Learning From Collaboration: The Role of Teacher Qualities

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ABSTRACT: In special education, professional collaboration is viewed as a powerful tool for helping teachers serve students with disabilities. An underlying assumption is that general educators will improve practice if they have opportunities to participate in collaborative professional development aimed at improving instruction for students with disabilities. Although sustainability studies suggest that teachers benefit from such collaboration, evidence also demonstrates that they profit differently. This study examined how teachers who readily adapt and adopt strategies acquired in collaboration differed from those who do not. Findings revealed differences in knowledge of curriculum, pedagogy, student management, and student-centered instruction, as well as differences in ability to reflect on and adapt instruction. Implications for improving professional collaboration in schools are provided.

Teachers learning and working together to achieve common goals is considered by many scholars to be a central element of major school reform efforts, including those aimed at improving the inclusion of students with disabilities in general education settings (Darling-Hammond & McLaughlin, 1995; Johnson & Bauer, 1992; Pugach & Johnson, 2002). The assumption is that when teachers work together to achieve a common vision, they will be able to change their instructional practices in important ways. “In collaborative working environments, teachers have the potential to create the collective capacity for initiating and sustaining ongoing improvement in their professional practice so each student they serve can receive the highest quality of education possible” (Pugach & Johnson, 2002, p. 6). Inherent in this call for collaboration is that the act of planning and working together, by itself, is a powerful professional development tool.

One only has to turn to descriptions of different collaborative arrangements in the literature and their assumed power for creating change to understand that collaboration is viewed as essential to promoting teacher learning (Rogers & Babinski, 2002; Thousand & Villa, 1992). Pro-
fessional development schools, teacher study groups, teacher–researcher partnerships, professional learning communities, peer coaching, collaborative consultation, co-teaching, collaborative problem-solving, and teacher mentoring all assume that teachers can learn when given the opportunity to work together. Moreover, researchers have demonstrated that teachers (and ultimately their students) benefit from opportunities to work and learn together (Louis, Kruse, & Marks, 1996; Pugach & Johnson, 1989; Snyder, 1994; Trent, 1998; Walther-Thomas, 1997). These research findings combined with scholars’ assertions about the importance of collaboration in changing teacher practice have led to its widespread acceptance as an essential component of any effort aimed at improving teaching.

Although the literature provides many examples of how collaborative efforts result in positive changes for teachers generally, we do not know much about how individual teachers respond to collaboration. Do all teachers learn equally from working together? Or, do some teachers profit a great deal while others profit very little? Moreover, what individual factors enable some teachers to profit more than others from collaboration? Previous research on staff development and collaboration suggests that individual teachers do not profit equally even when the conditions supporting collaboration are positive (Elmore, Peterson, & McCarthey, 1996; Klingner, 2004; Vaughn, Hughes, Schumm, & Klingner, 1998). Certain teachers are likely to learn a lot and others are likely to not learn much at all.

Studies in the professional development and teacher collaboration literature provide evidence that opportunities to work together with researchers or other teachers do not always result in equivalent learning outcomes, even when teachers work in similar organizational contexts. Researchers examining teachers' adoption and sustained use of effective innovations for students with disabilities show that teachers benefit differently from collaborative opportunities to learn (Klingner, 2004; Klingner, Vaughn, Hughes, & Arguelles, 1999). In these studies, classroom teachers were involved in collaborative professional development efforts aimed at learning research-based innovations to improve the learning of students with disabilities. Although many teachers learned the innovations and continued to use them, not all teachers benefited equally. For the most part, researchers blamed organizational conditions and feasibility of the innovation for standing in the way of innovation adoption and sustained use (Greenwood, 1998; Klingner). However, researchers also acknowledged that even when the organizational conditions for promoting change were just right (e.g., administrative support for change and sufficient resources to change practice) and the instructional innovation was feasible, some teachers adopted and engaged in sustained use of innovations and others did not (Abbott, Walton, Tapia & Greenwood, 1999; Klingner; Vaughn et al., 1998). Researchers concluded from these studies that a mismatch between the teachers' style or personality and the instructional practice, problems adapting the instruction to suit their style or student needs, lack of in-depth understanding of the practice, disinterest in learning the strategy, and forgetting to use or how to use a practice either facilitated or hindered sustained use.

In general education, similar findings exist. For example, Elmore et al. (1996) studied three schools that restructured to promote teacher collaboration around literacy instruction. These researchers found that despite opportunities and supports for collaborative dialogue around literacy instruction, teachers had difficulty changing practice. When teachers held different conceptions of literacy pedagogy, they had difficulty learning from each other. Consequently, Elmore and his colleagues concluded that opportunities to collaborate on literacy instruction were necessary, but insufficient, for improving teacher learning. What teachers knew and believed about literacy instruction also played a role in teacher learning. In a different study, Ryan (1999) found that teachers in middle school teaching teams who held different conceptions of teaching roles and beliefs about curriculum and instruction varied in the extent to which they engaged in collaboration. Teachers whose views differed most were least likely to collaborate. Teachers also tended to maintain one conception of teaching, suggesting they learned little from teachers with different views.

These studies demonstrate that individual teachers respond differently to collaborative pro-
fessional learning opportunities and raise awareness that individual differences in teacher beliefs and knowledge may result in different learning outcomes. They do not, however, provide in-depth information about how knowledge, skills, and beliefs work together to enable some teachers to adapt an innovation and continue its use and yet others abandon it. Researchers make general statements about the contributions of beliefs, knowledge, and personality to innovation adoption (Klingner, 2004; Vaughn et al., 1998), and when they do provide a deeper analysis, it focuses primarily on the role of attitudes and beliefs about teaching and learning (Richardson & Placier, 2001). Researchers have not demonstrated, in much depth, how beliefs and knowledge about content and students might work together to allow teachers to profit or not profit from professional collaboration. We predict that the impact of collaboration on practice varies by how well the information that teachers acquire from peers complements their existing knowledge and beliefs about content, pedagogy, and students. Teachers are sure to bring different knowledge, skills, beliefs, motivations, and understandings about students to the learning process. Because they build on different foundations of prior understandings and beliefs, we expect that they adapt and use interventions acquired during collaboration differently even when organizational conditions for change are equal. Moreover, teachers equally predisposed toward a particular practice may vary on the degree to which they implement it and the quality of their implementation because of variances in their existing knowledge. Thus, the benefits of collaboration will likely vary as a function of a teacher's existing knowledge and beliefs and their congruence with new knowledge.

Without understanding how individual teacher qualities influence a teacher's ability to profit from collaborative learning opportunities, we have no way of understanding how to gauge the potential success of such efforts or determine what type of collaborative structures general education teachers need to learn effective strategies for students with disabilities and other high-risk populations. Professional collaboration is an important medium for teacher learning, but researchers need to better understand what individual teachers bring to the process and how those individual qualities assist them in applying what they have learned to practice. Many special education scholars believe that collaboration is an essential component of any professional development effort aimed at helping classroom teachers learn to address the needs of students with disabilities (Darling-Hammond & McLaughlin, 1995; Johnson & Bauer, 1992; Pugach & Johnson, 2002). This belief is so widely held that researchers have failed to examine in depth how individual general education teachers might respond to professional collaboration and what these individual responses mean for implementing professional development efforts aimed at improving the education of students with disabilities and other struggling learners. General educators play a primary role in the education of students with disabilities, and often they report feeling unprepared to undertake this role. Deeper understanding of how and why they respond differentially to professional collaboration is imperative to improving their practice, and ultimately, the inclusion of students with disabilities in their classroom.

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TEACHER LEARNING COHORTS

This study was part of a larger, federally funded, 3-year study designed to investigate the use of Teacher Learning Cohorts (TLC) for promoting teacher learning about instructing students struggling to learn as well as students with disabilities. We designed the TLC to be a professional development process driven by collaborative problem-solving, focusing on what teachers felt they needed to change in their teaching practice. In doing so, we incorporated processes and strategies from the research-to-practice and staff develop-
ment literature (Englert & Tarrant, 1995; Gersten, Vaughn, Deshler, & Schiller, 1997), including (a) providing concrete examples of innovations tailored to teachers' classrooms and instructional practices, (b) discussing how innovations may be used, (c) providing repeated opportunities for collaborative discussions about innovations, and (d) giving feedback on the use of innovations.

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To determine teachers' needs, TLC researchers observed them in their classrooms and asked questions during both formal and informal meetings about classroom practices they wanted to improve. Research-based classroom practices, known to be effective with students with disabilities and high-risk learners (e.g., classwide peer tutoring; cooperative learning structures; cognitive strategies for reading and writing; positive reinforcement; behavioral contracts; self-monitoring strategies for changing behavior; peer-mediated conflict resolution skills; phonological awareness and fluency building strategies; strategies for solving basic mathematics operations; curriculum-based measurement; and responsive classroom strategies, including morning meeting, designed to improve students' social relations) were discussed at group meetings. These research-based practices were selected because they have strong potential for helping students with disabilities and other struggling learners progress academically and behaviorally in general education classrooms. During meetings, teachers or researchers provided concrete demonstrations of how these practices could be implemented. In addition, teachers modeled practices in their classrooms to show their TLC colleagues how to use an innovation. All TLC teachers selected practices to implement.

The TLC also provided a structure for discussing classroom problems and describing how teachers were implementing innovations. TLC researchers served as "critical friends" to TLC participants both in their classrooms and at meetings. Through observations, researchers provided feedback on how better to involve students exhibiting emotional and learning problems in instruction. The researchers also provided feedback on teachers' use of innovations in their classrooms and the quality of the collaborative process.

**PURPOSE OF THE STUDY**

In this study, we examined the pedagogical practices and beliefs of teachers who were adopting practices geared toward improving the education of students with disabilities and other high-risk students as a result of their TLC participation. We extended previous research on collaboration and innovation sustainability by describing in more detail those qualities that provide the basis for differences in teachers' adoption of innovations (Abbott et al., 1999; Elmore et al., 1996; Greenwood, 1998; Klingner, 2004; Klingner et al., 1999; Vaughn et al., 1998). We wanted to know what role personal qualities played in teachers' acquisition and use of practices learned in collaborative groups and what variation in teacher qualities meant for structuring teacher collaboration.

**METHODOLOGY**

We used case study methodology to study eight general education teachers involved in the TLC process at two urban schools (Miles & Huberman, 1994; Yin, 1994). The schools, Hidden View Elementary and Hilton Elementary (both pseudonyms), were located in a city in the Southeast. Because few research studies have documented how teacher qualities affect collaboration, we deemed qualitative case study a useful methodology for uncovering complex interactions that occurred.

**PARTICIPANTS AND CONTEXTS**

We selected two elementary schools with principals who were recommended as capable leaders. The teachers at both schools agreed to participate in the project. Hidden View Elementary and Hilton Elementary were 2 of 200 elementary
schools in the city where the study was located. Hidden View Elementary, a regular education initiative school, had a student population of 570 students, of which 43.2% were minority and 54.9% received free or reduced-price lunch. All children with mild disabilities were fully included in general education classrooms. The TLC partnership with Hidden View Elementary existed for 4.5 years.

Of the 382 students who attended Hilton Elementary, 73% were minority and 84% received free or reduced-price lunch. Hilton Elementary was a cluster school, serving nearly 50 children with physical and cognitive impairments, most in self-contained settings. Only a few students were included in general education full time or part of the day. Hilton Elementary was involved in the TLC project for 3 years.

We narrowed our focus on 8 of the 20 TLC teacher participants, purposively selected because they varied in their ability to adopt practices from the TLC. Each teacher, however, demonstrated commitment to the TLC through active and sustained participation. The teachers were assigned pseudonyms: Sarah, Brenda, Diane, Cindy, Marty, Lois, Carl, and Martha. The teachers included 1 African American and 7 Caucasian teachers. Teaching experience ranged from 2 to 22 years. Participants included 1 second-grade teacher, 1 teacher who taught both second and third grade, 2 third-grade teachers, 2 fourth-grade teachers, and 2 fifth-grade teachers. Seven of 8 teachers graduated from elementary education programs at either the undergraduate or graduate level; one teacher majored in a content area and minored in elementary education. All teachers were certified or endorsed according to the license standards in their state. Three teachers were also certified in early childhood education and English for Speakers of Other Languages (ESOL). See Table 1 for details about each teacher.

**PARTICIPATING RESEARCHERS**

As researchers, we began this project with more than 60 years of combined experience in special education, general education, and school psychology. Because of our backgrounds, we brought well-defined views of education to the project that included both behavioral and cognitive orientations to teacher learning and a strong emphasis on inclusion. We focused on accommodating individual students in the general education classroom by identifying their needs and adjusting curriculum, methods, behavior management techniques, and/or instructional and behavioral expectations. We also believed that the first step to solving many instructional and behavioral problems was highly effective instruction that actively involved students. Moreover, we believed that teachers could learn to better address the needs of struggling learners and students with disabilities through well-designed collaboration that helped teachers learn powerful strategies. We felt that if teachers changed their practices as a result of TLC participation and subsequently noted student progress, they would become more committed to working collaboratively in the TLC.

The nature of the TLC required that we interact with teachers frequently. We were helping to facilitate collaboration as well as helping teachers gain access to research-based practices. In addition, observing teachers, providing feedback, and attending meetings helped us become insiders in the school community. Teachers often confided in us about frustrations with colleagues and shared personal issues. We became participant observers.

**DATA COLLECTED**

Data collection involved formal and informal classroom observations, teacher and principal interviews, field notes of meetings, debriefing notes from project staff discussions, and documentation of informal conversations with participants. The following provides a detailed description of the data sources.

**Formal Classroom Observations.** These data were collected using the Pathwise diagnostic and instructional observation system, a version of PRAXIS III (Educational Testing Services [ETS], 1995). Data from the Pathwise observation system were used only to triangulate findings secured first through analyses of other qualitative data (see the following). We chose Pathwise because it is a well-recognized evaluation system that yields both narrative descriptions of teaching practices as well as quantitative ratings for data analysis. We assessed teachers by directly observing classroom instruction, reviewing teacher-prepared written documentation, and conducting
### Table 1

*Participant Certification/Endorsement, Experience, and Pathwise Domain Scores*

<table>
<thead>
<tr>
<th>Name</th>
<th>School</th>
<th>Grade</th>
<th>Certification/Endorsement</th>
<th>Years of Experience</th>
<th>Implementation Level</th>
<th>Domain Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brenda</td>
<td>Hilton</td>
<td>2–3</td>
<td>Elementary</td>
<td>3</td>
<td>High</td>
<td>2.7 3.4 3.0 3.0</td>
</tr>
<tr>
<td>Sarah</td>
<td>Hilton</td>
<td>3</td>
<td>Elementary</td>
<td>13</td>
<td>High</td>
<td>3.3 3.3 3.1 3.0</td>
</tr>
<tr>
<td>Lois</td>
<td>Hilton</td>
<td>5</td>
<td>Elementary</td>
<td>5</td>
<td>Moderate</td>
<td>1.9 2.6 2.4 2.4</td>
</tr>
<tr>
<td>Carl</td>
<td>Hilton</td>
<td>5</td>
<td>Elementary</td>
<td>6</td>
<td>Low</td>
<td>1.6 1.8 1.9 1.4</td>
</tr>
<tr>
<td>Diane</td>
<td>Hidden View</td>
<td>2</td>
<td>Elem, ECE, ESOL</td>
<td>22</td>
<td>High</td>
<td>3.4 3.3 3.3 3.3</td>
</tr>
<tr>
<td>Martha</td>
<td>Hidden View</td>
<td>3</td>
<td>Elem, ECE, ESOL</td>
<td>9</td>
<td>Low</td>
<td>2.0 2.6 2.0 2.4</td>
</tr>
<tr>
<td>Cindy</td>
<td>Hidden View</td>
<td>4</td>
<td>Elem, ECE, ESOL</td>
<td>18</td>
<td>Moderate</td>
<td>2.4 2.7 2.7 2.9</td>
</tr>
<tr>
<td>Marty</td>
<td>Hidden View</td>
<td>4</td>
<td>Elementary</td>
<td>2</td>
<td>Moderate</td>
<td>2.4 2.9 2.9 3.0</td>
</tr>
</tbody>
</table>

*Note.* Domain A = organizing content knowledge for student learning; Domain B = creating an environment for student learning with an emphasis on classroom management; Domain C = teaching for student learning; and Domain D = teacher professionalism with an emphasis on reflection. Domain scores range from 1.0 to 3.5, with a score of 1.0 representing the lowest score possible, and a score of 3.5 representing the highest score possible. Elem = elementary; ECE = early childhood education; ESOL = English for Speakers of Other Languages.
semi-structured interviews with each teacher before and after observations. On the basis of this record of evidence, teachers were rated on 19 criteria organized into four domains: (a) Domain A: organizing content knowledge for student learning, (b) Domain B: creating an environment for student learning with an emphasis on classroom management, (c) Domain C: teaching for student learning, and (d) Domain D: teacher professionalism with an emphasis on reflection. Domain scores range from 1.0 to 3.5, with 1.0 being the lowest and 3.5 being the highest score possible. Across domains there was a focus on a teacher's ability to consider the needs of individual students and adjust instruction or management techniques accordingly. Scoring and summaries of Pathwise observations took approximately 2 hr per teacher. Project staff observed each TLC teacher twice using Pathwise.

Prior to Pathwise observations, teachers prepared written documentation including a detailed lesson plan, description of their classroom, and demographic information for themselves and their students. During lessons, we took anecdotal notes documenting positive and negative evidence for Domains B and C (ETS, 1995). Semistructured interviews occurred before and after observations and probed for information about conceptualization of instruction (Domain A) and reflection on implementation of the lesson plan (Domain D).

Informal Observations. These data were collected at least four times a year for 1 to 2 hr per observation over the 3 years of the study. We took field notes during each classroom visit, constructing a running narrative of classroom events. For approximately 80% of observations, we conducted informal postobservation conferences to obtain teachers' perceptions of the lesson and how well students having academic or behavioral difficulties responded. We also provided feedback on academic and behavioral concerns.

Semistructured Interviews. We conducted two semistructured, individual interviews per year with TLC teachers and their school principals. Interviews lasted approximately 1 hr. Interview questions varied and were selected to gather data related to project goals and research questions. Topics included (a) teachers' beliefs about instruction and management, (b) descriptions of struggling students' academic and behavioral needs and how to address them, (c) the nature of TLC collaboration, and (d) barriers and supports for collaboration. We altered interview protocols in Year 2 to gather more information about issues emerging from the data, specifically those related to teacher leadership and learning.

Meeting Minutes and Researcher Reflections. Meetings occurred once or twice a month and generally lasted 1 to 1.5 hr. During the meetings, we took notes documenting the agendas, discussions, and interactions of the group. Following meetings and school visits, we documented informal conversations and general information gathered during the visit, as well as our initial reactions.

DATA ANALYSIS

During data collection and analysis, we used three strategies to establish trustworthiness: (a) triangulation of multiple sources of evidence, (b) peer debriefing during data coding and theme development, and (c) member checks involving TLC teachers. As a first level of analysis, we recorded informal reflections for each meeting, classroom observation, and school visit, making notes about issues and concepts that were emerging in the research.

We then generated a list of codes, coded all sources of evidence independently, and then met to compare and contrast data analysis. For example, we compared data coded as effective instructional practices from interviews and meetings to codes from observations (e.g., making content understandable) to develop the theme “Understands how to structure instruction for struggling students.” Once themes were identified, we met and discussed whether they appropriately captured individual examples from the data. Also, we wrote yearly reports based on analyzed data. TLC participants read these reports and provided feedback.

FINDINGS

Although we expected teachers to differ in their ability to use strategies acquired in the TLC, we did not realize the degree to which they would vary. Some acquired strategies readily, whereas
others used few strategies, and their propensity to adopt strategies seemed to have little to do with their experience, preparation, or school context. Using data from meetings, interviews, and classroom observations, we identified various levels of adoption and outlined qualities that distinguished high adopters, moderate adopters, and low adopters. We found five characteristics that influenced teachers' willingness to adopt strategies learned in TLC meetings.

**TLC Learner Outcomes: The Continuum from High to Low Adopters**

Some teachers quickly implemented new strategies, whereas others, despite their willingness to learn and discuss ideas, implemented innovations poorly, or not at all. We classified teachers as high, moderate, and low adopters based on our perceptions of how frequently and willingly they adopted strategies learned in the TLC. In the following narrative, we use examples from observations and meetings to describe teachers' varying levels of adoption.

High adopters were teachers who quickly incorporated new practices into their classroom. These teachers were always working on at least one strategy they had acquired in the group, both behavioral and academic. They were also willing to try strategies that were teacher directed and student directed. Moderate adopters used many practices but were inconsistent in their willingness to adopt certain practices. Low adopters were the least willing to adopt new practices and often had difficulty using the new strategy.

The three high adopters were always interested in using something new. For instance, one high adopter attended a meeting where one of us briefly suggested she score correct letter sequences on spelling tests rather than whole words as correct or incorrect. At the next meeting, she described for the group how she was now giving students credit for spelling parts of a word correctly:

\[
\text{I am using a scoring system where students get credit for partially correct spellings. For example, if a child writes DUG for the word dog, he or she would receive credit for the } d \text{ and } g. \text{ The kids' spelling has improved dramatically. There is not enough space on my bulletin board to post all the good spelling tests kids are turning in.}
\]

The two other high adopters were also quick to implement suggestions. For example, after Diane missed a meeting, we gave her the reading materials we distributed, which described Classwide Peer Tutoring (CWPT). At the next meeting, she was the only teacher to have implemented the CWPT procedures. With one exception, remaining teachers needed direct assistance from one of us to implement what they had learned.

Moderate adopters used certain classroom practices and ignored others. Over the course of the project, one of the three implemented CWPT, began teaching students multiple strategies for comprehending text, and even developed her own strategies for teaching students vocabulary, incorporating some of the concepts learned from CWPT. More than the other two teachers, she voiced a need to do things differently to meet students' needs. The other two moderate adopters changed less. They were willing to use some strategies but ignored many others. For instance, although one was quick to incorporate CWPT for reading, she resisted using more explicit cognitive strategy instruction. She told us she had used a summarization strategy "only a few times," even though we spent months discussing it and provided specific, concrete ways to use it. She found teaching the strategy unexciting and limiting, and she enjoyed being more spontaneous. Although her TLC colleagues presented many interesting and engaging ideas for explicitly teaching summarization, she seemed unwilling, and perhaps unable, to capitalize on those ideas.

There were two low adopters. With considerable assistance, one implemented CWPT, used more positive classroom management techniques, and implemented a strategic program for teaching basic math operations. The other tried strategies...
that his colleagues suggested to reward behavior (e.g., putting a marble in the jar to reward the class for appropriate behavior), but decided to do so only when he realized that he had to do something about the behavior in his class, and the TLC reading materials he encountered kept stressing the need to manage behavior using positive approaches. He refused to implement CWPT, morning meetings (designed to build classroom community), and any reading strategies, asserting that reading "was not his cup of tea" or that his students lacked the skills for cooperative work.

Qualities That Differenciate Levels of Adoption

As we examined differences among teachers based on their willingness to use TLC strategies, we noticed that they differed in important ways. High adopters had the most (a) knowledge of curriculum and pedagogy, (b) knowledge and student-friendly beliefs about managing student behavior, (c) student-focused views of instruction, and (d) ability to carefully reflect on students’ learning. High adopters also were able to adapt strategies to meet students’ needs, which in all likelihood derived from the other four qualities. Teachers considered moderate adopters varied more dramatically on the five instructional qualities. Finally, low adopters ranked lowest on the five instructional qualities.

We used Pathwise scores on Domains A, B, C, and D to triangulate data from informal observations and the other data sources to separate the eight teachers into three groups. These Pathwise domains assessed ability to (a) organize instruction, (b) create a well-managed and supportive environment for instruction, (c) carry out cohesive instruction, and (d) be professional and reflect on student learning and instruction. Pathwise scores for the three high adopters were consistently higher than other teachers in all four measured domains (see Table 1). Furthermore, differences in Pathwise scores between these three teachers and the other five participants were most substantial in Domain A, the domain that measured ability to organize content knowledge for student learning. The second Pathwise tier consisted of two teachers we judged to be moderate adopters (Marty and Cindy) who were high on one category and moderate on the other four instructional qualities. One moderate adopter (Lois) and the two low adopters (Martha and Carl) made up the bottom Pathwise tier.

Knowledge of Curriculum and Pedagogy. High adopters were consistently the most knowledgeable teachers. They knew that high-risk students needed explicit, systematic instruction that was engaging and geared to their needs. These teachers could see quickly how ideas presented in the TLC fit within their curriculum and what they knew about instruction. Moderate and low adopters were less knowledgeable, took longer to grasp ideas, and did not always implement them well. Some of these teachers needed to have ideas explained in detail and would discard ideas they did not appear to comprehend.

When asked why they were teaching specific strategies or content and how to teach high-risk students in urban schools, high adopters provided precise answers that demonstrated their understanding of how to teach struggling learners. For example, Sarah emphasized the need to be explicit and systematic. She said,

The teacher must be very aware of the children's understanding of content and present things more systematically. The students need things broken down. The teachers need to be willing to make adjustments, take longer, try new things. . . . You have to be tuned in to what is going on with the children. Sometimes you have to restructure your activities based on the students’ needs.

When we observed high adopters, their instruction was explicit, and content was relevant and interesting to children. These teachers could articulate why they were teaching a particular concept or strategy and could develop instruction that was clear and engaging. Sarah’s lesson on cause and effect was a good example. In describing her lesson, Sarah talked about the importance of beginning a lesson with clear and engaging examples so students would understand the concept and be motivated to participate. So, Sarah began the lesson by saying “underwear.” As Sarah predicted, all the students responded, “Yuck.” Thus, Sarah had the opportunity she was hoping for, to point out that her statement was a cause and the students’ response was an effect. Because the students also found this example humorous, Sarah

Exceptional Children
had captured their attention. She followed with more examples and an interactive lesson involving all students acting out causes and effects. During follow-up independent work, very few students had difficulty distinguishing cause and effect.

The moderate and low adopters were less knowledgeable about pedagogy but also were strikingly different from one another. One moderate adopter had well-developed knowledge about science and social studies curriculum and some knowledge of pedagogy. She was willing to use innovations, but often took longer to determine how to incorporate them or needed more prompting and support to do so. She could articulate the need to incorporate cooperative learning strategies into instruction but did not seem to know how to do so consistently. Many times in her classroom, we observed that students were reading from textbooks and writing answers independently with little teacher interaction. Although her instruction was never the most interesting, it often was focused on important concepts and organized to involve all students. During the 3-year study she began to incorporate more cooperative activities and better questioning techniques.

One low adopter appeared least knowledgeable about both content and pedagogy. When we first observed in her classroom, we found students completing one independent seatwork assignment after another. This teacher seemed unable to articulate why she was teaching certain skills. For instance, when she first learned CWPT, she raved about the program's ability to "cut down on behavior problems and get them ready for learning." However, she never commented about how the program had helped her students to become stronger in math.

Knowledge and Beliefs About Managing Student Behavior. Teachers varied considerably in their beliefs about what constituted appropriate classroom behavior and a teacher's role in helping children learn to behave. High adopters held two beliefs about managing student behavior. First, they acknowledged that well-designed instruction can go a long way toward eliminating behavior problems. Second, they judged teaching behavior to be as important as teaching academics. High adopters believed interesting instruction was foundational to classroom management, and this belief was evident in how they spoke about their classrooms. For instance, one remarked that she was willing to invest a good deal of money in interesting books, materials, and games for the students. From her perspective, "spending the money was worth it because it made life easier in the classroom." She and other high adopters knew that when children were interested and busy, they were less likely to be disruptive. As a consequence, these teachers took to instructional techniques such as CWPT that engaged children.

High adopters also realized that actively teaching discipline in positive ways was an important goal of education. They knew how to set up a classroom; they emphasized positive discipline and helped children reflect on and change their behavior. As a result, they were most capable of helping children with behavior problems. Diane, for example, talked frequently about the importance of teaching children to become better citizens in the classroom and community. In one TLC meeting, she started by providing a rationale for character education. She spoke with passion about the problems occurring in schools because students do not know how to interact in respectful and responsible ways with one another. As she modeled her approach to character education, it became apparent how she explicitly teaches responsibility and cooperation. She described how she highlights qualities by using literature and praises children when they exhibit these qualities in class. She also explained how she encourages students to notice other children when they demonstrate these behaviors.

Brenda also realized the importance of teaching children appropriate behaviors. When asked what she learned from the challenges in her first year of teaching, she responded, "I realized there is a whole lot more to school than academics. [My first year] made me realize that while teaching academics, I had to teach social skills and manners." Because she believed teaching behavior was important, Brenda recognized the importance of praising children for appropriate behavior both as a class and individually. She also knew it was important to provide individual supports for children having the most difficulty behaving. For instance, when asked what good teachers do to manage the behavior of high-risk students, Brenda said, "Good teachers use behav-
ior modification charts and break the time that a child has to... demonstrate appropriate behavior [into smaller intervals]."

The moderate adopters differed in that they believed so strongly in the significance of academic engagement that they failed to recognize the importance of actively teaching students more appropriate behavior. Instead, these teachers focused exclusively on making instruction interesting and engaging while downplaying the importance of teaching children to behave. One moderate adopter often claimed that good instruction made classroom management problems disappear. In an interview, she remarked, "I eliminate a lot of behavior problems by structuring lessons. There is no time for behavior problems during my class. Students have behavior problems before class, in the hall, and in recess, but not during instruction, normally." Her heavy emphasis on instruction, however, often meant she ignored promising management strategies presented by her colleagues. For instance, after a joint meeting between Hilton and Hidden View, she remarked, "Meeting with teachers from the other schools was beneficial. I listened to ideas, but I'm so focused on teaching reading that other things are immaterial to me, like morning meetings. ... I can't lose sight of my primary objective, teaching reading. ... Every minute of my day is scheduled, so there's no wasted time. I don't have time for kids to sit in a circle and hold hands."

High adopters believed interesting instruction was foundational to classroom management, and this belief was evident in how they spoke about their classrooms.

Although she and several other teachers were able to use well-structured instruction to help most students, they struggled when confronted with more serious behavior problems. More often than not, they would blame children who exhibited the most significant problems rather than consider adopting more proactive, positive discipline techniques.

The two low adopters held rigid expectations for student behavior but viewed responsibility for managing student behavior differently than the other teachers. Martha believed teaching behavior was an important goal in her classroom and that she had a moral duty to help all children, especially those who were the most trying. Thus, she would often consider changing behavior management practices before instructional practices. In meetings, she focused almost exclusively on concerns about student behavior. For instance, she monopolized an early meeting with concerns about a student and the punitive strategies she had used to deal with her. When we observed this child, she seemed restless but not excessively disruptive. It was clear from our conversations and observations that Martha had a low tolerance for behavior she considered inappropriate and did not know how to use more proactive or positive strategies to either prevent or reduce behavioral difficulties. Over time, her concerns about student behavior and her commitment to help children ultimately enabled her to adopt new behavioral strategies and become less punitive. As one of us noted in Year 2, "I was hoping to go in and model more positive behaviors for Martha, but she was already doing that. I saw Martha giving out praise and helpful suggestions to the students about how to improve their writing." Even Martha acknowledged that TLC had really helped her "to see the importance of positive interactions with students."

Carl, in contrast, did not feel responsible for changing students' behavior. In fact, he resisted having to play this role. He responded strongly to our suggestions that he use more positive management techniques. Specifically, he remarked, "I am not going to change my approach to discipline. There is good behavior and bad behavior, and that is it. I do not believe all this behavior modification stuff. Schools should be able to get rid of kids who are disrupting the classroom. I am tired of people telling us that we need to adapt to these kids and set up behavior modification programs. Kids should know how to behave, and that's it."

On the bright side, Carl began to make small changes. As he struggled with students'
behavior, particularly in the second year, he knew he needed to change. Often he indicated the need to work on using more positive reinforcement. For example, he agreed to read an article about schoolwide positive approaches to behavior management and to explain the content to his colleagues.

**Views of Teaching and Student Learning.** High adopters had the strongest student-focused views of instruction, considering academic and behavioral needs of the class and individual child. These teachers were the most willing to implement peer learning and management techniques, cognitive strategy instruction, and self-management techniques. High adopters realized they could not approach students using standardized curriculum or strategies. Moreover, these teachers often valued peer-mediated approaches to address diversity and foster a positive classroom community. Brenda recognized the importance of considering both the child's academic and social needs and was not one simply to follow the text. She realized early on that many of her students had too many needs to teach them in a standardized fashion. In an interview, reflecting on her first teaching experience, also in an urban school, she said, “I could not rely on textbooks and teacher guides. . . . I needed to adjust to students' abilities.” Because of her beliefs, this high adopter thought carefully about struggling students and sought to identify how to help them.

Another high adopter had a sophisticated, student-centered view of learning. She believed strongly in creating student choice, helping children learn to work together, and fostering an environment that was interesting to children. She created opportunities throughout the day for children to choose. She told us that “self-selection reading time was an important way to incorporate student choice in the curriculum.” She also developed learning centers to support or enrich concepts learned in class, and students had considerable choice in selecting centers. She frequently used cooperative learning and other student-centered strategies and said that students needed opportunities to work together and direct their learning, otherwise they would never acquire the social skills necessary to be successful adults. As she planned curriculum, she often considered what would interest and engage children. For example, at Thanksgiving, she taught a unit about early American life. She had students study quilt making and make a quilt, visit a nearby town where people demonstrated colonial crafts, and write letters using quills. She followed these experiences with a collaborative writing assignment in which writing strategies students were learning and knowledge gained from these experiences were integrated.

By contrast, the other high adopter and the three moderate adopters vacillated between teacher-controlled and student-focused orientations. One high adopter was willing to implement conflict resolution techniques in her classroom but was reluctant to implement cooperative group work. She felt “that the type of students we have will not learn unless you are looking over their shoulder.” A moderate adopter believed that cooperative learning was critical to fostering a positive and supportive classroom environment, and she saw herself as a facilitator, fading into the background of student activity. She arranged an elaborate science activity that took children several weeks to complete and was almost exclusively student-directed. Students were allowed to select a science topic, to conduct experiments, and to decide on a manner of presentation. When the students did not cooperate, however, the teacher immediately switched to a more teacher-centered approach. Instead of teaching students to work cooperatively, she held out working together as a reward for students “when they learned to act right.”

The low adopters demonstrated the most teacher-centered view of learning. During observations, we noticed that one of them failed to notice an opportunity to facilitate children working together, and instead, emphasized behavioral control. For instance, after reading a story about building a dream house, students were asked to draw a picture of their dream house. The teacher provided instructions for completing the drawing and reminded students to use many different colors to make their dream house “pretty.” She instructed them not to look at each other's drawings because that “would be cheating” and reminded them that this was a “noncommunicating” time. On other occasions, she would insist that students not work ahead in their textbook until the entire class was ready to move on.
Ability to Reflect on Students' Learning. High adopters were the most reflective about their instructional practices and classroom management. During interviews and postobservation conversations, these teachers demonstrated an ability to think about the entire class as well as individual students. They were adept at identifying individual students' needs, took responsibility for finding ways to meet them, and were most reflective about academic learning and classroom management.

Diane was the most reflective TLC member. She always considered how her entire class and individual students were progressing academically and socially and wondered what she could do to remedy their problems. She thought a lot about the purpose of instruction and whether she was achieving those purposes. For instance, Diane was assigned to teach reading to the designated second grade inclusion classroom. After listening to discussions about the importance of fluency in several TLC meetings, Diane decided she needed to do something different to help students who had difficulty reading the basal text. She organized small group instruction in decodable texts geared to students' reading levels. At the same time, she also began to conduct fluency timings. She used these data to determine whether she was achieving her aims.

Two others, Sarah and Mary, also gave much thought to how individual students were learning, but they sometimes failed to recognize a need to change. Sarah could provide detailed descriptions of how students were performing and the steps she undertook to help them, but sometimes blamed students for inappropriate behavior or their failure to learn. For instance, one of us watched Sarah teach a lesson about finding the main idea. Although the lesson was carefully designed and executed, it was too long. The children grew inattentive, and Sarah was frustrated. When we suggested the lesson was too long, Sarah insisted that the children could attend for that length of time but were choosing not to. Later, she reconsidered her stance, as she often did, and we saw her teach shorter strategy lessons, more in tune with her students' attention spans.

Two moderate adopters were thoughtful about their instruction, but not as reflective as the teachers in the top group (which included the other moderate adopter). They seemed less able or less willing to adjust their practices to address student concerns. For instance, Cindy recognized individual student needs and wanted to address them, but she did not always change her practices accordingly. She would incorporate peer-mediated strategies, yet she would not consider other adaptations. During Year 3 at Hidden View, she talked about the problems of punishing students and sending them to detention for not doing their homework. She knew this approach was not improving behavior or encouraging homework completion, but rather than consider more positive alternatives, she continued to rely on detention.

Low adopters were least likely to reflect on their practices. After one lesson, one of them voiced concerns about two students who were frequently off task. When asked what he was doing to remediate these problems, he offered simplistic strategies for getting their attention, such as calling their names or standing next to them. When one of us prompted him to generate other ideas for working with students, he redirected the conversation to a mother who refused to refer her son for special education.

Ability to Adapt Instruction. High adopters were able to read or use information independently to meet their students' needs. These teachers were "sponges" for information. Their ability to acquire new ideas and enact them quickly reflected the tremendous knowledge they had about students, content area pedagogy, behavior management, and techniques for helping students direct their learning. It seemed that success bred success: The more success these teachers experienced with TLC techniques, the more likely they were to implement additional strategies. High adopters tried new strategies because they knew they could adapt them to suit their teaching style and student needs.

High adopters talked about many ideas learned in meetings, often from colleagues, or picked up from us informally. They integrated information from different sources to improve their instruction or routines. Brenda offered a good case in point when she combined what she knew of cooperative learning and CWPT. After learning about CWPT in a TLC meeting, Brenda felt it would be helpful for her class. Two weeks later, Brenda told the group that she had learned how
to teach teaming skills in a district-sponsored workshop and that she intended to apply what she had learned to introduce CWPT social skills. At the next meeting, she showed all the primary grade teachers her charts for teaching teaming and demonstrated how she used the characters Positive Patty and Negative Nellie to teach kids good team behaviors. The teachers were mesmerized.

Another high adopter used information that a colleague presented for teaching summarization and created a four-step strategy of her own. She first taught students to highlight key words and phrases and to find the main idea for each page of a story. She then had students draw pictures representing main ideas and record both the main ideas and pictures in a log. When the students finished these steps, she modeled how they could use the strategy to summarize the whole story and asked them to tell the story in as few words as possible.

Two moderate adopters also were able to incorporate instructional ideas into existing routines, but they at first seemed reluctant. Cindy, for example, had difficulty seeing how she could use CWPT without encountering classroom management problems. With support, she implemented CWPT and, seeing the power of peer learning, began to adapt her instruction to involve more peer learning. For Cindy, peer learning became an increasingly important tool. Ultimately, she taught skills, strategies, and content primarily through peer learning arrangements.

Low adopters experienced the most difficulty adapting instruction. They would not attempt new strategies unless the innovation required few changes or support was provided. For instance, one tried to use the summarization strategy but was unable to do so effectively. We watched him talk for 25 min while modeling summarization (prompting a student to complain, "Here is this man just talking again"). He later explained that he "thought students were not allowed to talk during modeling, that the teacher did all the talking." He did not pursue strategy instruction further. Conversely, when suggestions were simple and consistent with his views, he would implement them. After talking to TLC colleagues about ways to help struggling readers, he was eager to level texts and count the number of minutes students spent reading.

**DISCUSSION AND IMPLICATIONS**

We began this 3-year project with assumptions about the benefit of professional collaboration for helping general education teachers improve their instruction for students with disabilities and high-risk learners. Like many education scholars, we believed teachers would benefit from meeting with peers and a skilled facilitator over time to explore problems and to learn how to implement new strategies. We were surprised at the variability of teachers' responses to participation. All of the teachers adopted strategies, but some teachers acquired only one or two. We did not anticipate how little power professional collaboration had for changing the practices of some teachers and wondered what this lack of progress means for helping all or most general education teachers acquire the skills and strategies they need to appropriately involve students with disabilities in instruction.

Our participants were volunteers, and they selected strategies for study. All eight teachers participated in TLCs for at least 2 years. During meetings, they engaged in discussions of student learning and identified areas of difficulty on which to focus. New strategies were presented and discussed, which for some teachers was all it took to improve classroom practice. Others needed additional encouragement and support, and supports such as modeling and coaching were not always enough. All teachers expressed a desire to continue with the TLC and felt that it was valuable; they seemed eager to learn and grow. Why, then, did some teachers benefit so little? How did their individual qualities work together to enable them to use strategies?

We found teachers who readily incorporated new practices differed in important ways from teachers who did not. Teachers who had a strong knowledge base to build on, who were able to consider the needs of individual students while responding to the whole class, and whose beliefs closely aligned with the innovations we presented seemed to understand how to adapt novel strate-
gies for their students and were most likely to adopt them. By contrast, teachers who experienced dissonance in their beliefs, who could not make the needs of individual students a priority, or who lacked prerequisite knowledge struggled in their attempts to use and adapt a strategy, often implementing the strategy in routinized ways, and were likely to abandon it. It also is interesting that high adopters received high Pathwise ratings. Our data—quantitative and qualitative alike—demonstrate how knowledge, beliefs, skills, and reflective ability work together to influence a teacher's benefit from collaborative professional development efforts.

Clearly, our findings extend previous research on collaboration, in which variability in teaching learning is underplayed (Pugach & Johnson, 2002; Rogers & Babinski, 2002). In addition, our findings extend special and general education research that is focused on the extent to which teachers implement practices learned through professional development, and then sustain the use of those practices (Klingner, 2004; Vaughn et al., 1998). To date, research examining collaboration and sustained use of innovations has focused mostly on identifying contextual barriers and facilitators that disrupt teacher learning or collaboration (Klingner), or those attitudes and beliefs that influence innovation adoption. At present, we do not have much in-depth information about how the nature of teachers' individual knowledge and beliefs might interact to facilitate or hinder innovation adoption (Gersten et al., 1997; Klingner; Richardson & Placier, 2001). Our study articulated the types of teacher qualities that mattered in determining how to use an innovation and the ways in which those qualities interacted to influence what practices TLC teachers implemented and their success in doing so. We also found that teachers' ability to reflect simultaneously on the needs of the group and individual students played an important role in innovation adoption. Previous research on teacher education has established the importance of teacher reflection to becoming a successful teacher; however, this research has not considered how reflection, knowledge, and beliefs might work together to influence how teachers adapt innovations and ultimately use them (Bolin, 1990; Griffiths & Tann, 1992; Korthagen, 1988).

Moreover, the staff development and collaboration literature has not examined how the ability to reflect on individual students and groups of students, in conjunction with teacher knowledge and beliefs, influences how teachers adapt strategies and continue to use them (V. Richardson, personal communication, September 10, 2004).

Teachers' individualistic responses to collaboration in our study and the Elmore et al. (1996) study suggested that having collaborative learning structures in place, and even a desire to collaborate, will not create equal benefit for all participants. In fact, some teachers may benefit very little from well-designed opportunities to learn from each other and researchers. Alternatively, some teachers may just require a lot more information about how to use an innovation and support and time to do so. In addition, they may need help in understanding how to consider the needs of individual students in adapting a strategy for their classroom. We suggest, as does Klingner (2004), that differential levels of assistance may need to be provided to individual teachers based on their characteristics. Differences among teachers in our study suggest the need to know more about how different collaborative structures affect groups of teachers as well as individuals. Scholars need to know how curriculum and these collaborative structures provide opportunities for teacher learning. Research in general education suggests that structured collaborative learning around curriculum that helps teachers understand how to take action in the classroom may be very effective in supporting teacher learning (Cohen & Ball, 2000). Staff developers, teacher educators, and others working to help teachers improve their practices need ways of identifying those teachers who require considerable assistance to use innovations and consider ways of providing more learning support.

However, providing different types of assistance raises a new set of research questions. What will these different types of assistance look like? Will they involve more focused discussions of how to use and adapt innovations within current curriculum rather than just extensively training teachers how to use a particular innovation with fidelity (a practice commonly used in the most intensive training efforts in special education)? How will more intense structures, such as modeling...
and coaching, affect the use of new practices? Will more intense, collaborative supports for learning be more likely to influence teachers’ adoption of new practices, even when the practices are at odds with their current knowledge and conceptions of teaching and student learning? How can that assistance be provided without hampering development of a shared vision for teacher learning or creating an overreliance on experts? Will too much assistance foster dependence on experts rather than interdependence among teachers, thus, hampering teachers’ collective capacity for continued learning? Also, what is the feasibility of providing these more intense (and arguably more expensive) collaborative supports?

Finally, we note that in our study we defined benefit from collaboration in terms of practices adopted by teachers. However, the ultimate benefit—that of improvement in student achievement—is more difficult to determine. We did not collect evidence of student learning as a result of changes in teacher practice related to participation in collaboration. Without that direct link to student achievement, it can be argued that we are looking for change rather than improvement. Ultimately, professional collaborative efforts are important only if they help teachers change in ways that promote student learning. Answers to these and other questions will provide teachers, administrators, and teacher educators much needed information about implementing and sustaining collaborative professional development in schools so that all students will achieve.

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