheduling, where classes are scheduled for longer time periods (e.g., 90 minutes instead of 50 minutes), to allow students to spend more time delving into topics. A Grade 10 multimedia teacher at a school with two-hour blocks explained that he found this longer period essential for deeper learning. Having come from a traditional high school himself, he described the difference in the following way:

The thing about this school that's really unique to the other schools that I've taught at, that really promotes the deeper learning, is the schedule I am coming from a school where I taught ... five periods, I had four different classes that I taught ... and so you literally prepped four different lessons every day. You can't develop, I mean you can but you are going to kill yourself, trying to develop quality lessons and projects and all that stuff. And then in addition, each period was 50 minutes..., so the kids don't really have a chance to go into depth on a project. But here, they do humanities for two hours, multimedia for two hours ... and having those two hours as a teacher, it's great ... because otherwise by the time you set up, it's almost time to tear everything down.... I teach two two-hour periods but having one class to prepare for, I can really create great lessons and great projects."

Another network school that employed block scheduling began the day with what it called “zero period”—a period before school started when teachers were available for students to ask for help with any difficulties or questions. Nine other schools had mixed block, flexible, or extended day schedules to accommodate internships, projects, or interventions before or after school. One network school, for example, had a multisession schedule, where seniors began their day earlier than other grades to take courses like Advanced Placement (AP) English or to leave early for internships. In another school where students conducted long-term projects that often involved fieldwork and presentations to or activities with community audiences, teachers of a certain grade level had flexibility to modify the classroom schedule on certain days to make room for these onsite or offsite activities.

Personalized School Cultures

Personalization can facilitate deeper learning through the creation of a supportive and engaging environment. Network school staff and leaders from all schools discussed the creation of

personalized school cultures and learning environments as a way to engage students in their education, create an environment where students feel supported in their learning, and ensure individual students meet learning goals (and receive supports, when necessary, to do so). Almost half of the network schools (8 out of 19) explicitly described their school cultures as “families” with high levels of trust, respect, and support. At one network school, a student explained it this way: “This school is like our house.... The teachers are like parents and the students—we are like brothers and sisters. We do not have secrets.” At another network school, students reported feeling very supported by their teachers, in particular in their advisory classes, where they reported that teachers served as guides and mentors and sometimes as parents. As one lower division student noted: “The teachers pay attention to you, they help you a lot, they take care of you, and they ask questions.... So they are always there for you.” Similarly, an upper division student explained: “If at any point a student feels lost or confused, a student can always go to a teacher.” Other network schools encouraged students to address staff by their first names to make students feel comfortable approaching adults on campus.

These sentiments were reflected in the student survey where students were asked about the extent to which they felt a sense of belonging at their school. On average (mean score = 3.20 on a four-point scale), students in network schools agreed with statements such as, “I feel like a real part of my school,” “People at this school are friendly to me,” and “There’s at least one teacher or other adult in this school I can talk to if I have a problem.”

Similarly, one aspect of school culture that teachers reported on in the teacher survey was their sense of collective responsibility. Specifically, teachers indicated the degree to which they agreed with statements such as “Teachers in my school help maintain discipline in the whole school, not just their classroom,” “Teachers in my school take responsibility for improving the school,” and “Teachers in my school feel responsible that all students learn.” Teachers in network schools, on average, reported that they agreed with these statements (mean score = 3.30 on a four-point scale).

Network school respondents emphasized that personalization and supports had been established in multiple ways. (See also the Learning Supports section.) In addition to creating personalization through advisory classes, many schools established it through small class sizes (15–25 students), as well as through teacher and student teams. Some schools grouped students and/or teachers into teams that stayed together through the year or over multiple years, enabling a core group of teachers to get to know a smaller number of students well, both academically and socially. For example, staff at one network school reported that the smaller class sizes enabled by teacher teaming were important to their success as a school. Each team of two teachers taught approximately 52 students each day, split into two classes of 26, for one semester. At the beginning of a new semester, co-teachers worked with another 52 students in the grade. Each class of 26 students remained together for the duration of their studies, from freshman to senior year. Teachers and administrators cited the smaller class sizes as fundamental to knowing students

well and being able to serve them better. As a Grade 10 teacher explained: “You have 50 students that you’re responsible for instead of 150. So that by knowing your students, you can push them in their learning.... You know where each of your students is at and you can push them.”

According to the principal at another network school, “the backbone of our school is the teacher teams; our school wouldn’t really function without those teams.” Teachers at this school were grouped into interdisciplinary teams that worked together with a set group of students. There were three Grade 9/10 teams, with approximately 70 students in each, where all teams included a mix of students in Grades 9 and 10. There was one Grade 11 team and one Grade 12 team. Combining Grades 9 and 10 was intentional: students stayed in the same team from Grade 9 to Grade 10, and the experienced Grade 10 students provided support to new Grade 9 and 10 students. The teacher teams helped to facilitate this support by encouraging the more experienced Grade 10 students to be leaders within their classes and to teach the new students about why they approached learning at the school in the way they did. By having the same teacher team in Grades 9 and 10, students could build closer ties with their teachers and other students within their team. In addition, the structure established a group of teachers who could support and monitor progress among a consistent set of students.

Differences Between Network and Non-Network Schools

The data we collected from network schools provides rich information on the strategies and approaches these schools used to address the deeper learning competencies in the cognitive, interpersonal, and intrapersonal domains. While the focus of this report has been to describe these approaches, in this section we provide some comparative information on the strategies, structures, and cultures of the *non-network* schools and the extent to which they differed from the network schools. For this analysis, we collected only principal interview data and teacher survey data for the 11 non-network schools, and therefore this section provides a limited perspective on these differences and similarities. (For more information about the qualitative methodology, see Technical Appendix, Section III.)⁷

Differences Between Schools: Main Findings

Overall, we found the following main differences between non-network and network schools:

- **Cognitive domain:** Non-network school principals reported less use of project-based learning and fewer longer term cumulative assessments than did principals in the network schools. However, principals across the two types of schools described a similar emphasis on implementation of the Common Core and providing learning supports for students.

⁷ Our second and third reports provide more detailed information on the differences in opportunities and outcomes between network and non-network comparison schools.

- **Interpersonal domain:** Fewer non-network principals reported an emphasis on developing interpersonal skills, and their school descriptions reflected less group work and fewer internship opportunities for students than in the network schools.
- **Intrapersonal domain:** None of the non-network school leaders identified competencies related to academic mindsets and learning how to learn as part of their school's learning goals for students, compared to about half of the network principals.
- **School structures and cultures:** Fewer non-network school principals reported having advisory classes and alternative scheduling in place and they described less of an emphasis on developing personalized school cultures compared to the network schools.

Cognitive Domain

A majority of principals at both network and non-network schools discussed goals related to development of cognitive skills. In addition, a focus on the CCSS was not unique to the network schools. The non-network principals we interviewed reported that they were either in the process of implementing the CCSS or had started getting ready to implement the CCSS (for example, by providing training to teachers). However, in terms of instruction, while project-based learning was implemented at nearly all network schools to some extent, principals at only 6 of 11 non-network schools reported that project-based learning happened in some classes, depending on the teacher and classroom. A few of these principals mentioned that project-based learning happened more in English and social studies. One non-network principal did report more systematic use of projects as a means to bridge language gaps for students, and the principals of two non-network schools in one district discussed a district-required senior project that is usually done independently by the student and that requires writing and presenting, as well as a community service component. The teacher survey data further suggested differences in instructional strategies between network and non-network schools. As noted earlier, teachers reported that they believed instruction should focus on higher order thinking skills and allow opportunities for student-directed learning (mean = 3.49 on a four-point scale). The teachers at network schools agreed with the relevant statements to a greater extent than those in the non-network schools (effect size = 0.34). The survey data also highlighted the network schools' focus on personalized supports and instruction. On average, network school teachers agreed that teachers in their school were committed to every individual student (mean = 3.21 on a four-point scale). The teachers at network schools agreed with these statements to a greater extent than those in the non-network schools (effect size = 0.81).

Like the network principals, non-network principals also discussed a range of assessment strategies, including traditional tests and quizzes; ongoing informal assessment (e.g., exit/entrance tickets); the use of rubrics to assess projects; benchmark assessments (sometimes district-based); and district/state tests. However, principals in non-network schools reported longer term cumulative assessments less often than those in network schools. The exception was one non-network school principal who reported that students developed a portfolio across Grades 6–12, which they then defended in Grade 12. This school also incorporated portfolio

reviews (including peer review) to make sure students were on track. In addition, teachers designed their own assessments (including performance and formative assessments), and the school was moving towards mastery-based grading.

With regard to learning supports, reports from non-network and network principals did not differ substantially. Non-network principals discussed a variety of supports, including afterschool tutoring programs and programs that allowed more advanced students to take college courses (e.g., College Now).

Interpersonal and Intrapersonal Domains

One of the main differences between network and non-network schools was the extent to which they placed an emphasis on developing competencies in the interpersonal and intrapersonal domains, with non-network schools placing less emphasis on these skills. For example, none of the non-network school leaders identified competencies related to academic mindsets or learning how to learn as part of their school's learning goals for students. In addition, fewer non-network principals (4 of 11) than network principals (11 of 19) identified goals that emphasized development of communication or collaboration skills.

Related to the interpersonal domain, among non-network schools, only two of the principals described group work as a strategy that was used on a consistent basis in their schools. One of these principals reported “a lot of teamwork” because students worked together on projects. The other principal reported that teachers used a workshop model that incorporated collaborative work. In an additional three non-network schools, group work reportedly happened more frequently in particular subjects (e.g., science) or with certain teachers. For example, one principal said that students learned collaboration through their lab work. Communication, though not specifically discussed by most non-network principals, seemed inherent in much of the collaborative work they discussed. For example, one school's workshop model incorporated time for students to share and reflect upon the work they had done.

Similarly, only one non-network principal reported that all of the school's students participated in internships. This principal explained that all students completed an internship or community service as part of their senior project. The principals of a few other non-network schools discussed internships, but these internships were not required and/or were not available to every student on campus. For example, one non-network principal reported that they introduced students to internship opportunities funded through a nearby performance center as part of their arts focus. At another non-network school, students in one of the school's small learning communities had summer internships.

School Structures and Cultures

Finally, there were differences in the structures and cultures of network and non-network schools. While almost all of the network schools (16 of 19) had advisory classes, only 4 of the 11 non-network schools had this structure in place, and one of these schools had them only in Grade 9 (although it had plans to expand them to Grade 10). Similarly, while a majority of network schools (14 of 19) had block or flexible scheduling in place, only 3 of the 11 non-network schools reported having alternative scheduling, one of which only employed block scheduling in some of their small learning communities. (One non-network school used to have block scheduling but the union disallowed it from schools in the area.)

In terms of school culture, students from network schools reported having a stronger sense of belonging at their schools than students in matched non-network schools, based on the student survey (effect size = 0.34). In addition, teachers from network schools reported having a higher degree of collective responsibility (see the section on Personalized School Cultures) than teachers in matched non-network schools on the teacher survey (effect size = 0.88). Some of the non-network school principals described building school culture through student clubs and other student activities, as opposed to through personalized school cultures (as in the network schools). Some non-network school principals also reported larger class sizes (more than 30 students). In addition, the principal of at least one of the large, non-network schools noted a mixed student culture of “the smart kids” and the “regular kids” and was working on integrating students better.

Conclusion

In this report, we provided an overview of the strategies, structures, and cultures in a set of 19 schools participating in networks associated with the Hewlett Foundation’s Deeper Learning Community of Practice. These schools were all identified for the study as moderate to high implementers of deeper learning; however, they took different approaches to this work and emphasized different aspects of deeper learning. Our descriptions of the network schools’ approaches across three domains of deeper learning (cognitive, interpersonal, and intrapersonal) suggest the following key takeaways:

- **Network schools took a range of approaches to developing the deeper learning competencies.** This study examined schools from across 10 networks, all of which took different approaches to developing the deeper learning competencies. Some models emphasized long-term, in-depth project work, some integrated intensive internships, some focused on creating individualized learning plans for students, and others focused on collaborative classroom work. In some cases, strategies and approaches were meant to address the unique needs of the student population (e.g., language development or dropout recovery).

- **Most schools integrated project-based learning to develop mastery of core academic content knowledge and critical thinking skills.** However, projects looked different in different schools, ranging from semester-long projects with multiple components and assessments to short-term projects addressing specific units. Projects typically involved real-world connections and experiences, tasks differentiated to students' skill levels, and a range of assessment strategies to measure students' deeper learning cognitive skills.
- **Interpersonal skill development was a goal at a majority of network schools and was addressed through instruction, assessment, and internship opportunities.** Group work and assessments that included presentations and writing prompts were common features of the network schools' instructional programs. Internship opportunities were intended to build language skills and students' ability to work with community members.
- **Network schools used a variety of structures and strategies to encourage the development of academic mindsets and learning-to-learn skills.** Relevant strategies included internships, projects, study groups, and student participation in decision making to enable students to monitor and direct their learning and develop skills to be successful learners. Three schools from two networks focused explicitly on individualized approaches to learning as a means of developing independent learning and self-management skills.
- **Most network schools had established structures and cultures to support the implementation of instructional strategies aligned with deeper learning.** These included advisory classes, alternative scheduling, and personalized learning environments. According to respondents, advisory classes and a personalized learning environment helped to build strong relationships among students and teachers, engage students in their schoolwork, and provide an environment where students felt well supported in their learning. Alternative scheduling (such as block, flexible, or extended day schedules) allowed students to participate in internships and accommodated project work and interventions before or after school.

As we discussed in the introduction to this report, the first assumption of the deeper learning initiative is that educators can design/redesign schools' instructional strategies, structures, and cultures to explicitly focus on deeper learning. While these approaches may differ from one another, it is assumed that they will be collectively distinct from more traditional and commonly implemented educational approaches. The data discussed here provide evidence to support this assumption. Across the 19 network schools included in this analysis, we observed the many ways in which schools designed instructional strategies to develop deeper learning competencies. We observed commonalities in the approaches—for example, substantial numbers of schools implemented less traditional learning strategies including project-based learning approaches, offered learning opportunities outside of the classroom, and created structures to personalize education. We also observed many differences among the approaches—for example, in the level of emphasis each school placed on certain dimensions of deeper learning, the combinations of instructional strategies implemented, and the degree of focus on individualized education.

Comparisons with the non-network principal interview and teacher survey data indicated that, when taken together, these various strategies, structures, and cultures were collectively distinct from the way instruction was organized in more traditional settings.

These data demonstrate that there are many different ways in which schools can approach deeper learning. However, the variation in approaches also raises questions about whether schools and networks are interpreting deeper learning in different ways and whether certain strategies, structures, and cultures are more effective than others in developing the deeper learning competencies. The field would benefit from additional research on how schools can operationalize deeper learning in their contexts and how schools might be optimally organized to promote opportunities for deeper learning and related student outcomes.

While comparisons between the network and non-network school principal interview data suggested that the network schools employed strategies to foster the deeper learning competencies more than the non-network schools, our qualitative data from non-network schools were limited, particularly with respect to instructional strategies. In the next report—our second in a series of three—we provide a more rigorous analysis of the differences between network and non-network schools, focusing on the second assumption of the deeper learning initiative: that students in settings designed to promote deeper learning—including those from traditionally underserved groups—will experience *greater opportunities to engage in deeper learning* than they would have otherwise. This second report—*Providing Opportunities for Deeper Learning* (Bitter, Taylor, Zeiser, & Rickles, 2014)—uses student survey data and instructional assignments that teachers gave to students (“teacher assignments”) across network and non-network schools to explore the extent to which students in network schools experienced different opportunities to engage in deeper learning than students attending non-network comparison schools.

Together, the approaches to deeper learning discussed in this report and the analysis of opportunities discussed in our second report set the stage for our third report—*Evidence of Deeper Learning Outcomes* (Zeiser, Taylor, Rickles, Garet, & Segeritz, 2014)—which examines the *outcomes* of deeper learning using student survey data on interpersonal and intrapersonal outcomes, assessment data from a standardized test examining complex problem-solving skills, and data on graduation rates and postsecondary outcomes.

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