GROUNDING LEARNING IN DEVELOPMENT

You have a strong sense of child development: You know about the specific age you're working with, what they're cognitively able to manage and understand; emotionally and psychologically, what they are feeling; and how to nurture the skills that they need to handle the challenges they face at that point in their life. There's also a lot of emphasis on the variety of different types of learners. There is not a one-size-fits-all approach to teaching. You have to find ways to differentiate to different kids' skills and strengths and scaffold them when they need extra support and [learn] that different children will need different sorts of assistance in different ways.

—A Bank Street teacher candidate

In this chapter, we begin our deep dive into the five dimensions of deeper learning experiences identified in chapter 1 by focusing on how teaching can support children's development in ways that personalize learning. Teacher candidates in the programs we studied learn how to build learning experiences based on students' prior knowledge and cultural experiences, helping them actively construct new knowledge. They connect learning to who students are as well as what they already know. School tasks are intrinsically interesting based on students' experiences, appropriate to their level of development, and scaffolded according to their needs.

The report of the National Academy of Education Commission, *Preparing Teachers for a Changing World,* outlines the knowledge and skills of a developmentally aware teacher in this way:

> Understanding development requires not only a sense of the "whole child" but also a consideration of the "whole child developing in particular social contexts." A teacher who is developmentally aware will know, for example, how the child's prior knowledge and cultural experiences will inform what the child knows and how he may approach new ideas and tasks . . . This teacher will know that a curriculum which encourages children to learn actively and concretely—by observing, collecting information, describing, counting, manipulating, and using what they have studied—will later support abstract thinking that relies on these concrete understandings.

A developmentally aware teacher . . . will also understand that some students still need to learn skills others have mastered earlier, and will know how to diagnose these needs and target teaching and assistance accordingly. A developmentally aware teacher will know that as students progress in their understanding within a domain, they will be increasingly able to look for patterns, to think abstractly and contingently, and to manage multiple variables in more complicated ways. This teacher will be prepared to help students engage in this progression toward more systematic reasoning and symbolic thinking.[1]

These features of a developmentally aware teacher are exemplified by Ted Pollen, a graduate of Bank Street College, now a cooperating teacher, whom we observed in action at Midtown West in New York City—a Bank Street partner school staffed largely by Bank Street graduates. See the box "Developmentally Grounded Teaching in Action"

This short vignette illustrates how Midtown West School and Ted's class are grounded in a developmental framework that supports strong, trusting relationships; collaboration in the learning process; connections to prior experience; teaching that promotes inquiry interspersed with explicit instruction where appropriate; and support for individualized learning strategies as well as collective learning.

Authentic and engaging tasks with real-world connections like the task Ted chose—measuring and comparing children's heights in two classrooms of different ages—motivate student effort and engagement. Students' work is supported through teacher scaffolding and a wide range of tools that allow for personalized learning and student agency. Other scaffolds—like the charts reminding students of their learning processes and key concepts—support self-regulation and strategic learning while reducing cognitive load, in order to facilitate higher-order thinking and performance skills. These also enable student self-assessment, as well as peer and teacher feedback that is part of an ongoing formative assessment process. Routines for reflection on and revision of work support the development of metacognition and a growth mind-set. Meanwhile, students' identities as competent writers, scientists, and mathematicians are also reinforced as their work dominates the walls of the classroom and is the focus of the learning process.

All students feel they belong in this room, where together they are learning to become responsible community members, critical thinkers, and problem solvers. A range of culturally connected curriculum units and materials fosters that sense of inclusion, while a wide array of school supports reinforces that inclusion by addressing student and family needs in multiple ways while incorporating families as partners in the educational process.

Developmentally Grounded Teaching in Action

In Ted Pollen's fourth-grade classroom at Midtown West school in New York city, a racially diverse group of twenty-seven students is deeply engaged in a mathematics inquiry focused on understanding the concepts of range, mean, median, and mode. Some are seated around tables, while others are in pairs or trios on the rug in the classroom meeting area. While some teachers might introduce the three terms with definitions and rules for calculating them and give students a worksheet of problems to fill out, Ted's class has been conducting a study that provides them with the data they are now analyzing: Earlier in the week, they measured and recorded the height of everyone in their own classroom and all the children in one of the kindergarten classrooms who are their "reading buddies." Each then figured out how to display the data distributions with bar graphs they constructed individually, so as to be able to figure out the range, mean, median, and mode for each class and compare them. Working in teams, they use various tools, such as manipulatives and calculators, as they advise and query one another about what to do.

Ted and his two student teachers move unobtrusively among groups, watching the process and occasionally asking questions to help move students to the next level of understanding. It's clear that he is thinking about students' zones of proximal development as he chooses his questions. Ted says to one group: "Think about your design. What's the best way of displaying the data so you can make an actual comparison?" In another, he asks, "Can someone give me the range for kindergarten? Our range? Are there any outliers?" This led to a realization that there was little overlap between the two groups, but there were a few relatively short fourth graders and one very tall kindergartner. A student said proudly, pointing to that data point: "That's my reading buddy!"

In yet another group Ted observes to one of the boys, "You're having the same problem that she's having," pointing to a tablemate to encourage the two of them to work together. They begin counting and calculating to solve the problem jointly. Ted never gives away the answer, but he assists the problem-solving process with questions that carefully scaffold student understanding. In their groups, students engage in vigorous debates about the answers, explaining their reasoning to one another, re-counting their data, marshaling evidence, and demonstrating their solutions in different ways. Ted does not attempt to adjudicate the disputes or provide the right answer. He allows the groups to work through the problem.

Ted watches over a student with autism who is doing her work with a one-on-one aide. The student sings to herself periodically while she is doing the work but continues to make progress. In the hubbub of the classroom, her singing is not a distraction to the others, as they all focus intently on communicating to find solutions to this highly motivating puzzle. Every single student has made significant progress in developing a deep understanding of these key statistical concepts that often elude much older students.

Around the hardworking groups of children, student work covers the walls: a classroom constitution that was collectively developed and signed by each student and teacher is displayed, along with a "Problem Parking Lot" with stickies listing

various problems and questions the class has agreed to return to. Especially prominent are student accounts of their lives as slaves in New Amsterdam and New York: 1621–1680, along with fractions posters illustrating various problems they have tackled and solved, including how they have split submarine sandwiches among various odd numbers of people.

On the back shelves, one set of tubs offers manipulatives for mathematics. Another set of tubs includes books labeled by type, all connected to current topics of study: authors who have been studied by the class each merit a tub, as do African-American biographies, slavery, other biographies, Ted's favorites, and more. Handmade globes and a time line string with chronological date cards of important events hang from the ceiling. The meeting area in front of a whiteboard is covered with a rug that is a map of the world.

Also on the wall are many posters reminding students about their routines. One summarizes the rules for "Book Club." Another asks, "What is figurative language?" clarifying that it is "when words mean something other than their literal meaning." The poster defines what most would think of as high school terms: simile, metaphor, hyperbole, personification, alliteration, onomatopoeia, idiom, allusion, and oxymoron, offering concrete examples of each.

Other posters developed by students and the teacher include a "Writing workshop conferencing protocol," "Poetry guidelines," "Persuasive essays," "Jobs in a reading conference" (enumerated for both the student and the teacher), and "Elements of a news magazine article." These are often in the students' own words, codifying their learning so they can share it and go back to it as needed. Another poster enumerates, "What we know about maps," while still another describes "Multiplying 2-digit by 1-digit numbers: The traditional algorithm."

Invisible in this moment are the school supports that make this productive hubbub possible: free breakfasts for all children; free transportation for children who live in temporary housing; a Family Center that offers educational workshops, cultural connections, and family support services; extended afterschool time and services; twice annual student-family-teacher conferences; and a set of children's rights that include: "I have a right to be happy and to be treated with compassion in this school." "I have a right to be myself in this school. This means that no one will treat me unfairly." And "I have the right to be safe in this school." Community building and conflict resolution are explicit schoolwide efforts. Although the school is overcrowded, it is welcoming in every respect.

Jarod, a Bank Street student teacher who works with Ted, explained to us how his coursework applied to his fieldwork at Midtown West.[2] Jarod is currently enrolled in Mathematics for Teachers in Diverse and Inclusive Educational Settings, which is teaching him many of the practices he sees modeled in Ted's classroom. Jarod noted that this course has provided him with "easy prompts that you can make yourself do as a student teacher . . . constantly asking [students] why: Why do you think that? Why did you

do that? Can you show me how that works? Can someone else repeat what that person just said? Did anyone do something different?"

Jarod described how he has seen Ted, his cooperating teacher, model this type of inquiry in his classroom. Jarod remarked that "as a student teacher, there is a lot of mimicry; you do what you see your head teacher do, and then some of that you just internalize and it becomes part of your practice, and others you start to tweak for your own personality." Because both his Bank Street mathematics course and his cooperating teacher model inquiry-based instruction in mathematics, Jarod is learning how to develop questions that guide students to direct their own mathematics learning, as well as how to draw on Vygotsky's theory and support children's learning within their own different zones of proximal development as they collectively teach and learn.[3] As Jarod learns to scaffold students' inquiry and thinking by asking questions, he is also learning how to interpret the answers he receives from students in terms of their developing thoughts and understandings, so he can figure out what they are ready to do next and what kinds of supports they may need.

As we noted in chapter 3, this fusion between coursework and clinical work—theory and practice—is organized to help teachers develop a vision for teaching as well as to develop knowledge and skills. Bank Street's vision of teaching and learning is supported through a highly integrated process of learning to teach and is ever-present in how the faculty teach, just as it is in the formal curriculum that faculty seek to transmit. This "hidden curriculum" is, as Biber explained, quite deliberate:

> We have assumed for many years that, beyond the structured curriculum that is provided, the students internalize the pervasive qualities of the learning environment we try to create for them, that the qualitative characteristics of their own teaching styles will reflect, later, the qualities of their own personal experience in learning to become teachers.[4]

The belief that teachers must have opportunities to learn in the same ways they will someday be expected to teach develops a strong and distinctive practice, immediately visible the moment one enters a classroom or a school touched by Bank Street training. In the Bank Street School for Children, children are building with blocks, making books, designing architecture and science projects, constructing and visiting museums, arguing mathematics, and collaborating with one another on a kaleidoscope of projects. In college classrooms, prospective teachers can also be seen making picture books for children and curriculum books for teachers;

experimenting with beans, sand, water, and other manipulatives for mathematics and science; constructing museum and community trips for themselves and future students; and collaborating with one another on a variety of projects.

LEARNING TO TEACH CONTENT FROM A DEVELOPMENTAL PERSPECTIVE

Activities such as those described above are frequently part of content-specific methods courses, outlined in chapter 3, that use a developmental frame for learning to teach each subject area, from language arts and mathematics to science, social studies, the arts, and physical education. In addition to a class on child development, Bank Street candidates take a series of courses grounded in a developmental perspective: Developmental Variations; The Study of Children in Diverse and Inclusive Educational Settings Through Observation and Recording; Family, Child, and Teacher Interaction in Diverse and Inclusive Educational Settings; Language Acquisition and Learning in a Linguistically Diverse Society.

The developmental needs of students and the demands of the curriculum for deep understanding are brought together in curriculum planning. For example, the lesson we saw in Ted's classroom was the product of careful planning that took into account how to engender the kind of mathematical reasoning demanded for a robust understanding of central tendency and variation—the fundamental underpinning of mean, median, and mode. The planning also considered students' individual needs and modes of working as the teachers designed the groups students would work in, shaped the questions they posed to individuals, and decided on follow-up learning activities. Ted explains this thinking to his student teachers throughout the year, as they are increasingly able to contribute ideas.

In addition to planning with their cooperating teacher, candidates develop their own skills as they learn to design curriculum throughout their courses, considering how to account for student needs and differentiate to accomplish their curriculum goals. In one course, candidates are expected to create their own curriculum unit based on the local context and their students; they then learn to improve their instruction as they gather information from their observations and analysis during the lessons they test out in their fieldwork placement. Throughout the assignment, candidates receive feedback, review models of curriculum, and make multiple revisions to refine their curriculum. This iterative lesson planning assignment requires teachers to build on the experience of their students based

on careful observation and analysis, and then to reflect on the effectiveness of their lesson for individual students in order to improve it for future students.

In this example, Jarod is learning to bring the child to the curriculum and the curriculum to the child, as Dewey described.[5] One part of this work is understanding subject matter and curriculum deeply, so as to engage children in learning the content in developmentally appropriate ways. The other part of this work is understanding children and what they bring to the classroom. Through a series of courses on development and developmentally grounded content pedagogy, Bank Street aims for candidates to learn how to "engage and educate children in active learning"[6] that supports their cognitive development as well as their deep understanding of concepts. Our visit to a Child Development class as shown in the box "Learning to Teach History Through a Developmental Lens" illustrates how candidates learn to apply foundational child development theories to inform effective student learning experiences within content areas. Social studies was the focus of the examples taken up that day.

Learning to Teach History Through a Developmental Lens

On a Thursday evening, a racially diverse group of eighteen Bank Street teacher candidates—about 40 percent of whom are students of color—stroll into an eighth-grade School for Children classroom for one of the graduate school's hallmark courses, Child Development. They find their way to tables where they cluster in groups of three to five.

Even before class begins, the candidates are immersed in a classroom marked by deeper learning activities. Products of the eighth graders' learning are spread across the walls, including evidence of a unit on governance. One poster notes the elements "A Democratic Nation Needs," including People, Currency, Taxes, Elected Officials, Laws, Police, Army, Income Equality, Fairness for All Persons, Freedom, Fair Courts, and Strong Information.

Other posters outline assignments for the eighth-grade students for their civil rights project, including (1) Johann—President Johnson & the passage of Civil Rights Acts, (2) Ruthie—Montgomery Bus Boycott, (3) Cole—Malcolm X, and (4) Raf—The role of women in the movement. This type of project pushes students to consider how race, gender, and privilege have shaped the history of the United States.

Today, the teacher candidates are studying cognitive growth during adolescence. They are learning how to create an environment that supports students at a period marked by significant developmental variation, especially in adolescents' ability to move from concrete to abstract thought. The instructor, Nancy Nager, frames the central question for the session, modeling the type of inquiry-instruction

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that candidates should apply within their classrooms: "What represents a good enough environment for formal thought to emerge" for adolescents? She begins by grounding the class in candidates' personal experience, with a three-minute written reflection on "what was adolescence like for you?"

As they debrief on the central themes of adolescence, Nancy raises the social process of developing identity, the importance of peers, and the periodic emotional roller coaster that can occasion a need for teacher support. She says of students at this age: "It's their job to push. It's our job to be the wall," reinforcing the notion that the teacher must offer the stability that allows adolescents to explore. She also notes that, without explicit teaching, formal thought—often known as higher-order thinking skills—does not always emerge, so this is a particular mission and challenge for teachers.

Margaret Silver, a seventh-grade teacher at the School for Children, is a guest in the class. She begins by asking the teacher candidates to reflect on their own experience as seventh graders—what it was like socially, emotionally, and academically. After helping teacher candidates empathize with adolescents, Margaret presents two examples of projects from a seventh-grade unit about the encounter between Native Americans and European settlers.

The first activity is aimed at helping her students develop symbolic thinking and perspective-taking, two aspects of formal thought that are challenging to develop, and that are not always explicitly taught. The activity involves pairs of students in analyzing an iconic painting, *American Progress*, that shows an angel hovering over European settlers moving west. The students are then asked to produce their own drawings to illustrate what this image of westward expansion might look like from a perspective other than that of the European settlers, such as that of Native Americans.

The second activity is also aimed at developing perspective-taking, along with analytic skills and empathy. It involves a role play of a special session of Congress set in the 1850s. Each student receives a different historical figure to enact during debates about various issues related to slavery. The artifacts of this activity include the student's notes, their roles, statements they made in the course of the role-play, and a self-evaluation students wrote about the role-play.

After describing the activities, Margaret drops off her students' artifacts from these two projects to groups of four teacher candidates sitting around circular tables. The teacher candidates pore over the projects, asking questions of each other and of Margaret when she is nearby. One teacher candidate, reviewing a student's drawing that illustrates the westward expansion from a Native American perspective, asks, "How do you get the students to think symbolically?"

"That's a really good question," Margaret replies, describing how she scaffolds the activity. She explains that she first gives students speeches by multiple Native Americans that are rich in imagery. Next, she has the students talk in pairs about the images—what they mean, why they are powerful, what are the commonalities in the images across speeches. In explaining her teaching moves, Margaret also describes how the class analyzed the *American Progress* painting together and learned what a parody is as the basis for their consideration of other messages or alternatives. "[The project] needs a lot of steps," she notes. "But the students need a lot of options."

Margaret also explains how she thinks about students' dispositions and needs as she selects partners and roles for them. Choosing pairs of students to work together as abolitionists or as defenders of slavery in the mock Senate role play was essential in the design of that unit. "I want a partnership that works but I also want to stretch them a little bit. I usually don't have them with a close friend," she said.

Similarly, for the role-play, Margaret offers insight about the importance of selecting appropriate roles for students. "Who is going to end up working together as abolitionists, as Southerners; where are there leadership opportunities? Who would it be unfair to have run as chairman because they are socially so insecure that they couldn't weather that?" Depending on what students are ready to learn and how they might be able to take on different roles, she thinks hard about "who plays Lucretia Mott or John Calhoun." Margaret's comments highlight for the teacher candidates the importance of considering the whole student when creating a lesson, including his or her intellectual and social development.

Nancy identifies how the practices being described relate to the concepts of cognitive development, observing, for example, "You helped them move into 'flexible thinking,'" and later, "This is an example of how you scaffold for student learning, how you find that ZPD [zone of proximal development]."

Candidates ask Margaret to comment on the concepts they read about: "How did students take on these perspectives so different from their own?" "Did you notice them thinking about their thinking?"

Margaret describes how she uses self-assessments and written and oral reflections with her students to help make these decisions and to help them see their own growth. As she notes, "There are few gifts better for students than knowing themselves as learners." She underscores the fact that "they tend to underestimate themselves in seventh grade," emphasizing that it is in part the teacher's role to help them see what they can do.

The teacher candidates finish asking Margaret questions, ranging from developing the content of the projects to managing the classroom during the project. After Margaret leaves, the class reflects on the rich, project-based activities they just observed and analyzed. One notes how cool it was for the students to be asked to role-play and do creative work in seventh grade—something that was far from her own experience in school. Another comments on the structure of the project, noting the varying degrees of challenge in the tasks and prompts the teacher could use for different students within the project.

One student comments, "The way that she has prompted them, given them suggestions, not told them the answers, really allows for her students to be challenged. . . . It could be developmentally appropriate for so many different kids."

Building on this rich experience, Nancy ties in another body of learning theory from their readings, noting that Kuhn's view of the evolution of thinking was more differentiated than that of Piaget; for example, that aspects of formal thought—such as propositional thinking, flexible thinking, symbolic thinking—do not all develop together at the same time. She asks them in pairs to think about examples of these kinds of thinking and understanding that they have seen in student work or in other contexts. Armed with their own examples and the ones they just reviewed, the candidates dive into their own process of thinking about thinking together.

Nancy Nager's class illustrates Bank Street's focus on child and adult development and how it contributes to teacher candidates' ability to teach for deeper learning. Specifically, teacher candidates must consider the intellectual, social, and psychological needs of each of their students in order to create safe and nurturing learning environments where teachers can push their students to think critically and deeply. The beginning of Nancy's class provided the candidates with a framework for thinking about adolescents' development. This framework was then used to observe and analyze a seventh-grade teacher's pedagogy and her students' work within a specific content area. Teacher candidates' time at Bank Street is marked by a parallel process—a focus on child development that provides the foundation for their understanding of students and education within each of the areas relevant to teaching: curriculum development, pedagogical strategies in the content areas, and classroom management.

DEVELOPING SOCIAL AND EMOTIONAL CAPACITIES

In addition to teaching content and developing students' cognitive skills, developmentally grounded teachers learn to help students develop the social and emotional skills, habits, and mind-sets they need to be successful in guiding their own efforts in school and life and in engaging with others. This preparation was also prominent in the seven programs we studied, especially where professional development school relationships allowed candidates to train in partner schools where social-emotional learning was valued and taught. In the box "Developing Social-Emotional Skills and Mind-sets" we illustrate how a Trinity University candidate was working on the development of a growth mind-set with her young students in her yearlong student teaching assignment.

Along with teaching students about growth mind-sets, this lesson illustrates student-centered pedagogy, group work, role playing, and giving students the opportunity to associate their life experience with important concepts. This lesson grew out of the work Cassandra had done during the summer when she worked with other candidates in a team to design a ten-session Understanding by Design (UbD) unit to be used with fourth graders focused on growth mind-set.

As we noted in chapter 3, these units, as with other summer assignments, are not merely theoretical in nature: they introduce candidates to the UbD curriculum planning process, and also give candidates practical experience in looking at district curriculum guidelines and making professional decisions regarding how those guidelines should be addressed so

Developing Social-Emotional Skills and Mind-sets

It is afternoon on a rainy day in San Antonio. We are visiting Cassandra, a Trinity candidate who is teaching in a first-grade class at Lamar Elementary, a neighborhood school. In a small room, crowded with tables and chairs, the class typically includes seventeen children—eleven boys and six girls, although today two students are absent. The class is a mix of African American, Latino, and white students. Cassandra's mentor, Monica, notes that the neighborhood is becoming gentrified, and there are more white students now than in the past.

Today's lesson focuses on Lamar's five "constellations" of a growth mind-set: empathy, persistence, resilience, optimism, and flexibility. Cassandra is using everyday scenarios from students' lives to help them learn the concept of growth mind-set. Students are working in small teams to create a skit related to their growth mind-set "constellation" and act it out for their peers. Peers then determine which "constellation" is being presented. The activity is itself a means to develop social-emotional skills, as students must collaborate and learn to observe closely the emotions others are communicating.

Cassandra is sitting in a chair with students sitting on the floor in front of her. She hands out paper strips to groups of students. Each piece of paper has a scenario that aligns with one of the five growth mind-sets. Students are divided into groups of three. Cassandra and Monica help each group read the scenario they have been given and develop a skit. Cassandra walks around helping different groups, while Monica focuses on a small group of three.

After about ten minutes, Cassandra gives students a one-minute warning. She then tells students to go to their desks and sit if they are finished. Students go to their desks and wait. She asks for helpers to pass out paper napkins and markers. Another student passes out sheets covered with plastic protectors on which they can write with the markers. For the few off-task students, she adds, "We are not going to play with markers. If I see you do that, I'll take them. The napkins will be your erasers."

When everyone is settled and has their materials, Cassandra says, "Let's see which group wants to go first." As students eagerly raise their hands, Cassandra picks a group and provides instructions: "If you're acting it out, you may go to the front of the room. Tristan is going to read the story. After they act it out, you're going to write down which of these [constellations] their story represents, based on what they say they should and should not do." The first group of students reads their story out loud. It is a story about not being good at playing soccer during recess. The three students act out the story. Cassandra then asks the students, "What should you not do?" A student says: "Give up!" "What should you do?" Cassandra asks. "Write it down on your board." Students write and then Cassandra adds, "You're going to flash [your board] to the group." The students hold up their papers.

Cassandra reads the papers that students are holding up and says, "I see persistence. Did you all get persistence? Was that right?" The group of students nod yes and sit down. The students use their napkins to erase their plastic protectors.

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The next group of students reads their story. Cassandra summarizes: "They want to play basketball but there is no basketball, but there are jump ropes. What should you not do?" A student says, "Don't grab the ball." Cassandra then asks, "What should you do?" Another student responds, "You should play jump rope, since so many jump ropes, it's fine." Cassandra then asks, "Which of these is their story?" Some students hold up flexibility, and others hold up resilience.

Cassandra asks a student why she selected resilience. The student responds, but too quietly to hear. Cassandra says, "I could see how it could be resilience," and adds, "The thing they wanted to do, they couldn't, so they were flexible . . . but sometimes more than one word fits."

The process repeats itself with the rest of the groups. One group reads a story and does a skit about empathy in which a student is sad that his dog is sick. Cassandra asks, "What should you not do? Would you laugh? What would you do?" A student responds, "Say, 'Sorry your dog is sick.'" Cassandra acknowledges the student's response and says, "Maybe they could write a get-well card. Which word?" Students hold up empathy.

Another group does a skit on persistence, in which a student is doing an art project, but cutting and folding the paper the wrong way. Some students believe it is an example of resilience. Cassandra acknowledges both answers and then explains the difference between resilience and persistence. The final group reads a story about trying new food in the cafeteria. Cassandra asks, "What should you not do?" A student says, "Throw it on the floor." Cassandra follows up, "What should you do?" Another student responds, "Eat it. It might not be too bad." Students then write optimism on their board.

At this point, the class has gone over all five "constellations," and after a quick summary from Monica, the master teacher, the bell rings.

that students will learn the content deeply. The development of the unit and the reflective essay that candidates write regarding what they learned in planning the unit serve as performance assessments for the MAT summer courses.

Cassandra linked her decision to teach a growth mind-set lesson in her own classroom to the Trinity summer session, Lamar Elementary School's focus, and Trinity's emphasis on applying coursework in clinical experiences:

> So, we started talking about growth mind-set over the summer. And how our own mind-sets can influence our students. Lamar also really embraces growth mind-set, the five constellations, as we've called them. We started introducing these to our students last semester. We've been doing read-alouds all throughout the year. I think it's

really cool that the work I started doing at Trinity with growth mindsets, readings, and talks really ties in with what I'm doing here.

Cassandra was able to reflect on this lesson in curricular terms, describing how and why she made specific decisions about the groupings of students and the choice and structuring of the task they were asked to undertake:

> I really like having them work in groups and I've tried doing different groupings and seeing which kids work well together as well as the ones who don't usually talk: What group can they be in where they'll feel more comfortable? I've done a lot of observing. Lead teaching was a great way to play around with that and see where they work best. At first, I was thinking of having them make a poster for each [constellation] and saying that we could put the posters in hallways for visitors to see what we are working on. But then I decided that I wanted to make it more relatable to them personally with the little scenarios about their lives because they can say "empathy" or read it in a book, but being able to notice it between each other is something I think they could use a little more practice on. That's why I decided to make the scenarios.

Cassandra also exemplified the sort of reflective teaching that Trinity promotes among its candidates when she described how she thought the class went and how she could change the lesson to better achieve her goals:

> It went well. It was rushed at the end. I would have done a wrap-up—more of a closure. When we went through each of the five, we did "turn and talks" about which ones they could identify easily and which ones they were struggling with. One they needed more work with is optimism. I would have done some reflection with them on that, to see if their answers would have changed.

Cassandra will have opportunities to act on her insights in future lessons, as she has a full-year placement in her master teacher's classroom to put into ongoing action what she is learning. As Trinity interns work in their clinical sites, the collaborative learning that is an essential part of the Trinity-PDS relationship also shapes interns' practice through the integration of Trinity's approach to planning and the work of the professional development schools.

Lorraine, another Trinity candidate placed at Lamar Elementary, also incorporated the five facets of growth mind-sets as much as possible into her daily lessons. Over the extended period of time in her placement, she told us that she had seen students internalizing them. "The other day we were sitting on the carpet and one student was upset that another kindergarten student was sitting in his spot. He said, 'I'm going to be flexible' and moved." She gave another example: "We had a scuffle coming back from music the other day. [A student] said, 'I'm really mad that she called me a crybaby, but I'm going to be optimistic and think that she's going to make a better choice later.'"

PERSONALIZING INSTRUCTION BY UNDERSTANDING AND ATTENDING TO DIVERSE NEEDS

As the teaching candidates highlighted in this chapter illustrate, having considered how students can learn specific content, as well as thinking, reasoning, and social-emotional skills, it is equally important to bring knowledge of individual students to the planning process. All of the programs we studied use a variety of strategies to help candidates learn to think deeply about student needs.

The Child Case Study

One common strategy is the child case study. As we described in chapters 3 and 4, case study assignments are used in multiple classes, and often include the opportunity to develop a lesson that is tailored to the needs of a specific student. Bank Street candidates do both in a literacy class, as do SFTR's candidates' classes for teaching English learners. This approach gives teacher candidates a chance to experiment with the skills and the potential methods that a teacher might deploy to make a lesson more challenging, more accessible, or engaging for a particular student. By focusing deeply on one student, candidates practice their process for differentiating their instruction—something they eventually will do for all students in their classroom.

These experiences help teachers learn to observe students closely, as they study aspects of learning and develop their own courses in order to understand how to teach different students well. A good example of how these skills are developed is Bank Street's Observation and Recording course, described in chapter 3, which helps students "learn to use a variety of observational approaches and recording techniques as basic assessment tools to increase their understanding of and skill in planning for children

who are developing normally, as well as children with disabilities and special needs."[7] This course helps teacher candidates differentiate between subjective and objective observations of children and their development, and thus to recognize and better distinguish implicit bias from meaningful, actionable observations. Strengthening observational skills further provides educators with important evidence for building practice tailored to students' observed strengths, interests, and needs.

Much like assignments in other programs' courses on development, a foundational assignment in the Observation and Recording course requires teacher candidates to observe one child throughout the duration of the semester-long course. For the final project, candidates complete a paper that outlines:

- their methods for observing and recording
- a multifaceted description of the child (e.g., age, size, race, disabilities, abilities, family, school history)
- a description of the child's neighborhood, school, and classroom
- a summary of themes the candidate noticed about the child and why these themes are relevant
- an annotated list of the candidate's field notes, broken down by the themes the candidate noticed while observing the child throughout the semester
- an essay that connects the description of the child with the themes, and answers the following questions:
  - How does the child's behavior in each of the themes fit together to make him/her a unique individual and a complex person?
  - How do temperament, background, and any other personal qualities play a role in what you see?
  - What are the child's strengths? Vulnerabilities?
  - Is there any information that might be useful for the child's parents or next year's teacher to have?

- recommendations for ways that teachers could best support the student
- a self-evaluation reflecting on the following questions:
  - Have your ideas and feeling about the child and your relationship with him/her changed during the study?
  - What did you learn about other children in this class, or about the group as a whole, as a result of your study?
  - Did you find anything about a hidden curricular aspect of the classroom (e.g., unplanned influences from the physical

environment, scheduling, school/child interaction, etc.) as a result of your study?

. What particular lessons did this child teach you? Has this process changed the way you teach, think about, or relate to children? How?

Instructors review weekly observations and provide feedback. For example, on early assignments instructors' comments might include questions related to the language the graduate students uses to describe a child, or the clarity of contextual descriptions, and the eternal "Why do you think that?" "How do you know?" and "What is the evidence for this interpretation?" that often fill the margins of observation logs. Later in the semester, the questions are more specific to the child as a learner and call for the use of a variety of recording techniques such as a running record of a child's use of expressive materials; observations of the child's use of language in different contexts; a collection of the student's work; recordings of children's responses to on-demand performance of specific tasks, and children at play or in unstructured interaction with other children. Final requirements ask that students review all documentation, create categories of evidence, triangulate evidence to support their assumptions, make recommendations for teaching or further study, and use theoretical understandings to back up their recommendations.

Evan, a current Bank Street student, noted how this assignment helped her learn "to observe and not be biased right away, and not just assume things" and instead to recognize that "there is a deeper meaning about the child." The combination of teacher candidates' deep understanding of child development and their ability to observe and record children in detail with "diminishing subjectivity" helps them derive actionable insights into children's learning needs. Moreover, the process of observing and recording provides teacher candidates "greater sensitivity to the effect that their emotions and interactions may have on their observations."[8] The insights derived from objective observations are critical for a teacher to be able to identify where a child may be struggling or thriving. It also helps candidates find the activities that are most interesting for a child and how best to help the child advance in his or her learning.

For Bank Street teacher candidates to apply the theoretical child and adult development frameworks and insights from unbiased observation and recording, they must adopt an inquiry mentality. For example, a Bank Street instructor explained how she models questioning to encourage

students to get to a deeper understanding of children: "What we do is when someone brings up a question or problem, I tell them don't just go in with solutions. Explore. Ask more. What happened before? What happened after? How did you feel? Explore more before jumping in because you have a better idea. And when you have a better idea, you're better able to think about things."

As the instructor and Bank Street more generally continuously stress, questions are more important than answers, especially when exploring child and adult development to inform teaching and learning. This inquiry approach empowers teachers to adapt their instruction to meet students' needs. For example, the instructor explained how "a few of my students were having problems leading book groups. The kids were acting out. And not one of them blamed the kids. Not one of them." Instead, the teacher candidates asked, 'What did I do, what could I have done, what was going on'—that's the discussion we had."

This kind of case study is also a major assignment in each of the other programs. In the STEP Adolescent Development course taken by SFTR residents, the study includes not only a cumulative assignment (the creation of the case study itself), but also weekly observation logs that residents are required to complete and submit. Candidates are asked to choose a focus student who is puzzling to them: a child who is different from the type of student they were in school or who seems enigmatic in some way and from whom they might learn. Once they have chosen a focus student, they spend the rest of the quarter interviewing and observing that child in and outside of classrooms, as well as meeting and talking with parents or a guardian in a home visit and looking at the student's schoolwork and record.

Part of this process is learning to engage in nonjudgmental observation that does not label students' behaviors, but carefully examines them for clues to what may be going on with the child. These clues then raise questions for the teacher to pursue, rather than immediate decisions about how to treat the student. Another key goal of the assignment is for the teacher to see the world, including teaching, through the students' eyes. A critically important element of the case is for teachers to shadow their student through a full day of school. This often proves a powerful experience as teachers realize how exhausting and stressful high school can be; how some teachers engage students and others do not; how their student may not be spoken to by any adult throughout the entire day, or may have relationships with peers that can provoke anxiety or reassurance. This

perspective, many say, changes their approach to teaching and stays within them throughout their careers.

Each week, the class spotlights one of the central components of adolescent development—physical development, cognitive and moral development, social and emotional development, or a different context (including family, peers, school, community)—that ultimately affects student learning and motivation. Teacher candidates synthesize the information they have gathered from their focus student and from the assigned readings into a reflective log that contributes to the case study and is keyed to the weekly topics and readings in the course. The course covers all areas of development, including cognitive, social, emotional, and physical development as well as the development of racial/cultural identity.

In one SFTR Adolescent Development class, teacher candidates used what they had learned in a candidate-led in-class activity where they formed a physical web of their students' developmental assets—the set of skills, experiences, relationships, and behaviors that enable young people to develop into successful and contributing adults, such as adult role models or high expectations. After a presentation on developmental assets led by a group of teacher candidates, everyone stood in a circle and described the developmental assets they had experienced in their lives, tossing strings of yarn to create the visible instantiation of this web. They then created a web of their own students' developmental assets, drawing on their case study work. The latter web was smaller, and the class discussed the role that teachers play in helping to create a robust web of developmental supports for each of their unique students.

A Developmental Frame of Reference

This frame of reference extends across multiple courses in these programs, not just a single class on development or differentiation. A current Alverno teacher candidate noted, for example:

> Everybody comes to the table with something different, and I think Alverno did a great job of hitting that in probably every class I took there, particularly in 611 [Human Learning and Development], studying all those theories and looking at what sorts of things influence students from the outside, what they can control and what's out of their control. And things that influence them inside of school, things they can control and not control, and knowing that everybody is bringing something different to the table.

Understanding what a child brings to the table allows the teacher not only to identify needs, but also to build upon strengths. Asked how she would describe her teacher, a young child diagnosed with behavioral challenges responded about her Alverno student teacher, "My teacher makes me feel calm . . . She treats me like I'm smart." The young child's response reflects how the teacher was able to use developmental and learning theories to identify students' assets and needs, and then apply her pedagogical knowledge to help ensure all students are supported and thrive.

The superintendent of a Wisconsin district described how Alverno-prepared teachers in her district excel at engaging in developmentally appropriate teaching and differentiating instruction in their classrooms to meet the needs of all learners:

> The expectation is that [Alverno teacher candidates] are in classrooms early on and it's not a one-size-fits all kind of thing, like all kids have to learn reading this way. That's not the expectation. . . . It's not just, "You're going to hear a lecture, and then you're going to do a worksheet. And then we're going to be done. And when you come back tomorrow we're going to redo that worksheet and talk a little more, and you're going to get a new worksheet." That's not what we see from Alverno graduates. But you do sometimes see that from other graduates who aren't ready to deal with the level of diversity in our district.

This range of pedagogical strategies is evident in classrooms of Alverno teacher candidates. It is not unusual to see students working collaboratively in small groups, engaged in a project with real-world implications, while the teacher candidate moves from group to group to provide support and push students' learning through pointed questions. To address individual learning needs, the teacher candidates engage in a range of activities, including grouping students based on their interests, allowing students to work on computers or tablets rather than using paper and pencil, and giving students opportunities to show what they were learning through a variety of channels, including presentation, visuals, and writing.

This same range of practices was obvious in Ted's Bank Street partner classroom where Jarod was learning to teach—helping students learn in the ways that were most supportive for them. This included figuring out what to do when students struggled to learn. Jarod noted that "encountering those students for whom your plan does not work forces you to

think, 'What do I do now?'" Jarod also described the critical role of his cooperating teacher in helping him learn to differentiate his instruction for students in the context of specific lessons, and the importance of not just reading about differentiation, but having an opportunity to try to teach students with a range of social, emotional, and intellectual strengths and needs: "You can talk about it in the coursework, but I don't think it's until you are in the classroom that you see what that means."

Similarly, an urban teacher resident in Montclair's Newark program, who was working for a full year in the classroom with a veteran teacher, described the value of "learning how to differentiate instruction: how to cater to all of the students' needs in a mindful way where it's not obvious that I'm doing this for this student. [The student] doesn't know [differentiation is happening] because everyone's enjoying it. It's just embedded in there: meeting the learner where they are and working from that place to develop them into everything that they can be."

Like other programs, Montclair carries a strong developmental framework into multiple courses on child and adolescent development that help candidates understand their students more deeply. In addition, Montclair augments these courses with other developmentally grounded courses such as Cultural and Social Contexts of Families and Communities, Working with Diverse Families, Meeting the Needs of English Learners, and Inclusive Classrooms in Middle and Secondary Schools. This approach to examining child development and learning in cultural and family contexts and in ways that attend to students with different language backgrounds or learning needs is common across these programs.

CREATING STRONG LINKS TO FAMILIES AND COMMUNITIES

The ability to meet student learning needs is built on an understanding of what each child brings to the classroom from home as well as what he or she has learned in school. A CU Denver candidate described how important this knowledge base is for her practice: "In this program, we're taught to have an explicit respect for students no matter where they might be for their grade level; everybody comes to an academic classroom setting with experiences and knowledge that ranges . . . . Respecting our students means seeing them as individual people with assets that we can work with . . . . As teachers, we can use that as our ultimate resource for teaching."

One strategy for developing this knowledge is engaging in clinical placements in community contexts other than schools—such as afterschool

programs, recreation centers, or social service agencies. A CU Denver alum, now working as an elementary school behavior interventionist, reflected on what she'd learned in such a field experience, which was part of the program's coursework on cultural diversity and understanding students in urban contexts:

> I see our job as special agents who go into the trenches and try and figure out all of the information possible—try and support students and the families, and we can't do that unless we know, and I mean, genuinely *know* the whole child—tapping into the whole family, the community, the culture . . . knowing what it's like to walk home in the neighborhood, what kind of music is blaring in the windows . . .it's only then that you can curate and differentiate your interventions and support.

At High Tech High, the process of learning about students and their lives is facilitated by the fact that, in their work in the schools, they serve as student advisors as well as teachers. Advisors are assigned to a group of fifteen to twenty students who remain together for multiple years: for example, one advisor keeps an advisory group for grades 6–8; another takes the group in grades 9–12. Advisors keep track of how students are doing socially, emotionally, and academically; they are the liaison for other teachers and for the family; and they serve as advocates, guides, and supports for the students. The regular advisory class they lead is a place where students can share their experiences, learn coping strategies, and receive help in everything from homework and projects to college applications. These relationships are beneficial in getting to know students and linking their life beyond school to their experiences in school. As one HTH leader noted, "It's incredibly helpful for making a connection with a family and having empathy or understanding with where the kids are coming from."

These kinds of advising relationships, which create a stronger knowledge base about students and their development in family and community contexts, are also present in partnership schools that work with other programs, including SFTR and Trinity.

Another practice that helps HTH intern teachers further their understanding of the student and families that they serve are home visits and Family Collaborative Nights. Abbreviated as FCN, Family Collaborative Nights are evening events where teachers meet with families to discuss additional supports for students. While teachers in the secondary schools are

expected to conduct home visits for all new advisees in the student's first year at HTH, elementary teachers largely rely on the FCN to get to know families better. These activities are in addition to the traditional back-to-school nights and parent-teacher conferences. Home visits from advisors and FCN interns provide a better understanding of who the student is, including any unique challenges, and allow the intern to better design projects that reflect the students and their experiences. In many instances the home visit and FCN serve as families' earliest introduction to HTH and the teacher. One first-year intern teacher described Family Collaborative Night as an opportunity to "hear from parents about their concerns, educate parents on access to books, how to read at home with your child. I think that extra time for parents to come in and connect definitely helps you understand where they're coming from; you can learn about a kid from talking to their parents and hearing about what life is like for them."

Working closely with students and families during home visits and FCNs, serving in advisory roles, and taking courses such as Healthy Environments empowers interns with the tools and knowledge to develop appropriate tasks, experiences, and projects based on student interests, while also recognizing students' prior knowledge and advancing new knowledge, all of which contribute to developing deeper and more engaging learning experiences.

The work of getting to know students and their communities goes beyond the field experience, school events, and coursework, as it is part of the culture of HTH schools. Intern teachers participate in professional development experiences and problem-solving sessions at their schools that engage them in constant collaboration with their colleagues, often focused on supporting students.

During our visit, one school director gave an example of such a professional development effort undertaken by the faculty at the HTH secondary school where he works. The teachers got together with their teaching partners for the next school year and looked at their student rosters, focusing on students who had struggled in school. Each team picked out two students, then set out to learn more about the neighborhoods where they lived by visiting them. "So, they went out into these neighborhoods, these communities," he told us, "with the question of 'How can we use this community as a resource for a project next year, and how might this community serve as an audience for student work?'" These are important goals for HTH teachers, as having an authentic topic and a real audience for project work are two ways that HTH aims to make student work relevant and

authentic. He went on to describe how two of the ninth-grade teachers visited one student's neighborhood, a community with many refugees.

> Here's the address where the student lives, and a block away this big apartment with all these people hanging out . . . so they went and talked to the men, just about who they are, and what they aspire to, if they had kids, and were they in school, what they hope for them. And they figured out, wow, they want to do a project next year, documenting their stories. Having kids go out there and document these stories . . . to best meet the needs of kids from these communities that we're serving least well.

THE "HIDDEN CURRICULUM": TEACHER EDUCATION THAT IS PERSONALIZED AND DEVELOPMENTALLY GROUNDED

As is true of all of the principles of learning to teach, faculty in these programs teach and treat the teacher candidates in the same way they want those candidates to teach and treat their students—what Bank Street's Barbara Biber called the "hidden curriculum," which is, in fact, not so hidden. All of the programs take a developmental frame with their adult students, planning for their learning along a trajectory that anticipates the initial perspectives of a novice and supports their growth toward the more sophisticated set of understandings and skills possessed by a well-prepared emerging professional.

This process is enacted through the advising systems the programs construct—the small supervisory groups (usually four to eight candidates) that debrief and problem-solve with each other and their university supervisor weekly. The developmental perspective is also visible in the ways in which faculty attend to candidates' evolution and needs as teachers and as people, and the learning-oriented assessment systems the programs use to support candidate development on explicitly taught knowledge and skills.

For example, Bank Street's approach emphasizes teaching for understanding, respecting and building on learners' interests and experiences, looking at individual learners with care and attentiveness, and creating community. Each of these ideals is as carefully represented in the way teacher education faculty nurture their students as it is in the formal teaching curriculum that faculty seek to transmit. Advisors, who teach courses as well as meet with teacher candidates individually and in groups every week, know them as intimately as the candidates hope someday to know

their future students. The faculty model the student-centered instructional practice that they hope to instill in teacher candidates, a practice that also helps faculty learn how to customize their instruction, advising, and relationships to best serve each of their teacher candidates. As one Bank Street instructor explained,

> My main goal when I first meet my students is to establish a relationship with my students and get to know who they are as individuals, and to learn about them, to support them. Not to tell them they are doing it right or wrong . . . There is that parallel process with children—we tell the students the first thing you do is observe kids and recognize and identify their strengths because that's how you work with a child.

Through this "hidden curriculum," the prospective teachers see their own development as being nurtured and their interests and passions as being respected and extended—learning intuitively how to create these same relationships with their students.

Observing expert teachers who illustrate a developmental approach—both in K–12 classrooms and in the teacher education program itself—is a key part of the learning process. For example, Alverno candidates learn how to create "developmentally appropriate learning environments" and to "facilitate positive social interaction, active engagement in learning, and self-motivation" in part by observing exemplary teachers in their field placement and in part by experiencing it in their own classrooms. One principal noted that "understanding the whole child" and "integrating character into the curriculum" were strengths of Alverno-prepared teachers."[9]

Candidates examine their own experiences in a highly supportive, personalized setting as they consider how to create those same kinds of experiences for their students. Alverno's small classes allow faculty to develop rich, caring relationships with their students, which supports their social and emotional development. Faculty learn about each candidate's interests, goals, and family situations, which helps them determine how they can best support each of their students in becoming an effective teacher.

Alverno faculty's modeling of social and emotional values illustrates for candidates how this awareness can support students' growth and give them the foundation students need to be able to engage in deeper content, such as critical thinking and problem solving. For example, many current students and alumni said that using performance assessments to demonstrate mastery and narratives, rather than grades to capture progress, reduces feelings of competition and encourages teamwork throughout the college. This example helps candidates consider how they might create collaborative learning environments within their own classrooms so that students can learn how to positively interact with others.

We have noted that teachers' deep understanding of development and how it occurs in social contexts is a foundation for student-centered teaching. In the next chapter, we describe how teachers learn to draw on their knowledge of students' experiences to contextualize learning so that it creates powerful connections from what students already know to what they want to learn. In addition, we describe how these programs similarly contextualize candidates' learning so that it, too, offers powerful opportunities for deep understanding and development.