Title
Appropriating and Enacting Literacy Teaching Practices in the Context of the Pathway Project Professional Development Program

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Chung, Huy Quoc

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IRVINE

Appropriating and Enacting Literacy Teaching Practices in the Context of the Pathway Project Professional Development Program

DISSERTATION

submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in Education

by

Huy Quoc Chung

Dissertation Committee:
Associate Professor Elizabeth A. van Es, Chair
Associate Professor Carol Booth Olson
Professor Judith Haymore Sandholtz

2015
DEDICATION

To

My parents, Chung V. Chuong and Luu N. Ha

My siblings, Chung G. Hoang and Chung B. Chau

My nieces and nephew, Caitlin, Troy, Carissa, and Cara

Your support has been the light that has guided me throughout my life

&

To

All educators who strive to make the educational enterprise of schooling equitable and just
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ACKNOWLEDGMENTS

Every dissertator has a unique journey and story to tell about their research and what informed their decision to embark on what may seem at times a daunting and arduous task. It is never easy; but the experiences I have had, the work that I have done, and the people I have met along the way have made this all worth it. I could not have accomplished this on my own.

First, I would like to thank my advisor and chair, Beth van Es. Your passion for your work shows through in everything that you do. Through your mentorship, guidance, and wisdom I was able to navigate the different milestones that have shaped my intellectual journey as a doctoral student. The immense work and intellectual investment of advisors often goes unacknowledged, so I want it to be known that the amount of time and care you put into my development as a scholar can never be repaid.

Second, I also want to thank Carol Booth Olson. This dissertation would not exist had it not been for your gracious agreement to let me study the CPEC-Pathway Project and its teachers. But more than that, your leadership as an English educator, Writing Project director, and mentor has provided me with some of the most rewarding experiences of my life. I can never thank you enough for your generous support, guidance, and belief in my abilities. I also want to thank the Writing Project staff and its affiliates for their research support: Tracy Gov, Eric Chansy, Annie Wong, Candice Somay Perez, Veronika Zherdeva, and Diana Mullins.

Third, I want to express my deepest appreciation for Judith Haymore Sandholtz. Your courses on teacher professional development have been invaluable experiences and inspired this work. It was only fitting that I started and ended my coursework with your classes. I respect your deep knowledge of the field and your academic commitments. However, what I want to most thank you for is your kindness and support throughout my time here. I will always think about you fondly and your penchant for dark chocolate.

Last, but certainly not least, I also want to thank Joshua Lawrence for his support and guidance, Linda Vo for serving on my proposal committee, George Farkas for his expertise in statistics, Jamal Abedi for his mentorship and support, and numerous other faculty members who have made my time here rich and rewarding. I respect you all so much. Learning from all of you was such a privilege.

Graduate school can also be a lonely place, but the friends I have made and the colleagues I have met along the way have certainly made me never feel alone. Special thanks go out to my cohort (C3): Ana, Alex, BinBin, Chenoa, Dan, David, E.J., Emily, Jennifer, Jill, Mary, Sabrina, Tara, Teya, and Tracy. I also feel it was such an honor to meet so many graduate students in our program that are passionate about what they do, but also who are just genuinely nice people. You will never be forgotten.

I cannot thank my family enough. They allowed me to pursue a dream without question and supported me when I did not think I could do it. My parents risked everything when they made the fateful decision to leave Vietnam and vowed that their children will have better opportunities. I would like to think that they made good on this promise. I am who I am because of them. Who would have thought that the little boy who dreamt of being a paleontologist would study comparative literature as an undergraduate, become a middle school humanities teacher, and now an education researcher. Anything is possible with the right circumstances and people. Finally, I would also like to thank my sponsors for their financial support throughout my post-secondary years, especially the Bill and Melinda Gates Scholarship Foundation and the Vera Strayer Fellowship. I am able to pursue my dreams because of the generosity of others.
CURRICULUM VITAE

HU QUOC CHUNG

RESEARCH INTERESTS

- Teacher Learning & Professional Development
- Curriculum & Instruction in the Humanities
- Mechanisms of Appropriation in Educational Settings
- Symbolic Interactionism in Learning Environments
- Instructional Accommodations for English Learners
- Formative Assessments and Learning Progressions

ACADEMIC APPOINTMENTS

Postdoctoral Scholar-Employee: University of California, Davis October 2015
PI: Jamal Abedi, Professor of Education
Projects: The three projects: Formative Assessments in Mathematics, WRITE professional development project, & testing accommodations seek to help and support English Learners and their teachers to engage in more authentic learning experiences. Funds come from the National Science Foundation and the Institute of Education Sciences. I am also a project manager and coordinator for the Formative Assessments in Mathematics Project.

EDUCATIONAL HISTORY

University

2015  Ph.D., Education, University of California, Irvine
Primary Emphasis: Learning, Cognition, and Development
Secondary Emphasis: Language, Literacy, and Technology
Committee: Elizabeth A. van Es (chair); Carol Booth Olson; Judith Haymore Sandholtz
Thesis: Appropriating and enacting literacy teaching practices in the context of the Pathway Project professional development program

2012  M.A., Learning, Cognition, & Development, University of California, Irvine
Advisor: Elizabeth A. van Es
Thesis: Pre-service teachers’ use of tools to systematically analyze teaching and learning

2007  M.Ed., Teacher Education, University of California, Los Angeles
Advisors: Nancy Parachini; Kim Mitchell; Carlos Lossada
Action Research Thesis: Reading and writing character: Helping students develop empathy, critical thinking, and writing skills through responses to literature

2004  B.A., Comparative Literature, University of California, Berkeley
Senior paper: The discourse of race and gender in Henry Rider Haggard’s She
Certifications
CA Multiple Subjects Teaching Credential: Preliminary Clear
Cross-cultural, Language, and Academic Development (CLAD) Certificate
Pearson’s Learning Teams Facilitator
EdTPA Reader
University of California Analytical Writing Placement Exam (AWPE) Reader

RESEARCH EXPERIENCE
Principal Investigator: September 2014 to September 2015 UC Irvine
California Council on Teacher Education Quest Grant ($250): Tools that Transform Secondary
English Pre-Service Teachers into Teachers
Using Symbolic Interactionism as a theoretical frame, I studied the links among the tools
secondary English pre-service teachers receive from their methods instructor, master teachers,
and professional development. The way the pre-service teachers appropriated these tools was
also a central focus.

Graduate Student Researcher:
January 2014 to September 2015 UC Irvine
PI: Drs. George Farkas & Carol Booth Olson
I assisted in the evaluation of an Office of English Language Acquisition grant study that
provides professional development to grades 7-12 teachers in an urban school district. I ran
regressions, factor analysis to reduce components, constructed table of means, wrote summary
reports, cleaned data, merged data sets, and other duties as necessary.

September 2013 to September 2015 UC Irvine
PI: Dr. Jamal Abedi, UC, Davis: (visiting scholar at UC, Irvine for AY 2013-2014)
I assisted in an inter-university team of faculty, graduate students, and researchers on research
assessing the effectiveness of the WRITE program for English Learners, developing online
assessment accommodations for English Learners, and characterizing the use of formative
assessments of mathematics in California. Duties included collecting, cleaning, and analyzing
data, writing reports, conducting literature reviews, and administrative work such as IRB
approval, project coordination, and grant writing.

September 2013 to September 2014 UC Irvine
PI: Drs. Joshua Lawrence & Carol Booth Olson
I assisted in the evaluation of a California Postsecondary Education Commission grant study that
provides professional development to grades 6-8 teachers in an urban school district. I ran
hierarchical linear models, regressions, factor analysis to reduce components, constructed table
of means, wrote summary reports, cleaned data, merged data sets, and other duties as necessary.

SCHOLARLY ACTIVITIES
Peer-Reviewed Academic Publications
Reducing achievement gaps in academic writing for Latino secondary students and
English Learners. Journal of Educational Psychology, X(X), XXX-XXX.


Publications in Progress


Refereed Presentations


RP8. Chung, H.Q. (2012b). Tracing the lines: English language arts pre-service teachers’ varied analyses of the impact of their teaching on student learning. Research round table presentation at the annual convention of the National Council of Teachers of English held in Las Vegas, NV.


presentation at the California Council on Teacher Education Fall Conference held in San Diego, CA.


Invited Presentations


HONORS AND AWARDS

Scholarships
2014 UCI School of Education Keith Curry Scholarship
2009-2013 Gates Millennium Scholarship: UCI
2005-2007 Gates Millennium Scholarship: UCLA
2000-2004 Gates Millennium Scholarship: UC Berkeley
2000 Cal Bears Scholarship
2000 Garden Grove, CA Strawberry Festival Scholarship
2000 Tylenol Corporation Scholarship

Fellowships
2014 AERA: Division K Graduate Student Seminar
2009-2013 UCI School of Education Fellowship
2012 UC Evaluation Center Institute Summer Fellow
2011 UCI Writing Project Summer Fellow
2005 UCLA Graduate School of Education Vera Strayer Fellowship

Service Awards
2013 UC Irvine School of Education Graduate Student Service Award
2004 UC Berkeley Chancellor’s Volunteer Award
2004 UC Berkeley’s Department of Comparative Literature Volunteer Award

Grants
2014 California Council on Teacher Education Quest Grant
2014 SREE Short Course: Value Added Models
2012/13 UCI School of Education Conference Presentation Grant

TEACHING INTERESTS
- Teacher Learning & Professional Development
- Curriculum & Instruction in the Humanities
- Symbolic Interactionism and Learning Environments
- Instructional Accommodations for English Learners
- Action Research and Mixed-Methods Methodology

PROFESSIONAL TEACHING HISTORY
Teacher Supervisor: January 2014 to June 2014 UC Irvine
Multiple-subjects: Supervised 12 credential candidates as they student teach and completed requirements for licensure and guided them in exploring critical pedagogy and student learning. I observed each student teacher three times a quarter, debriefed with them, scored EdTPA portfolios, attended supervisor meetings, and provided feedback on lesson plans on all subjects.

Teaching Assistant: June 2010 to August 2013 UC Irvine
Education 205: Critical Assessment of Teaching Practice and Learning (Taught 3 times)
Helped grade assignments, supervised capstone projects, provided advice regarding literature review, met with individual groups, lectured on dissemination of action research, & lectured on ethics in research.
Education 207: Quantitative Literacy
Helped grade assignments, maintained course website, created handouts about content, created make-up quizzes, lectured on APA guidelines and writing an abstract.

**Middle School Teacher:** July 2006 to June 2009 Los Angeles Unified

6th and 7th grade humanities: *English, history, art/drama, world mythology, and advisory*

Created interdisciplinary curriculum for literacy development around fictional and non-fictional texts, taught all sections, maintained grade book for all sections, and advised students.

**Substitute Teacher:** January 2005 to June 2005 Garden Grove Unified

*All grade levels: Varying subjects and topics*

Followed teachers’ lesson plans and supervised students’ work

**Instructional Provider:** November 2004 to June 2005 Santa Ana Unified

6th-8th grade: *Afterschool tutoring, remediation, and standardized test preparation*

Retought language lessons, assessed students for instructional needs, provided tutoring, created and taught standardized test curriculum.

**Instructional Assistant:** November 2004 to July 2005 Rancho Santiago CC

*Adult ESL: Assistant to Testing Coordinator*

Assess students on literacy development; helped assign appropriate assessments; administrative work such as attendance sheets, data entry on student information, and records

**Writing Tutor:** January 2003 to May 2004 UC Berkeley SLC

*All levels: Academic English tutoring*

Provided one-on-one tutoring sessions with students of all academic levels and disciplines on organization, clarity, language expression, grammar, vocabulary, and syntax

**SERVICE**

**University Service**

Education Committee: DECADE Program: 2013-2014
Graduate Student Liaison: Committee on Faculty Welfare: 2010-2011
Council Member: Associated Graduate Students: 2010-2011
Education Representative: Graduate Student Writing Center Committee: 2006-2007

**Department Service**

Committee Lead: Associated Doctoral Students in Education: 2012
Committee Member: Department of Education PhD Recruitment Weekend: 2010
Student Liaison: PhD Professional Development Seminar program: 2009-2012
Lab Manager: Teacher Learning Group: 2009-2012
Program Representative: Graduate Student Association in Education: 2005-2007

**Professional Service**

Reviewer: English Education 2014 -
Reviewer: Teacher Education Quarterly: 2014 -
Reviewer: California Council on Teacher Education: 2013 -
Reviewer: AERA: Division K: 2013 -
Reviewer: Journal for Learning through the Arts: 2010 -
Support Provider: Beginning Teacher Support and Assessment: 2008-2009
Secretary: School Site Council: 2007-2009
Small Learning Community Representative: Advisory Committee: 2007-2009
Lead Teacher: LA Opera’s Opera In-schools program: 2006
Committee Member: English Learners Advisory Committee: 2005-2006

Community Service
Advisory Board Member: CSUF-Vietnamese American Education Advisory Council
Mentor: GMS/APIASF Mentoring Program
Committee Member: GMS/APIASF Academic Advisory
Program Manager: Student Tutorial Resources for Immigrant and Vietnamese Education

PROFESSIONAL AFFILIATIONS
American Educational Research Association
California Council on Teacher Education
Conference on English Education
International Society of the Learning Sciences
Literacy Research Association
National Council of Teachers of English
University of California, Irvine Writing Project II
ABSTRACT OF THE DISSERTATION

Appropriating and Enacting Literacy Teaching Practices in the Context of the Pathway Project Professional Development Program

By

Huy Quoc Chung

Doctor of Philosophy in Education

University of California Irvine, 2015

Associate Professor Elizabeth A. van Es, Chair

Given that teacher professional development is a part of teachers’ professional lives and given that billions of dollars have been invested in teacher professional development, this dissertation advocates for research that studies teacher learning and the conditions under which they learn, as an equally important component of studying the impact of professional development on students’ test scores, achievement, and/or learning.

The Pathway Project, a research-based literacy professional development program, served as the study context. The Pathway Project provides teachers with tools to use in their practice to support students in reading and writing using a cognitive strategies approach (Olson & Land, 2007). Using data in the form of observational protocols, survey measures, teacher focus groups, and field notes, as well as, qualitative analytic methods, I investigated: (1) how teachers appropriated Pathway tools for their practice; (2) teachers’ perceptions about their participation in the Pathway Project and subsequent impact on student perceptions and learning; and (3) how the Pathway Project design impacted opportunities for teachers’ learning.
My findings are centralized around the role tools play in teachers’ enactment of the Pathway Project, teachers’ perceptions, and the design of professional development. Data analysis revealed that teachers appropriated the tools in a variety of ways. The teachers responded positively to tools that were easy or moderately easy to implement and they were more willing to use these tools and often used them soon after they were introduced. I also found that the teachers perceived the Pathway Project as a valuable experience and mainly spoke of the ease of implementation of Pathway tools to help their students read and write more analytically. Importantly, they found assessment tools to be more difficult to navigate. Their students also had positive perceptions, noting that they did more writing, worked harder, and scored significantly better on an on-demand writing assessment. Finally, the design of the Pathway Project professional development program afforded teachers numerous opportunities to grow as professionals, yet they were limited in their opportunities to enact and collaboratively reflect on their practice. Implications for the design of literacy professional development will be presented.
INTRODUCTION

In the past decade, researchers, policymakers, and practitioners have given increased attention to the impact of teachers on student achievement (Baker et al., 2010; Darling-Hammond et al., 2009; Sykes, 1999; Yoon et al., 2007). The logic behind this focus stems from studies that conclude that teachers significantly affect student achievement (Ingvarson, Meiers, & Beavis, 2005; Neuman & Cunningham, 2009; Nye, Konstantopoulos, & Hedges, 2004). Teacher effects matter even more for schools in lower socio-economic communities that experience high teacher attrition (Ronfeldt, Loeb, & Wyckoff, 2013). In order for systematic change to happen in schools and to sustain a strong culture of teaching, education researchers call for an investment in teachers and their practice (Ball & Forzani, 2011; Morris & Hiebert, 2011; Stigler & Thompson, 2009). In fact, according to René Islas, the federal policy advisor of the National Staff Development Council, $24 billion has been invested in initiatives tied to teacher professional development since the 2002 establishment of Title II in the Elementary and Secondary Education Act (von Zastrow, 2010). Large amounts of funding have been provided to schools and districts to offer professional development programs to improve teaching in hopes of increasing student learning. A substantial amount of research related to these efforts focuses on the impact of professional development on student achievement (Baker et al., 2010; Guskey, 2002; Wallace, 2009; Yoon et al., 2007). This emphasis is clearly important; policymakers and taxpayers deserve to know if such efforts are making a difference for students. However, I argue that a comprehensive understanding of, and attention to, teacher learning and the relationship between their long-term learning and classroom practices is necessary in order to ensure a lasting impact of teachers’ practice and long term improvements on students’ learning.
Research in teacher education recognizes the complex nature of learning to teach and developing as a teacher over time. Berliner’s (1994) research on teacher expertise demonstrates that simply having experience teaching does not ensure that one becomes an expert practitioner. Rather, expert teachers demonstrate both a commitment and disposition to learn in and from their practice over time. They are highly motivated, reflective, and strategic in the way they approach their work and it can take years to develop the knowledge, dispositions and skills to become an expert. Feiman-Nemser (2001) proposes a continuum of teacher learning over the span of a teacher’s career. She conceptualizes pre-service education as just the beginning of a lifelong pursuit to develop one’s knowledge, commitments, and skills for teaching. Her model for teacher learning recognizes that teachers cannot learn all they need to know in the brevity of a teacher education program. Instead, teacher development of knowledge, skills, and dispositions for practice takes time, sustained effort, and constant vigilance. The development of such a teaching repertoire can also be considered a knowledge base for teaching that promotes teachers learning in and from practice over time (Hiebert, Gallimore, & Stigler, 2002). However, the development of this knowledge base and teaching expertise is complicated by the fact that knowledge for teaching is shaped by a teacher’s context and the opportunities that these contexts afford for learning (Berliner, 2001; Hill et al., 2008; Putnum & Borko, 2000).

While research on teacher education points to the complexity and longevity of developing teacher expertise, studies of the effectiveness of professional development on student achievement have ignored this critical piece of the puzzle. To be clear, research in this vein does look at factors that contribute to teacher learning, such as time spent in professional development, opportunities for active learning and collaboration, and instructional support (Desimone et al., 2002; Garet et al., 2001; 2008; 2010; Guskey, 2002; Ingvarson, Meiers, &
Beavis, 2005; Jacob & Lefgren, 2004; Neuman & Cunningham, 2009). However, these studies do not examine how these settings provide or limit teachers’ opportunities to learn, the nature and development of that learning, and how the contexts in which they work interact with their participation and learning in professional development.

In this dissertation I seek to extend our understanding of how teachers experience professional development, with a particular focus on how they appropriate tools for use in their practice. That is, I seek to understand how they learn to use and enact pedagogical tools from a professional development program aimed at introducing the Common Core State Standards (2010) as well as a cognitive strategies approach to reading and writing (Olson & Land, 2007). I also consider how they perceive the Pathway Project as informing their practice, how students perceive the impact of their teachers’ practice on their learning, and resulting student achievement. Finally, I examine how the design of the professional development program influences their enactment. This is consistent with other research that advocates for a more comprehensive approach to studying the effects of professional development on teachers, as well as how the settings in which teachers operate provide opportunities for enduring change (Borko & Putnam, 1997; Datnow, 2005; Desimone, 2009; Ogawa, Crain, Loomis, & Ball, 2008; Opfer & Pedder, 2011).

Thus, this study intends to open the “black box” of teacher effectiveness to understand how teachers enact what they learn in professional development to inform where better supports are needed to provide sustained improvements in both teacher and student learning. Few studies carefully examine variations in the ways that teachers take up what they experience in professional development for their practice over the course of one school year. Research suggests that not all individuals follow the same trajectory in their learning and development and that
attention to these variations have implications for how to design learning opportunities that have a lasting impact (Richter, Kunter, Klusman, Lüdtke, & Baumert, 2011). This study takes a fine-grained look at teachers’ enactment, how teachers and students perceive the influence of teachers’ participation in the Pathway Project on their learning, and then considers how particular design features of the professional development influenced teacher learning and practice. I focus on a cohort of 32 teachers who participated in a year-long, intensive professional development program to investigate my first two research questions. I then focus on one grade level group committed to enacting these practices to gain insight into what happens at schools when teachers grapple with implementing these tools in their own work.

In the process of exploring three research questions, I provide both theoretical and practical implications for the study of how teachers enact professional development initiatives while teaching. The first question examines how teachers appropriated tools from professional development and the ways teachers appropriated and enacted these tools. The findings have implications for understanding how to design professional development to inform teacher practice. The second question explores teachers’ perceptions about the program, the content, their own pedagogies, their students’ experiences, and the impact of the program in order to comprehensively understand how teachers and students perceive the program influenced them. The third question examines the design of the professional development program that influences the teachers’ opportunities for learning by highlighting one grade level team’s experiences.

In the following chapters I present my conceptual framework, literature review, methods, results, and discussion and conclusion. In chapter 2, I expand on my conceptions of teacher learning and emphasize the importance of studying different entry points where professional development can impact teacher learning. In chapter 3, I provide a review of the literature to
elaborate on these entry points. In chapter 4, I share my study context, research questions, data, and analytic plans. In chapter 5, I present results for my first research questions regarding the appropriation of Pathway Project tools for practice. In chapter 6, I present results for my second research question involving teacher perceptions, student perceptions, and student outcomes. Chapter 7 present results for my third research question pertaining to opportunities for teacher learning based on the design of the professional development program. Finally, in chapter 8, I discuss the findings, make concluding remarks, address limitations, and offer ideas for future research.
CHAPTER 1

Conceptual Framework

Research conducted over the past few decades has found that teaching is a complex activity (Lampert, 2001; Lawrence, Crosson, Paré-Blagoev, & Snow, 2015; Leinhardt & Greeno, 1986; Leinhardt & Steele, 2005; Schoenfeld, 1999). It requires an extensive knowledge-base about teaching, content, learners, and school contexts (Ball, Thames & Phelps, 2008; Shulman, 1986), development of beliefs and identities as teachers (Richardson, 1996), and constant improvement of teaching practices through critical analysis and reflection (Hiebert, Gallimore, & Stigler, 2002; Zeichner & Liston, 1996). As Schoenfeld (2011) argues, learning to teach, and developing expertise in teaching takes time and is slow to develop. Teachers develop an expanding repertoire of pedagogical practices, skills, knowledge, and concepts (Feiman-Nemser, 2001) as they become part of their teaching communities. However, the work of creating and cultivating communities of practice that result in teacher learning is not to be underestimated (Grossman, Wineburg, & Woolworth, 2000; McLaughlin & Talbert, 2006). What I argue is that impact studies neglect an extensive body of literature that attends to the importance of teacher learning. Many fail to take into account all that needs to be considered to support teachers to learn to improve their work and thus often find that selected outcomes (i.e., student achievement) plateau or fade after the initial year(s) of professional development (Borman, 2005; Wallace, 2009). Moreover, institutional memory and the expectations that arise out of the cultures of schools also influence the impact of professional development on teachers’ practice (Grossman, Smagorinsky, & Valencia, 1999; Rusch, 2005; Windschitl & Sahl, 2002). As with any reform, policy climates change, schools respond differently, and teachers interpret initiatives to meet their context. Such reforms may lead to decreased morale, upheaval, and high-
anxiety inducing working conditions (Brooks, 2006) as teachers attempt to negotiate their roles in meeting these demands. Thus, another reason why meaningful learning gains may not be sustained is that the designs do not account for the complexity of schools responding to policy climates, the challenges of building a climate of learning and improvement for all students, and school leaders guiding teachers in focused improvement on teaching practice (McLaughlin & Talbert, 2006). Without attention to these issues, such studies provide limited information about how to sustain changes in teachers’ practices that will support continued improvements in student learning.

Research on the effectiveness of professional development on student achievement attempt to simplify the impact process, but do not currently account for the complexity of teacher learning and changing teaching practice (Opfer & Pedder, 2011). Figure 1 illustrates this limited conceptual model for studying the impact of professional development. In this model, the teaching is largely absent. Instead, the focus is on student outcomes and teacher characteristics (e.g., degrees obtained, years teaching, etc.) are used to explain these results.

**Figure 1**  
*Limited Conception of Teacher Development*

Importantly, across much of this research, studies of teacher learning are largely absent and little research examines how teachers were supported while they implemented new teaching practices (Hamre et al., 2012; Penuel, Gallagher, & Moorthy, 2011; Roschelle et al., 2010). The model I propose (see Figure 2) incorporates many of the factors I described that operate to influence teacher learning. These include:
- Teachers’ cognition, including knowledge, beliefs, and perceptions;
- Teachers’ local enactment of practices promoted in professional development;
- The local, state, and national policy context, as well as the school culture and community on teachers’ learning;
- Time invested for sustained change in teaching and student learning

**Figure 2  Expanded Conception of Teacher Development**

In this model, the link between professional development, teacher, and student achievement remains. However, additional elements are incorporated to expand the conceptualization of how researchers and policy makers should seek to understand the impact of professional development on teachers. Moreover, in this model, I highlight the reciprocity between these elements. I ground my argument using research on how learning occurs in the interactions that take place among multiple reference points. Situated learning theory suggests that learning is not unidirectional. Instead, the communities in which people participate both shape and are shaped by the members of the group (Anderson, Reder, & Simon, 1996; Brown, Collins, & Duguid, 1989). Additionally, Kazemi and Hubbard (2008) argue that research attend to the co-evolution of teachers’ participation across contexts. That is, they propose that teachers will take up what they learn in professional development in different ways and thus changes in practice will vary
across participants. Because of these variations, they will bring back to subsequent professional development activities different experiences, which will influence how and what they learn in future professional development activities. The model I propose gives attention to this movement because it is critical for understanding if and how teachers are impacted by professional development and thus improve student learning. Finally, this model adds student learning as an additional outcome of interest. While student achievement is critical, current approaches to measuring achievement are narrow in focus (Baker et al., 2010). Additionally, current conceptions of learning suggest that learning is not just about pieces of knowledge, but also includes how learners manage their learning and knowing, how they develop practices for participating in a community, and how they learn to use tools and resources for productive participation (Brown, Collins, & Duguid, 1989). These dimensions are needed in studies of the impact of professional development on teachers and students because without acknowledging these dimensions as critical components, professional development initiatives have little chance of having a lasting influence (Borko, 2004; Desimone, 2009). It is clear that to understand the impact of an intervention on student achievement requires attending to a wide range of features. It is beyond the scope of this study to attend to all features. Informed by Kazemi and Hubbard’s (2008) framework, I focus on three components in particular – teacher enactment, teacher cognition and in particular their perceptions of the professional development as it relates to their enactment, and the how the design of the professional development influenced their enactment. In what follows, I draw on the teacher education literature to present the necessity of attending to teacher learning in effectiveness studies of professional development.

Research on situated learning theory and teacher cognition inform the model I propose (Greeno, 1997; Greeno, Collins, & Resnick, 1996; Putnum & Borko, 2000; Schoenfeld, 1998;
Situated learning theory posits that knowledge is distributed across actors, objects, artifacts, and tools (Pea, 1993). Moreover, this perspective explains that people are a product of the contexts in which they participate (Lave & Wenger, 1991). That is, teachers have histories, as do the communities in which they work, which mutually inform teachers’ knowledge, practice, and identity (Horn & Little, 2010). Additionally, the contexts in which teachers participate afford or limit opportunities for learning and development. What and how a teacher learns is not the sole responsibility of that individual; instead, it is the interaction between the settings and the individual that account for learning (Brown & Campione, 1996). Finally, situated theory explains that learning occurs dialogically where novices can learn from more experienced members of a group (i.e., Lave & Wenger, 1991) and valued as a legitimate way of learning through observation and practice. An important focus for studies of teacher learning is consideration for the interrelatedness of knowing and learning as situated in contexts, within a social network, and involving artifacts and tools (Putnum & Borko, 2000).

One dimension that situated learning theory draws attention to is the role of tools for mediating practice. In this study I use the distinctions that Grossman, Smagorinsky, and Valencia (1999) used to define tools in the context of educational studies. They highlight the differences between pedagogical tools - conceptual or principled tools - and more practical and immediate tools. Conceptual tools shape how teachers think about their work, lesson goals and objectives, and what their students will need to know. Such habits of mind are specific to different content areas. However, some conceptual tools that are common to many subjects are making connections, organizing information either deductively or inductively, and setting goals for learning. Other cognitive tools help with visualization of problems and solutions (Fischer, Bruhn, Gräsel, & Mandl, 2002; Hamada, 2006), whereas the more practical tools are the resources they
use to execute their goals. Such practical tools can help facilitate learning, but because of their limitations, can also hinder learning (Salomon, 1993).

Of particular interest to this study is the concept of appropriation (Rogoff, 1995). The word appropriation has many meanings. I draw on appropriation to closely resemble the word transformation (Niesz, 2006) and to mean “the processes by which individuals transform their understanding of and responsibility for activities through their own participation” (Rogoff, 1995, p. 7). This process is also culturally informed and situated in long-standing historical traditions (Lave & Wenger, 1991). Thus, appropriation is an active decision to adapt or change tools for intended purposes. Appropriating tools also means adopting them at a high conceptual level, so that they are accessible (Leko & Brownell, 2011); incorporated into one’s teaching repertoire, thinking, and practice (Brown, 2010; Coskie & Place, 2008; Mitka & Gates, 2010); and helpful in responding to the goals of human activities (Rogoff, 1990). Grossman, Smagorinsky, and Valencia (1999) view appropriation as “a process through which a person adopts the pedagogical tools available for use in particular social environments and through this process internalizes ways of thinking endemic to specific cultural practices” (p. 15). In light of other definitions of what it means to appropriate a tool, Grossman and her colleagues also see the process as taking up a practice in principled ways so that it can be drawn upon when teaching.

Appropriation is also related to how individuals learn and develop in diverse ways, even when they are experiencing the same activity (Lave, 1988 as cited in Cole & Engestrom, 1993). For example, consider each school a system and each subject area department as a subsystem, say English or math. Teachers within each subsystem may experience the same professional development activities, but the activity for each individual is different and informs, shapes, and is shaped by individual teacher’s knowledge, beliefs, perceptions, affect, identity, and other
individual characteristics that influence how an individual participates during the common activity. Appropriation will depend on how the contexts in which the teachers reside afford opportunities to take up and reflect on what they learn. Of concern then is not just do they use what they learn or not, it is also about how the professional development scaffolds their learning and how did it provide a context to collaborate with colleagues.

I now turn to discuss the literature related to the four components of the proposed model in order to develop the argument for placing attention on the impact of professional development on the teacher learning process and their enactment of this learning in their teaching, which ultimately impacts student learning.
CHAPTER 2

Literature Review

Defining Effective Professional Development

The last decade of research on teacher effectiveness has provided important insight into factors that have the potential to improve teaching and, in turn, impact student achievement (Guskey, 2002; Harris & Sass, 2011; Ingvarson, Meiers, & Beavis, 2005; Jacob & Lefgren, 2004; Neuman & Cunningham, 2009; Thompson, Windschitl, & Braaten, 2012; Wallace, 2009). These factors range from the type of professional development teachers attend, opportunities for collaboration or sustained support, and what emphasis is given to student and/or teacher learning. One of the main findings from this literature is that most teachers experience professional development on a regular basis, but what that looks like varies across school contexts (Garet et al., 2001; Vescio, Ross, & Adams, 2008). For example, teachers in Garet and colleagues’ (2001) study report attending both traditional (workshop) and reform (collaborative) types of professional development. However, the activities that they engaged in differed in duration, support, and content. Moreover, not all reform professional development opportunities exhibited high quality features and not all traditional professional development opportunities were ineffective. What these types of studies reveal is that professional development that is highly tied to the local contexts and focused on problems of student content learning has a greater impact than those that do not.

Another contribution from this line of work is the establishment of an empirical base for what makes for effective professional development (Darling-Hammond et al., 2009; Desimone et al., 2002; Garet et al., 2001). These studies identify the following features as critical for effective professional development: a) a focus on student learning of content; b) teachers share in decision
making and collaborate around issues derived from practice; c) long term supports to support teacher change; and d) coherency of professional development activities within and across years.

A final contribution of these studies shows that professional development can impact student achievement (Darling-Hammond, 1996; 2000; Guskey, 2002; Sanders, Wright, & Horn, 1997; Wallace, 2009). Many studies of this sort look at impact over the duration of teachers’ participation in professional development. These studies show that participation in professional development can impact teachers during that time. That is, teachers’ practices change in some way to impact student achievement while they are engaged in professional development. For example, Olson et al. (2012) reported on the impact of teachers’ participation in the Pathway Project, a professional development program intended to promote the use of cognitive strategies for the purposes of reading and writing, on student achievement. In this randomized control trial, they found that students of the Pathway teachers showed greater gains on standardized tests in reading and improvements on an analytical writing task over two years. This study makes a major contribution by showing that teachers’ participation in professional development can benefit students. While this study and others like it show that participation in professional development can influence students, less research investigates whether teachers sustain changes in their practices after the conclusion of the professional development activities, particularly once the professional development providers no longer support teachers (Desimone et al., 2002; Jacob & Lefgren, 2004; Neuman & Cunningham, 2009). Such attention to long-term impacts would provide insight into challenges teachers encounter in sustaining changes in practice.

Despite these contributions, these studies are also limiting in that they do not capture what and how teachers learn, nor the sort of useable knowledge they develop for their teaching. A focus on teacher learning from participation is professional development is essential for
understanding how to design experiences that show promise to have a lasting impact on teachers (Birman, Desimone, Porter, & Garet, 2000; Borko, 2004; Fishman, Marx, Best, & Tal, 2003).

More recent research suggests that additional components may be necessary as well. In particular, a recent turn to a practice-based approach to teacher education suggests that professional development also provide opportunities for teachers to learn the practices of teaching in professional development, enact them in practice and then reflect on the enactment – often with the aid of artifacts from practice such as video and student work – to analyze the extent to which the teaching influenced learning (Grossman, Hammerness, & McDonald, 2009; Hiebert, Morris, Berk, & Jansen, 2007; Lampert, Boerst, & Graziani, 2011). Collecting evidence from practice is crucial in understanding the impact of teaching on learning. In the case of Hiebert et al.’s (2007) recommendations, careful planning is involved to study teaching and learning. Moreover, Lampert et al.’s (2011) study reveals the importance of having common resources that teachers can collectively collaborate around. This body of literature extends from prior research to identify those activities of professional development that can advance teacher learning, particularly an emphasis on student learning and sustained efforts.

A practice-based approach to teaching has also been advocated by many scholars in the field of teacher education (Ball & Forzani, 2011; Borko, 2004; Desimone, 2009; Zeichner, 2012). Teachers need support in learning the necessary practices to implement curriculum with integrity (Grossman & McDonald, 2008). Recent research on helping teachers learn high leverage practices for ambitious pedagogy show that teachers are able to develop such practices, but each teacher will enact these skills in different ways (Franke et al., 2009; Lampert, 2010).

The resources that teachers can draw upon also influence the type of work they can do. Resources can be physical (i.e., paper materials and equipment) but also intangible (i.e.,
institutional knowledge). Some schools have more resources than other schools which accounts for why two schools in the same district can have different performance trajectories (Scribner et al., 2002). Teacher attrition in more affluent schools is low and helps cultivate a culture of stability and trust (Bryk & Schneider, 2002). Trust in each other, in the work that a school is doing, and in the community are invaluable resources from which a teacher can draw when teaching. Moreover, the ability to discuss problems of practice with more knowledgeable others is essential in fostering a community of learners among staff members (Little, 1999). The culture of a school greatly impacts the ways teachers and students interact with each other and the curriculum (Smagorinksy, 2010).

**Accounting for Local Enactments of Practice**

I adopt Shulman’s (1987) vision of teaching and teacher education, arguing that teachers are professionals who are capable of “enacting –of acting in a manner that is self-conscious with respect to what their act is…” (p. 13). In other words, teachers do not just do what others tell them to do nor do they simply adopt the strategies they learned as students; rather, they are aware of their thinking as they teach and they make conscious decisions about their practice based on what they know and believe (Schoenfeld, 2011). Most professional development is aimed at change in teacher practice (Richardson & Placier, 2001). Consistent with Shulman (1987) and the situative perspective (Wenger, 2010), the process in which this change happens can be characterized as an appropriation for practice. In other words, teachers will modify and adapt what they learn in professional development based on their knowledge, beliefs, and context (Grossman, Smagorinsky, & Valencia, 1999; Rogoff, 1995). In some cases, the intent remains (Neuman & Cunningham, 2009) and in other cases, teachers greatly modify the information
learned and their interpretation of the practice is not in the spirit of the original professional development program (Brown & Campione, 1996).

Cohen’s (1990) study of Mrs. Oublier shows the challenges of teachers enacting what they learn in professional development. Mrs. Oublier recognized that her mathematics teaching was too traditional, so she attended professional development that advocated for reforming mathematics teaching. Despite her enthusiasm and belief that she was doing the work as advocated by these programs, closer scrutiny revealed that even though she was using reform curriculum materials, she was still teaching them in the same way she taught prior to professional development. Spindler and Spindler (1982) call this process a “substitute change” (p. 216) where tasks can be done in a different way, but still conserve traditional patterns of use. Cohen’s classic study shows the difficulty teachers have adopting new practices. They may believe they are teaching in new ways, and it may appear as if they are on the surface, but at the core, teaching practices remain largely unchanged. In another study, Coskie and Place (2008) studied five elementary teachers the year after they completed the National Board Certified Teacher (NBCT) process. They found that these teachers were able to sustain some of the learning that resulted through their participation in the NBCT process, but that local constraints, such as forced use of curriculum materials counter to the learning principles advocated by the NBCT process, disrupted the teachers’ learning.

Research highlights that teachers’ enactment of what they learn in professional development is not a simple matter. Kazemi and Hubbard (2008) advocate for studying the co-evolution of teachers’ participation in professional development across settings and across “depictions, artifacts, and enactments,” (p. 436) that point to the variety of ways teachers can engage in learning during professional development. In some cases that learning is fruitful and in
other cases, barriers to teacher learning surface that hinders progress. For example, simply giving teachers tools to use in their classrooms is not enough, as they will encounter different problems with these tools and will raise these problems during subsequent professional development meetings (Kazemi & Hubbard, 2008).

In the context of teaching, teachers also use a variety of tools to support them in their practice. Curriculum materials are one example. Remillard’s (2005) review of curriculum use explains that historically, curriculum materials have been viewed as a means to reform teaching practice. However, research on curriculum use reveals mixed findings. Some research suggests that teachers embrace new materials, while others reject and subvert the goals of curriculum. Remillard (2005) proposes that this is the case because the “teacher-curriculum relationship is intertwined with other teacher practices, is dependent on the particular teacher and curriculum, and is situated in a specified context” (p. 212). Attending to this relationship is necessary for understanding the success of materials to support and transform teaching.

**Accounting for Teacher Cognition**

Research in teacher education shows that knowledge for teaching matters and plays a significant role in influencing student learning (Hill et al., 2008; Kersting et al., 2012). Shulman’s (1987) seminal work identifies at least seven different types of knowledge that teachers need to develop to be effective: content knowledge; general pedagogical knowledge; curriculum knowledge; pedagogical content knowledge; knowledge of learners; knowledge of educational contexts; and knowledge of educational ends. Let us consider just one aspect of this knowledge to understand the complex nature of knowing for teaching.

Pedagogical content knowledge underscores the importance of the interactions between subject matter knowledge and pedagogy. That is, content knowledge alone does not necessarily
make one good at teaching the same content to others (Goldschmidt & Phelps, 2010). For example, Magnusson, Krajcik, and Borko (1999) demonstrated that pedagogical content knowledge for each scientific topic is made up of five interrelated components. Among these components are knowledge and beliefs about students’ understanding of specific science topics and knowledge and beliefs about instructional strategies for teaching science. Because these types of knowledge are interrelated, development of these knowledge domains must be done in tandem. To develop only one type of knowledge for teaching science is not adequate for comprehensive and sustained change. Magnusson and her colleagues also explain that not all teachers have the same levels of knowledge. It may be that some teachers know more about strategies for teaching science, while others know more about students’ understanding of science. This imbalance of types of knowledge, and the variation among teachers, suggests that targeting one particular area is not sufficient. Ball and colleagues (2008) investigated teachers’ pedagogical content knowledge for teaching and argue that teachers have specialized content knowledge for teaching. This type of knowledge captures an awareness of different strategies for solving mathematics problems, how learners solve those problems, different errors they may make solving such problems, and the like.

More recent research has drawn attention to other types of knowledge that matter for teaching. For example, Gutierrez (2010) has argued for the importance of sociopolitical knowledge in teaching, especially its influence on equitable educational practices for all students. Another type of knowledge is teachers’ knowledge of student thinking (Erbas, 2004). This knowledge underscores the process that is needed to make student thinking visible, to use this knowledge, and to discern how this knowledge can inform teachers about students’ understanding of particular concepts. Ainley and Luntley (2007) propose a type of knowledge
that arises during teaching, what they call attention-dependent knowledge. This model captures a type of knowledge that reflects the attentional skills teachers need to engage in a more student-centered, diagnostic teaching practice (Schoenfeld, 2011), what some researchers refer to as teacher noticing (Jacobs, Lamb, & Philipp, 2010; van Es & Sherin, 2008). The point is that teachers need to know a lot; they need to know the contexts in which they teach, the backgrounds of their students, how to best represent content for each academic domain, what is most appropriate for student learning of content at different grade levels, and how to create classroom interactions that provide opportunities to attend to and respond to their students. But simply knowing all of this information about teaching and learning is not enough. Teachers also need to know how to draw on and use this knowledge in practice (Grossman et al., 2000; Munby, Russell, & Martin, 2001), a subject I will discuss in the next section.

Teacher beliefs are another aspect of teacher cognition that influences teaching (Pajares, 1992; Richardson, 1996; Richardson et al., 1991; Stipek et al., 2001). Beliefs refer to “psychologically held understandings, premises, or propositions about the world that are felt to be true” (Richardson, 1996, p. 103) and guide behavior. Beliefs are deeply ingrained and highly individualized, and develop during early stages of observation and participation in daily life to the point where contradictory evidence does little to change strongly held beliefs. Richardson (1996) underscores the fact that teacher beliefs are strong and enduring and develop from different life experiences that can either be personal, experienced during schooling, or developed in formalized settings such as in their teacher education programs. Rokeach (1968 as cited in Pajares, 1992) explains that beliefs are made up of three components: cognitive, affective, and behavioral. Knowledge plays a large role in developing beliefs and serves as a developmental foundation by providing the information and experiences on which beliefs are based (Fives &
Buehl, 2012). Emotions are also tied to beliefs, as more positive associations that a belief provides for an individual the stronger that belief is encoded (Frijda, Manstead, & Bem, 2000). Finally, beliefs are manifested by external actions made by an individual and the feedback that individuals are given from these actions can also play a part in how deeply rooted a belief is (Pajares, 1992).

Research shows that changing beliefs, particularly teachers’ beliefs, is challenging but possible (Fives & Buehl, 2012). Schoenfeld (2011) suggests that to change a belief first requires an understanding of its rootedness. Belief structures are likened to an atom (Rokeach, 1968 as cited in Pajares, 1992), where beliefs that serve as the nucleus of one belief system are harder to change than beliefs in other systems that float around the periphery. Moreover, core beliefs that are connected to other core beliefs are even harder to change due to their complex and interrelated nature (Speer, 2008). From a cognitive perspective, Pajares (1992) proposes that for a belief to change, an individual must recognize new beliefs as different from what they already know; decide that the new belief is worth incorporating in their existing schemata; be motivated to reduce conflicting schemata; and finally, discover that the assimilation process failed to incorporate this new belief. Studies on changing beliefs show that an individual’s interactions with others can influence this process. For example, Turner, Warzon, and Christensen (2011) found that teachers in their study changed their beliefs about student motivation in learning mathematics only after sustained collaboration, changing their own sense of self-efficacy, and growing awareness of their own instructional contexts.

To treat knowledge and beliefs as separate would not give a realistic account of their use in teaching. Schoenfeld’s (2011) research on problem solving shows that teacher knowledge and beliefs are intertwined in a complex network and inextricably feed into each other. His research
draws particular attention to how these two constructs along with teacher goals are enacted and manifested in teaching. He proposes that without explicit understanding or acknowledgment of one’s beliefs and the sources that shaped these beliefs (i.e., knowledge and experiences) any change in teaching cannot be sustained nor critically considered. Speer (2008) also emphasizes the importance of connecting beliefs to practice and found that pockets of beliefs around certain domains (i.e., formative assessments) have more impact on actual teaching practice than singular beliefs (i.e., assessment of using the order of operations). The important point is that beliefs and knowledge come together during teaching and heavily influence how a teacher appropriates tools from professional development for use in the classroom.

In connection with knowledge construction and belief structures are teacher perceptions. Perceptions shape how teachers react to their contexts and professional development initiatives; however, this is not to say that there is a one to one correlation between teacher perceptions and teacher enactment or behavior towards professional development. Other aspects of teachers’ cognition also come into play when determining behavior such as perceived feelings, perceived norms, and perceived controls on behaviors (Kennedy & Kennedy, 1996). For example, if a teacher feels positive (feelings) towards a professional development initiative, he or she will more likely enact (behavior) the initiative in the classroom if he or she also feels that other teachers or stakeholders will approve of this enactment (norms). However, what can also impact enactment are external or internal constraints (controls) such as lack of support, uncooperative students, or a change in standards (e.g., state standards to the Common Core). Other influences on teacher perceptions and linked to enactment are anecdotal evidence and an openness to change (Banilower, Heck, & Weiss, 2007; Groulx, 2001; Guskey, 1988; Marx, 2000; McLesky & Waldron, 2002b). That is, teachers who saw evidence that the professional development or
teaching practice made a positive change on student achievement or learning were more willing to change their perceptions about the practice. Moreover, teachers who were more confident about their own abilities as teachers were more willing and open to enacting new practices despite the risk of failure. In sum, teacher perceptions are but one aspect of teacher cognition that influences enactment. It is an important piece of the puzzle as perceptions can drive enactment, can change through time, and can be different according to the situation and nature of the work. Teacher perceptions also demonstrate another tension in how research on teacher learning must account for the multi-faceted components of teacher cognition when studying learning in professional settings and across contexts.

**Accounting for Teacher Context in Studies of Professional Development**

Research on teacher enactment and teacher cognition draws attention to the individual teacher. A third aspect I include in the model is the context in which the teacher is situated. Here, I mainly draw attention to the influence of the professional development contexts (both the design of professional development and where it is held and by whom), and acknowledge the importance of organizational contexts and the policy contexts on teacher learning and changes in practice (Talbert & McLaughlin, 1994). Situated learning theory posits that teachers are nested in systems and they must learn to negotiate the “rules” for each part of the system, such as professional development. Each system comes with inherent goals. Thus, teachers within professional development must work together “to negotiate meaning and develop, reify, and transform common practice” (Ogawa et al., 2008, p. 84). This is to say that teachers are not free agents; rather their practices are deeply tied to their environments, both physical and historical, and these environments also produce goals that teachers must meet (Ogawa et al., 2008).
Within professional development settings, teachers are expected to confront challenges and opportunities for new learning within their professional lives, such as learning new curriculum, trying new pedagogies, or developing content knowledge. Teachers attend professional development in order to improve their practice and to improve student learning. From the past decade of research on teacher professional development, through large national surveys, and smaller-scale empirical work, the field has identified certain common design components that have shown to be needed for professional development to be effective: a) a focus on student learning of content; b) teachers share in decision making and collaborate around issues derived from practice; c) long term supports to support teacher change; and d) coherency of professional development activities within and across years. (Darling-Hammond et al., 2009; Desimone et al., 2002; Garet et al., 2001; Hawley & Valli, 1999). However, attention to the contexts of teachers’ work must be taken into account when professional development is delivered (Ball & Cohen, 1999), particularly the way teachers work collaboratively together (Kazemi & Hubbard, 2008).

True collaboration occurs when teachers are involved in collegial interactions, have established productive norms, and focused on student and teacher learning in authentic ways (Ermeling, 2010; Mclaughlin & Talbert, 2006; van Es, 2012). Most often cited in successful teacher collaborations is the paradigm shift from “teacher learning” to “student learning” (Little et al., 2003). All cases studied found that teachers who brought in artifacts of learning to professional development meetings, who were willing to make their teaching deprivatized, and who focused on questions that emphasized student understanding of standards had more gains in student achievement and a more conducive atmosphere for collegiality and continued learning (Little, 2002; Little et al., 2003; Thomas et al., 1998; Vescio et al., 2008). A focus on authentic
pedagogy also makes the work of teacher collaboration most opportune for enacting change (Vescio et al., 2008). When work was grounded in what students were or were not able to do, protocols were set in motion to guide discussion around the student artifacts (Ermeling, 2010). Teachers cite working with other teachers they previously have not worked with as an important aspect of their professional growth as well as engaging in intellectually stimulating work (Little et al., 2003). Moreover, teachers at varying stages of their development and experience feel a greater sense of ownership and contribution to a common cause.

The emphasis on coherence and how goals influence teacher practice underscore the tensions that teachers experience and the impact on their work. Problems can arise when administrators’ and teachers’ goals are not aligned which can influence what and how teachers learn (Louis & Marks, 1998; Sandholtz & Scribner, 2006). Far too often, teachers engage in trainings that display a “lack of autonomy and choice in determining what types of activities would most help them improve their teaching” (Sandholtz, 2002, p. 823). Moreover, “teachers are asked in advance what they want, and then ignored and given what the administration wants” (Sandholtz, 2002, p. 823). If teachers have no say in what they will find most useful in terms of professional development, they will not adopt such practices for use in their own classrooms. This lack of application of active learning to the teaching profession also downplays the importance of collaboration for teacher learning (Goldenberg & Gallimore, 1991).

Beyond professional development and school contexts is the accountability and standards context that surrounds teachers’ work which often stems from state and federal policy. Professional development facilitators are tasked to answer to what degree is learning in professional development aligned with standards (Yoon et al., 2007). This preoccupation with test scores and alignment between professional development and testing ignores a plethora of
other evidence of student learning. Also, standardized tests are too narrow in what they measure (Baker et al., 2010). A pencil and paper test taken at one point in time cannot capture the complexity of the work that is involved in a school year. Hence, the over-reliance on using these test scores to determine teacher efficacy is short sighted and leads to a decrease in school morale (Baker et al., 2010). Teachers then must negotiate the tensions between what they want students to know and learn and being measured by standardized tests, often resulting in a complete disavowal of the test or misunderstanding of teaching to the test as actual teaching of the content (Popham, 2001).

While there is no clear consensus among policy makers on the best ways to assure teacher quality and develop quality teachers through professional development and teacher education programs (Hirsch & Samuelson, 1999), it is acknowledged that professional development is necessary to support teacher learning (Wenglinsky, 2000), but the means to which we achieve these ends need to be carefully studied lest we risk alienating teachers or losing them altogether (Baldacci, Johnson, & the Project on the Next Generation of Teachers, 2006; Newkirk, 2009).

**Providing Time for Teacher Learning and Change to Take Hold**

One of the criticisms of current studies of the impact of professional development on students is that they are limited in timeframe (Baker et al., 2010). That is, these studies look at the year that teachers are in professional development and then look at test scores or teacher change in practice that same year. The presumption behind these studies is that professional development will impact student learning in that same year. However, Richardson and Placier (2001) point out that teacher change is neither linear nor predictable but is rather more idiosyncratic and can take years to manifest in practice. Webster-Wright (2009) also argues that
professional development studies need to consider what it takes for authentic teacher learning, citing that time is an essential need and that teacher learning is an indefinite process. Darling-Hammond et al. (2009), Garet et al. (2001), Guskey (2002), Hawley and Valli (1999), and Mouza (2009) identified the need for sustained and supported professional development opportunities that are beyond one-shot workshops (Goldenberg & Gallimore, 1991). Thus, I argue that studies of the effectiveness of professional development on student achievement and learning take into account time for teacher learning (Taylor, Pearson, Peterson, & Rodriguez, 2005).

For a variety of reasons, changes in teaching can be challenging. One reason is due to the fact that teachers are nested in schools and districts and all with their own demands. Schoenfeld (2011) also highlights the interplay among three different systems: orientations, resources, and goals. Teachers, he argues, may not always be conscious of these systems and thus any change to occur is gradual and slow. The teacher change literature also emphasizes that change does not only occur at the individual level, but it also occurs at an organizational level (Richardson & Placier, 2001). To put this in another way, changes that occur in a classroom reflect changes that occur at a school. Because changes in these two systems mutually inform each other, these changes also take a long time to occur and manifest.

A second reason is because in the United States, there is an expectation for quick results. Gallimore, Ermeling, Saunders, and Goldenberg (2009) show change takes time and remind us that schools are cultural systems. “Cultural activities are constructed over time through collaborative human effort to achieve a stable daily routine” (Stigler & Hiebert, 1999, p. 121). Because teaching is a cultural activity, it will not change quickly or drastically (Gallimore, 1996). Instead, efforts to improve teaching need to account for the time that teachers need to
make changes in their practice. Stigler and Thompson (2009) argue that because of the cultural nature of teaching, sustainable innovations will be incremental. They contend that major improvements can happen but only as a result of the accumulation of small changes over time. Kazemi and Hubbard (2008) emphasize the fact that teachers need time to experiment with ideas from professional development and require forums to bring these ideas out in the open to discuss them and to reflect on the effectiveness of these programs of study.

Not only is improvement on a learning assessment a sign of effectiveness, so too are the lasting impacts of a professional development program. For example, Wallace (2009) studied the impact of professional development on National Assessment of Educational Progress scores for both reading and mathematics over four years. She found moderate effects on student achievement mediated by teachers’ practice as a result of professional development. Other studies utilize more qualitative methods to trace the impact of professional development over time. In Johnson’s (2011) study of National Writing Project teachers, teachers participated in one year of professional development and were asked to complete pre, post, and post-treatment surveys on their beliefs about writing. She found that teachers’ beliefs changed immediately after the end of professional development; however, there was a fade out effect one year after all professional development activities ended. What both studies show is that lasting impact is hard to achieve. One plausible reason can be that the professional development programs teachers participated in did not account for the numerous factors that impact teacher learning as previously outlined in other parts of this chapter.

Of course, policymakers, school leaders, and designers of curriculum materials and resources for teaching are pleased when evidence shows that either the professional development program or innovations “worked” to improve test scores. But I argue that is not sufficient. For
long term, sustained change to happen in schools, teachers need to be given time to learn a range of new knowledge, beliefs, and practices, as well as time to collaborate with colleagues around problems located in their own practice (Gallimore, Ermeling, Saunders, & Goldenberg, 2009).

**Accounting for Student Learning in Impact Studies**

The final addition to the proposed model is the inclusion of student learning as an outcome of these efforts. One of the main criticisms of current state assessments is that they have a narrow view of student achievement (Baker et al., 2010), placing an emphasis on knowledge acquisition. I do not disagree that that schools and teachers should be held accountable for ensuring that all students learn a basic level of knowledge. However, students deserve more than that. They deserve to have equitable instruction that allows them to be critical consumers and producers of knowledge in their classrooms. They also must develop 21st century skills that help them problem solve, work with other students, and integrate knowledge that provide them with richer experiences in schools and their environments (Jenkins et al., 2006; Rotherham & Willingham, 2009). Ultimately, there are other aspects of student learning to cultivate and care about, and this is even clearer in the broader context of our information rich, globally connected society (Suárez-Orozco, 2012).

Current measures focus more on facts and knowledge. But schools also promote learning beyond that. Some other ways to consider student learning can be developing moral (King, 1986) and socio-emotional (Brouillette, 2010) constructs. Children develop a sense of what is right and wrong, how to help each other, and develop feelings of well-being as they interact with other students and their teachers within a school (Berman, 2004). Holistic development in students can also be of interest. Holistic development focuses on children’s cognitive, health, and socio-emotional development, as well as, schooling and home life (Puma, Bell, Cook, & Heid, 2010).
With the introduction of the Common Core State Standards (2010) students will not only demonstrate subject matter knowledge, but they will also demonstrate on demand performance competencies. One type of assessment will be computer adaptive where students will be provided with questions of increasing or decreasing difficulty based on their responses to previous test questions. These types of questions are par for the course and are in line with traditional standardized assessments. A second type of assessment is more performance based and more attuned to what I mean by student learning beyond standardize tests. These assessments can come in the form of student essays synthesizing different genres of information into one coherent argument. In these essays students must use text-based evidence to carefully build their argument. Another performance based assessment could be constructing proofs of mathematical reasoning or demonstrating the ability to read lab reports. With this movement away from the assessment model of No Child Left Behind (Guilfoyle, 2006), understanding the shifts of where teacher learning occurs and what impacts this learning are the crux of this dissertation.

In sum, teaching is a complex practice—just like medicine and law. Research needs to acknowledge the complexity of teaching and recognize that just bringing teachers together is not enough. Rather, a holistic and comprehensive view of teaching learning is needed to understand the influence and limitations of professional development. This dissertation seeks to examine how a particular professional development design focused on literacy and the Common Core State Standards for English language arts (2010) afforded and/or limited opportunities for teacher learning. I structure my analysis around three questions: 1) How do teachers appropriate and enact the Pathway Project tools for use in their teaching of writing over time?; 2) How do teacher perceptions influence their appropriation and enactment of Pathway Project tools and
subsequently influence their students perceptions and student outcomes?; and 3) How does the
design of the Pathway Project influence opportunities for teachers’ learning?

These research questions differ substantially from related research on the Pathway
Project in several ways. First, rather than focusing on student achievement as the main outcome
(Kim et al., 2011; Land, 2010; Olson & Land, 2007; 2008), I investigate how teacher learning
with a particular focus on how teachers appropriate and enact the professional development tools
and materials. I also consider the relationship between enactment and perceptions, and how the
professional development design relates to teacher enactment. Moreover, I advance Miller’s
(2011) work by exploring variations in teachers’ appropriation and enactment of pedagogical
tools in addition to focusing on high and low implementers of the Pathway Project initiatives. I
also take the professional development design into account for why enactment differs as a way to
inform how the professional development interfaces with teacher learning.

Broadening the definition of impact of impact studies of professional development is
essential for several reasons. First, research shows that professional development can often have
an impact, but it often does not last (Borman, 2005). One reason might be that teachers are not
given an opportunity to develop knowledge, beliefs, and practices with other professionals.
Another reason can stem from an incomplete understanding of the full reach of professional
development on teaching and schooling (Desimone, 2009). Understanding and recognizing the
various ways professional development impacts teaching can help identify areas for
improvement. Third, in order for the impact of professional development to take hold on student
learning, teachers’ learning must be addressed (Levine, 2010; Lieberman & Pointer Mace, 2009).
Teachers are the main vehicle in which education policy is enacted. Without attending to their
learning, sustained improvements in education cannot occur. Moreover, systematic
understanding of the impact professional development has on different domains is also needed. Future work must build upon past and present work. Understanding what the field already knows can lead to more nuanced recognition of where gaps in knowledge occur. Implications for this dissertation also include: how to scaffold teacher learning during professional development and designs for professional development that can help sustain teacher interests and enactment of reform pedagogy to support student learning. I now discuss my study design, data, and analytic work.
CHAPTER 3

Research Design

This dissertation attempts to explore how teachers who participated in a two-year professional development program appropriated cognitive strategies tools (Olson & Land, 2007) for reading and writing analytically, in the context of their practice during the first year of implementation. I focus my analysis on the first year of implementation for three reasons: this was the first year that teachers were working with the Common Core State Standards; teachers were also being asked to work with non-fiction, a genre that English Learners usually struggle with, and was new to their curriculum; and because teacher attrition in the second year meant that only half of the participants in year one were the same in year two. Because of the turnover of teachers from year one to year two, it would be difficult to assess the impact of the Pathway Project over two years. In addition, I am primarily concerned with understanding how teachers take up and use materials from professional development so a more focused analysis in one year was more appropriate. Using both qualitative and quantitative data, I examine three issues: teachers’ appropriation of tools, their perceptions of the professional development as it relates to their enactment of the professional development tools, and the relation between the professional development design and teacher practice. More specifically, I examine how the teachers take up and use the tools they are introduced to in professional development for their practice over the course of one school year, with a focus on what tools they use, when they take up the tools during instruction in relation to when they are introduced in the professional development, and variations in how teachers enacted the tools. In addition, I consider how their level of enactment might be related to their perceptions of the program. Finally, I consider how the different features of the professional design influenced their appropriation and enactment.
Study Context

The professional development program that I am studying is the Pathway Project developed by Dr. Carol Booth Olson and the UCI Writing Project. The central core of the Pathway Project is the use of cognitive strategies to support all students in reading and writing about complex text. Cognitive strategies are conceptual tools and processes that can help students become more meta-cognitive about their work (Olson & Land, 2007). In Olson’s (2011) book, *The Reading/Writing Connection*, she likens the cognitive strategies to a set of tools that can be drawn upon when approaching a reading or writing task. The following are the cognitive strategies introduced in the Pathway Project and also included in her book:

- Planning and Goal Setting
- Tapping Prior Knowledge
- Asking Questions and Making Predictions
- Constructing the Gist
- Monitoring
- Reflecting and Relating
- Revising Meaning
- Reflecting and Relating
- Evaluating

Some sub-components are: Visualizing, Making Connections, Summarizing, Adopting an Alignment, Forming Interpretations, Analyzing Author’s Craft, and Clarifying Understanding (p. 23)

These strategies were disseminated in a set of usable materials through teacher professional development. The primary intent of the professional development was to provide teachers with lessons and materials to introduce the cognitive strategies to students toward the intended goal of writing analytic essays around either fiction or non-fiction texts. Secondary goals were to foster collaboration and support in teacher and student use of cognitive strategies in teaching and learning. Additional literacy professional developments such as strategies on how to teach poetry, use of Socratic seminars, or develop academic vocabulary were also content goals. Dr. Olson typically led the professional development. Occasionally, other guest speakers from UC, Irvine, her home campus, or local school district administrators or professional development providers were invited to share their expertise on topics related to literacy instruction.
The program was first established and piloted in Santa Ana Unified School District, a southern California school district with a large, urban, low SES school district population of approximately 57,000 students consisting of 95% Latin@ students, 64% English Learners (EL) or Reclassified as Fluent English Proficient (RFEP) and 77% enrolled in the free or reduced price lunch program (FRPL). The first iteration of the Pathway Project ran from 1996 to 2004 with a grant from the United States Department of Education Office of English Language Acquisition. An additional grant with the district was received from 2006 to 2010 from the U. S. Department of Education Institute of Education Sciences to study the Pathway Project in a randomized control trial. At the conclusion of the grant, Santa Ana Unified School District requested that Dr. Olson work with two of their lowest performing middle schools to provide literacy strategies in the context of the Pathway Project and to facilitate their transition to the Common Core State Standards. Moreover, the district did not want a control group so all of their teachers received the Pathway Project tools and training. The district believed the success of past Pathway Project initiatives in the district could help with the low performance of these two schools. Together, the district and Dr. Olson secured funding from the California Postsecondary Education Commission (CPEC) as part of an initiative to facilitate collaboration between K-12 schools and higher education faculty. The commission was developed to support the efforts of the California Master Plan for Higher Education. It was decommissioned in June 2011.

The two middle schools in the CPEC-Pathway Project were Lion Middle School (EL/RFEP: 66%; FRPL: 92%) and Sparrow Middle School (EL/RFEP: 67%; FRPL: 92%). The entire English language arts department from both schools (N=32) participated in the professional development program for two years, Academic Years 2011-2012 and 2012-2013. The Pathway Project consisted of three parts: a series of six full release days led by Dr. Olson, a
series of five afterschool workshops led by Pathway Project coaches, and weekly grade-level meetings. During the full release days, Dr. Olson typically introduced the teachers to important strategies that work in conjunction to promote analytical writing skills with Dr. Olson modeling the strategies and their use in teaching. During the afterschool workshops, all 32 teachers came together and the coaches modeled particular strategies and techniques as a way to reinforce what was introduced in the full day meeting or to focus on the use of one or two particular strategies. Finally, the weekly meetings occurred at the school site and were organized by grade level. The purpose of this portion of the program was to allow teachers time to work together to plan for implementing what they were introduced to in the full day and afterschool workshops in their own classrooms. A final component of the program was coaching observations. These occurred three times a year and were intended to provide teachers feedback on their instruction and use of the tools and resources they put into practice in their teaching. More details about each aspect of the program are provided below. The following table outlines the details and intentions of each professional development context for Year 1, the focus year of this study.

Table 1  
CPEC-Pathway Project Year 1 AY 2011-2012 Descriptions of Meeting Contexts

| Full Release Days | • Introduction to the Common Core, Reading/Writing Connection  
| | • Common Core Standards, Academic Vocabulary, Cognitive Strategies with Non-fiction  
| | • December Writing Project conference  
| | • Common Core Assessments; Introduction to Theme  
| | • Writing Revision  
| | • Poetry, Wrap-up  
| Afterschool | • Book Club Notebooks; Sample Lessons from McDougal Littell  
| | • Literature Circles with Non-fiction  
| | • Follow-up to December Conference, Thinking Maps  
| | • Sharing Common Core Lessons  
| | • Help with Writing Revision  
| Weekly Grade-level | • Provide space for discussions around the Common Core, Cognitive Strategies, the Pathway Project, other district priorities or initiatives, other school priorities or initiatives, their pacing guide, student data |

The overall goal of the professional development was: 1) to support teachers in integrating a cognitive strategies approach, especially with a focus on the reading and writing of non-fiction;
2) to consider the implications of the Common Core State Standards with its emphasis on text-based analytical writing; 3) to negotiate how to approach these goals with other district-wide mandates to improve reading and writing, such as the use of thinking maps; and 4) to help students develop their writing pre-test in to a multi-paragraph, analytical essay around a theme of their choice. In order to scaffold students through the revision process, the Pathway teachers participated in a full day of professional development and were walked through a list of steps and suggestions on how to promote this skill. The Pathway Project recommended that the revision process take the span of three to upwards of six days; however, teachers were given the discretion on how best to approach this task. During this process students dissected the writing prompt into verbs and objects (e.g., the Do/What chart), color-coded or highlighted different types of sentences in their pre-test (e.g., yellow for summary type sentences), worked on creating a coherent and clear introduction with a hook, Title Author Genre (TAG) line, a small summary of the plot, and a thesis statement. Moreover, teachers also scaffolded students’ writing for each body paragraph (addressing author’s craft, interactions among the subjects of the article, and theme), and a concluding paragraph. This revision lesson was one of the key features of the Pathway Project and provided teachers with opportunities to reflect on their practice and student learning. At other meetings, professional development facilitators also encouraged teachers to have students respond to texts through a variety of modalities and approaches such as found poetry, story boarding, collages, and posters. These responses were encouraged so that students could practice particular cognitive strategies for reading and writing about texts such as predicting, visualizing, making connections, and/or forming interpretations in hopes of supporting their work around writing analytically.
The Pathway Project was designed to introduce concepts and model lessons during the full release days and afterschool settings and to facilitate collaboration among teachers during the weekly grade-level meetings. The teachers were able to set their own agenda during the weekly meetings, but they were encouraged to use the time for Pathway Project purposes. For example, during the first full day professional development, Dr. Olson introduced the Common Core State Standards for English language arts (2010) and reviewed the anchor standards and the different grade level standards for reading, writing, listening, and speaking. Teachers were given time to read the standards, interpret them in groups, and to trace the progression of standards throughout each grade level (6-8). She also introduced the concept of cognitive strategies to the group by leading them through a tutorial of Ray Bradbury’s short story “All Summer in a Day,” suggesting that the tutorial serve as a guide and not to be prescriptive. Her tutorial was designed to introduce all 15 cognitive strategies. For example, she first asked the teachers to predict what the story may be about by the words in the title, but also to tap prior knowledge about who Bradbury is as an author. Some teachers thought the “end of summer vacation,” or because they tapped into their prior knowledge of Bradbury, they predicted that it would be a science fiction piece set on different planets. Then Dr. Olson read the story out loud and strategically stopped at different points in the story to introduce a different cognitive strategy and to have teachers apply this strategy to what they were reading (e.g., when she read excerpts describing characters or the setting, teachers employed the visualization cognitive strategy). By the end of the tutorial, teachers learned about all 15 strategies and had a better idea of how to use these strategies with their students. The final step in the tutorial included brainstorming with teachers how to help students interpret or reflect on the story. A very popular suggestion involved writing a letter from
the protagonist’s future perspective addressing her classmates and reflecting upon how their actions impacted her.

Similarly, in the first afterschool meeting each grade level within each school was given a resource book called the *Book Club Notebook*. This notebook included sample lesson plans and artifacts of these lessons that help teachers scaffold students’ engagement and learning of character, setting, plot, and theme for any text they are using. On this particular day, teachers experienced a model lesson using Sandra Cisneros’s short-story “Eleven.” After reading the short-story as a group with cognitive strategies embedded, teachers divided into grade level teams and picked one of the *Book Club Notebook* strategies to complete as a group. One group decided to create a found-poem, another group completed a recipe for the plot of “Eleven,” an open mind for the protagonist was created by another group, and a different group decided to write a letter from the perspective of the protagonist addressing her antagonists 10 years from when the story ended. After sharing out each strategy, teachers were given class sets of Cognitive Strategies booklets to use with their chosen Pathway classroom. Each page in the booklet consisted of a cognitive strategy, its definition, sentence starters, and blank lines for students to respond to their reading using these sentence starters. The emphasis on cognitive strategies on both days demonstrated a coherent narrative for teachers and reinforced ideas across meetings.

The weekly meetings were designed to extend this coherent narrative at the school sites. For example, during the first weekly meeting for the 8th grade team at Lion Middle School, the teachers discussed how to fit all of the Pathway components into their district-issued pacing guide/plan. This plan was a sheaf of paper that included thematic readings grouped around content standards with mandated or suggested texts and activities on an academic calendar.
During this initial meeting, teachers had to determine if they wanted to read “All Summer in a Day” with their eighth grade students, as they had already read this text as sixth graders. Moreover, they also had to plan time to administer the pre-test and strategies use surveys that had to be turned in by the next full day professional development meeting (a three-week window or four-week window if a teacher requested an extension). Ultimately, the teachers decided to still use “All Summer in a Day“ and took time away from teaching another text, “What do Fish Have to Do with Anything?" The 45-minute meeting ended by a review of three upcoming units for the teachers and students. In this case, the goals that were set forth in the full day and afterschool contexts were maintained. The teachers worked together to contemplate how they were going to put into action what they had learned in the two other contexts. However, it was not always the case that the teachers successfully negotiated how to put the Pathway Project materials to use in their classrooms.

Another component that was meant to support teachers in using Pathway Project tools were Literacy Coaches. The Pathway Project employed two Literacy Coaches to observe and provide feedback to Pathway Project teachers. Each coach used an observational protocol while observing each teacher. The protocol included questions regarding how much a teacher is seen using Pathway Project strategies, how much knowledge the teacher demonstrates, how engaged students are in the work, and the overall effectiveness of the lessons. In addition to these scales, the Literacy Coaches also checked for the presence or absence of specific cognitive strategies and Pathway Project related behaviors. Once observations were completed, the Literacy Coaches provided feedback in the form of a letter. Each letter detailed what happened during the lesson, constructive feedback, and suggestions for future lessons.
Data for this study came from all teachers who participated in the full release days and afterschool meetings (n=32), as well as the group of 8th grade teachers (n=6) from Lion Middle School. To answer research questions 1 and 2, I used data on all teachers in all three contexts and analyzed Literacy Coaches’ letters. To answer question 3, I followed a group of 8th grade teachers from Lion Middle School. I chose this group of teachers because their principal identified them as strong collaborators. In addition, one of the 8th grade teachers had participated in Dr. Olson’s summer professional development, the UCI Writing Project Summer Institute, and became a leader to help navigate the implementation of the tools in practice.

Table 2 provides a summary of teacher characteristics in terms of the average years of teaching, average educational attainment (e.g., highest degree obtained), and their average class sizes. The average number of students per classroom may seem uncharacteristic, but it is because the school was able to apply for Quality Education Investment Act (QEIA) funds that helped reduce class sizes.

Table 2  Teacher Characteristics During Year 1 AY 2011-2012

<table>
<thead>
<tr>
<th>Year 1 Teachers</th>
<th>Avg. Years Teach</th>
<th>Avg. Education</th>
<th>Avg. Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Teachers</td>
<td>n=32</td>
<td>~10</td>
<td>Masters</td>
</tr>
<tr>
<td>Pseudonym</td>
<td>Years Teach</td>
<td>Education</td>
<td>Students</td>
</tr>
<tr>
<td>Jeremy</td>
<td>15</td>
<td>MA</td>
<td>15</td>
</tr>
<tr>
<td>Sarah</td>
<td>5</td>
<td>MA</td>
<td>20</td>
</tr>
<tr>
<td>Mary</td>
<td>1</td>
<td>MA</td>
<td>19</td>
</tr>
<tr>
<td>Trisha</td>
<td>1</td>
<td>MA</td>
<td>16</td>
</tr>
<tr>
<td>Carrie</td>
<td>1</td>
<td>MA</td>
<td>8</td>
</tr>
<tr>
<td>Ramona</td>
<td>1</td>
<td>BA</td>
<td>18</td>
</tr>
<tr>
<td>mean</td>
<td>~4</td>
<td>--</td>
<td>16 (n=96)</td>
</tr>
</tbody>
</table>

In addition to the Pathway Project professional development program, teachers also participated in other district initiatives and directives meant to address their district students’ learning needs. These include using thinking maps (Hyerle, 1996); Sheltered Instructional
Observation Protocols (SIOP); Specially Designed Academic Instruction in English (SDAIE); benchmark exams; and common assessments. Thinking maps were meant to help with making student thinking visible and to help organize student thinking. SIOP and SDAIE were strategies meant to support the development of English Learners through pedagogical practices such as making lesson goals explicit, using visuals during instruction, and constant feedback on student progress. The Benchmark exams and Common assessments were part of the district’s data-driven process to assess students’ needs. Teachers either met during faculty meetings or attended other release days to participate in these other forms of professional development. In addition, district and policy makers at the state level placed increased emphasis on the Common Core State Standards (2010) at the same time as using California Standards Tests as an assessment tool. While California was an early adopter of the Common Core State Standards and provide resources for professional development to learn about the new standards, they were still being assessed using the previous system. I anticipated that this would cause teachers some tension in determining what materials to use because the two programs had very different goals.

Data Sources

As part of the grant, The Pathway Project researchers collected data from a) the professional development; b) teacher data; and c) student data for the purposes of studying the impact of the Pathway Project on teacher practices and student outcomes. I was one member of a larger research team that collected data for this study. Table 3 provides a summary of all sources of data collected for the study. Staff members from the UC Irvine Writing Project and I entered quantitative data (e.g., survey responses) into Excel files and I transferred the values to STATA. Descriptives for variables as well as a comparison of mean scores were used to analyze the quantitative data. An undergraduate research assistant and I transcribed qualitative data (e.g.,
open ended responses, focus group interviews) in Word and I transferred them to ATLAS.ti or Excel for coding. The codes helped me generate analytical memos about what was occurring during meetings or patterns that I saw emerge from the different qualitative data sources.

Table 3  

<table>
<thead>
<tr>
<th>Professional Development</th>
<th>Teacher data</th>
<th>Student data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field notes: Full day; Afterschool; Weekly Grade Level (8thL)</td>
<td>Literacy Coach Observations; Letters</td>
<td>Analytical Writing (Pre/Post)</td>
</tr>
<tr>
<td>Tools: PPT; Handouts; Materials</td>
<td>Teacher Practice Surveys (Pre/Post)</td>
<td>CST Scores (Pre/Post)</td>
</tr>
<tr>
<td></td>
<td>Teacher Reflection Surveys (Post Only)</td>
<td>Benchmark Scores (Pre/Post)</td>
</tr>
<tr>
<td></td>
<td>Focus Group Interviews (Post Only)</td>
<td>Strategies Use Survey (Pre/Post)</td>
</tr>
<tr>
<td></td>
<td>Self-Efficacy (Pre/Post)</td>
<td>Student Reflections (Post only)</td>
</tr>
<tr>
<td></td>
<td>Beliefs (Post Only)</td>
<td></td>
</tr>
</tbody>
</table>

Here, I provide a more detailed description of the data. I collected the weekly meeting field notes for one group, what I refer to as the Weekly Grade Level (8thL) to understand how teachers learned to use the materials as they participated in the three components of the professional development design.

- **Field Notes**: Field notes include general descriptions of what is said and what participants were doing for all three types of professional development meeting contexts [six full day, five afterschool, and 24 weekly meetings]. They are organized by activity units (i.e. when PowerPoint presentations occur, how to use a particular strategy, when unit planning is discussed, etc.)

- **Tools**: These include materials given to teachers to enact cognitive strategies, including PowerPoint presentations, and informational materials (e.g. articles, worksheets, etc.), and teaching materials
• **Teacher Classroom Observations:** Three observations conducted per year by Literacy Coaches on random, announced days using an 8 question protocol that describes what they saw, cognitive strategies use (15 items), Pathway Project promoted behaviors (12 items), and overall assessment of lesson effectiveness

• **Literacy Coach Letters:** After each observation the Literacy Coaches wrote letters summarizing what they saw happening during the lesson and offering constructive feedback on implementation of Pathway Project tools to teachers

• **Teacher Practice:** 26 items survey asking teachers to indicate assigning of homework and writing assignments; using materials, instructional practices, and cognitive strategies; reporting the activities and content of their lessons; providing feedback on student work, written assignments; detailing their planning, and supporting students in revising their writing (Pre/Post)

• **Teacher Reflection:** 11 open ended questions about the Pathway Project: attributions for student growth, beliefs about their students, their experiences with the Pathway Project, their abilities to teach the Common Core State Standards, strategies they felt that were helpful in developing readers and writers; 20 yes/no questions about using materials introduced during the Pathway Projects

• **Teacher Focus Group:** Grade-level focus group based on how they benefitted from the Pathway Projects and what needed improvement

• **Teacher Self-Efficacy:** 12 questions related to teachers’ perceptions about their abilities in classroom management, assessment practices, and classroom teaching. Scale A to E, A=not at all; E=a great deal. (Pre/Post)
• **Teacher Beliefs on Writing**: 16 questions related to if teachers believe they supported their students in writing; can overcome outside contexts; and writing pedagogy. Scale 1-5, 1=Strongly disagree; 5=strongly agree. (Post only)

• **Analytical Writing**: All students wrote analytical essays on two pieces of non-fiction text. Each essay was scored by two graders from a scale of 1 to 6, for a total range of 2 to 12 points. (Pre/Post)

• **CST scores**: The research team received permission to access students’ English language arts scores on the California Standards Test. Total scaled scores as well as subscale scores for Writing conventions, Writing strategies, World Analysis, Literary response, and Reading comprehension were available for analysis. (Pre/Post)

• **Benchmark scores**: Students took district benchmark exams covering particular standards throughout the year. (Pre/Post)

• **Strategies Use Survey**: Students completed surveys on their use of specific cognitive strategies for reading and for writing purposes. (Pre/Post)

• **Student Reflections**: Students were asked to reflect on their experiences during the program, how their Pathway teacher compared to other teachers, and what they felt they learned from their participation (Post only)

Because of its design, this professional development program provides a context to study the following three questions: 1) How do teachers appropriate the tools from professional development for use in their teaching? What tools do teachers appropriate from professional development? When do they use them over the course of the PD program? How do they use them and are their variations in their use? 2) How do teacher perceptions influence their appropriation and enactment of Pathway Project tools? How do they influence the opportunities
students had to improve reading and writing?; and 3) How does the Pathway Project design influence teachers’ enactment of the Pathway tools for their practice and opportunities for learning? These questions are important to answer because they help provide evidence for the conceptual model I am proposing that intends to open up the black box and investigate the nature of teacher learning as reflected in their enactment (question 1 and sub questions); their cognition (question 2 and sub questions); and the relation between enactment and cognition and professional development design (question 3). In the following sections, I present each of my research questions and sub questions, the data sources I used to answer these questions, and my analytical methods to answer each question.

**Research Question 1 and sub-questions:** How do teachers appropriate the tools from professional development for use in their teaching? What tools do teachers appropriate from professional development? When do they use them over the course of the PD program? How do they use them and are their variations in their use?

Table 4 provides a data and analysis matrix for the three different phases for the first research question.

**Table 4 Question 1 Data and Analysis Matrix**

<table>
<thead>
<tr>
<th>RQ: How do teachers appropriate the tools from professional development for use in their teaching? What tools do teachers appropriate from professional development? When do they use them over the course of the PD program? How do they use them and are their variations in their use?</th>
<th>Data</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: What All 32 Teachers on what teachers appropriated</td>
<td>Teacher Practice Surveys, Professional Development Field Notes, Teacher Observation Letters from Literacy Coaches, Focus Group Interviews</td>
<td>Quantitative Analysis: Descriptives for Which Tools Were Used the Most Qualitative Analysis: Ease of Implementing Tools</td>
</tr>
<tr>
<td>Phase 2: When All 32 Teachers on when they were observed using</td>
<td>Professional Development Field Notes, Teacher Observation Letters from</td>
<td>Qualitative Analysis of Presence of Tools, When Enacted, and During which</td>
</tr>
</tbody>
</table>
Data sources. The primary source of data for this question consisted of the Literacy Coach letters. Literacy Coaches observed each participating teacher three times throughout the school year, for a total of 96 observations conducted over the course of the program. Each observation was followed by an observation letter that often included a detailed report of what happened during instruction, possible suggestions with a focus on using tools and materials from the Pathway Project, and a closing paragraph that elicited the teachers’ requests for more targeted feedback in future observations. Letters to all teachers were included in the analyses. Other data included field notes of the professional development meetings, both the full day meetings and after-school sessions, and focus group interviews by grade level and school, and practice surveys and open-ended reflection questions that each teacher filled out at the end of the program. I used these data sources because I thought they provided insight into what tools teachers used, when they used them over the course of the program, and variations in their use.

Data analysis. I analyzed the data over three phases addressing the what, when, and how of tool appropriation. During the first phase I generated a list of all the potential tools that the teachers could have appropriated from the Pathway Project from the teacher practices survey, field notes of professional development meetings, and focus group interviews. I was particularly interested in looking for tools provided by the Pathway Project, rather than other district wide professional development programs. I then grouped the tools into sets by purposes and intended
goals they served. I inferred the intended goals from field notes and knowledge of the Pathway Project intentions and confirmed my groupings with the Pathway Project director. I categorized tools into the following goals: 1) helping students read complex texts (e.g., cognitive strategies); 2) aiding students in writing about complex texts (e.g., modeling); 3) guiding students to improve their writing (e.g., color coding); 4) assisting students in revising their writing (e.g., revision of the pre-test); 5) developing students’ understanding of literary terms (e.g., book club strategies); 6) facilitating students work with specific texts (e.g., “Eleven”); 7) preparing students for the Common Core State Standards assessments (e.g., power writing); and 8) supporting students in discussing literature (e.g., literature circles). Dr. Olson explained that she conceptualizes some of these tools as activities and others as strategies. The difference between an activity and a strategy is mainly about the timing and use of the tool. Activities are usually limited in scope and are tied to specific units, lessons, and/or texts. These activities are often taught during one class period or over several class periods. In contrast, a strategy is more generally applicable and can be used within activities. Strategies can also stand alone and can be taught and practiced across the curriculum regardless of the standard or text of focus (see Table 5).

Table 5  
*Tools available to Pathway Teachers in Year 1*

<table>
<thead>
<tr>
<th>Tools that help students…</th>
<th>Activity or Strategy</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read complex texts</td>
<td>Activity</td>
<td>Play-Doh Think Aloud</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tsunami Think Aloud</td>
</tr>
<tr>
<td></td>
<td>Strategy</td>
<td>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Guidelines for Reading Texts (Bubble maps, visualization, outline, summary)</td>
</tr>
<tr>
<td>Write about complex texts</td>
<td>Strategy</td>
<td>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do/What Chart</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kelly Gallagher’s Modeling and Real World Writing</td>
</tr>
</tbody>
</table>

48
| Work with specific texts | Activity | All Summer in a Day Tutorial  
|                         |          | Horned Toad Lesson  
|                         |          | Eleven Lesson  
|                         |          | Steve Irwin Tutorial with Nonfiction  
|                         |          | All Summer in a Day Essay  
|                         |          | Eleven Book Club Strategies  
|                         |          | Horned Toad Essay  
| Improve their writing   | Strategy | Do/What chart  
|                         |          | Brushstrokes  
|                         |          | Color-coding of sentences  
|                         |          | Essay Templates  
|                         |          | Vocabulary/Academic English Lessons  
|                         |          | Incorporation of quotes/textual evidence  
|                         |          | Introduction, hook, TAG, summary, thesis/theme  
| Revise their writing    | Activity | Japan: Scuba Hero for Revision  
|                         |          | Revision of Pre-Test  
| Understand literary devices | Activity | Tutorial on teaching theme with Horned Toad  
|                         |          | Video Clips on Topic and Theme lesson  
|                         |          | Theme (general)  
|                         | Strategy | Personification/Symbolism/Figurative language  
|                         |          | Book Club Strategies/Lessons for characterization, setting, plot, and theme  
| Prepare for Common Core State Tests | Activity | Multiple choice test on Horned Toad/Japan: Scuba Hero  
|                         | Strategy | December Conference workshops that teachers could choose from: what does every writer need to know; vocabulary; comics and graphic novels; technology; what works in writing instruction; rigor; informational texts; project-based writing  
| Discuss literature      | Strategy | Literature Circles with Fiction  
|                         |          | Literature Circles with Non-fiction  

I then read all of the literacy coach letters and generated a count of the number of times a tool a coach observed tools being used by teachers or students on my list of Pathway Project tools grouped by sets. Next, I calculated the number of teachers who stated they used certain tools in the teacher practices survey within these different groups and rank-ordered them in terms of frequency. I drew on these data sources to understand what was being enacted. I also noted whether activities were cited more or less than strategies.
I also analyzed the ease of implementation for teacher enactment of each type of tool based on extant literature (Boston & Smith, 2009; Brophy & Allemon, 1991; Clark & Lampert, 1991; Puntambekar & Hubscher, 2005) and my own knowledge of pedagogy. I felt this was necessary because I conjectured there were some commonalities among the tools used with higher frequency compared to those used with lower frequency. I determined the ease of implementation of the tools’ enactment on several themes: familiarity, prior use, preparation time, enactment time, accessibility to students, time needed during professional development to discuss the tool with teachers, and general applicability across different lessons, texts, and learning goals (See Table 6).

Table 6  
*Framework for the Ease of Implementation of Tools for Enactment*

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Easy to implement</th>
<th>Moderately easy to implement</th>
<th>More difficult to implement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarity</td>
<td>Familiar to teachers</td>
<td>May be familiar</td>
<td>Unfamiliar to teachers</td>
</tr>
<tr>
<td>Prior Use</td>
<td>Prior enactment</td>
<td>May or may not have prior enactment</td>
<td>No prior enactments</td>
</tr>
<tr>
<td>Preparation Time</td>
<td>Low prep time</td>
<td>Medium prep time</td>
<td>High prep time</td>
</tr>
<tr>
<td>Enactment Time</td>
<td>Takes less than a day</td>
<td>Takes more than a day to implement</td>
<td>May take a week or more to implement</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Accessible to students; students can apply with little to no scaffolding</td>
<td>Students can apply with teacher scaffolding</td>
<td>Inaccessible to students; teachers must scaffold for students</td>
</tr>
<tr>
<td>Time Needed to Discuss with Teachers</td>
<td>Required minutes to teach concept during professional development</td>
<td>Required 30 or more minutes to teach concept during professional development</td>
<td>Required hours to teach concept during professional development</td>
</tr>
<tr>
<td>General Applicability</td>
<td>Applicable to a wide range of texts</td>
<td>Applicable to a limited range of texts</td>
<td>Applicable to a specific type of text</td>
</tr>
</tbody>
</table>

*Easy to implement* tools, such as multiple choice exams, are familiar to teachers, and they probably have had experience in enacting them in the past. It also took little time to discuss during professional development. Moreover, they take less than a day to prepare to integrate into
lessons. Students can also easily access these tools. Finally, these tools are applicable to a wide range of text. *Moderately easy to implement* tools take more resources to enact. For example, teaching students how to write a hook for an essay requires more scaffolds for students to learn how to write them than simply writing an essay without an attention getting opening. *Moderately easy* strategies may or may not be familiar to a teacher so they may require more time for teachers to learn how to model or to teach them during professional development. The *more difficult to implement* tools, such as ones to teach revision, take longer to learn during professional development, plan for in instruction, and teach to students.

I used the *framework for the ease of implementation of tools for enactment* to analyze each tool from the Pathway Project. I also categorized each type of tool into sets, based on their instructional purpose. Thus, I categorized two sets of tools as *easy to implement* because the teachers were familiar with cognitive strategies, they took little time to implement in the classroom, and each cognitive strategy only took five minutes each to be taught or demonstrated for teachers. On the other hand, four sets of tools were considered *moderately easy to implement*. For example, some of the teachers may or may not have showed their students how to incorporate quotes into an essay or fill out an essay template. Other ways these set of tools were *moderately easy to implement* are that they took about 15 to 30 minutes to explain during the professional development meeting, and students needed to be walked through the use of each type of tool during a lesson and required scaffolding as they used the tools. I identified one set of tools as *more difficult to implement* because teachers were unfamiliar with extended revision strategies. In addition, revising writing requires an intensive amount of planning and vigilance on the part of both teachers and students to be enacted successfully as teachers need to strategically plan and teach revision strategies and students will need time to practice writing (see Table 7).
Table 7  
*Sets of Tools Grouped by Ease of Implementation*

<table>
<thead>
<tr>
<th>Pathway Project Tools</th>
<th>Easy to Implement</th>
<th>Moderately Easy to Implement</th>
<th>More Difficult to Implement</th>
</tr>
</thead>
</table>
| Tools that help students read and write about texts | • Cognitive Strategies  
• Bookmarks/Wall Posters/Blue Booklets  
• Guidelines for Reading Pre-Test  
• Play-Doh/Tsunami Think Aloud  
• Do/What Chart | Tools that help students work with different literary terms emphasizing textual evidence  
• Personification  
• Book Club Strategies  
• Video Clips on Topic and Theme | Tools that help students revise their writing  
• Scuba Hero for Revision  
• Revision of Pre-Test |
| Tools that help students prepare for assessments | • Multiple Choice Test on Horned Toad/Scuba Hero  
• December Conference | Tools that help students discuss literature/texts  
• Literature Circles | Tools that help students work with specific texts  
• All Summer in a Day Tutorial/Essay  
• Horned Toad/Eleven Lesson  
• Steve Irwin Tutorial |
| Tools that help students improve their writing | • Color-coding of Pre-Tests  
• Essay Templates  
• Vocabulary/Academic English  
• Brushstrokes |  | |

During the second phase (the when), I mapped all professional development meetings and teacher observations of all teachers chronologically on an AY2011-2012 calendar. This mapping enabled me to trace different tools from the list generated in phase one, from one setting to another setting over time. It also enabled me to see if teachers were using one type of tool immediately after it was introduced during professional development settings or much later in the school year. I conjectured that if it took more time for teachers to use the tool, then it required more learning and understanding on their part to enact in practice. To further facilitate
answering the question of when a tool was enacted, I grouped one full day meeting and one afterschool meeting as individual modules to link the meetings in coherent ways by their conceptual purpose. Each of the six identified modules was then assigned a certain goal to be accomplished.

M1: To teach and promote the use of cognitive strategies  
M2: To work with non-fiction and to scaffold students in writing an interpretive essay  
M3: To scaffold students to meet the Common Core Writing Standards  
M4: To support students in revising their pre-tests into analytical essays  
M5: To support the literacy practices of students in all subject areas  
M6: To further work with the Common Core and writing across the curriculum

I then looked within each module and identified the types of tools given to teachers and their intended goals. I also looked for trends when tools were taken up. I color coded tools from each module in teacher observations to help me trace which tools from different modules surfaced in the observation letters. For example, module 1 tools were color coded red. Thus I highlighted those tools in red so that when I looked across the academic school year I can visually see which tools were present based on their colors.

Finally, during the last phase (the how), I analyzed the feedback letters from Literacy Coach observations, Literacy Coach observation protocols, select responses from an end of the year reflection survey, and transcribed responses from focus group interviews. I noted what the coaches observed teachers and students doing in each letter. During the observation, coaches were asked to pay attention to any use of cognitive strategies, lessons, or texts from the Pathway Project and to comment on them when appropriate, thus helping me understand how tools were used. Teachers completed the reflection surveys on the last day of professional development. The three questions that pertained to teachers’ appropriation of tools on this survey include:

- What I will repeat next year, reinforce, change, or add to my curriculum based on what I see.
Please describe one strategy, activity or lesson you used this year that has helped your students to become better strategic readers. Describe this practice in detail and explain why you feel it has been effective.

Please describe one strategy, activity or lesson you used this year that has helped your students to become better analytical essay writers. Describe this practice in detail and explain why you feel it has been effective.

The research team also conducted grade level focus groups at the end of the year. Research team members, including myself, conducted six focus group interviews. The interviews consisted of eight focal questions for each group. I analyzed five of those questions for tools and how they were used:

- Programs like Pathway are often tailored and tweaked for every kind of school, classroom, and teacher. What did you do like that—to make the program work for you? What did you toss out, do differently, do more of? What mattered in your teaching this year that was outside of Pathway but you found it important to do, or needed to do?
- How did your reading/writing activities change this year vs. the previous years when you were not in Pathway?
- Tell me about some success stories with kids in your classroom this year; some failures/challenges. What seemed to work and what did not—what happened do you think?
- What did you like best about Pathway? What would you delete, change, modify, or add to the program if you could?
- How well do you feel the Pathway training has prepared you to teach to the Common Core Standards for ELA?

I used these responses to analyze how teachers appropriated tools. I also coded the 96 observational protocols and feedback letters from the Literacy Coaches for all teachers and traced the enactment of each tool, noting how teachers used each tool. I used the reflection surveys and focus group interviews for all teachers to code for confirming evidence of these uses of tools. During this phase, I also qualitatively analyzed how these tools were appropriated by constant comparison (Miles & Huberman, 1994) of my field notes and how they were described from the different data sources. For example, one tool that the Pathway Project provided teachers with was a walk-through of a lesson to teach the use of cognitive strategies with Ray Bradbury’s
text, “All Summer in a Day,” with strategic chunking of the text and application of cognitive strategies for each part of the text. If this lesson was mentioned in the data, I compared how the lesson was taught to its original intentions. Differences, such as another text used, different skills or purposes introduced, or changed activities or teaching strategies were noted as an appropriation of the lesson. This process was applied to all tools mentioned in the data. From this analysis, I developed a coding scheme/framework that captures the different purposes for why teachers appropriated the Pathway Project tools. I also noted the type of tools being appropriated against the ease of implementation framework I generated during Phase 1 to look for any emergent patterns that existed among the appropriated tools.

Finally, I examined whether there were differences among teachers observed to have used the tools more than others across the three observations based on an observational protocol the Literacy Coaches used, what I refer to as levels of implementation. Questions pertaining to the presence or absence of cognitive strategies and Pathway Project targeted behaviors were used to calculate this implementation scale. There were a total of 27 items the literacy coaches could have checked off (15 cognitive strategies and 12 behaviors). Across three observations a teacher could have scored 81 points. I calculated the mean score for all teachers and the standard deviation. Teachers who fell below one standard deviation of the mean were low implementers; teachers who fell within one standard deviation on either side of the mean distribution were considered medium implementers; teachers who fell above one standard deviation of the mean were high implementers.

After knowing what, when, and how tools were used from the Pathway Project, it was important for me to understand how teachers perceived the Pathway Project in terms of its affordances or limitations to their work. Research also has shown that teachers with more
positive perceptions of their participation during professional development were more likely to enact what they learned in these settings. I wanted to understand if this was true for teachers in the Pathway Project and to see if there were other outcomes related to teachers’ perceptions, such as the rate at which they implemented the Pathway Project tools, what tools they enacted based on their perceptions, and the influence of teachers’ perceptions on students’ experiences and outcomes as related to the Pathway Project.

**Research Question 2 and sub-question:** *How do teacher perceptions influence their appropriation and enactment of Pathway Project tools? How do they influence the opportunities students had?*

I also present here a data and analysis matrix for research question 2 (See Table 8).

**Table 8 Question 2 Data and Analysis Matrix**

<table>
<thead>
<tr>
<th>Phase 1: All 32 teachers for perceptions about their experiences</th>
<th>Open-ended reflection questions</th>
<th>Open and axial coding of content in reflections based on questions asked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 2: All 32 teachers for perceptions about their experiences</td>
<td>Focus group interviews</td>
<td>Open and axial coding of content in focus groups interviews matched to Phase 1 coding; also noting different axial codes</td>
</tr>
<tr>
<td>Phase 3: All 32 teachers, 342 student reflections from 17 teachers, and 544 students’ essay scores to link teacher perceptions to student perceptions</td>
<td>Open-ended reflection questions, focus group interviews, Level of Implementation Framework, Positive Perceptions Continuum, Student reflections, and Student AWA Scores</td>
<td>Applying the ease of implementation framework from Research Question 1; Analyzed teacher’s reflections from Phase 1 based on where they fell on the Level of Implementation Framework scale; Analyzed students’ reflections based on where their teacher was on the Level of Implementation</td>
</tr>
</tbody>
</table>
Data sources. I analyzed all teacher reflections as part of the teacher perceptions data set. They consisted of open-ended questions about their experiences, successes, and challenges. There were five questions:

- Please describe one strategy, activity or lesson you used this year that has helped your students to become better strategic readers.
- Please describe one strategy, activity or lesson you used this year that has helped your students to become better analytical essay writers.
- Assuming that we do see a pattern of growth in the Pathway CPEC Project, to what do you attribute that growth?
- What I will repeat next year, reinforce, change, or add to my curriculum based on what I see.
- Overall, how has your experience in the Pathway Project been this year? What has been most helpful to you?

Teachers completed these reflection questions by hand at the last Pathway Project full day meeting. I also analyzed focus group interview data. The focus group interviews took place with an entire grade level team by school, for a total of six focus groups. The research team asked eight questions regarding the teachers’ participation and experiences in the professional development.

- You were using Pathway activities this year. If you were describing Pathway training, goals, or activities to another teacher, how would you describe it?
- Programs like Pathway are often tailored and tweaked for every kind of school, classroom, and teacher. What did you do like that--to make the program work for you? What did you toss out, do differently, do more of? What mattered in your teaching this year that was outside of Pathway but you found it important to do, or needed to do?
- Teachers talk about intervention programs like Pathway with each other, and you have probably seen more than one over the years. How does Pathway compare? How likely is it that it will be implemented and become a routine practice in your classroom? In your school district?
- How did your reading/writing activities change this year vs. the previous years when you were not in Pathway?
• Tell me about some success stories with kids in your classroom this year; some failures/challenges. What seemed to work and what did not—what happened do you think?
• What did you like best about Pathway? What would you delete, change, modify, or add to the program if you could?
• How well do you feel the Pathway training has prepared you to teach to the Common Core Standards for ELA?
• Do you have anything else you would like to add?

An added dimension is to also see how teacher implementation levels (from research question one) impacted teachers’ perceptions. To be clear, I wanted to see if it mattered whether teachers’ perceptions were related to their amount of use of the Pathway Project tools. I also wondered if teachers’ implementation levels impacted their overall experiences based on the open-ended survey questions. I coded their responses to the open-ended reflection question, “Overall, how has your experience in the Pathway Project been this year?” I used the codes to rank teachers on a positive perception scale: less positive, neutral, positive, and more positive.

For student experiences and outcomes, I examined students’ end of the year reflections. Students answered four questions: 1) Reflect on your pre-test and post-test. Did you see any differences? 2) What made you a better reader? 3) What made you a better writer? And 4) In what ways, if any, was your English language arts class/ELD class different than previous classes? I choose to only analyze question 4 because it is directly related to students’ experience as impacted by teachers.

Student results come from the Analytical Writing Assessment (AWA). The AWA is an essay prompt that students must respond to over two class periods. One period is devoted to reading a given text and the next period devoted to writing a response to the text. The prompts often ask for the author’s message or purpose. During the first year, the research team randomly assigned each teacher to administer an analytical writing task on one of the following non-fiction texts, either Leonard Pitts’ “Sometimes, the Earth is Cruel” or Roger Rosenblatt’s “The Man in
the Water” at pretest, and then assigned the other non-fiction text at posttest. The research team then reviewed the responses and scored each essay on a 6-point rubric (see Appendix A). For example, during the first year, an essay that scored a level 6 exhibited the following characteristics:

- Writer introduces the subject, giving enough background for the reader to follow the interpretation he/she offers in response to the prompt.
- Overall, writer presents a thoughtful theme statement which expresses the author’s main point, lesson, or message.
- Writer clearly addresses all parts of the writing task:
  - Writer clearly discusses the author’s description of the Haitian people’s actions after the earthquake or the man in the water’s actions after the plane crash.
  - Writer thoughtfully analyzes the language Pitts or Rosenblatt uses to describe nature and the relationship between either the Haitian people and nature or the man in the water and nature (including similes, metaphors, symbols, personification, or other figurative language).
  - Writer thoughtfully discusses Pitts’ or Rosenblatt’s response to the way the Haitian people respond to their tragedy or to the fact that the man in the water lost his life in the process of saving others.
  - Writer thoughtfully discusses the author’s purpose in writing his article, restating his message, and explaining why that message is especially significant.
  - Writer skillfully weaves numerous references from the text into the paper to support his/her ideas.
- Writer interprets well and brings the paper to a logical conclusion.
- Writer uses precise, apt, or descriptive language and sentence variety.
- Paper has few errors in the conventions of written English.

Scores lower than a 6 indicated decreasing complexity, accuracy, or completeness. The minimum score for passing was a 4; students who only summarized or recopied chunks of the text were assigned a score of 1. The research team scored 544 student essays. These essays, along with their scores, were included in the analysis because they can indicate students’ growth and learning during the Pathway Project.

**Data analysis.** During the first phase of the analysis, I applied both etic and emic approaches to capture the perceptions of teachers regarding the Pathway Project tools in the
reflection questions across the five questions. That is, I analyzed the data with particular attention for Pathway Project tools (etic), but was also interested to see what else teachers would mention (emic). For example, in response to the question: “What is one strategy, activity, or lesson you used this year that has helped your students to become better analytical essay writers?” if a teacher wrote, “Color coding. They really understood how to quote and comment,” then the response would be coded: color coding sentences. Similar analyses were conducted for each reflection question. Once all statements were coded, I sorted the codes (with responses) alphabetically which helped me see common codes among the responses. I then organized the responses by frequency and also calculated the percentage of teachers who mentioned similar statements around the same tool. The percentages helped me see patterns among the different responses.

During the second phase, I used a similar approach to the six teacher focus groups, with particular attention to responses that supported the teacher reflection responses, but also anything else that emerged not previously stated. I generated open codes for the focus group responses and then grouped them under axial codes or categories (Saldana, 2003). For example, some open codes that I generated from the 8th grade Lion Middle School group were: “Bookmarks provided a guide for what to do; The Do/What chart was helpful as it broke down the directions for students; PPTs are very informative.” These three codes were then respectively grouped under the axial codes: Tools for reading, Tools for writing, and Tools for instruction. All focus groups responses were coded and assigned axial codes to support responses from the open ended, but directed reflection questions. I also noted axial codes that were not similar to ones from the reflection questions (e.g., assessment materials). I used the axial codes to help me compare different themes that emerged across the focus group responses.
In the third phase, I wanted to see if teachers’ perceptions influenced what kind of tools teachers mentioned, were related to their own implementation levels, shaped their overall experiences, impacted their students’ experiences, and influenced their students’ learning growth. To trace how what kind of tools influenced teachers’ perceptions, I noted the ease of implementation levels of the tools mentioned in the open-ended reflection questions and the focus group interviews. By noting the ease of implementation levels of the tools mentioned among the different data points, a clearer picture can be discerned from the list of tools mentioned and what resonated with teachers. It is important to know if teachers focused on certain types of tools in their reflections over others. I also examined the perceptions of teachers by where they fell on the low, medium, to high implementers scale. I grouped teachers into their implementation level and noted what they stated in terms of their perceptions on the open-ended reflection question to also understand their overall experiences. Finally, I used the same implementation scale and analyzed students’ perceptions based on where their teachers were placed on the implementation scale in order to see if their teachers’ implementation level impacted their experiences. I purposely sampled the teachers from among the 32 in the first year group and analyzed the student reflections of four low implementers, seven medium implementers, and six high implementers who were all two-year participants. I also analyzed the overall performance of all students on the AWA by running t-statistics from pre to posttest based on these groupings (i.e., low, medium, and high implementers).

The previous two questions provided insights around the tools enacted and possible links to teachers’ perceptions and student perceptions and learning outcomes. It is also important to understand how the design of the professional development program may or may not have supported these enactments or may or may not have engendered these perceptions and outcomes.
Knowing what aspects of the Pathway Project design impacted teachers’ opportunities for learning will provide valuable feedback for designers of professional development.

**Research Question 3:** How does the Pathway Project design impact teachers’ opportunities for learning?

For my last research question, please refer to Table 9 for my data and analysis matrix. My field notes were main data source for this question.

Table 9  
**Question 3 Data and Analysis Matrix**

<table>
<thead>
<tr>
<th>RQ: How does the Pathway Project design impact teachers’ opportunities for learning?</th>
<th>Data</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1:</strong></td>
<td>Field Notes from Full Day Meetings, Afterschool Meetings, Weekly Meetings, and Literacy Coaches’ Letters</td>
<td>Analyzed the number of activity units for each data source</td>
</tr>
<tr>
<td><strong>Phase 2:</strong></td>
<td>Field Notes from Full Day Meetings, Afterschool Meetings, Weekly Meetings, and Literacy Coaches’ Letters</td>
<td>Analyzed for confirming and disconfirming evidence of components from Lyons and Pinnell’s framework for literacy professional development</td>
</tr>
<tr>
<td><strong>Phase 3:</strong></td>
<td>Field Notes from Full Day Meetings, Afterschool Meetings, Weekly Meetings, and Literacy Coaches’ Letters</td>
<td>Analyzed where the confirming and disconfirming evidence were in the sub-processes for each component</td>
</tr>
</tbody>
</table>

**Data sources.** Previous analyses and results examined teachers’ enactment and perceptions. In this analysis, I wanted to understand how features of the professional development design provided opportunities for teacher learning. Teachers had opportunities to attend at least 80 hours of professional development during the first year of the Pathway Project (6 hours for each full day professional development, 2 hours for each afterschool workshop, and 1 hour each for weekly grade level meetings). In addition, they were observed three times during the year and were provided feedback on their teaching by Pathway coaches. To study the impact
of the design components of the Pathway Project on teacher learning, I focused my observations on one of the grade level teams during their weekly meetings, the eighth grade level team from Lion Middle School, in addition to observations of the full day and afterschool meetings. The weekly meetings were a part of the Pathway Project design and were intended to provide teachers time to discuss Pathway materials and resources. The weekly meetings took place during their weekly professional learning community time so they may have used it to discuss other issues, as needed. There were a total of 34 possible weekly meetings from October to June. Some of the weekly meetings were not held due to other conflicts, resulting in 24 observed weekly meetings. In addition, all 8th grade teachers attended each of the full day professional development meetings and the afterschool meetings. Thus, each teacher in this group had at least 70 hours of professional developments. I recorded field notes at each meeting across the three contexts. I also view the coaches’ letters as a portion of the professional development because they visited teachers’ classrooms and offered feedback to them on their instruction. Therefore, an additional data source for this analysis included the coaches letters for the teachers who participated in the 8th grade Lion Middle School group (n = 6).

I was interested in understanding what features of the Pathway Project supported or hindered the learning opportunities teachers had during the program. The main analytic frame I used to analyze the field notes was drawn from Lyons and Pinnell’s (2001) Framework for Professional Development in Literacy Education. This framework consists of 10 components that are broken down into different processes and goals (see Appendix B). These components are organized as a three-part design: planning, problem-solving, and coaching. Research supports these same processes (Hawley & Valli, 1999). Researchers propose that teachers should be involved in the beginning phases of professional development design as consideration of
teachers’ learning goals, along with the skills and knowledge their students will also need to develop, is important and crucial (Avalos, 2011; Borko & Putnam, 1995; Fullan, 1993). Moreover, working together to problem solve collaboratively is also a necessary component of professional development design (Butler & Schnellert, 2012; Guskey, 1995; Little, 1993). Finally, teachers need to have ongoing supports beyond the professional development meetings to sustain their learning of the professional development initiatives (Desimone, 2011; Lieberman, 1995).

Lyons and Pinnell’s (2001) planning components involve collecting information about what “teachers know and what they are doing that is effective and ineffective” (p. 13). Moreover, studying the classroom discourse and data on student achievement are also part of assessing the context, along with understanding the school culture. Other components of planning involve providing the basics, meaning giving teachers materials, directions, and demonstrations. Demonstrating the process means working with teachers on what they would like to learn and showing them how to put pedagogical practices into action either through videotapes, classroom observations, or demonstration lessons. While these planning processes occur, it is also important to reassure teachers that these new techniques they are learning will work by establishing rationales. Rationales can come in the form of empirically based statements or a handout. The main purpose is to help teachers understand why what they are learning is worth the time investment and important to learn.

Once the planning portion of the professional development is done, the next set of processes involves engaging the learners. In this phase, professional development facilitators foster engagement by providing opportunities for active learning and exploration, visualizing the processes involved, and noticing important behaviors and reactions in students. Once teachers
are engaged, then they should begin trying it out – in other words, they have opportunities to practice, evaluate, and reflect on what they are learning. As part of this phase, teachers also navigate establishing routines and procedures. The focus is on how to achieve their goals by seamlessly incorporating new tools and practices into their instruction; at the same time, students begin to learn what is exactly expected of them as they work with new practices.

The third set of components, related to coaching, is crucial because it helps teachers reflect on their experiences and formulate plans on how to proceed with their work. Coaching for shifts in behavior involves helping teachers focus on student learning and analysis of student data and reactions to the different practices they are enacting through questions posed by the coaches such as providing suggested next steps or pointing out what was helpful. This type of data is important feedback for teachers to use to make their pedagogical decisions. Teachers may not enter professional development equipped with highly developed reflecting skills, so coaching for analysis and reflection are also necessary to help teachers become more flexible in their instruction and to make their teaching more student-centered. Finally, coaches, along with teachers, can also initiate the process of supporting extended learning opportunities. This process is meant to help solidify the entire program by helping teachers form dynamic theories about what works and why (Hiebert et al., 2007; Santagata et al., 2007). This last step is truly indicative of the learning that occurred for teachers during professional development.

The professional development program design should account for all ten components, as recommended by Lyons and Pinnell (2001). Thus, I wanted to see if the Pathway Project had these components. To be clear, I am not evaluating the effectiveness of the Pathway Project, which has been empirically studied elsewhere (see Kim et al., 2011; Olson et al., 2012). Rather, I am using this framework as a way to understand how the Pathway Project design provides
opportunities for teacher learning. Such an analysis has implications for replicating the professional development and informing the design of other literacy based professional development that can support teacher development, particularly for programs working with teachers of English Learners.

**Data analysis.** In order to study the impact of these design components on opportunities for teacher learning, I determined which data source could provide information about each component. My main data sources include field notes from the full day professional development meetings, the afterschool meetings, the weekly school meetings, and the Literacy Coach letters. The full day meetings mainly consisted of notes about what the professional development facilitators did or said and how teachers participated. For example, I was looking for the activities teachers were involved in and skills or knowledge the facilitators were promoting in the program. The afterschool meetings consisted of similar notes. Again, in these settings I was noting teacher activities, where skills were discussed or demonstrated, as well as teacher participation and questions raised during these meetings. The notes from the weekly grade level meetings also had notes on teachers’ discussions on various topics, such as the Pathway Project or assessments, what problems they had to resolve, what work they collaborated around, and sharing of expertise with each other. Finally, the Literacy Coach letters included observation notes about the teachers’ lessons, students’ reactions to teachers’ lessons, what students were doing, and reflection and analysis questions regarding the lessons. The following table provides each component and what data source(s) I analyzed to make claims about those components. For example, I recognize that there would be few opportunities to check for confirming evidence of providing the basics during the weekly meetings or from the Literacy Coach letters, that is why I only analyzed the full day and afterschool meetings for this component (see Table 10).
<table>
<thead>
<tr>
<th>Component</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assess the Context</td>
<td>Full Day PD, Afterschool PD, Weekly Meetings, and Literacy Coach Letters</td>
</tr>
<tr>
<td>2. Provide the Basics</td>
<td>Full Day PD, Afterschool PD</td>
</tr>
<tr>
<td>3. Demonstrate the Process</td>
<td>Full Day PD, Afterschool PD</td>
</tr>
<tr>
<td>4. Establish the Rationales</td>
<td>Full Day PD, Afterschool PD, Weekly Meetings, and Literacy Coach Letters</td>
</tr>
<tr>
<td>5. Engage the Learners</td>
<td>Full Day PD, Afterschool PD, Weekly Meetings, and Literacy Coach Letters</td>
</tr>
<tr>
<td>6. Try it Out</td>
<td>Full Day PD, Afterschool PD, Weekly Meetings, and Literacy Coach Letters</td>
</tr>
<tr>
<td>7. Establish the Routines and Procedures</td>
<td>Full Day PD, Afterschool PD, Weekly Meetings, and Literacy Coach Letters</td>
</tr>
<tr>
<td>8. Coach for Shifts in Behavior</td>
<td>Literacy Coach Letters</td>
</tr>
<tr>
<td>9. Coach for Analysis and Reflection</td>
<td>Weekly Meetings</td>
</tr>
<tr>
<td>10. Extend Learning</td>
<td>Full Day PD, Afterschool PD, Weekly Meetings, and Literacy Coach Letters</td>
</tr>
</tbody>
</table>

I first reviewed the field notes and segmented each observation by activity units or “episodes, which [are] defined by a series of interactions associated with a particular idea and/or activity” (Zembal-Saul, Munford, Crawford, & Friedrichsen, 2003, p. 446). More specifically, an activity consists of a segment of interaction focused on the learning of a skill or tool or a set of tools from the Pathway Project. For example, in one full day meeting, Dr. Olson allocated two hours to demonstrate how to introduce cognitive strategies to students. During this segment of activity, the teachers read along with Dr. Olson and rehearsed different steps of the lesson. Another example from the afterschool meeting includes an activity in which the coaches demonstrated how to use the book club notebook with teachers around the story “Eleven” by Sandra Cisneros. They also read along with the coaches, but also produced written or artistic work using the book club notebook as a guide. Finally, in the weekly meetings, an activity included the teachers reviewing the Pathway materials and discussing how to incorporate the different Pathway components (e.g., cognitive strategies tutorial, administering student surveys, administering the
pre-test) into their pacing guide. There were a total of 36 activities in the full day meetings, 15 in the afterschool meetings, 34 in the weekly meetings, and 87 across the 18 literacy coaches’ letters that I analyzed. Each professional development activity became my unit of analysis (Miles & Huberman, 1994). I then generated an Excel spreadsheet for each data type for each component. In this spreadsheet, I included the component and the processes for each component. I then read through and coded my field notes and populated this spreadsheet with confirming and disconfirming evidence (Brantlinger, Jimenez, Klinger, Pugach, & Richardson, 2005; Dana & Floyd, 1993; Erickson, 1986; 2012; Santagata, 2009; Silva, 2003; Smith, 1987; Zemtalatt-Saul et al., 2003). In other words, I considered if these components and processes were present in the full day meetings, afterschool meetings, weekly meetings, or the Literacy Coach letters.

By examining the number of instances relative to the idea units, we can see which of the four features of the professional development design – full day, afterschool, and weekly meetings, along with the coaches’ letters - targeted particular components, the extent to which opportunities for teacher learning arose in those contexts, as well as how the different features coordinated to provide opportunities for teacher learning.

The following example illustrates how I coded the field notes from the first full day professional development meeting for component two (Provide the Basics): process A (provide a limited number of materials for first trials) (see Table 11). In this particular meeting, there were a total of 7 units of activity. I focus on my analysis of the sixth activity, when Dr. Olson introduced the participants to the cognitive strategies.

<table>
<thead>
<tr>
<th>Field Note</th>
<th>Code</th>
<th>Confirm/Disconfirm</th>
</tr>
</thead>
</table>

Table 11  Example of Full Day Professional Development Field Notes and Coding for Confirming-Disconfirming Evidence
Activity 6: Cognitive Strategies

They are now transitioning to the cognitive strategies power point. Each teacher has a copy of Ray Bradbury’s short story “All Summer in A Day.” She informs them that they can each receive a class set of the story to use if they want to use it to teach cognitive strategies. She also said that she will provide a class set of cognitive strategies bookmarks at the afterschool meeting because they had to order more. She is also providing cognitive strategies posters for teachers to hang up in their classrooms. As she transitions into the reading of the story, she first introduces the concept of tapping into prior knowledge and instructs the teachers to think about the word “summer” and what do they associate it with. Then she wants them to predict what the story might be about. She starts to read the story...

Component two deals primarily with providing resources for strategies and skills for specific lessons, particularly, lessons for which the professional development program is advocating. In this excerpt the teachers received Power Point slides, a copy of the story, and cognitive strategies posters and a promise for cognitive strategies bookmarks at the next professional development meeting. The Power Point slides are meant to be used to introduce the cognitive strategies and the story is part of the demonstration. Thus, I coded this excerpt that these were provided for teachers. Then, in my confirming or disconfirming column, I noted it as a confirmation. The same approach was used for the other data sources I identified for each component and processes.

While I followed a similar approach with the weekly meeting field notes, an additional element to the coding I did was to also understand if what the teachers were talking about during these meetings was related to the Pathway Project or related to other professional development topics. For example, during their second meeting, I wanted to examine if component six (Try it Out), process A (encourage teachers to try new techniques) was evident during the meeting. At
the same time, I also noted if new techniques were Pathway Project techniques or other techniques that were being promoted through other professional development offerings in the district (see Table 12).

Table 12  

<table>
<thead>
<tr>
<th>Field Note</th>
<th>Code</th>
<th>Confirm/Disconfirm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity 1: Teachers rearranged desks into a circle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 2: Discuss Dropbox</td>
<td>Dropbox as new concept to try</td>
<td>Confirm: new technique of Dropbox (non-Pathway)</td>
</tr>
<tr>
<td>Jeremy introduces the common Dropbox that he wants the teachers to use when they are planning anything together. He explains that there’s a folder for lessons, pacing guides, Pathway, and their common assessments. Mary and Ramona both say how they think this is such a great idea.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 3: Pathway</td>
<td>Cognitive strategies as new concept to try</td>
<td>Confirm: new technique of cognitive strategies (Pathway)</td>
</tr>
<tr>
<td>They then transition to discussing the Pathway Project and how the cognitive strategies are successful with students. Jeremy explained how he is actually a veteran of the Pathway Project and had participated in the past. He explained how his students became more engaged with their reading when he asked them to use a cognitive strategy and he wants to encourage the teachers to use them in their classes in any way they can. He also explained how they are similar to the GATE depth and complexity icons. Sarah also says that her honors students really respond to the icons because they push the students to think more deeply about their reading. She says it is difficult work, but she thinks it is worth it for students to try.</td>
<td>GATE icons</td>
<td>Confirm: new technique of GATE icons (non-Pathway)</td>
</tr>
</tbody>
</table>

Here, not only do Jeremy and the other teachers discuss a common Dropbox and the cognitive strategies, but also the GATE depth and complexity icons. The conversation is focused on encouraging teachers to use these new techniques in their classroom. Interestingly, the teachers
are not only talking about the Pathway Project but they are also exploring other professional development initiatives (e.g., non-Pathway).

The Literacy Coach letters provide data on teachers’ classroom practice. However, I used a similar approach to analyze their observations to look for confirming or disconfirming evidence of providing feedback that reflected the principles of effective professional development. For example, for component five (Engaging the Learners), process B (link observations of student behaviors to procedures) I looked at the Literacy Coach letters for each teacher to determine if there was confirming and disconfirming evidence that the teachers were receiving feedback on using the Pathway tools and the relation between student behavior. Like the field notes, I divided the letters into activity units as well. For example consider some excerpts from Sarah’s first Literacy Coach letter (see Table 13). I particularly paid attention to what student behaviors or reactions were included in their letter and how they related these reactions to anything that Sarah did while teaching:

Table 13  
Example of Literacy Coach Letters and Coding for Confirming-Disconfirming Evidence

<table>
<thead>
<tr>
<th>Field Note</th>
<th>Code</th>
<th>Confirm/Disconfirm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity 1: General Impression of the Class</strong>&lt;br&gt;What a pleasure it was to observe your classroom yesterday! We were impressed with how deftly you managed your class and presented your lesson. We liked your classroom environment and appreciated the attractive display of student writing on the back wall. You demonstrated an excellent rapport with your students, and they, in turn, were responsive and very well-behaved.</td>
<td>Excellent rapport; students were responsive and well-behaved</td>
<td>Confirm: students were responsive and well-behaved because of excellent rapport</td>
</tr>
<tr>
<td><strong>Activity 2: Introduction to the Lesson</strong>&lt;br&gt;You began the class by projecting a slide with directions for what students needed to do to begin the period. We liked that it began with “Welcome Scholars,” immediately sending students a positive message while letting them know that they are there</td>
<td>Sending students a positive message; no</td>
<td>Disconfirm: do not know how students responded to positive</td>
</tr>
</tbody>
</table>
to learn. You told students that they would be finishing the reading of the Steve Irwin article they had begun at the previous meeting. As an aside, you mentioned that you had been reading the students’ essays for “All Summer in a Day,” commenting that while overall they were quite good, they needed more work in addressing themes. We appreciated that you are obviously implementing strategies and lessons from the UCI Pathway Project.

Activity 3: Summarizing Steve Irwin Article
Next, you projected the slide for the cognitive strategy of summarizing and called on students to summarize what the class had read of the Irwin article thus far. Several students responded. You also asked students about the irony of how Irwin died.

Activity 4: Reading Conclusion of Steve Irwin Article
You then began reading the concluding section of the article, stopping to ask questions when appropriate, incorporating the strategies of evaluating, monitoring, and clarifying. You also questioned students about the author’s point of view, asking them to support their positions with evidence from the article.

Here, you can see that the literacy coaches tried to provide as much detail feedback as possible to teachers. I also noted evidence I had for student behaviors in relation to certain procedures. Then I either coded it as confirming or disconfirming evidence. For analyzing the type of feedback literacy coaches provided to teachers, I noted whether the feedback was related to Pathway or non-Pathway related activities or suggestions.

All data sets for each component were coded this way. Thus, by examining the data sets for confirming and disconfirming evidence of the different components and processes, I can gain insight into the opportunities for teacher learning as provided by the professional development design.
CHAPTER 4

Results for Research Question 1

Tools encompass almost all aspects of teachers’ work. Teachers use a variety of tools in their work, including assessments, thinking maps, and note-taking tools. Tools, such as lesson plans and curriculum materials, help teachers organize lessons, assess students, and manage their students’ progress in a lesson, a unit and over the course of a school year. Essentially, tools are objects or concepts that help teachers facilitate their pedagogy. The literature has identified two types of tools that teachers use: practical and conceptual tools. Teachers use practical tools to demonstrate or share with students in public ways. For example, asking students to share their thinking using different graphic organizers makes their thinking more public and open to discussion and can help teachers discern misconceptions. Conceptual tools are ideas, frameworks, and beliefs about instruction that shape teachers’ instruction (Grossman, Smagorinsky, & Valencia, 1999). They are implicit but can be made visible through objects and their design and use. For example, the concept of asking deliberate and explicit questions to elicit productive information on student learning is important. Teachers can use a framework that helps them ask questions for different purposes as they plan lessons; thus these concepts can guide the decisions teachers make. The sources where teachers acquire and develop tools for teaching are important to consider; however, what they do with these tools in the classroom matters even more. Important questions center on how teachers take up and use tools for their practice, as exposure to a tool simply does not guarantee use, let alone proper use (Grossman et al., 2000).

Feiman-Nemser (2001) proposes that teacher education programs support teachers in developing a beginning repertoire of instructional strategies and “a range of approaches to curriculum, instruction, and assessment, [among other skills].” This means “becoming familiar
with a limited range of good curricular materials, learning several general and subject specific models of teaching, and exploring a few approaches to assessment that tap student understanding” (p. 1018). What teachers learn in teacher education are ways to develop and use tools to facilitate their teaching that will increase over time. As they become more experienced, research shows that they must become discriminating and critical of what they adopt, adapt, or reject as they encounter these pedagogical tools throughout their careers (Leko & Brownell, 2011). Factors that come in to play as they make these pedagogical decisions can be the knowledge they have of their content, their students, and the context of their work. Thus, as they learn what works in their classroom they became better at discriminating the decisions that work for them and their students.

Similarly, studies on teacher professional development demonstrate that teachers seek opportunities for learning from other professionals (Desimone, Porter, Garet, Yoon, & Birman, 2002). They attempt to implement the tools and strategies taught to them in these settings in an effort to learn better pedagogical strategies and tools and to improve their teaching. For example, curriculum materials are tools that have been under study by many researchers. The overall conclusion that these studies make is that teachers can learn to make curriculum materials more usable through gradual refinement in collaboration with other colleagues (Brown, 2010; Davis & Krajcik, 2005; Grossman & Thompson, 2008; Morris & Hiebert, 2011; Penuel, Fishman, Yamaguchi, & Gallagher, 2007). However, Kazemi and Hubbard (2008) and other researchers acknowledge that teachers take up materials in different ways over the course of professional development and claim that take up varies by teacher because of what they understand the tools to represent, their knowledge of subject matter and curricular goals, and how their contexts support their use. Teachers are professionals who make decisions on implementation of
professional development tools and strategies that meet their pedagogical needs. They must consider where their students are in terms of learning goals and standards, they must think about their curriculum maps and what and how to supplement the lessons in these maps, and they must also consider if they have the necessary resources and support to implement what they learn in professional development (Desimone, Porter, Garet, Yoon, & Birman, 2002). It is too easy to say that if a teacher is exposed to ideas and concepts then these ideas can be used as packaged (Davis & Krajcik, 2005). As teachers learn about new strategies or old strategies in a different context, their enactment will not all be uniform. These different variations demonstrate both individual and group teacher learning during professional development across contexts (Borko, 2004) and provide reasons why understanding how teachers use tools, if at all, from professional development can provide insights into making professional development more educative.

Efforts to design effective instructional practices have been in development across disciplines by various researchers (Guskey, 2002) and often are shared with teachers through professional development. To understand whether what teachers learn in professional development is being used by teachers is an important investment as teacher professional development is a billion dollar enterprise (Sparks & Hirsh, 2000) and it is important to understand what is being used, how much of it is being used, when it is being used, and how it is being used to determine different features of tools from professional development that matters for teacher learning. Understanding the nuances of tools use from professional development will help the field refine its efforts in making professional development more effective and useful.

The results reported below explore variations in the Pathway Project tools that teachers enact because tools can be used to facilitate change in teacher practices. For example, Davis and Krajcik (2005) demonstrated that designing the right learning heuristics for curriculum can make
an impact on teachers’ practices (e.g., pedagogical content knowledge for specific purposes). However, instructional improvement does not occur simply through curriculum. Literature shows that teachers modify what they receive from professional development (Brown, 2010; Grossman, Smagorinsky, & Valencia, 1999). This process of trying to make sense of tools received during professional development also means that teachers will inevitably make changes to these tools (Leko & Brownell, 2011). Thus, another question to consider is, “Do they modify these tools in ways that maintain the integrity of the tools or do they get modified in a way that alters their original purpose?” These are important considerations because we need to understand whether adherence to a particular way of using a tool actually results in better learning outcomes or whether changes can be made without altering the impact of the tools. By exploring how teachers use tools from professional development, we can also understand what gets taken up and enacted, which provides insight into what resonates with teachers or what difficulties they may face when enacting certain practices. In the case of the Pathway Project, where teachers are given many tools to teach, both practical and conceptual in nature, it is important to know whether more of certain types of tools are used by teachers so that future iterations of the Pathway Project can be improved in the interests of both enhanced teacher and student learning.

In this analysis, I focused on teachers’ appropriation of the Pathway Project tools for their practice. The purpose of this analysis was to understand if they took up all of the tools that they were provided over the course of the professional development, and if not, are there reasons why some tools are more readily enacted. In addition, I sought to understand if some tools were taken up soon after being introduced to them as a way to understand if they were more accessible for teachers or if they required more work on the part of the teacher to incorporate into their practice. Finally, I wanted to understand how teachers appropriated the tools – what modifications did
they make and what influence might that have had on their instruction. Findings are organized around what tools teachers took up, when they enacted them, and how they enacted them for their practice as well as whether these tools were activities or skills.

**What Tools Teacher Enacted**

Every time the teachers met in either a full day professional development meeting or after-school professional development workshop they were typically provided with a new concept, tool/strategy, or lesson/activity that they could use in practice. A concept might be the different types of knowledge that a lesson or activity intends to target, a tool refers to actual skills that teachers provide to students, and a lesson includes a fully designed experience that embodies the skills of focus. In using the phrase *fully designed* experience, I mean that the Pathway Project provided specific learning goals and a planned lesson with suggested scripts and assessments. Over the course of the Pathway Project, teachers were exposed to over 30 different tools (ideas/concepts, tools, and/or lessons). These tools ranged from something as simple as a laminated bookmark with sentence stems (e.g., “To understand better, I need to know more about...”) to a 3-hour long tutorial on revising written work into a more polished analytical essay. Data analysis revealed eight main purposes for Pathway Project tools: 1) helping students read complex texts; 2) aiding students in writing about complex texts; 3) guiding students to improve their writing; 4) assisting students in revising their writing; 5) developing students’ understanding of literary terms; 6) facilitating students work with specific texts; 7) preparing students for the Common Core State Standards assessments; and 8) supporting students in discussing literature. Recall that table 5 summarizes the particular tools from the Pathway Project for each purpose as well as whether they were activities or strategies. There were a total of 32 tools across the eight different purposes. Seventeen were activities and 15 were strategies. Tools
for improving student writing (seven strategies) and working with specific texts (seven activities) comprised almost half of all the tools. Moreover, nine tools for reading complex texts (two activities and two strategies) and understanding literary devices (three activities and two strategies) made up an additional set of tools.

In order to understand what tools (including both activities and strategies) teachers enacted from Table 5, I analyzed 96 Pathway Project Literacy Coaches’ observation letters. The coaches were trained to observe each teacher three times throughout the school year, about once every two or three months. From this analysis, cognitive strategies bookmarks, cognitive strategies wall posters, and cognitive strategies blue booklets stand out the most across the 96 observations conducted. Note that these are strategies and not activities (see Table 14 that represents the counts of these observations and all strategies are indicated in bold).

Table 14  

<table>
<thead>
<tr>
<th>Type</th>
<th>Tools</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read complex texts</td>
<td>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets 45</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Guidelines for Reading Texts (Bubble maps, visualization, outline, summary) 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Play-Doh Think Aloud 0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tsunami Think Aloud 0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Write about complex texts</td>
<td>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets 45</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do/What Chart 9</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kelly Gallagher’s Modeling and Real World Writing 5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Work with specific texts</td>
<td>All Summer in a Day Tutorial 12</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>All Summer in a Day Essay 3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Horned Toad Lesson 6</td>
<td>6</td>
<td></td>
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<tr>
<td></td>
<td>Horned Toad Essay 1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eleven Lesson 0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eleven Book Club Strategies 2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Steve Irwin Tutorial with Nonfiction 7</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>
Similar in conceptual focus, these tools all bridge both reading and writing strategies. For instance, the bookmarks include each of the 15 cognitive strategies and 45 sentence stems (three each) to activate students’ reading, thinking, writing, or discussion. The wall posters provide visuals related to each cognitive strategy and also provide a definition for that strategy. For example, the “making connections” poster has a picture of a boy with a thought bubble that includes a globe to represent that students can make connections to their world. The words “making connections” are emblazoned at the top of the poster. Teachers use this poster to illustrate how they want students to make connections during discussions or reading or writing assignments. The blue booklets are similar to the bookmarks in that they provide sentence stems as well; however, the booklets also include blank lines so that students can write in examples of the cognitive strategy as they are analyzing a text. Thus, it is not surprising that these tools would
be enacted the most, as the main purpose of the Pathway Project is to help teachers activate their students’ meta-cognition as they read complex texts and write analytically about texts.

The coaches also observed the teachers using tools that help students revise their writing. However, in less than 10 percent of the observations, the coaches observed the teachers enacting the other types of tools. For example, the Do/What chart (a strategy to deconstruct the directions of an essay prompt into verbs and objects so that students can make a list of what they need to address in their essays) and the Book Club Strategies (strategies that help students demonstrate their understanding of character, setting, plot, and theme) were both observed being enacted only 10 percent of the time. What is also noteworthy is that the coaches did not observe the tools for preparing for Common Core assessments and discussing literature being enacted as frequently as the other tools. However, a possible reason for the lack of use was that California was phasing out the California Standards Tests; thus, it was less likely that teachers would emphasize tools, either activities or strategies that helped facilitate work with this test.

Because there were only three observations per teacher, not everything teachers may have enacted would have been captured through these observations. Moreover, half of the tools are activities that are often taught once, because the content of the lessons were specific to a certain text or were activities that would not occur more than once in a school year. It was not sufficient then to only rely on observations to understand what tools teachers enacted. Thus, I also looked at teachers’ self reports of what tools they used. Analysis of Table 15 represents what the teachers reported using during instruction.

<table>
<thead>
<tr>
<th>Type</th>
<th>Tools</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
</table>

Table 15  Tools Teachers Reported Using from the Pathway Project
<table>
<thead>
<tr>
<th>Read complex texts</th>
<th>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Guidelines for Reading Texts (Bubble maps, visualization,</td>
</tr>
<tr>
<td></td>
<td>outline, summary)</td>
</tr>
<tr>
<td></td>
<td>Play-Doh Think Aloud</td>
</tr>
<tr>
<td></td>
<td>Tsunami Think Aloud</td>
</tr>
<tr>
<td>Write about complex texts</td>
<td>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets</td>
</tr>
<tr>
<td></td>
<td>Do/What Chart</td>
</tr>
<tr>
<td></td>
<td>Kelly Gallagher’s Modeling and Real World Writing</td>
</tr>
<tr>
<td>Work with specific texts</td>
<td>All Summer in a Day Tutorial</td>
</tr>
<tr>
<td></td>
<td>All Summer in a Day Essay</td>
</tr>
<tr>
<td></td>
<td>Horned Toad Lesson</td>
</tr>
<tr>
<td></td>
<td>Horned Toad Essay</td>
</tr>
<tr>
<td></td>
<td>Eleven Lesson</td>
</tr>
<tr>
<td></td>
<td>Eleven Book Club Strategies</td>
</tr>
<tr>
<td></td>
<td>Steve Irwin Tutorial with Nonfiction</td>
</tr>
<tr>
<td>Improve their writing</td>
<td>Do/What chart</td>
</tr>
<tr>
<td></td>
<td>Brushstrokes</td>
</tr>
<tr>
<td></td>
<td>Color-coding of sentences</td>
</tr>
<tr>
<td></td>
<td>Essay Templates</td>
</tr>
<tr>
<td></td>
<td>Vocabulary/Academic English Lessons</td>
</tr>
<tr>
<td></td>
<td>Incorporation of quotes/textual evidence</td>
</tr>
<tr>
<td></td>
<td>Introduction, hook, TAG, summary, thesis/theme</td>
</tr>
<tr>
<td>Revise their writing</td>
<td>Japan: Scuba Hero for Revision</td>
</tr>
<tr>
<td></td>
<td>Revision of Pre-Test</td>
</tr>
<tr>
<td>Understand literary devices</td>
<td>Tutorial on teaching theme with Horned Toad</td>
</tr>
<tr>
<td></td>
<td>Video Clips on Topic and Theme lesson</td>
</tr>
<tr>
<td></td>
<td>Theme (general)</td>
</tr>
<tr>
<td></td>
<td>Personification/Symbolism/Figurative language</td>
</tr>
<tr>
<td></td>
<td>Book Club Strategies/Lessons for characterization, setting,</td>
</tr>
<tr>
<td></td>
<td>plot, and theme</td>
</tr>
<tr>
<td>Prepare for Common Core State Tests</td>
<td>Multiple choice test on Horned Toad/Japan: Scuba Hero</td>
</tr>
<tr>
<td></td>
<td>December Conference workshops that teachers could choose</td>
</tr>
<tr>
<td></td>
<td>from: what does every writer need to know; vocabulary;</td>
</tr>
<tr>
<td></td>
<td>comics and graphic novels; technology; what works in</td>
</tr>
<tr>
<td></td>
<td>writing instruction; rigor; informational texts; project-</td>
</tr>
<tr>
<td></td>
<td>based writing</td>
</tr>
<tr>
<td>Discuss literature</td>
<td>Literature Circles with Fiction</td>
</tr>
<tr>
<td></td>
<td>Literature Circles with Non-fiction</td>
</tr>
</tbody>
</table>

N.B. Zero values indicate tools not included on the survey. Strategies are also indicated in bold.

Consistent with the coach observations, the teacher survey also highlights the popular use of the suite of cognitive strategies tools for both reading and writing purposes. It is important to note that the survey that asked these teachers what they used in their classrooms did not include all of
the tools reflected in Table 5 because they were not of much interest to the Pathway Project researchers. So, even though some values were zero in Table 15, it was only because they were not included in the survey. The tools that were not included in the survey but were provided to the teachers in the professional development were the Eleven Book Club Strategies, Horned Toad Essay, Do/What Chart, Kelly Gallagher’s Modeling and Real World Writing, Incorporation of quotes/textual evidence, Introduction work, tutorial on teaching theme with Horned Toad, and Theme (general).

Taken together, Tables 14 and 15 demonstrate how cognitive strategies were highly enacted by teachers in both the observations and their self-reports. Strategies tended to be observed more than activities; however, if activities are considered as more static lessons than these observations make sense. Moreover, even though only 3% of the observations reported the revision activity being used, over 90% of teachers reported enacting the revision activity, which demonstrates why it is important to have multiple sources of data around the same phenomena. These findings beg the question as to why that may be.

**Ease of implementation.** Another analysis I applied to this data is what I call *ease of implementation for teacher enactment*. I determined the ease of implementation for each tool by drawing on my own experiences as a former middle school humanities teacher (similar to the teachers in this study) and by confirming my designation with the Pathway Project facilitator (α=.80). Recall, the criteria I used to determine ease of implementation: familiarity, prior use, preparation time, duration of implementation, accessibility to students, time needed during professional development to discuss the tools with teachers, and general applicability across texts. Member checks are an important step in ensuring that I was capturing participants’ thinking, particularly those who were designing the tools themselves (Merriam, 2009; Patton,
An analysis of the tools using this framework resulted in three categories: *easy to implement, moderately easy,* and *more difficult*. Thus, drawing on this framework, I determined that much of the easy to implement tools for teacher enactment were more numerously observed and reported as compared to the moderately easy or more difficult tools to implement (see Table 16).

Table 16  
*Ease of Implementation for Teacher Enactment of Pathway Project Tools*

<table>
<thead>
<tr>
<th>Type</th>
<th>Tools</th>
<th>Level of Ease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read complex texts</td>
<td><strong>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets</strong>&lt;br&gt;<strong>Guidelines for Reading Texts (Bubble maps, visualization, outline, summary)</strong>&lt;br&gt;Play-Doh Think Aloud&lt;br&gt;Tsunami Think Aloud</td>
<td>Easy</td>
</tr>
<tr>
<td>Write about complex texts</td>
<td><strong>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets</strong>&lt;br&gt;<strong>Do/What Chart</strong>&lt;br&gt;Kelly Gallagher’s Modeling and Real World Writing</td>
<td>Easy, Moderate</td>
</tr>
<tr>
<td>Work with specific texts</td>
<td><strong>All Summer in a Day Lesson</strong>&lt;br&gt;<strong>All Summer in a Day Essay</strong>&lt;br&gt;<strong>Horned Toad Lesson</strong>&lt;br&gt;<strong>Horned Toad Essay</strong>&lt;br&gt;<strong>Eleven Lesson</strong>&lt;br&gt;<strong>Eleven Book Club Strategies</strong>&lt;br&gt;<strong>Steve Irwin Lesson with Nonfiction</strong></td>
<td>Moderate</td>
</tr>
<tr>
<td>Improve their writing</td>
<td><strong>Brushstrokes</strong>&lt;br&gt;<strong>Color-coding of sentences</strong>&lt;br&gt;<strong>Essay Templates</strong>&lt;br&gt;<strong>Vocabulary/Academic English Lessons</strong>&lt;br&gt;<strong>Incorporation of quotes/textual evidence</strong>&lt;br&gt;<strong>Introduction, hook, TAG, summary, thesis/theme</strong></td>
<td>Moderate</td>
</tr>
<tr>
<td>Revise their writing</td>
<td><strong>Japan: Scuba Hero for Revision</strong>&lt;br&gt;Revision of Pre-Test</td>
<td>More Difficult</td>
</tr>
<tr>
<td>Understand literary devices</td>
<td><strong>Theme (general)</strong>&lt;br&gt;<strong>Book Club Strategies/Lessons for characterization, setting, plot, and theme</strong>&lt;br&gt;Video Clips on Topic and Theme lesson&lt;br&gt;Tutorial on teaching theme using <em>Horned Toad</em>&lt;br&gt;<strong>Personification/Symbolism/Figurative language</strong></td>
<td>Easy, Moderate</td>
</tr>
</tbody>
</table>
The fact that many of the tools were *moderately easy to implement* meant that teachers had to work with the Pathway Project tools to integrate them into their lessons. About an equal amount were activities or strategies. Moreover, teachers drew on a wide range of tools, from *easy* to *more difficult*, which meant that the teachers were willing to use Pathway Project tools for different learning goals and that even if the tool was considered *more difficult* to work with they used the tools to help support their students’ learning of writing.

**When Teachers Appropriated Tools in Practice**

I also conjectured that when tools were taken up over the course of the Pathway Project professional development program also speaks to the inherent ease or difficulty in implementation of a tool. That is, tools that were less complicated for teachers to put into practice would be ones that they put into practice more immediately after participating in the professional development than those that required more time to make sense of and integrate into their practice. To examine the timing of the adoption of the tools, I identified six different modules for the Pathway Project professional development program in terms of their intended goals and when they were introduced to teachers.

- October: M1: To teach and promote the use of cognitive strategies
- November: M2: To work with non-fiction and to scaffold students in writing an interpretive essay
- December: M3: To scaffold students to meet the Common Core Writing Standards
- January: M4: To support students in revising their pre-tests into analytical essays
- February: M5: To support the literacy practices of students in all subject areas

<table>
<thead>
<tr>
<th>Prepare for Common Core State Tests</th>
<th>December Conference workshops that teachers could choose from: what does every writer need to know; vocabulary; comics and graphic novels; technology; what works in writing instruction; rigor; informational texts; project-based writing</th>
<th>Easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss literature</td>
<td>Literature Circles with Fiction</td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>Literature Circles with Non-fiction</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

N.B. Strategies are in bold.
May: M6: To further work with the Common Core and Writing across the curriculum

Then I mapped the tools introduced to the teachers in the full day and afterschool portions of the program and when they were observed as being enacted across the different months of the modules. I also grouped the tools by implementation level to demonstrate how the *easy to implement* tools were enacted more across the different months/modules than the *moderately easy* or *more difficult* tools. Note that Module 6 is not included in Table 17 because Module 6 was the last day of the Pathway Project professional development meetings and all 96 observations were completed prior to this date. In Table 17, I also listed the different tools and noted when they were introduced (as indicated with an X). I showed how they persisted over the school year by the presence or absence of asterisks (*). Moreover, strategies are in bold. Analysis of Table 17 shows that both the *easy to implement* and *moderately easy to implement* tools were observed being used throughout the year more than the *more difficult to implement* tools. It is important to acknowledge that when tools were introduced also made a difference in how many opportunities teachers would be able to use a tool as well as whether it was an activity or skill.

Table 17 *Presence of Tools, by Implementation Level, During Observations across Five Modules*

<table>
<thead>
<tr>
<th>Level</th>
<th>Tools</th>
<th>M1 Oct</th>
<th>M2 Nov</th>
<th>M3 Dec</th>
<th>M4 Jan</th>
<th>M5 Feb</th>
<th>March</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>Cognitive Strategies</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Guidelines for Reading Texts</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Do/What Chart</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Theme with Horned Toad</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Theme (general)</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Play-Doh Think Aloud</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Tsunami Think Aloud</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Multiple choice tests</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Moderately</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy</td>
<td>Book Club Strategies</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td><em>All Summer in a Day Lesson</em></td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td><em>All Summer in a Day Essay</em></td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Eleven Book Club Strategies</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Eleven Lesson</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Kelly Gallagher’s Modeling</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Vocabulary/Academic English</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Introductions for Essays</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td><em>Steve Irwin Tutorial</em></td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Color-coding of sentences</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
<td>X*</td>
</tr>
<tr>
<td></td>
<td>Lit Circles with Fiction</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Lit Circles with Non-Fiction</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Table 17 allows me to answer five questions: 1) How many of the tools are used right away?; 2) Are there some tools that are used and used right away and then drop off?; 3) Are there some tools not used right away and then used?; 4) Are there some tools that are not used at all?; and 5) How do answers to questions 1 to 4 relate to the ease of implementation?

**Tools used right away.** About half of the tools were used within the same month they were introduced (e.g., X*). Of these tools cognitive strategies and book club strategies were used throughout the entire year as indicated by the presence of an asterisk under each module or month. Other tools were frequently observed being used (e.g., not being used during one module or month), such as the Do/What chart, the *Horned Toad* lesson, essay, and theme, Color-coding of sentences, and author’s craft.

**Tools used right away, but then drop off.** Some tools were used almost right away, but then were not seen used later on in the year. Tools like guidelines for reading texts, theme (general), Kelly Gallagher’s modeling, the *Steve Irwin* tutorial, and literature circles with fiction may have been used early in the school year, but after the second module they were not present in any of the observations made.

**Tools that took longer to be used.** A handful of tools took a little longer than others to become present in the observations after they were introduced. The *Eleven* lesson, December conference, brushstrokes, incorporation of quotes, *Japan: Scuba Hero* lesson, and the revision lesson took at least another module cycle to be present in an observation.
Tools that never got used. Another handful of tools were never captured in observations, despite being introduced throughout the year. Literature circles with non-fiction, Play-doh think aloud, the tsunami think aloud, and the multiple choice exams were introduced in modules 2, 4, and 5 yet were not observed being used in any of the 96 observations.

Relation of use to the ease of implementation. Regardless of how many opportunities teachers had to use a tool, it is interesting in that many of the easy to implement and moderately easy to implement tools were used within the same month they were introduced. About 65% of the moderately easy to implement tools were also used almost immediately, but about half were not. Similarly, the more difficult to implement tools of revising Japan: Scuba Hero or the pre-test were observed being used a month or two after being introduced. In terms of persistence, cognitive strategies (easy) and book club strategies (moderately easy) were observed being enacted every month observation(s) occurred. Moreover, a greater number of easy to moderately easy to implement tools also persisted almost every month (e.g., All Summer in a Day lessons, Horned Toad lessons, Topic v. Theme lessons, color-coding sentences), as opposed to the more difficult to implement tools (e.g. revision). Finally, among tools that were not immediately enacted, more moderately easy to implement tools were enacted one or two months later than more difficult to implement tools. Essentially, what these results demonstrate is that easy to moderately easy to implement tools are more readily used by teachers than others.

How Teachers Enacted Tools

Finally, I turn to consider how the teachers enacted and appropriated the tools for their practice. This is an important consideration because how teachers modify tools has consequences for teachers, student learning, and implications for professional development design (Grossman, Smagorinsky, & Valencia, 1999). Of course, teachers will modify materials and resources for
their practice (Leko & Brownell, 2011; Grossman et al., 2000; Kazemi & Hubbard, 2008). They need to be designed so that they can be adapted for local contexts (Squire, MaKinster, Barnet, Luehman, & Barab, 2003). On the other hand, if more tools of certain implementation levels are being appropriated, then that also indicates how important it is for professional development designers to take into consideration how tools are introduced and opportunities for teachers to adapt them during and after professional development.

Data analysis revealed several important findings. First, the teachers appropriated the tools in a variety of ways. Second, tools that were easy to implement were appropriated more than tools of moderate ease or more difficult ease to implement for teacher enactment. Each of these findings is described below.

**Different patterns of appropriation.** The major finding from this analysis is the creation of a framework that described the purposes for appropriating the Pathway Project tools and how these patterns were exemplified in their teaching (see Table 18).

**Table 18 Appropriation of Tools Framework**

<table>
<thead>
<tr>
<th>Purpose of Appropriation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizing Student Learning</td>
<td>Rearranging the sequence of tasks or creating additional organizational protocols to facilitate student activity</td>
</tr>
<tr>
<td>Incorporating Competing Professional Development Goals</td>
<td>Incorporating or combining other professional development initiatives or policies together</td>
</tr>
<tr>
<td>Accommodating Student Learning Needs</td>
<td>Making changes to the tools to decrease or increase complexity</td>
</tr>
<tr>
<td>Addressing Gaps in the Curriculum</td>
<td>Adding additional components to the Pathway Project curriculum not provided by the program</td>
</tr>
<tr>
<td>Engaging Students</td>
<td>Creating or changing tools to engage students in the learning of cognitive strategies</td>
</tr>
</tbody>
</table>
**Organizing student learning.** The majority of appropriations came in the form of organizing learning experiences for students. The teachers would also create different tools, pulling disparate components of the Pathway Project tools together into packets that walked students through the reading, interpretation, and writing of complex textual analysis. Other ways they re-organized their students’ learning was to rearrange the sequence of the curriculum or to only use the basic components of a curriculum to address the demands of time and pacing. Moreover, some teachers added additional organizational components such as more colors during the color-coding process (e.g., red for topic sentence, orange for syntax, and brown for concluding sentence). Take Mario (a pseudonym), for example. One way he reorganized his students’ learning was by creating a Socratic seminar protocol sheet to help his students hold discussions about the text, “*The Horned Toad.*” He first created a page to show two discussion groups (A and B), pairing each student to another. The reason for the pairing is that while group A is discussing, group B is observing the discussion and keeping track of their partner’s participation on a score sheet. During the Socratic Seminar itself, Mario’s students used questions he projected on the screen in his room if students needed discussion points. Moreover, he would randomly draw Popsicle sticks that had cognitive strategies written on them and used them as prompts to lead the students’ discussions. In this way, Mario organized his students’ discussion by taking different tools from the Pathway Project (cognitive strategies, Socratic Seminar, Horned Toad) and incorporating them into a class discussion. Another teacher, Leila, created a packet for her students to work with the text, “*All Summer in a Day.*” In this packet, she prompted students to work with the text sequentially, first, prompting them to tap into prior knowledge, then front loading vocabulary, and then having them create a plot map, a circle map, write a letter as one of the characters, a summary page, an exercise on the difference between
topic and theme, and finally a summary page that had students write about the big ideas presented in the text. Both, Mario and Leila, demonstrate how teachers have purposefully organized their students’ learning through the Pathway Project.

**Incorporating other professional development.** While the Pathway Project tool was an important focus for the teachers in this study, their district also had other professional goals for the teachers. In order to address the demands of both the Pathway Project and their other professional development activities, some teachers would combine different tools together to meet these demands. For example, thinking maps and graphic organizers, a district-wide initiative, were incorporated into the texts that the teachers were given from the Pathway Project. Other teachers would also use the cognitive strategies with Sheltered Instruction Observation Protocols (Echevarria, Short, & Powers, 2006) and depth and complexity icons, a strategy used with Gifted and Talented Education students. Betty, another teacher, used thinking maps extensively, such as a circle map to help her students analyze a folk tale or incorporated another school initiative, technology, by using a SMART board during instruction to help students learn different cognitive strategies. During one lesson, Sarah, had her students analyze “All Summer in a Day” by using both a cognitive strategy and a depth and complexity icon together in their writer’s notebooks.

**Accommodating student learning needs.** Another prevalent pattern of appropriation was adapting the Pathway Project tools as accommodating student learning needs. A common theme from the focus group interviews revealed that the teachers felt the tools from the Pathway Project were too advanced for the majority of their students who were either English language learners, special-needs students, or below grade level in terms of reading and writing. They would often change the complexity of the curriculum materials by reducing the cognitive demands of writing
prompts, by replacing texts given to them with other texts with less demanding language, by chunking lessons across multiple days rather than one single day as they were intended to be given, and by creating new tools with more scaffolds than were given to them. Mayra was one of these teachers. She would rewrite Pathway Project prompts that her students were given to make them more accessible and more manageable to address within one class period. Moreover, she also created a voluntary afterschool writing club that provided students with additional supports that she could not provide her students during regular instruction.

**Addressing gaps in the curriculum.** Another way the teachers appropriated the Pathway tools was addressing gaps in the curriculum given to the teachers. The curriculum from the Pathway Project addressed the teaching of analytical writing, specifically through the analysis of theme in both fiction and non-fiction texts. The curriculum also included ways to scaffold students in the different components of an analytical essay, such as an introduction, body paragraphs, conclusion, a thesis about the theme, and textual evidence. These lessons all used different texts to be taught over two or three days. Some of the teachers felt that the curriculum was not comprehensive enough and would develop other tools or materials to address such gaps. For example, Joseph felt that his students needed to develop a deeper understanding of character development and how characters can be dynamic or static, and how certain symbols in the Pathway Project texts can demonstrate this quality in the characters they were reading about. This component was not given to the teachers by the Pathway Project facilitators; however, teachers were encouraged by the facilitators to adapt and make these lessons their own. Other tools were created to address content standards, to expand concepts, and to scaffold students even more than what was covered by the Pathway Project curriculum.
**Engaging students.** Finally, many teachers were concerned about the complexity level of the materials disengaging students so incorporated technology, created new tools to capture student interests, and developed games incorporating the Pathway Project tools for students. For example, Joan developed a matching game for students to identify and define what the cognitive strategies were. Other teachers incorporated the cognitive strategies into silent reading activities or when discussing other types of writing.

**Ease of implementation level of tools appropriated.** I also examined whether teachers appropriated certain tools more than others and if the ease of implementing certain tools supported this hypothesis. For each appropriation type, I listed the tools that teachers were appropriating and then mapped on the ease of implementation level (see Table 19).

<table>
<thead>
<tr>
<th>Purpose of Appropriation</th>
<th>Tools Appropriated</th>
<th>Implementation Level</th>
<th>Example Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizing Student Learning</td>
<td>Cognitive Strategies Do/What charts Theme (general) <em>All Summer in a Day</em> lesson</td>
<td>Easy Easy Easy Moderate</td>
<td>Created packets that incorporated cognitive strategies, graphic organizers, writing prompts, essay components; Creating check lists of tasks and walking students through the list</td>
</tr>
<tr>
<td></td>
<td>Book Club Strategies Color coding sentences December conference</td>
<td>Moderate Moderate Moderate Moderate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Figurative language <em>Horned Toad</em> lesson</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Parts of an introduction</em> <em>Steve Irwin</em> lesson Topics v. Theme video clips <em>Japan: Scuba Hero</em> lesson</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Incorporating Competing Professional Development Goals</td>
<td>Cognitive Strategies <em>All Summer in a Day</em> lesson</td>
<td>Easy Moderate</td>
<td>Thinking maps with theme or cognitive strategies; Depth and complexity icons with cognitive strategies; Using Pathway Project tools to help</td>
</tr>
<tr>
<td></td>
<td>Book Club Strategies Brushstrokes Color coding sentences <em>Eleven</em> lesson</td>
<td>Moderate Moderate Moderate Moderate</td>
<td></td>
</tr>
<tr>
<td>Accommodating Student Learning Needs</td>
<td>Cognitive Strategies</td>
<td>Easy</td>
<td>Using stories at grade level or below-grade level to teach cognitive strategies; Changed the writing prompts to be more direct; Chunking lessons across multiple days rather than in one period</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------------------</td>
<td>------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Do/What chart</td>
<td>Easy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theme (general)</td>
<td>Easy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Summer in a Day lesson</td>
<td>Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book Club Strategies</td>
<td>Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color coding sentences</td>
<td>Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figurative language</td>
<td>Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horned Toad lesson</td>
<td>Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parts of an introduction</td>
<td>Moderate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Japan: Scuba Hero lesson</td>
<td>More difficult</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N.B. Strategies indicated in bold</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The majority of tools appropriated were *easy to moderately easy to implement* for teachers, particularly the cognitive strategies, Book Club strategies, *All Summer in a Day* lessons, *Horned Toad* lessons, and color-coding sentences. Note how most of the tools appropriated by teachers who are engaging their students are strategies and not activities. The adaptation of these tools demonstrates that teacher learning occurs around tools that are easy to work with and use and can
serve different purposes, particularly the cognitive strategies. Tools that are harder to adapt
require more time investment and resources, which may explain why certain tools are either not
appropriated or not used at all by some teachers. Further research is needed to trace how
appropriation patterns affect the level of teacher implementation.

Discussion

Results from these analyses suggest that teachers are willing to appropriate a wide range
of tools if they find that the tools serve the purposes that they have for their teaching and/or
student learning. Though some tools are appropriated more than others (e.g., cognitive
strategies), these highly appropriated tools suggests that tools that are versatile or generally
applicable have a better chance of being used and adapted for local contexts. Strategies also
tended to be used more than activities which may be due to the sensibility of enacting an activity
more than once. Finally, results from Table 19 suggest that teachers will appropriate tools that
are *moderately easy to implement*. This notion of ease of implementation for teacher enactment
has implications on different design phases of professional development. First, before
professional development sessions occur, facilitators can select and choose what tools they will
provide teachers with and consider if they will be more likely enacted or appropriated based on
the ease of implementation. They can do so by selecting a suite of tools effective towards their
own goals and survey teachers prior to professional development according to their familiarity
and use of these different tools. Moreover, during professional development, facilitators can
provide time for teachers to collaborate and discuss how they are enacting different tools and for
what purposes. Providing time for them to adapt them and tailor them to their own classroom
context. Finally, after professional development has ended, facilitators can provide support for
teachers as they make sense of these different tools towards the aim of improved teacher and
student learning by leading them through collaborative planning sessions or by observing how their tools are used during lessons and if adaptations had intended consequences. Together, these findings support what the literature has already shown where teachers will adapt practices if they see positive results and that they will adapt practices if they know and understand how it will benefit their students (Brophy & Allemon, 1991; Guskey, 2002; Leko & Brownell, 2011).

**Limitations**

Though the three resulting findings have provided insight into what, when, and how teachers appropriated the Pathway Project tools, each analysis also had some limitations. In terms of what was being used, more teacher observations are required to capture what teachers use throughout the school year and during each module. Three observations do not truly capture everything a teacher does, as the teacher self-reports showed teachers using more than what was observed being used or enacted. The survey items also needed to be more comprehensive than what was asked to include all possible tools so that claims can be more corroborated for how many times each tool was used and what were some ways tools were used. In terms of when tools are used, the issue of limiting to three observations also did not provide a complete picture of when tools are used. A weekly check in may have been a better way to track when tools were being used. Finally, how they were being used also should be supported by member-checks to confirm or disconfirm how tools were being appropriated.
CHAPTER 5

Results for Research Question 2

In the previous chapter, I explored teachers’ enactment of the Pathway Project tools and found that they enacted a wide range of tools for various reasons. Another dimension of my framework that I want to draw attention to is teacher cognition. While teacher enactment is often a public act, teacher cognition is often more about what teachers are thinking as they plan, teach, and assess. Teachers can choose to make their thinking visible by making their decisions public and acting on them either through lesson plans or through what they choose to use as they teach. Thus, I am choosing to focus on teachers’ perceptions of the Pathway Project professional development program in order to understand what teachers perceived of the Pathway Project and how these perceptions became evident in what teachers write about as they reflected on their experiences, as well as, what they expressed in focus groups. Moreover, I want to understand if perceptions are influenced by and influences students and students’ learning.

Socio-cultural theory focuses on a system of activities, thus focusing on teacher cognition/perceptions allows insight into one part of the system of the professional development activity (Greeno, Collins, & Resnick, 1996). Teachers’ enactment is another part of the system, teacher cognition is another. The two intersect with each other through teaching. Thus understanding how teacher perceptions mediate teachers’ enactment of the Pathway Project tools provides valuable insights. These insights are an added dimension to understand how teachers make sense of professional development, learn from professional development, and come to manifest professional development.

I will present my findings in two parts: first, I will present a description of teacher perceptions and then a description of the impact of teacher perceptions on students. I ask three
questions related to teachers’ perceptions. 1) What are teachers’ perceptions of the Pathway Project? 2) Do the teachers have different perceptions about the implementation level of the tools? 3) Are there differences between the levels at which they implement Pathway Project tools and their perceptions? In addition, I want to understand the relationship between teacher and student perceptions and student outcomes. I ask two questions: 1) Do students of teachers who implement Pathway Project at different levels perceive the program differently? 2) Is there a difference in student outcomes based on their teachers’ levels of implementation?

**Teachers’ Perceptions Related to Enactment**

Data analysis reveals several important themes related to teachers’ perceptions of the influence of the Pathway Project: 1) the cognitive strategies were particularly useful in supporting their students’ reading skills; 2) the revision strategies were particularly useful to support their students’ writing skills; 3) the assessment tools were problematic for students; 4) the change in the assessment tools and the issue of time as areas for improvement, and 5) the general positive impression of the Pathway Project as resonating with teachers. These perceptions, in turn, influenced what they enacted in their classrooms, but also what they wrote about in their reflections or what they discussed during the focus group interviews.

How do teachers perceive the pathway project? To answer this question, I looked at their perceptions of students’ reading and also of students’ writing. More specifically, I looked at how the teachers perceived the tools helped them support students’ reading and writing.

**The benefits of cognitive strategies to support students’ reading skills.** Out of the 32 Pathway Project tools that the teachers were provided, they mainly wrote about or discussed how useful they found the different cognitive strategies to be of great support when teaching students reading skills (66%). They also attributed cognitive strategies as a reason why their students
become better readers (37%). Moreover, 43% said they would repeat the use of cognitive strategies and 17% cited the cognitive strategies as the most helpful aspect of the Pathway Project professional development program (see Table 20).

Table 20  
*Teachers’ Perceptions of Pathway Project Tools for Reading Instruction*

<table>
<thead>
<tr>
<th>Question</th>
<th>Tools</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please describe one strategy, activity or lesson you used this year that has helped your students to become better strategic readers.</td>
<td><strong>1. Cognitive Strategies</strong></td>
<td>23</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>2. Specific Texts (e.g., Scuba Hero, Steve Irwin)</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>3. Annotating paragraphs</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>4. Author’s craft</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>5. Graphic organizers</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6. Book club activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>7. Brush strokes</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>8. Context clues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assuming that we do see a pattern of growth in the Pathway CPEC Project, to what do you attribute that growth?</td>
<td><strong>1. Cognitive Strategies</strong></td>
<td>13</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>2. Writing Strategies</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>3. Color coding sentences</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>4. Power Points</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>5. Provided Lessons</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6. Analogies</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>7. Assessments</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>8. Graphic organizers</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>9. Literature</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>10. My colleagues</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>What I will repeat next year, reinforce, change, or add to my curriculum based on what I see.</td>
<td><strong>Repeat</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>1. Cognitive strategies</strong></td>
<td>15</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>2. Revising essay components</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>3. Color coding sentences</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>4. Do/What chart</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>5. Brushstrokes</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6. Author’s craft</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>7. I am Poem…</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>8. Pre-writing activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>9. Modeling think-alouds</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Change</td>
<td><strong>2. Begin the year with cognitive strategies</strong></td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>3. Working with the prompts</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>
Overall, how has your experience in the Pathway Project been this year? What has been most helpful to you?

<table>
<thead>
<tr>
<th>Helpful</th>
<th>1. Cognitive strategies</th>
<th>6</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Given materials</td>
<td>6</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>2. Training components</td>
<td>4</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>3. Essay templates</td>
<td>3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>4. Engaging with the literature</td>
<td>3</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>5. Color coding sentences</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6. Do/What chart</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>7. Brushstrokes</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>8. Teaching Writing</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Across the four reflections questions, the teachers perceived the cognitive strategies to be the most beneficial and were the most mentioned tools ranging from 17% to 66% of the total number of responses. For example, from the question that asked about their overall experiences, 17% of the respondents cited cognitive strategies as being the most helpful, one of two aspects of the Pathway Project that were cited as being most helpful. Similarly, when asking respondents about what helped their students become better readers, 66% of the respondents cited cognitive strategies. A typical reflection response to this same question demonstrates the prevalence of cognitive strategies as a reason why students became better readers:

I used the cognitive strategies bookmarks quite often. As we read the text, I have my students complete a pre-assigned sentence starter. If the students write something of substance, I continue asking questions so we can go deeper into the meaning or the message of the text. I am glad to say that this technique has led the class into very deep and engaging conversations. [Mario]
Mario is not alone in this sentiment. His quote suggests that the teachers saw the cognitive strategies as a tool to use as a springboard for other aspects of the lesson, such as using it as part of sustained silent reading or before reading a text. It also illustrates how versatile the cognitive strategies are and that the teachers appreciate that aspect.

Do some cognitive strategies stand out more than others? There are 15 cognitive strategies. I reviewed the responses to determine if they identified particular ones as being more useful for supporting students’ reading. Data analysis revealed that there was a pattern in which cognitive strategies they found particularly useful. These include adopting an alignment, visualizing, making connections, and/or predicting. It is noteworthy that these four were singled out as particularly helpful as they are strategies that can be applied strategically during the reading process. For example, one teacher wrote:

   My students enjoyed the visualizing, making connections, predicting, and adopting an alignment strategy. I think that these cognitive strategies were important because they provided a framework to analyze and discuss the literature. [Mary]

Mary’s idea of these specific cognitive strategies providing “a framework to analyze and discuss the literature” echoes that of her colleagues who found that specific cognitive strategies resonated with their students.

Teachers’ comments in the focus groups support these findings about the general positive perceptions of the cognitive strategies. They expressed the value of these strategies for learning to read. For example, one question asked what the teachers would tell someone unfamiliar about the Pathway Project. In response, the group immediately suggested the Pathway Project is the cognitive strategies and they particularly mentioned how the cognitive strategies give students a purpose while reading.
It was a way to give students a purpose for reading too, a clear purpose for both the teacher and the students. They’re thinking strategies…ways of making sense of what they’re reading. Because the readers do describe these. It is teaching these students breaking down all these things. [Focus Group 3: 7th Grade, Lion Middle School]

Here, the teachers perceive the cognitive strategies as thinking strategies and benefitting reading activities. Moreover, the teachers state that they can teach students to use cognitive strategies to break down their reading assignments. All of the focus six focus groups contained this sentiment.

**The benefits of tools to revise writing.** Another pattern in teachers’ perceptions was the utility of tools to help them teach their students revision strategies. The central finding from this analysis is that the teachers perceived that color-coding sentences, revising written work, and focusing on figurative language helped students become better writers. Of the 32 teachers, 14 wrote about color-coding as being particularly valuable. For some teachers, they thought color coding was a useful tool because it would help kids enjoy the work of revising an essay. Color coding is a strategy where students are to identify the type of sentences they have line by line in their written work. In general, there are summary sentences, textual evidence sentences, and commentary sentences. The following quote exemplifies this sentiment: “Teaching students to identify essay sentences with the colored pencils was extremely helpful in teaching students the important elements of an essay. Plus, they enjoy using colored pencils. They are learning something very important while enjoying it.” [Karen] Other teachers commented that “practicing the same strategies for different texts and then revising their work (especially with color) to see what they individually need to work on...is key for [students].” [Ramona] They saw color coding as useful for helping students identify different parts/elements of an essay. Using this strategy enables students to see what element their essay may be missing. Teachers also picked up on the fact that color coding might also make the work of revising an essay more enjoyable as it is
different from the usual feedback students may get from peers or their teachers (see Table 21).

Of the 32 teachers, 11 perceived color coding as useful for self evaluation whereas three saw it more as a motivational tool.

Table 21  Teachers’ Perceptions of Pathway Project Tools for Writing Instruction

<table>
<thead>
<tr>
<th>Question</th>
<th>Tools</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please describe one strategy, activity or lesson you used this year that has helped your students to become better analytical essay writers.</td>
<td>1. Color coding sentences</td>
<td>14</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>2. Revising different essay components</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>3. Cognitive strategies booklets</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>4. Figurative language</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>5. Brush strokes (e.g., participles and absolutes)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>6. Analogies</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>7. Specific texts (e.g., Horned Toad)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>8. Do/What Chart</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>9. Persuasive speeches</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>10. Thinking maps</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Assuming that we do see a pattern of growth in the Pathway CPEC Project, to what do you attribute that growth?

<table>
<thead>
<tr>
<th>Tools</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive Strategies</td>
<td>13</td>
<td>37</td>
</tr>
<tr>
<td>2. Writing Strategies</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>3. Color coding sentences</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>4. Power Points</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>5. Provided Lessons</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>6. Analogies</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. Assessments</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. Graphic organizers</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. Literature</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. My colleagues</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

What I will repeat next year, reinforce, change, or add to my curriculum based on what I see.

<table>
<thead>
<tr>
<th>Tools</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive strategies</td>
<td>15</td>
<td>43</td>
</tr>
<tr>
<td>2. Revising essay components</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>3. Color coding sentences</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>4. Do/What chart</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>5. Brushstrokes</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>6. Author’s craft</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. I am Poem…</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. Pre-writing activities</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. Modeling think-alouds</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Change

<table>
<thead>
<tr>
<th>Tools</th>
<th>N</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Work on different parts of an essay</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>2. Begin the year with cognitive strategies</td>
<td>6</td>
<td>17</td>
</tr>
</tbody>
</table>
3. Working with the prompts 2 5
4. Types of texts we work with 2 5
5. Focus on key points 1 2
6. Brushstrokes for all classes 1 2

Add
1. Working on different essay components 7 20
2. Academic language and grammar 3 8
3. More grade appropriate texts 1 2
4. Create similar writing prompts for all texts 1 2
5. Recipe frameworks 1 2
6. Writing opportunities 1 2
7. ELD strategies 1 2
8. Graphic organizers 1 2

Overall, how has your experience in the Pathway Project been this year? What has been most helpful to you?

<table>
<thead>
<tr>
<th>Helpful</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive strategies</td>
<td>6 17</td>
</tr>
<tr>
<td>1. Given materials</td>
<td>6 17</td>
</tr>
<tr>
<td>2. Training components</td>
<td>4 11</td>
</tr>
<tr>
<td><strong>3. Essay templates</strong></td>
<td>3 8</td>
</tr>
<tr>
<td>4. Engaging with the literature</td>
<td>3 8</td>
</tr>
<tr>
<td><strong>5. Color coding sentences</strong></td>
<td>2 5</td>
</tr>
<tr>
<td>6. Do/What chart</td>
<td>2 5</td>
</tr>
<tr>
<td>7. Brushstrokes</td>
<td>2 5</td>
</tr>
<tr>
<td>8. Teaching Writing</td>
<td>1 2</td>
</tr>
</tbody>
</table>

Thus, among these reflection questions, teachers perceived the usefulness or benefits of helping students revise different components of an essay or color coding sentences as one of the most helpful tools. The color coding strategies were also a part of the set of tools that can help teachers support students with revision of their writing. They also found essay templates, working with academic language, and grammar useful as well, ranging anywhere from 8% to 40% of the responses.

In the focus group interviews, the teachers also positively remarked on the color-coding sentences technique for teaching writing. One teacher, from Focus Group 3: 7th Grade, Lion Middle School, stated:

I did the color coding with my kids when they were doing a poem response before the STAR test and they wrote their own, like we did all of the examples that came
with the packet, but then wrote their own and then they traded and they color coded each other’s and it was so like they picked apart each other. They were so into it, you know and they already know what commentary to use in their classroom, which is great.

Two points can be inferred this quote. The teachers perceived that students learned how to assess their own and each other’s work and the teachers’ adapted the materials for other lessons. They were given the color coding to use with essays. However, the teachers also found this to be a useful tool for other writing tasks, such as poems.

Other aspects of revising their students’ writing using the Pathway Project tools involved working on the hook, the thesis or theme of the texts they read, transition statements, topic sentences, incorporating quotes into the essays, incorporating commentary, and overall grammar and style, including academic vocabulary. The teachers all found these tools to help their students become better writers and were pervasive in their reflections and focus groups.

Beyond the teachers’ positive perceptions about what supported their instruction of reading and writing, teachers also raised a number of issues that were not captured in the open-ended reflection questions, but rather in the focus groups.

**Issues with assessment materials.** The focus group responses, though also generally favorable of the Pathway Project, did reveal some areas of improvement. Some of these themes center on the impact of the Pathway Project on students, how the Pathway Project can be improved, and suggested changes that can be made. First, they found the assessment materials particularly problematic. Some teachers expressed the difficulty level of the materials or that the assessment did not truly capture all of the learning or work students were capable of demonstrating. These difficulties were related to the composition of the students within the class. The teachers often discussed these issues in relation to what track their students were placed in at the beginning of the school year. Students were placed into four different tracks based on
previous performance on the California Standards Test: Intervention, Benchmark, Strategic, and Honors. It is not surprising that they would see differences among students in terms of the effectiveness of the Pathway Project as teachers often differentiate lessons to meet their students’ needs (Gregory & Chapman, 2007). According to teachers, Strategic and Honors students seem to benefit from the program more than Benchmark or Intervention students because they felt the Strategic and Honors students came in with better prior skills. The following exchange among three teachers (from Focus Group 3: 7th Grade, Lion Middle School) captures this perspective:

They [the pre and post-test readings] were difficult. It was very difficult reading for them [the intervention group] so I would read it to them just like you guys [the Pathway Project] had said, but even it was still hard it was very hard.

I would say the same thing for my strategic kids is that even though I could see them getting better structurally in their writing they couldn’t access the texts any better on the post than they could on the pre, really.

My benchmark was a really low benchmark. I didn’t see a great amount of change. The thing with my strategic [students] I saw more change because of the sentence starters and the fact that they knew where they had to go and what they had to do. I saw much better organization even with benchmark but not where they went with the theme and I…but still strategic did better and only it wasn’t my focus group. They did better because they’ve had structure it was really structured for them.

This exchange demonstrates teachers’ different experiences with students depending on the track they were assigned. There was a general consensus that the readings were too hard for most of the students, but some teachers felt that Strategic students did better than Benchmark students because there was more structure for the Strategic students in terms of sentence starters and essay templates. Benchmark students seem to have gone astray with theme, according to one teacher.

**Areas for improvement.** Even though there was one question from the reflection questions that asked for suggested improvements, the focus group responses revealed several
unifying opinions about what can be improved. The teachers perceived the prompts and the readings for the pre-test and post-test as too long and difficult for students to manage.

And the prompts, just looking at that prompt the whole page they didn’t know where to look, what to look for. To just have a simpler prompt would have helped them a lot. [Focus Group 6: 8th Grade, Sparrow Middle School]

The teachers perceived their students were overwhelmed by the amount of directions they had to answer and keep track of as they wrote their essay. They believed if the prompt was easier to follow the students might be able to do better on the writing assessments. However, the prompts were specifically long and structured based on Dr. Olson’s prior experiences that students wrote less when prompts were shorter and less structured.

Finally, time also seemed to be an issue for many of the groups. They were often worried about how they would accomplish all of the assigned tasks (e.g., surveys, assessments, and lessons) they wanted in the time they were given during their class period, but also during the course of the academic school year. This was particularly relevant for helping students with the writing prompts. Their own district English language arts curriculum pacing guide proved challenging as they wanted to also fit in Pathway components within this pacing guide.

The first essay was really difficult. I was trying to respect all of the steps, but I was feeling really pressed for time. I had to create mini-steps for students who were struggling and the rest of the class would work on something else. It was really valuable for them to have peer-editing time, so I had to give some students extra time to work on their essays with their peers. [Focus Group 1: 6th Grade, Lion Middle School]

Teachers often said that they felt they had to rush through a lot of the work or if they did not rush through the work, they had to give more time than allotted by the assessment protocol to fit everything on their pacing or curriculum guides. Teachers struggled to fit everything in.

General perceptions of Pathway tools. The teachers also found ways to use the Pathway Project tools in many lessons and felt that the tools were not just isolated skills, but ones that
students should be able to apply across the curriculum and one focus group even had stated the skills are life skills. In Focus Group 1, the teachers shared this about the Pathway Project:

I found it wonderful. My students all benefitted from it. It’s also the consistency across the Common Core and how it can apply to other content areas and the vocabulary is applicable to other subjects.

I agree with that, I couldn’t help to use the language. I was being trained to use the vocabulary. It just became a part of my teacher talk.

Absolutely, I would have to agree with everything she says. The vocabulary is so important and every chance I can I use the vocabulary so that students can hear and use it.

The teachers really appreciated how it became a part of their practice and language. They also recognized the importance of constant reinforcements. Focus Group 3 teachers summed up the Pathway Project as “the cognitive strategies...The cognitive strategies were helpful. The cognitive strategies also align with the GATE icons and that was quite helpful…” Again, we see here that the Pathway Project provided tools that were applicable and generalizable. Other sentiments about the Pathway Project included general enthusiasm and feeling supported by the Pathway Project and Literacy Coaches. The teachers have a high regard for the Pathway Project, but they do focus on a narrow range of tools to discuss. I wanted to examine where there is a connection between their perceptions and the ease of implementing tools and variations in the extent they used the tools.

**Perceptions and ease of implementation.** Data analysis of the reflection questions and focus group interviews in terms of the ease of implementing tools from these data sources shows that the teachers cite the tools that are *easy* and *moderately easy to implement* most frequently (see Table 22).

<table>
<thead>
<tr>
<th>Type</th>
<th>Tools</th>
<th>Ref</th>
<th>FG</th>
<th>Ease</th>
</tr>
</thead>
</table>

Table 22  
*Ease of implementation levels of tools mentioned in reflections or focus groups*
<table>
<thead>
<tr>
<th>Activity</th>
<th>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets</th>
<th>%</th>
<th>%</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read complex text</td>
<td>Guidelines for Reading Texts (Bubble maps, visualization, outline, summary)</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play-Doh Think Aloud</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tsunami Think Aloud</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write about complex texts</td>
<td>Cognitive Strategies Bookmarks/Wall Posters/Blue Booklets</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do/What Chart</td>
<td>3</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kelly Gallagher’s Modeling and Real World Writing</td>
<td>3</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work with specific texts</td>
<td>Lessons around specific texts</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Summer in a Day Essay</td>
<td>2</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eleven Book Club Strategies</td>
<td>0</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horned Toad Essay</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improve their writing</td>
<td>Brushstrokes</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color-coding of sentences</td>
<td>15</td>
<td>83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essay Templates</td>
<td>2</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorporation of quotes/textual evidence</td>
<td>4</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduction, hook, TAG, summary, thesis/theme</td>
<td>17</td>
<td>83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revise their writing</td>
<td>Japan: Scuba Hero for Revision</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revision of Pre-Test</td>
<td>17</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understand literary devices</td>
<td>Video Clips on Topic and Theme lesson</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theme (general)</td>
<td>2</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book Club Strategies/Lessons for characterization, setting, plot, and theme</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personification/Symbolism/Figurative language</td>
<td>1</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tutorial on teaching theme with Horned Toad</td>
<td>2</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare for Common Core State Tests</td>
<td>Multiple choice test on Horned Toad/Japan: Scuba Hero</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December Conference workshops that teachers could choose from: what does every writer need to know; vocabulary; comics and graphic novels; technology; what works in writing instruction; rigor; informational texts; project-based writing</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discuss literature</td>
<td>Literature Circles with Fiction</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literature Circles with Non-fiction</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Across the different tool types more of the moderately easy to implement tools are mentioned in the reflection questions and focus groups. For example, after examining if a tool was mentioned across both data sources, six easy to implement tools were mentioned across both data sources as opposed to 12 moderately easy to implement tools. Moderately easy to implement tools were mainly tools that help students improve their writing, which is highly aligned with the goals of the Pathway Project. The teachers also more frequently raised cognitive strategies, the Do/What Chart, and Color-coding sentences as the most useful tools. Only one more difficult to implement tool was mentioned across both data sources (e.g., revision of the pre-test). Very few responses cite literature circles (moderately easy to implement) as a useful resource or one that is helpful. In the survey, only 1% of the teachers mentioned this strategy and in the focus groups only 16% or 1 focus group mentioned this strategy.

**Teacher perception in relation to implementation.** The literature suggests that how teachers perceived what they learn is tied to whether or not they will implement what they learned in professional development (Banilower, Heck, & Weiss, 2007; Guskey, 1988). Thus, I examined the Pathway Project teachers with respect to their own level of implementation. Recall that level of implementation is defined as low, medium and high based on the number of times the coaches observed the teachers enacting the Pathway tools across the three observations they made of each teacher. Across the three observations, teachers scored a low of 17 and a high of 45 (M=30; SD=7). Thus, teachers who scored 22 or below were low implementers, teachers who scored between 23 and 37 were medium implementers, and teachers who scored 38 or above were high implementers. Based on these ranges, eight teachers were low implementers, 16 were medium implementers, and eight were high implementers. These patterns are not unique to any grade level as grades 6 to 8 teachers are among each implementation level (see Table 23).
Table 23  
**Level of Teacher Implementation**

<table>
<thead>
<tr>
<th>Low Implementers</th>
<th>Medium Implementers</th>
<th>High Implementers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cindy</td>
<td>Catherine</td>
<td>Betty</td>
</tr>
<tr>
<td>Candice</td>
<td>Dora</td>
<td>Cathy</td>
</tr>
<tr>
<td>Deidra</td>
<td>Darlene</td>
<td>Caroline</td>
</tr>
<tr>
<td>Joseph</td>
<td>Hope</td>
<td>Jeremy</td>
</tr>
<tr>
<td>Jacob</td>
<td>Hung</td>
<td>Karen</td>
</tr>
<tr>
<td>Mary</td>
<td>Junko</td>
<td>Laura</td>
</tr>
<tr>
<td>Leila</td>
<td>Janice</td>
<td>Lourdes</td>
</tr>
<tr>
<td>Helen</td>
<td>Joan</td>
<td>Sarah</td>
</tr>
<tr>
<td></td>
<td>Ramona</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carrie</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kimberly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mayra</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mario</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mireya</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sophia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trisha</td>
<td></td>
</tr>
</tbody>
</table>

**Perceptions of positive experiences.** In addition to grouping teachers by their implementation levels, I also placed teachers along a less positive to more positive continuum based on their perceptions of their overall experiences with the Pathway Project. More positive experiences were described using superlatives such as “excellent” or “outstanding,” positive experiences were described using terms such as “enjoyed experience,” neutral experiences did not convey any emotion such as “the tools will support the Common Core State Standards,” and less positive experiences were not as enthusiastic or include negative experiences such as “work overload.” The distribution of teachers matched with their implementation levels (see Table 24).

Table 24  
**Placement of Teachers along a Positive Perceptions Continuum**

<table>
<thead>
<tr>
<th>Less Positive</th>
<th>Neutral</th>
<th>Positive</th>
<th>More Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candice (L)</td>
<td>Cindy (L)</td>
<td>Mary (L)</td>
<td>Darlene (M)</td>
</tr>
<tr>
<td>Joseph (L)</td>
<td>Deidra (L)</td>
<td>Carrie (M)</td>
<td>Hope (M)</td>
</tr>
<tr>
<td>Leila (L)</td>
<td>Helen (L)</td>
<td>Dora (M)</td>
<td>Joan (M)</td>
</tr>
<tr>
<td>Janice (M)</td>
<td>Jacob (L)</td>
<td>Hung (M)</td>
<td>Kimberly (M)</td>
</tr>
<tr>
<td>Lourdes (H)</td>
<td>Catherine (M)</td>
<td>Mayra (M)</td>
<td>Mario (M)</td>
</tr>
<tr>
<td></td>
<td>Junko (M)</td>
<td>Ramona (M)</td>
<td>Caroline (H)</td>
</tr>
<tr>
<td></td>
<td>Mireya (M)</td>
<td>Trisha (M)</td>
<td>Jeremy (H)</td>
</tr>
</tbody>
</table>
Most of the *low implementers* were either neutral or less positive about their overall experiences. Only one *low implementer* teacher was positive about her experience. Both the *medium* and *high implementers* had individuals distributed across the continuum, but more than half of both groups perceived their overall experiences as positive as or more positive than other teachers.

As teachers implemented the Pathway Project tools at varying levels, I also wanted to examine if these levels also impacted which tools and quality of tools (e.g., *ease of implementation*) resonated with the teachers within each group. Data analysis shows that, regardless of teachers’ implementation level, they found the *easy to implement* and *moderately easy to implement* tools as more beneficial to their experiences with the Pathway Project and as tools that helped their students become better readers and writers. Only six responses out of 160 mentioned revising the pre-test - what is defined as a *more difficult to implement* tool - as a tool that helped their students achieve growth (see Table 25) despite their perceived benefits.

### Table 25  Teacher Implementation Level and Perceptions of the Pathway Project

<table>
<thead>
<tr>
<th>Implementation Level</th>
<th>Perceptions of the Pathway Project Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong></td>
<td></td>
</tr>
<tr>
<td>Cindy, Candice,</td>
<td><strong>Reading</strong></td>
</tr>
<tr>
<td>Deidra, Joseph,</td>
<td></td>
</tr>
<tr>
<td>Jacob, Mary, Leila,</td>
<td></td>
</tr>
<tr>
<td>and Helen (8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Writing</strong></td>
</tr>
<tr>
<td></td>
<td>Color Coding (1)</td>
</tr>
<tr>
<td></td>
<td>Specific Texts (1)</td>
</tr>
<tr>
<td></td>
<td><strong>Growth</strong></td>
</tr>
<tr>
<td></td>
<td>Cognitive Strategies (2)</td>
</tr>
<tr>
<td></td>
<td>Figurative Language</td>
</tr>
<tr>
<td></td>
<td><strong>Repeat</strong></td>
</tr>
<tr>
<td></td>
<td>Cognitive Strategies (7)</td>
</tr>
<tr>
<td></td>
<td><strong>Overall</strong></td>
</tr>
<tr>
<td>Carrie, Catherine,</td>
<td></td>
</tr>
<tr>
<td>Dora, Darlene,</td>
<td><strong>Reading</strong></td>
</tr>
<tr>
<td>Janice, Joan,</td>
<td></td>
</tr>
<tr>
<td>Kimberly, Mario,</td>
<td></td>
</tr>
<tr>
<td>Mayra, Mireya,</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Writing</strong></td>
</tr>
<tr>
<td></td>
<td>Color Coding (7)</td>
</tr>
<tr>
<td></td>
<td><strong>Growth</strong></td>
</tr>
<tr>
<td></td>
<td>Cognitive Strategies (7)</td>
</tr>
<tr>
<td></td>
<td><strong>Repeat</strong></td>
</tr>
<tr>
<td></td>
<td>Cognitive Strategies (7)</td>
</tr>
<tr>
<td></td>
<td><strong>Overall</strong></td>
</tr>
</tbody>
</table>
Almost every teacher agreed that cognitive strategies were extremely helpful when supporting their students’ reading. Note how all of the high implementers only state that cognitive strategies were the one tool that supported their students’ reading skills. About half of the teachers from all levels felt that color coding sentences was an effective strategy to support students’ writing. High implementers were more likely to attribute writing growth to other skills and tools such as essay templates, persuasive speeches, figurative language, Do/What chart, or brushstrokes. Growth was distributed all across different types of tools, but cognitive strategies were more often cited than other tools. Growth was also attributed to writing practice, particularly revising the pre-test. When prompted about what they would repeat again, the teachers from each level again said that cognitive strategies are something they will repeat again. Out of the 32 tools that the teachers could have mentioned they altogether stated eight of them. Finally, when asked about what they
found was overall helpful for the teachers, provided lessons were highly cited as were cognitive strategies.

Overwhelmingly, across many of the previous analyses (e.g., Tables 20-22 and 25) the cognitive strategies are highly perceived to be one of the most useful tools for teachers. They are versatile and applicable in both reading and writing situations. When considering the ease to implement different tool and the teachers’ implementation levels the same pattern emerges, the cognitive strategies are simply highly valued tools. Other tools also made a positive impression on teachers. They also perceived the importance of helping students revise their writing using a variety of tools and strategies, namely color coding, the Do/What chart, and focusing on figurative language. These tools help students hone in on areas where their writing can be improved and makes student thinking more visible as color coding provides what sentences students are producing in their writing, the Do/What charts can reveal what students understand about their assignment, and work around figurative language can also help teachers assess students’ thinking in terms of how they apply this motif to their writing.

What we can learn from all of this description is that teachers do perceive the Pathway Project as a highly valuable experience, yet are also making decisions that resonate for them and their students. The fact that certain tools are mentioned more than others or that some tools dominate the conversation demonstrate how teachers stick to what works for them and because they have evidence from their student work they perceive the Pathway Project a worthy investment of their time (Guskey, 2002). Their perceptions are seen through their reflections, focus groups, but also by what they implement in their classrooms. As the teachers make pedagogical decisions and have perceptions about certain tools, a natural reaction is to wonder if
these perceptions also shaped their students’ learning experiences and learning outcomes. I discuss these findings in the next section.

**Student perceptions.** Recall that students responded to four questions about their perceptions of the Pathway tools for their reading and writing and that I analyzed their responses to just one question that captured their perceptions of the program in relation to their teacher: “In what ways, if any, was your English language arts class/ELD class different than previous classes?” Data analysis revealed several common themes across the student reflections that I sampled from the 32 teachers according to their implementation levels. First, across their responses, the students commented the most that they learned more from their Pathway teacher than their previous teacher. The kinds of things students wrote included “They give us a lot more higher level and a lot more knowledge” or “We learned how to put more in our essays.” Of the 342 student responses I coded, 135 perceived that they learned more ways to write effectively or learned more topics from their Pathway teacher than their previous teacher. Second, they also thought they wrote more in their ELA class this year than the previous year. 67 said they wrote more in their Pathway class. Finally, they commented that they thought their Pathway class was harder than the previous year. 54 said the class was harder and would write “It was harder and we don’t focus on just one thing we focus on many. I had to really push myself to be the best I could be.”

**Linking teacher and student perceptions.** I also wondered if teachers’ perceptions impacted students’ perceptions in distinct ways. Thus, I examined this question by looking at the responses of students with respect to their teachers’ level of implementation and highlighted responses that were unique to each implementation group. Of the eight teachers defined as *low implementers*, meaning they used the tools less than 22 times, their students did not perceive
their teachers as having any unique characteristics from other the other group of teachers. In contrast, the students of medium implementers - meaning they used the tools 23 to 37 times, cited their teachers’ unique contributions to better instruction, new skills, and different content. In terms of instruction, they felt that their teachers were better at teaching strategies, were more caring, and encouraged more group work. However, teachers were also cited as relying on worksheets during instruction. In terms of skills, students stated they learned new skills such as participating in Socratic Seminars, using transitions in their writing, and citing textual evidence. As for the content of their instructions, medium implementers’ students felt that though their teacher had more creative assignments and taught them to think in better ways, their teachers did use assessments quite a bit. Finally, students of high implementers’-teachers who used the tools more than 37 times-were the only students to specifically cite cognitive strategies as an instructional strategy that their teacher taught them. They also said they engaged in deeper thinking, worked with different content and methods, had engaged in higher creativity and interest, and improved their skills. Moreover, they cited their teachers as being more serious.

What these students’ perceptions as linked to teacher perceptions reveal is that teachers have an impact on their students not just by what they say or do, but also by what they convey through their interactions with students, particularly around the tools they use with students.

**Student outcomes.** Another way to link teacher perceptions to students’ learning experiences is to examine if teachers’ general perception of the Pathway Project influenced how much students would gain on a Pathway Project created on-demand timed essay, what they call the Analytical Writing Assessment (AWA). In general, for all teachers in year 1 (n=32) their pre-test mean score was a 2.3 and at post test their mean score was a 3.1. The difference between pre and post was .81 points (p<.000), nearly a one point increase on the 6 point scale rubric. The
rubric ranged from a minimal display of achievement to exceptional achievement in writing an analytical essay using criteria on the content of the writing and the quality of the writing. To illustrate this change in the quality of students’ writing, it means that prior to the Pathway Project students mostly summarized what had happened in the articles and may have had many grammatical mistakes and demonstrated a lack of an understanding of what an essay may look like. At post-test more of the essays demonstrated more analytical skills with at least an attempt to address the prompt in a superficial way, some essay structure, and attempts to make a claim.

When looking at students’ AWA scores by their teachers’ implementation levels, low and medium implementers’ students had pretest averages that were 1.96 and 1.92 respectively. High implementers’ students pretest averages was 2.4. At posttest, the averages for the three groups were 2.5, 2.9, and 3.2 respectively. All pre and posttest differences were significant at p<.000. The positive trend at posttest as teachers’ implementation increases indicates that the more a teacher uses Pathway Project tools the more likely their students are to improve on the AWA. This means that the more the teachers perceive their experiences as valuable to their learning and development, the more they use the Pathway Project tools, and the more their students gain to benefit from their participation as a Pathway Project student. Let me illustrate what I mean with a student’s transformation from pre-test to post-test on the AWA.

Cassandra’s teacher is Mayra, a sixth grade teacher from Lion Middle School who teaches students from the Benchmark track. Mayra appropriated the tools mainly to accommodate her students’ learning needs. She is also a medium implementer (though she used the tools 35 times, missing the high implementer cutoff by two) who had a positive experience with the Pathway Project. Cassandra and her classmates averaged a 2.3 at pre-test. Cassandra
scored a 2 and 3. Below is her writing at pre-test on “Sometimes, the Earth is Cruel,” with all errors intact.

Earth is realy buttiful but it is realy dangrous. The planet earth just dose what it dose because it is it’s way of being. If you have to eat you eat yout dont realy care who you affected. That how earth is. Earth sometimes is realy crul with living things.

Earth has many disasters like Haitis earthquake. Those disasters kill thousands of people in one whole day. Sometimes it is not only earth sometimes it’s humans anger. The twin tower disaster was not distruct because earth it was distruct by humans. Another in the same day was the pentegon and the pepole in the airplane. Imagine how many died in that day.

Earth nature is distruction sadly we have to handl it with help or no help. Earth’s nature is to destroy we have earthquakes, tornados, sunamise and havey rains all of those are coused by earth. Earth is always someway or onther will be crul. Sometimes we have to deal with it. It’s realy hard, but we have to go on. Even thought many pepole have lost there familys, they still go on.

That’s why earth is sometime crul, but in my opinion it is always crul. The earth just has to do all those disasters cause it is it’s nature. Earth is realy buttiful but it is tuf to be there and realy sad. Those were some things that make earth verey hard to live in and crul. Life in earth is very crul, mean and super sad.

Cassandra makes numerous spelling errors, 36 of them, and will repeat what the author has written in his article such a “Even thought..., they still go on.” However, she does attempt to make a case as to why the Earth is cruel and uses textual evidence. When Cassandra wrote her post-test, she doubled or even tripled her scores receiving a 5 and 6 from the two scorers. Below is her post-test in response to “The Man in the Water.”

“Help him he is diying.” Have you ever thought that when someone you know, love, or even a stranger is in danger, but have you ever thought on saving him yourself. “The man in the water” a non fiction storie written by Roger Rosenblatt talks about how a man did not even thint twice on saving this comeplet strangers to him. I think this storie has many lessons, but the main one is that the disition you make today will afect your tomrrow.

At first, the man in water was on a plane and like any normal person he was bored, and all of the sudden the man feels the trip would not be ordinary. I gusse he might have felt that the plane was shaking and like any person he felt
something was wrong. Then before the man in the water could even predict the last thing the plan had already crashed. Many people were shocked “Perhaps because the nation saw in it no mechanical failure, perhaps people saw no failure at all, but rather something successful about their make up.” Meanwhile the plane is sinking the survivors are trying to survive. The man the water suddenly does something worthy admiring his turn is up and he gives ring to the next person and after that the next and next. Finally when he was the last one the ring came to him, but sadly the plane was already was under water with the man that died in the water. This is one of the saddest thing it looks like everything is gonna turn out ok and it doesn’t.

Rossenblatt explains how the man in the water did during after the crash and how the two rutens intersect interrupting both rutens. “Washington, the city of farm regulations, turned chaotic, deregulated, by a blast of real winter and a singel of metal on metal.” That was an example of a personification Rosenblatt uses to make you imagine of what’s happening. I think Rossenblatt wanted us to see how the people saw and feel what the people felt.

Roger Rossenblatt feels that “the man in the water pitted himself against an implacable, impersonal enemy; he fought it with charity: and he held it to standoff. He was the best we can do.” I know that if the man in the water were still alive he would have not bragged and had said something heroic like a real hero. The man in the water also brought Rossenblatt’s feelings to a great hero that was on none.

I think Rosenblatt’s purpose was to show ever one how brave can humanity be. Rossenblatt in trying to inform us showing one of our great heroes. The lesson for me that this story showed was that the distion you make today will affect your tomorrow. This will help me in the future with my disions.

It is noteworthy how much Cassandra grew under Mayra’s teaching. She had more to say about the text. She addressed all aspects of the prompt including author’s craft (e.g., personification) and what lesson she learned as a result of reading the non-fiction text. Moreover, she incorporates quotes in a very effective way, a marked improvement from her pre-test.

Many of Mayra’s students grew like Cassandra, as their post-test average was a 3.5 (Δ=1.2; p<.000), one of the highest differences from pre to post among all 32 teachers. I use Cassandra’s progress to illustrate how important teachers’ perceptions are of the value of what they are learning during professional development, because these positive perceptions will
influence whether or not they will implement program materials and tools. Implementation then leads to positive student outcomes. I am not suggesting that teachers needed to implement all 32 tools at the highest level to make the program work for them, but rather the teachers who perceived the tools as useable and adaptable had better outcomes because they found ways to make the professional development work for them. Mayra had mentioned in her reflection starting an afterschool writers’ club to provide additional support for her students.

**Discussion**

Understanding how teachers’ perceptions impacted their students’ opportunities for learning and growth demonstrated that there is a link between better outcomes for teachers who implement more Pathway Project tools and also had a more positive regard of their experiences and the Pathway Project professional development program. Recall my conceptual model where I link teacher learning that stems from professional development to enactment and cognition and ultimately leading to student learning. These findings about the teachers’ perceptions, their students’ perceptions, and their students’ learning make these links clearer.

Teachers who have a positive regard for professional development enacted more tools or at least made more efforts to make the Pathway Project tools work for them. Moreover, the more teachers enacted, the more positive were their perceptions of their experiences. Finally, teachers who enacted more and had more positive experiences had students who learned more as a result. Teachers also influenced their students’ perceptions in different ways depending on their perceptions of their own experiences. Perhaps the students of low implementers had nothing unique to point out about their teachers because their teachers did not change their instruction in substantial ways. Whereas, medium and high implementers made efforts to change their instruction, which was also fueled by positive results they were seeing in their students’ work.
Limitations

There are several limitations to these findings. The questions that teachers responded to did not necessarily address how the teachers perceived the organization and structure of the professional development meetings. That is, what did they perceive to be helpful during the full day meetings as opposed to the afterschool meetings or their weekly meetings at their school site? Answers to these questions would offer more insight into what is worth pursuing with teachers and what may not be a necessary component. Teacher learning conditions are important considerations to take when designing for educative experiences.

Not all students’ essays were scored by the research team. The team only scored 20 essays from each classroom due to limited resources and time. Had a full set of student essays been scored, results might have been even better. Finally, not all student reflections were coded as the reflections were also sampled from among the 32 teachers based on teachers’ implementation levels. A wider range of students’ perceptions could have emerged which would add even more information about how teachers’ perceptions influences students’ perceptions. Despite these limitations, these findings demonstrate how important it is for all constituents involved in a professional development program work in tandem with each other.
CHAPTER 6

Results for Research Question 3

Returning to the conceptual framework for the study, I turn in this chapter to consider the relationship between teachers’ opportunities to learn and the design of the Pathway Project. Recall that the Pathway Project had three central design components – the full day meetings, afterschool meetings, and weekly meetings. In addition, the coach observations provided feedback to the teachers on their classroom instruction. These features of the professional development target what research defines as core features of effective professional development. More specifically, research has shown that it is important to give teachers tools that are well-defined and highly-specific to foster active engagement on the part of designers and learners and users to make the tools effective (Ball & Cohen, 1996; Correnti & Rowan, 2007). How teachers come to enact and reflect on tools, skills, and concepts in their classrooms and schools demonstrates the teacher learning process around curriculum (Kazemi & Hubbard, 2008; Windschitl, Thompson, & Braaten, 2011). This is an important focus because research has shown that teachers’ sense making around tools involves learning about the content they are teaching, how to teach this content in an accessible way, and the particular nuances that must be learned and implemented to promote student learning (Ball, 2000; Davis & Krajcik, 2005; Schneider & Krajcik, 2002). Moreover, the content that teachers use in their classrooms shapes the learning that takes place for both teachers and students and can impact the culture of the classroom (Moje, 2007; Street, 2005), the rigor of instruction (Cloonan, 2007; Moje, 2008; Porter, 2002; Thompson et al., in press), and the types of knowledge that are supported and learned during instruction (Freebody, Chan, & Barton, 2013; Shanahan & Shanahan, 2008).
Second, research shows the importance of teachers working together to make sense of and reason about tools and resources they encounter in professional development (Spillane, Reiser, & Reimer, 2002). Simply being introduced to high quality curriculum materials does not automatically ensure better learning results as many reform initiatives often produce modest results (Borman, Hewes, Overman, & Brown, 2003). Moreover, much of the change in practice that results from professional development ultimately fades because attention to teacher learning, among other factors, was not properly addressed or supported (Fullan, 2000; Stevens, 2004). Sense making around curricular materials is a highly complex and involved endeavor. Lampert and her colleagues (2013) detailed at least 11 principles a teacher must engage with to comprehensively reason about the content or materials they will be teaching and using. These principles range from the initial preparation for a lesson to considering how student thinking will be represented to managing transitions among ideas and parts of the lessons. What their study demonstrates is that teacher sense making around tools and materials influences what they will implement in their classrooms (Spillane, Reiser, & Reimer, 2002). Other factors that influence how teachers will implement materials rest on their perceptions of the materials (Könings, Brand-Gruwel, & van Merriënboer, 2007), their knowledge and beliefs (Fuller & Clarke, 1994; Roehrig, Kruse, & Kern, 2007), their feelings, or emotional reactions, about the materials (Schmidt & Datnow, 2005), and what they communicate to others by implementing the materials (Ketelaar, Beijaard, Boshuizen, & Brok, 2012; März & Kelchtermans, 2013). Essentially, teacher sense making of the materials is not simple and involves careful consideration about the impact their choices can have on their students (Stevens, 2004) and whether or not they have access and resources to the materials they are task to grapple with (Coburn, 2005).
In addition to learning about tools and resources and making sense of them for use in their classroom, research shows that professional development also needs to support teachers in reflecting on their practice (Rodgers, 2002) together. Colleagueship, a term that Little (1982; 1990; 2002) emphasizes in her work, is about promoting analytical, interpretative, and actionable norms with other peers around improving teacher and student learning within schools. When teachers are given the time and resources to work together much can happen that supports improvements in schools (Fullan, 2000; Horn & Little, 2010). When teachers come together to inquire, reflect, and act on issues pertaining to student learning, not only does the language they use in meetings change, but so does the culture of the school and teachers’ classrooms (Lieberman & Miller, 1990; Thompson et al., 2009; Vescio, Ross, and Adams, 2008). Given the necessary resources teachers can sustain this learning across contexts and years (Levine & Marcus, 2007), but they cannot achieve this feat alone. They require the uniform efforts of their colleagues and a shared commitment to improving student learning through critical analysis of the work they aspire to accomplish both individually and collectively. It is essential that they focus on instructional improvement together. This means both how to help people think about what to do and reflect on what they have done. For example, there is a body of work around the Japanese professional development concept of a lesson study (Lewis, Perry, & Murata, 2006). This concept centers on the refinement of a single lesson through teacher collaboration around cycles of co-planning, observations of teaching, reflection, and analysis. This type of work requires a strong commitment to knowledge gathering and critical discourse in order to improve student learning (Fernandez, 2002; Lewis, 2000; 2009).

Working together towards the goal of using tools and materials in effective ways also means being willing to be vulnerable and open up classroom teaching practices through
observations (Lieberman & Pointer Mace, 2010) by peers and coaches. Coaching has become a more common practice for modeling to teachers how to enact materials as well as for providing feedback to teachers on their practice (Ippolito, 2010). Coach observations hold teachers accountable to the work they are undertaking, and also provide them with the necessary support, feedback, and resources to enact their goals and intentions for student learning (Stephens et al., 2011). Coaches are also important for teacher learning because they often help provide space for teacher reflection, model and teach important skills, and help develop relationships among and with teachers (Blamey, Meyer, & Walpole, 2008; Vanderburg & Stephens, 2010). Most importantly, coaches can also help empower teachers (Steckel, 2009), and at the same time challenge their assumptions (Ippolito, 2010) so that their learning during and from professional development supports improvement in skills, knowledge, and practices (Coskie, Robinson, Buley, & Egawa, 2005).

The Pathway Project design follows these effective principles for professional development: it is centered on providing highly engaging and empirically developed tools and resources supporting student learning of analytical writing (Kim et al., 2012; Olson et al., 2011; Olson & Land, 2007; 2008). Teachers participate in over 70 hours of professional development over the course of the school year to introduce them to the materials and help them use and make sense of these materials. Teachers are also encouraged to meet on a weekly basis as grade level teams to plan, rehearse, and discuss lessons with each other on a weekly basis. Finally, Literacy Coaches provide support beyond the meetings through observations and feedback. These observations necessitate a closer look at how the Pathway Project embodies these principles in ways that provide opportunities for teacher learning during professional development and how teachers, in this case the 8th grade Lion Middle School group, navigate the multiple design
principles of the Pathway Project that influence their work. The results of this analysis have implications for the design of high quality literacy professional development.

Results

Recall that I used the ten components and their processes from Lyons and Pinnell’s (2001) *Framework for Professional Development in Literacy Education* to study the opportunities teachers had for learning throughout the Pathway Project design. I base the following results from data I analyzed from the full day meetings, afterschool meetings, weekly meetings, and literacy coach letters. I will first present my descriptive findings in terms of the counts of confirming and disconfirming evidence of these components in light of the number of activity units from each data source and thematically describe what the confirming and disconfirming evidence reveal. Then I present three themes that emerged from this analysis.

Table 26 represents the counts of confirming and disconfirming evidence of the different components derived from the data sources that I conjectured would provide evidence of the presence of these components. Overall, there was confirming evidence for each of the component across the various professional development contexts. The full day meetings were particularly fruitful in providing the basics, demonstrating the process, and establishing the rationale. In the weekly meetings, the teachers discussed, almost equally, issues related to implementing what they learned in the Pathway Project, as well as issues related to the implementation of other professional development materials and practices. Finally, it appears that while all of the features were present, there were fewer opportunities for the teachers to receive coaching to shift their behavior outside of the observation letters and to coach for reflection and analysis on practice. Below, I describe the findings related to each component and then come back to discuss these themes in more detail.
Table 26  *Frequencies of Confirming and Disconfirming Evidence of Professional Development Components by Data Sources*

<table>
<thead>
<tr>
<th></th>
<th>Full Day Meetings (36)</th>
<th>Afterschool Meetings (15)</th>
<th>Weekly Meetings (34)</th>
<th>Coach Letters (87)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Confirming</td>
<td>Disconfirming</td>
<td>Confirming</td>
<td>Disconfirming</td>
</tr>
<tr>
<td>1. Assessing Context</td>
<td>14</td>
<td>7</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>2. Provide the Basics</td>
<td>16</td>
<td>2</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>3. Demonstrate the Process</td>
<td>12</td>
<td>1</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>4. Establish Rationale</td>
<td>14</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5. Engage the Learner</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>6. Try it Out</td>
<td>19</td>
<td>12</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>7. Establish Routines and Procedures</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>8. Coach for Shifts in Behavior</td>
<td></td>
<td></td>
<td></td>
<td>59</td>
</tr>
<tr>
<td>10. Extending Learning</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>8</td>
</tr>
</tbody>
</table>


Assessing the context. This component is about the designers of the professional development program understanding the context of the teachers and students they are working with and for whom they are designing their program. Observing teaching and learning, identifying student factors, learning about the community, identifying teacher factors, and learning to know people in the school sites they are working with are essential processes. Dr. Olson and her team have had a long standing relationship with Santa Ana Unified School District (SAUSD). She piloted her program with teachers in SAUSD before deciding to scale up the program to other local districts and now across Southern California. Her fifteen years of working with SAUSD provided her with a wealth of knowledge about the participating teachers, schools, and district leaders. Both of her Literacy Coaches in this study are former SAUSD teachers. She and her team knew the school district well.

In the professional development meetings, there is strong evidence of understanding the students with whom the teachers are working. Many of the discussion points that Dr. Olson and other presenters raised during professional development meetings centered around student factors that impact the work and struggles teachers may have with their students. For example, during the first professional development meeting, presenters from the Orange County Department of Education were invited to discuss the Common Core State Standards with teachers. They started off by providing some statistics about students in Orange County: “Of the 3rd grade students in Orange County, 84% English language learners are below basic, and 30% of English only students are below basic. Though students are doing better on the California English Language Development Test (CELDT), graduation rates from the years 2001 to 2008 are at 74%.” This paints a picture for teachers in terms of whom they may have in their classrooms and what they have to do to help prepare their students for “college and career readiness.”
Overall, there was a sense that Dr. Olson and the Pathway team were aware of the context and students and that they were providing a professional development program that was targeted to the needs of the students in the two schools.

Despite knowing a lot about students in the district, knowledge of teacher factors were not as evident during some of the professional development meetings. For example, during the first afterschool meeting, teachers were working with Sandra Cisneros’ story “Eleven,” which served as a model lesson for teachers to use with the book club notebooks. Many of the seventh and eighth grade teachers shared with each other in groups that their students had already read this story in sixth grade, and sixth grade teachers said they just finished teaching the story prior to Pathway. Several commented that they wished they had a different story to use. Missteps such as these caused some teacher frustration.

**Providing the basics.** This second component is about giving a limited number of resources, providing concrete examples of organization and routines, and walking through routines with teachers as professional development is provided. Teachers were given materials to use in their classrooms from almost half of all the activities (16/32) during the full day meetings. For example, class sets of cognitive strategies bookmarks were provided, as well as, wall posters and booklets to use with students. Other times, teachers were given Power Points to use in a lesson and video clips to demonstrate the differences between a topic and theme. The teachers also had options for class sets of materials to be provided for different model lessons upon request.

There were very few instances of teachers not receiving the basics from the Pathway Project. Among the three instances of not receiving class sets of materials, one occurred on the last day of the Pathway Project. Teachers received a Power Point on the use of poetry in their
classrooms, but likely because this was the last day of the professional development for the year, teachers were not given extensive resources (e.g., class sets of poems to use) as they were given to them in previous meetings. This is a minor occurrence. The overwhelming evidence demonstrates that the teachers were given ample resources to work with their students.

**Demonstrating the process.** The third component focuses on demonstrating explicit procedures and providing good examples from experts. Teachers constantly saw model lessons in action at almost every full day and afterschool meeting. These model lessons are text-based and provide many opportunities for teachers to see the lesson enacted as if it were with a classroom of students. Due to Dr. Olson’s professional history as a teacher educator she also has an extensive collection of classroom artifacts to share with teachers from these model lessons enacted in prior classrooms. For example, when she discussed ways teachers can expand on the use of cognitive strategies, she provided samples of classroom artifacts where teachers had created collages, art work, and responses to literature using the cognitive strategies to provide concrete examples of what can be done in classrooms.

There were two instances of disconfirming evidence that appeared to be due to time constraints. After a full day conference, teachers reconvened during one of the afterschool meetings to share out the sessions they attended and if they had an opportunity to try out any of the skills and techniques they learned about. Being that the meeting is only two hours long and the presenters had other agenda items to cover (e.g., Common Core Writing Standards), the teachers who shared out were not able to demonstrate any of the procedures they learned with their peers. Instead, they listed what they tried but these lists limited the opportunities for them to share the details of what they learned with each other.
Establishing rationale. This component is about making rationales public and engaging teachers to state rationales for what they are doing in their classrooms. Professional development facilitators made quite a few statements about why their program is empirically sound and effective, often citing research that supports the use of cognitive strategies, working within students’ zone of proximal development, and the importance of engaging students through rigor and structure. Jeremy, during the weekly meetings, often gave a rationale for why the teachers were discussing the topics during that week. For example, a common discussion topic during the weekly meetings was the importance of having a common assessment. He cited how important data gathering and sharing is for teachers to understand how they are doing as a grade level team. It was important for him that all teachers understood why they were investing time into creating these assessments and what they can do to learn from them, because he believed data should drive instruction. The literacy coaches also often qualified their statements when they provided teachers with suggestions or feedback on their lessons.

While there were many instances of facilitators, teacher leaders, and Literacy Coaches providing the rationale behind the topics of discussion, there were fewer opportunities for teachers to make their own rationale public. For instance, teachers were not given an opportunity to discuss their feedback letters from the Literacy Coaches. They did not have the opportunity to respond to their feedback and to engage in critical discourse around these observations. Other times, they did not have any opportunity to agree or disagree with statements being made during the full day or afterschool meetings because there is so much to cover.

Engaging the learner. All four data sources had evidence of facilitators and teacher leaders showing and discussing examples and linking observations of student behaviors to procedures. Teachers were provided with numerous examples of what could occur in the
classroom as they tried out different skills and strategies. In one weekly meeting, the teachers went around their circle and shared how they taught the concept of “theme” with their students. This discussion was related to the Pathway meeting where Dr. Olson provided a lesson using video clips to solicit students’ ideas about what topics the clips addressed and what lesson/theme can be learned based on these clips. One teacher, Jeremy, said he has tried this lesson before and his “students really responded to the clips and that [he] would let students work together to bounce off ideas with each other.” Another teacher, Sarah, shared that she often tried to find texts that have a clear message that students can see or understand, so she often picks short stories with strong characters. A third teacher, Trisha, working with special needs students, explained that she often used fables to address themes so that the morals of the story can be easily understood. Thus, within one meeting teachers were given at least three examples of how a certain standard was being taught. Note that Jeremy’s example is related to the Pathway Project, while Sarah and Trisha developed their treatment of theme from other sources. Examples from different classrooms regarding different standards and topics across the four contexts were provided by teachers and their colleagues.

While there is strong evidence of discussing examples, there are some instances of discussing skills and procedures without discussion of linking observations of student behaviors to these procedures. What I mean is that there are times where a skill is promoted without an opportunity to link this skill with student reactions or behaviors. For instance, brushstrokes were introduced during one of the afterschool meetings. They are strategies to help students make their writing more dynamic such as using appositives or participle phrases. Though teachers experienced working with brushstrokes, they did not have much evidence of how students would
respond to brushstrokes. Thus, teachers did not have immediate feedback as to how students would react to using brushstrokes and whether it was a skill they should try with their students.

**Trying it out.** This component is about providing opportunities for teachers to try out what they are learning, to share their experiences and results of trying out these new techniques, to analyze the process for efficiency and good management, and to examine evidence of learning. There is more confirming than disconfirming evidence of having teachers try out different procedures and skills. When Dr. Olson and other presenters modeled different lessons and concepts, they built in time for teachers to try them out as well. Teachers often tried out skills and procedures that they would want their students to learn and use as well. Color-coding sentences is one example of how teachers tried out new skills. When this skill was introduced, teachers were given three colored pencils and an anchor set of papers from a past Pathway Project writing assessment. They were instructed to highlight student summaries of a story in yellow, student use of textual evidence in green, and student commentary in blue. As Dr. Olson read the anchor paper out, sentence by sentence, she asked the teachers to also tell her their assessment of the sentence. For example, when they read a student’s response to Gerald Haslam’s story *The Horned Toad,* she read the following sentences out loud and asked the teachers what type of sentences they were: “When Grandma arrived the narrator and her didn’t really talk. The narrator tried to impress her by showing her a horned toad...” Teachers then said these are yellow sentences. They would finish the essay using the same procedures. In this regard they were “trying out” the many skills and procedures they will be asking their students to do too, so that they can better understand how to enact these practices.

The reasons why there are quite a few instances of disconfirming evidence is that teachers were not given much opportunity during the full day and afterschool meetings to share
their experiences and results with each other. They were encouraged to do more of this in the weekly meetings. During the full day and afterschool meetings the leaders covered a lot of materials and introduced teachers to new concepts and topics each time they met, so there was very little time for them to bring in student artifacts to analyze together or time to discuss their experiences when using the various skills, tools, and resources introduced through the Pathway Project.

Establishing the routines and procedures. This component is about providing concrete suggestions for changes in teacher behavior, establishing a plan of action, and supporting the refinement of procedures. These processes entail scaffolding teachers as they try to improve their teaching. Most of the suggestions that teachers received were about how they approach the teaching of reading and writing, particularly for helping their students engage with the text and materials. For instance, in one of Mary’s letters, she was encouraged to have students copy less and produce more, meaning the Literacy Coach suggested that class time should not be about copying notes, but more about having students engage in the process they are copying down. In this case, it was how to incorporate quotes into an essay.

Some teachers were not given suggestions about how to change their behaviors because the Literacy Coaches did not perceive that any changes needed to be made. For example, two of Sarah’s letters were reports of what occurred in the classroom without any suggestions to change anything she did in her classroom. However, even if the coaches observed that her lessons were highly effective, they could have helped her learn to refine procedures and practices. However, most of the suggestions did not discuss refinement or break down a lesson to its component parts and analyze every aspect to make it more effective. Instead, the letters focused on a timeline of activities during the lesson and what the Literacy Coach thought about each activity.
Coaching for shifts in behavior. The main source of data for this component was the coaches’ letters. These letters intended to provide detailed feedback on teacher practice. There is more confirming than disconfirming evidence within this component. Main sub-processes of observing the process, analyzing and discussing the teachers’ own classrooms, connecting teacher behavior to student behavior, and discussing changes were evidenced in almost all of the literacy coach letters. Thematically, most of the changes that were suggested by the literacy coaches dealt with better management of students and lesson procedures. For example, during her first observation, Mary was given nine different suggestions on how to manage her classroom. They ranged from establishing classroom rules, to refraining from giving repeated warnings, to varying the way she reads texts with her students. The other five teachers also received feedback on classroom management such as encouraging better student participation or monitoring student work. In total, the coaches provided 19 suggestions on classroom management among the six teachers (though Mary was the recipient of 10 of them). The coaches also gave feedback on non-Pathway related lesson topics such as preparing for common assessments and working with poetry (n=5). The coaches also provided 13 suggestions that were related to the Pathway Project, especially around cognitive strategies and working with theme.

While the coaches provided many suggestions to teachers, Carrie had one observation where no concrete suggestions were given. The coach simply stated that she was impressed with her directions and checking for her students’ understanding. The rest of her letter was simply a report of what had occurred during her lesson, such as “You began by reading...Then you asked for volunteers...After sharing, you had...” This kind of letter provided limited opportunities for Carrie to learn from the observation because it did not target specific teacher behaviors or provide feedback on altering or changing them in the spirit of the Pathway Project.
**Coaching for analysis and reflection.** This component consists of widening teachers’ teaching repertoire, promoting analysis, and acting as a co-investigator in the classroom. The weekly meetings were the main focus of analysis because I thought this would be the context where teachers could analyze and reflect on their practice. Of the 34 activities across the weekly meetings, 6 centered on analysis of student learning around assessments. Jeremy, the teacher lead during the weekly meetings, tried to develop teachers’ repertoire and analytical skills, while acting as a co-investigator by asking questions to promote such skills. The main topic of analysis for teachers was connecting instruction to student learning via student data. The questions that guided this analysis were always centered on what did a teacher do to elicit such a reaction or what did a teacher do to help students learn a concept? These questions helped guide the conversation around evidence to support these different claims. For example, during one meeting the teachers felt that their students did well on literary devices so they asked each other what they did to help students study literary devices. Sarah talked about how she really emphasized story elements so that students could see the “parts for the whole.” Jeremy agreed that studying plot was considered a “power standard,” a standard that can cover more than one standard at one time. While some teachers focused on these components, other teachers said they created a game to help students with figurative language, such as distinguishing the difference between similes, metaphors, personification, and hyperbole using key words and context clues. Ramona created a matching game for her students where one student held a card with the term on it and another student would hold a card with an example. Students needed to pair up correctly as part of the game.

While the weekly meetings were opportunities where teachers could share out what they did in their classrooms around the different standards they were teaching, what the weekly
meetings did not sometimes provide a space for was widening their teaching repertoire. Even though there were new programs to learn and understand (e.g., SIOP), these programs often were related to what the teachers already know or did in their classrooms. For example, teachers already knew that providing visuals is good practice for students, regardless if they are an English Learner or an English Only student. Though SIOP emphasized this component, they already provided visuals for their students. Similarly, assessments are not new to teachers. Working with data was not what they were used to, but giving and grading them were.

**Extending the learning.** This last component is about leading group conversations around theory, using teachers’ classrooms as laboratories, bringing teachers together as co-investigators, and bringing teachers together so that they help one another. The main type of confirming evidence across the three data sources center on how different tools and strategies can help teachers develop more effective ways to scaffold student learning. During their first full day meeting, Dr. Olson described ways for teachers to scaffold student learning so that their students are more likely to take ownership over the writing process. She shared Langer and Applebee’s (1986) suggestions such as “providing students with a sense of purpose, selecting tasks that build upon students’ existing reading and writing abilities, making the structure of the task clear, promoting collaboration among students, and transferring control to students as they gain competence.” These scaffolds were also present in the afterschool meetings, particularly about giving students choice with the book club strategies to demonstrate their understanding of different literary devices. Moreover, during the weekly meetings, the teachers discussed ways to introduce interesting tasks that helps students engage with rigorous work such as multi-genre writing.
What we see less evidence of are opportunities for teachers to theorize about their current practices in order to “test [the theories] against the behavior of their own children and to help them...build theory from their observations” (Lyons & Pinnell, 2001, p. 19). This process entails making hypotheses about what will work in the classroom and using student evidence to confirm or disconfirm these hypotheses. Using assessments in the classrooms was a topic of discussion during many of the weekly meetings, but was not discussed in a theorized way. They were seen as inherent pieces in the curriculum so conversations around the use of assessments were never challenged among the teachers. For example, the teachers often would discuss common assessments and never questioned if the standards they are teaching are even worthwhile, important for students to learn, or even skills that students want to learn. It was an aspect of the curriculum that was never challenged throughout the meetings the teachers had with each other.

Taken together, the ten components, as detailed above, demonstrate the complexity needed to design for effective teacher learning during professional development. Lyon and Pinnell’s (2001) framework provide a comprehensive way to study each aspect of the Pathway Project. I end this chapter by expanding on three points by synthesizing what I see across all components, but also focusing on the weekly meeting as a space for contention, 1) the high confirmation of these components; 2) the de-emphasis of certain sub-processes for these components; and 3) the focus on non-Pathway related topics during weekly meetings.

**High Confirmation of Effective Professional Development Components**

From the perspective of design for professional development (Desimone, 2011), the Pathway Project exhibited high quality characteristics throughout all four data sources providing teachers with high quality materials and enabling them to engage with these materials in order to enact them. During the full day and afterschool meetings, there was high evidence of providing
the basics for teachers, demonstrating the process, establishing a rationale, engaging the learners, and trying it out. Moreover, during weekly meetings, teachers analyzed their teaching and student learning when they engaged in conversations around their common assessments, benchmark exams, and the California Standards Test. Literacy Coach letters provided a lot of concrete examples and suggestions for teachers to both consider better management techniques (e.g., monitoring student learning or encouraging better participation) and how they enacted the Pathway Project skills and strategies (e.g., using cognitive strategies beyond the tutorial and how to help students develop an understanding of the theme of a text). Evidence of what was occurring across these settings also provide confirmation that the teachers were learning and discussing content that were substantial in terms of learning new skills and techniques to help them support their students in reading and writing via both Pathway and non-Pathway professional development.

**Sub-processes within Components Were Not Evenly Focused On**

Each of the ten components included sub-processes that help guide the design of professional development activities. Dr. Olson did not use this framework to guide her design of the Pathway Project so it is not expected that every sub-process is present or emphasized. In looking at each component and its related sub-processes, some components were covered more than others. There were limited opportunities for teachers to engage in stating rationales (component 4); to share their experiences and results (component 6); to support refinement of procedures (component 7); and to engage in co-investigation of teachers’ classrooms on the part of the Literacy Coaches or professional development facilitators (components 9 and 10).

**Discussion of Non-Pathway Related Topics Dominated Weekly Meetings**
Recall that not only did I code for confirming and disconfirming evidence of the components during weekly meetings, I also noted what type of evidence I found in terms of Pathway and non-Pathway related topics as this was a space that was more open for teachers to choose what they wanted to discuss with each other. Across the seven components that I did this for, non-Pathway topics were discussed one and a third times more than Pathway topics (85:67). The main discussion point that was non-Pathway was assessments. The teachers discussed many forms of assessments during the weekly meetings: the California Standards Test, their district benchmark exams, and their work around common assessments. They focused their attention on selecting standards from the California Standards and not the yet established Common Core State Standards that would be adopted in their school district. Moreover, they focused on how to prepare teachers for these assessments, particularly during the latter months leading up to when the California Standards Test would be taken. The teachers’ immediate concerns were about preparing their students for testing and less focused on enacting the Pathway Project tools and skills. Their conversations were often peppered with the phrase, “after the CSTs...,” demonstrating that they felt they had to prepare their students for it as a priority.

**Discussion**

One issue that is worth discussing concerns how teachers participated in the professional development and their appropriation of the Pathway tools. My analysis found that much of the work of the professional development resided in the hands of the professional development providers – modeling how to use the tools, providing feedback to teachers on their practice, and providing lesson materials and resources. However, there were fewer opportunities for teachers to model with each other how they planned to enact what they learned in the professional development, to make visible the rationale for their instructional choices, or refining their
procedures with each other. Research suggests that for teachers to make new practices part of their repertoire involves sharing, discussing and reasoning with their colleagues about what they were doing in their teaching and why (Little, 1982). I conjecture that the weekly meetings provide a context for this to happen but without the formalized structure (e.g., agendas, specific materials, student work, or video tapes of lessons), this context was limited in the ways it could achieve the goals of high quality professional development.

A second issue concerns the nature of sharing practice among the teachers. An extensive body of research finds that when teachers come together to talk about their work, there are few opportunities for them to problematize and carefully critique practice. Instead, these sessions often turn into sessions where teachers applaud each other’s efforts but they do not engage in in-depth careful analysis around the influence of their practice on student learning (Grossman, Wineburg, & Woolworth, 2000; Horn & Little, 2010; Little, 2002). While the data analysis reveals that the teachers did have opportunities to share their practice, one of the limitations is that this framework does not examine the quality and nature of their sharing. Future research would be needed to understand what teachers learned by hearing from each other’s stories. Videotaping the weekly meetings and examining the nature of discourse and the turns at talk would provide deeper insight into how this space afforded the teachers opportunities to learn that move beyond show and tell and more on connecting teaching to student work or artifacts and thick description of what they are actually grappling with and what they come to understand about student thinking (Hiebert, Morris, Berk, & Jansen, 2007; Kazemi & Franke, 2004; Rodgers, 2002; van Es & Sherin, 2008).

Limitation
One limitation that I would like to briefly discuss is the reliance on field notes as my main data source to study the absence or presence of the effective components for the design of professional development. Other sources of data that could also help me understand these components are interviews with teachers, interviews with the professional development facilitators, and observations among other groups beyond the 8th grade teachers I studied in order to understand the varied experiences of all teachers participating in the Pathway Project.
CHAPTER 7

Discussion

Teachers are “pedagogical tool makers” (Turvey, 2013). They encounter tools and objects throughout their professional development and make these tools and objects their own as they grapple with the intricacies of teaching. They must negotiate their learning around the students they teach, the learning objectives they must meet, and the constraints on their time as policymakers and school districts mandate top-down initiatives throughout the year. The learning opportunities afforded to them in professional development settings are dependent on the design of these settings. I end by situating the findings from each of my analyses within the literature on teacher learning in professional development.

Analysis of the tools teachers enacted and appropriated shows that the types of tools provided to teachers in professional development impacted what tools they enacted, when they enacted them, and how they enacted them. Tools that were easy and moderately easy to implement demonstrated the importance of making tools accessible for teachers, as the more accessible tools are for teachers, the more likely they can implement them in practice. However, even with the more difficult to implement tools, we saw that teachers were willing to learn and use them because they saw how helpful the process was for their students. This is consistent with studies that found teachers were more willing to incorporate practices if they found evidence that it worked for their students (Guskey, 2002). This focus on tools is important because tools facilitate the work of teaching (Grossman, Smagorinsky, & Valencia, 1999). They manifest goals that teachers have and without them, a lesson may not have meaning. Tools also communicate purpose and how teachers adapt them for their use shows compelling evidence that teachers are professionals who make important pedagogical decisions (Leko & Brownell, 2011; Sykes, 1999).
Their choices shape the learning experiences for both the students and themselves. Thus, important considerations must be made when designing tools for learning in the classroom. Questions around the use of tools still remain around what they actually can communicate about thinking processes (Adams & Aizawa, 2009), what types of knowledge they contain and support about specific disciplinary work (Richardson & Anders, 2005), and what is actually learned when teachers use these tools (Sawyer & Greeno, 2009). In sum, what needs to be understood about tools are what features of the tools teachers use support their learning and how can professional development designers come to understand and use these features when they are creating tools for their programs and interventions.

I also considered the role that cognition, and in particular, teacher perception played in their use of the Pathway Project tools. Research shows that teacher perception of the value of pedagogical tools, such as curriculum and specific strategies, can influence the extent to which they attempt to use them in their practice (Robinson, 2011; Schmidt & Singh, 2011). Participating teachers found value in the tools; particularly those that helped their students become better readers and helped their students revise their writing. Yet, they also perceived some aspects of the program to be problematic (i.e., the assessment tools), and in turn, they shaped what they found to be useful and what they perceived could be better designed. Moreover, there were some tools that they barely mentioned, raising questions about their utility for teachers’ practice. Teachers are important stakeholders in the endeavor of teaching and research needs to attend to how teachers articulate what kinds of tools and resources are usable for them in practice (Rodriguez, Manner, & Darcy, 2010). More specifically, some of the teachers perceived that some aspects of the program did not relate to their context or did not work with their students. These findings offer suggestions for how to improve the professional
development so that it is applicable to teachers’ context (Borko, 2004). Kennedy and Kennedy (1996) also believe that perceptions are not the sole driving force for these pedagogical decisions. They argue that teacher perceptions in light of their beliefs, self-efficacy, and context should also be considered. Moreover, how social surroundings influence teacher perceptions and beliefs and how these situations influence their learning are other considerations that can be made towards examining teacher perceptions and teacher learning (Fishman, Davis, & Chan, 2014). In this regard, understanding how different cognitive processes work in tandem or perhaps against each other when teachers are enacting tools from professional development is an important area for future research.

Finally, the design of the Pathway Project demonstrates that the four core features of the full day, afterschool, and weekly meetings with the Literacy Coach observations address the core components of high quality professional development (Hawley & Valli, 1999; Yoon et al., 2007). Teachers are given many resources, they are supported in their work by Literacy Coaches, and they are provided with empirically based practices. However, there was also a lack of coherence among the three meeting spaces and the lack of clear expectations led teachers to localize their attention on more pertinent issues rather than on the Pathway Project components during their weekly meetings. These “centers of gravity” (Smagorinsky, Rhym, & Moore, 2013) demonstrate the issues with which teachers contend in their daily work. Knowledge of these tensions can help projects like the Pathway Project better meet the needs of teachers across the different features of the professional development. For example, though Jeremy was often a facilitator for the weekly meetings, he is not a Pathway Project Literacy Coach or facilitator. If the meetings were to be used as intended, they would have needed additional facilitation by a Pathway Project guide who could focus the work of teachers around bringing in student artifacts.
in light of the Pathway Project components to analyze students learning of how to write analytically or to engage with texts. Recent research shows the benefits of teachers working together to examine artifacts of practice (Kazemi & Franke, 2004; Little & Horn, 2007; Sherin & van Es, 2009) and participating in a more practice-based approach to professional development (Zeichner, 2012). Adding this component to the weekly meetings would have better focused the teachers’ time in ways that research identifies can be productive for teacher learning. For example, the revision unit is the core piece of the Pathway Project. The teachers spent almost half a day with this unit during professional development. However, it is important to have discussions around what revision really looks like as one provides feedback, help students incorporate feedback, and ensure that students develop dispositions for receiving and using feedback. Alternatively, a lesson study approach (Lewis, 2000) where teachers plan, observe, and reflect together might have provided them with more opportunities to refine the work they are doing with students through critical conversations and work grounded in student artifacts.

When the teachers’ conversations during the weekly meetings were situated around the Pathway Project, they were mainly focused on how to incorporate the Pathway Project into their existing pedagogical plans. Planning and organizing a teaching calendar is certainly important, but conversations around the actual work of classroom instruction should be foregrounded, and professional development designers cannot assume that teachers will be able to make productive use of this time without support. The Pathway Project mirrors many efforts that seek to transform instruction, grounded in a perspective that providing teachers with curriculum materials along with modeling how to use them will support them in transforming their practice (Collopy, 2003). However, research on professional development suggests that teachers also need opportunities to “try out” what they learn in professional development, work with colleagues to make sense of
these materials for their own practice, and then reflect with colleagues on their use in teaching (Fernandez, 2002; Hiebert, Morris, & Glass, 2003; Lewis, 2000; McLesky & Waldron, 2002; Santagata, 2009). I propose that deliberately designing for these kinds of interactions to happen as a part of the Pathway Project would allow teachers to make visible the various ways that they appropriated tools over time and examine the extent to which they were adapting them in ways that maintained the integrity of their initial design. Finally, the Pathway Project, and others like it, may benefit by training school-based participants to become leaders for their schools who can help teachers inquire into their practice. The findings suggest that this space was perhaps underutilized as the bulk of their conversations were around the assessment of standards. Important questions for future inquiry concern how adding this kind of support in the professional development design would better support teachers in enacting the tools from professional development and the impact that this has on student learning.

Conclusions

All together, this dissertation makes a contribution towards the merits of understanding teachers’ enactment and perceptions through the design of a professional development program before making links and claims to student learning as a result of teacher professional development. By jumping to examine impact on student learning, research may neglect to understand how those results came to be through teachers’ efforts, as well as what may hinder teachers in changing their practice – both from the perspective of the individual but also from the perspective of the professional development design. The findings of this study have both practical and theoretical implications.

I offer some practical implications first. The most important consideration stemming from this study is the type of tool provided for teachers during professional development. If they
are more generalizable, then teachers are more willing to take them up and make them their own. The cognitive strategies are generally applicable to any texts that students can reflect on. They can approach a job application, an instructional manual, as well as, novels or short stories with the same strategies. The use of cognitive strategies and similar generalizable tools can also provide more effective avenues for student learning as teachers can adapt and appropriate these tools for their local contexts. Another consideration is that there needs to be consistent and coherent support throughout all aspects of professional development for change to take place. When teachers can build links in the full day meetings, afterschool meetings, weekly meetings, and Literacy Coach letters around the Pathway Project components and tools, they are better able to understand how all the pieces fit together. Finally, teacher professional development is highly complex and requires concerted efforts between the facilitators and teachers to make for an effective and impactful experience. Time is needed for teachers to come together to work and study with each other. Holding conversations around learning goals, student work and evidence of student learning, linking teaching to this learning, and devising next steps (Hiebert, Morris, & Glass, 2003) may help fill in the gaps that is often found with professional development initiatives - an overwhelming amount of information with too little time to make sense of and reflect on what is learned.

The findings of this dissertation also have theoretical implications. Revisiting the conceptual framework, the link from professional development, to teacher characteristics, and student achievement were present. But as discussed previously, that was only one part of the picture. The conceptual model – and the research that supports it – shows the importance of examining teacher learning through cognition, enactment, and context and the intersections among these factors. For example, as the Pathway Project tools were designed and developed, it
was important that Dr. Olson knew that the majority of the students were English Learners. She developed tools that were easy for their teachers to implement as they could be generalizable to other content and contexts that English Learners could use to develop their analytical writing skills. Moreover, the findings of this study reveal that teachers have many reasons why they take up the tools and materials the way they did and understanding even more variations is needed (Brown, 2010; Coskie & Place, 2008; Grossman, Smagorinsky, & Valencia, 1999; Leko & Brownell, 2011; Mitka & Gates, 2010; Niesz, 2006). Other ways this model confirms the importance of the literature on teacher learning in professional development is how teacher cognition is still an important influence on teacher enactment. Expanding our understanding of teacher cognition beyond teacher perceptions is important (Kennedy & Kennedy, 1996; Stickles, 2011). One line of inquiry would be to look at how the use of the tools influences their self-efficacy, beliefs, and knowledge about students, their profession, and content. Importantly, teachers’ contexts beyond their own classrooms are also important factors that need to be understood to understand the role the Pathway Project played in teachers’ learning and how their participation in the Pathway Project functioned in light of other school, district, state, and even national initiatives. Thus, other questions that the conceptual model also challenges research to consider include: What do teachers learn about reading and writing instruction from participation in the Pathway Project? What is the relationship between appropriation patterns and teachers’ learning of the teaching of reading and writing? What would have happened if the Pathway Project was voluntary and not mandatory? How do competing professional development efforts in a school district influence the extent that each of them influences teacher practice? These are some of the questions that remain to be answered.
Ultimately, this dissertation is a story about how the teachers transformed into Pathway Project teachers by enacting the tools given to them for the purpose of improving student literacy practices, namely analytical writing (Rogoff, 1995). Of course this transformation was not absolute. It is also the case that tools do not always function the way they are designed, and that there are limitations to what they can do, which also impacted how much teachers were able to do with their students (Adams & Aizawa, 2009). Moreover, tool makers or tool users (e.g., the teachers) can also be the reason why some tools are not as effective as they can be as there may be limitations to their own beliefs, self-efficacy, and contexts (Turvey, 2013).

The Pathway Project is a site where tools were provided to teachers and generated with the best of intentions. It is not problematic then that some tools did not resonate with teachers; their experiences are helping the Pathway Project vet their ideas and work with teachers. The majority felt the program was a rewarding experience, despite some difficulties. They were also willing to work through these difficulties when evidence of student learning supported these struggles. The term “productive struggle” (Hiebert & Grouws, 2007, p. 391) applies here as teachers who are learning new ways to teach should be supported and applauded for working with tools that they have not used before and may have struggled with enacting. These learning experiences are sites for teacher learning. Understanding what they are, when, how, and why they occur is important.

Limitations

Despite the robust findings of the studies, there were many limitations around the research, particularly around studying teacher learning. First and foremost, one limitation is the lack of inter-rater reliability. Inter-rater reliability develops trustworthiness and confidence that the researcher did not come to these conclusions unsystematically and that a non-biased peer can
confirm the results (Merriam, 2009). In terms of how teachers enacted the Pathway Project tool, it would have been more beneficial to augment the Literacy Coach letters with my own observations of teachers’ lessons. As the Literacy Coaches were only able to observe each teacher three times throughout the year, it would have been more comprehensive to observe teachers once after every module to understand the links between the full day, afterschool, and weekly meetings. Moreover, member checks would have been helpful to confirm or disconfirm pedagogical decisions that I identified as the different appropriation patterns. Having participants provide feedback and input would provide another source of evidence that my characterizations were accurate to the ways they represent their work.

Another limitation to this study is the lack of a measure of teacher knowledge. I claim that teacher cognition is an important component of understanding teacher learning during professional development; however, I was unable to make claims to teacher learning of certain literacy pedagogy knowledge or practices as that was not part of the original design of the program. Video data of each context would have allowed me to do content analysis and examine shifts over time but I did not have this data to examine shifts in discourse to draw inferences about development in knowledge or practice. Neither could I authentically measure teachers’ beliefs or self-efficacy around literacy pedagogy because the measures that were used to study these constructs were not directly related to literacy instruction. Alternative measures that asked questions about specific reading and writing practices could have provided for more nuanced understandings of how teachers’ cognition influences their pedagogical decision making in terms of the Pathway Project tools and for their own work.

Another limitation is that I relied primarily on field notes. Additional sources of data, such as video or audio recordings of the activities and conversations during the full day,
afterschool, and weekly meetings would provide ways of triangulating my findings. Moreover, by taking a situative lens I was limiting my work to a more bird’s eye view of how the different pieces of the Pathway Project, teacher enactment, and teacher perceptions fit together. I did not focus on more fine grained analyses that would have been equally enlightening. For example, understanding the types of discourse that was being developed around the Pathway Project tools could have helped me understand what teachers understood about the tools (Little, 2002).

I also experienced a tension studying teacher learning in a program designed to focus on student achievement and outcomes. Funders, such as CPEC, want to focus on the influence of the professional development on students and often conceptualize the teacher as a medium through which student achievement is realized, without focusing on the teachers as learners themselves. I think this is important too; however, we have to pay attention to aspects of teacher learning. Literature has shown that when the professional development leaves changes in instructional practices do not always last (Borman, 2005; Sandholtz & Ringstaff, 2013). It is often the case that the learning that is entrusted to teachers is not incorporated as much from the professional development program when there is no accountability in place or evidence of effectiveness. At the same time, much of the curriculum research shows that teachers need opportunities to talk about and reason with their colleagues and that simply expecting teachers to implement resources does not honor the ways that they need to take and appropriate materials for use in their classrooms (Vescio, Ross, & Adams, 2008). My study suggests that mixed methods studies are needed to not only ask if achievement occurs, but also how teachers learn to make change happen for students (Baker et al., 2010). Such an analysis would have important implications for designing professional development that can have lasting impacts on both teachers and students.
Finally, research shows that the context of teachers’ work influences their learning and practice, as well as student learning. While this study did not take into consideration classroom characteristics, school characteristics, or district characteristics that may also impact teacher learning of the materials, this is an important issue for future inquiry. A stronger analysis could have made these links stronger to provide implications for not only how the design of the professional development impacts teacher learning, but also how other contextual features all play a role in determining where teachers’ attention are drawn and how these factors shape teachers’ learning through their enactment, cognition, and contexts.

**Future Directions**

This analysis was done with only one year of data. It would be important to examine the data over the two year period to examine how patterns in appropriation hold or shift for the individual teachers, as well as to see how the learning from one year is extended into the second year of the program. Moreover, the Pathway Project is designed in a way that can inform other professional development studies regarding literacy instruction and it would be interesting to see how other concepts can be taught using this design. For example, how could the Pathway Project design be used to disseminate the use of more discussion based practices such as Socratic Seminars and literature circles? Instead of being a secondary focus, these techniques could be the primary focus of inquiry for teachers. With the advent of the Common Core State Standards assessments, another way the Pathway Project could be used is to help teachers develop project based or problem based learning experiences for their students. Another line of inquiry would be to understand the relationship between teacher perceptions and their enactment, but this requires more extensive data collection. Addressing the gaps that occurred stemming from this study can
help us improve our understanding of what makes for effective and impactful professional development.

This framework for teacher learning can also extend to studies of pre-service teacher learning. Pre-service teachers are often provided tools and resources to build their beginning repertoire. Future inquiry into their appropriation patterns would show differences between the ways that beginning and practicing teachers use tools and their reasoning for their appropriation. We would anticipate that more experienced teachers may have more complex reasoning for how they adapt and enact tools for use in their classroom. Future research on the differences between novice and experienced teachers can show how these tools are useful for teachers across different stages in their career and how to design learning environments for teachers to support their use.
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APPENDIX A

Analytical Writing Assessment Rubric

Note: Papers at all levels of achievement described below will contain some or all of the characteristics listed as criteria for each particular score. The writer does not need to discuss these issues in a specific order to receive a high score as long as he/she addresses all parts of the prompt.

6 Exceptional Achievement

- Writer introduces the subject, giving enough background for the reader to follow the interpretation he/she offers in response to the prompt.
- Overall, writer presents a thoughtful theme statement which expresses the author’s main point, lesson, or message.
- Writer clearly addresses all parts of the writing task:
  - Writer clearly discusses the author’s description of the Haitian people’s actions after the earthquake or the man in the water’s actions after the plane crash.
  - Writer thoughtfully analyzes the language Pitts or Rosenblatt uses to describe nature and the relationship between either the Haitian people and nature or the man in the water and nature (including similes, metaphors, symbols, personification, or other figurative language).
  - Writer thoughtfully discusses Pitts’ or Rosenblatt’s response to the way the Haitian people respond to their tragedy or to the fact that the man in the water lost his life in the process of saving others.
  - Writer thoughtfully discusses the author’s purpose in writing his article, restating his message, and explaining why that message is especially significant.
  - Writer skillfully weaves numerous references from the text into the paper to support his/her ideas.
  - Writer interprets well and brings the paper to a logical conclusion.
  - Writer uses precise, apt, or descriptive language and sentence variety.
  - Paper has few errors in the conventions of written English.

5 Commendable Achievement

- Writer introduces the subject, giving some background for the reader to follow the interpretation he/she offers in response to the prompt.
- Overall, writer presents a reasonably thoughtful theme statement which expresses the author’s main point, lesson, or message.
- Writer addresses all parts of the writing task to some extent:
  - Writer discusses the author’s description of the Haitian people’s actions after the earthquake or the man in the water’s actions after the plane crash.
• Writer analyzes the language Pitts or Rosenblatt uses to describe nature and the relationship between either the Haitian people and nature or the man in the water and nature (including similes, metaphors, symbols, personification, or other figurative language).
• Writer discusses Pitts’ or Rosenblatt’s response to the way the Haitian people respond to their tragedy or to the fact that the man in the water lost his life in the process of saving others.
• Writer discusses the author’s purpose in writing his article, restating his message, and explaining why that message is especially significant.
• Writer weaves several references from the text into the paper to support his/her ideas.
• Writer interprets reasonably well and brings the paper to a logical conclusion;
• Writer uses some precise, apt, or descriptive language and sentence variety.

4 Adequate Achievement
• Writer orients the reader adequately by giving at least some introductory context.
• Writer may begin unsteadily but reaches a focus or point.
• Overall, writer presents an adequate theme statement which expresses the author’s main point, lesson, or message. This statement may not be in the introduction.
• Writer addresses most parts of the writing task (at least 3 of the 4 tasks).
• Writer adequately discusses the author’s description of the Haitian people’s actions after the earthquake or the Man in the Water’s actions after the plane crash but not in much detail.
• Writer adequately discusses but may not analyze the language Pitts or Rosenblatt uses to describe nature and the relationship between either the Haitian people and nature or the man in the water and nature (including similes, metaphors, symbols, personification, or other figurative language). The writer may only briefly refer to the language, discuss only one example, or quote the language without really analyzing it.
• Writer provides an adequate discussion of Pitt’s or Rosenblatt’s response to the way the Haitian people respond to their tragedy or to the fact that the man in the water lost his life in the process of saving others.
• Writer discusses the author’s purpose but may not thoroughly discuss why that message is especially significant.
• Writer weaves some references from the text into the paper to support his/her ideas.
• Writer interprets in less depth than a 5 paper. While the paper has a conclusion, the development of the paper toward that conclusion may be less logically organized.
• Paper has less apt, precise or descriptive language than a 5 or 6 paper.
and little sentence variety.

- Paper has some errors in the conventions of written English, but none that interfere with the message.

3 Some Evidence Achievement

- Writer introduces the topic perfunctorily or simply dives in—answering the questions without developing a clear introduction.
- Overall, writer’s essay may not include a theme statement; the essay may be superficial or rely on the retelling of events; or a one sentence theme statement may be tacked on at the end.
- Writer responds to some but not all of the writing tasks in the prompt:
  - Writer briefly summarizes but does not clearly describe how the Haitian people or the man in the water respond to the tragedy.
  - Writer summarizes but does not discuss in any depth how the author uses language to portray the relationship between the Haitian people and nature or the man in the water and nature. Writer may not identify uses of figurative language.
- Writer may fail to discuss Pitt’s or Rosenblatt’s response to how the Haitian people deal with the tragedy or the fact that the man in the water lost his life in the process of saving others.
- Writer may fail to discuss author’s purpose or may fail to discuss why that message is especially significant.
- Writer uses few, if any, references from the text into the paper to support his/her ideas.
- Writer may have limited facility with descriptive language and write simple sentences (i.e. no sentence variety).
- Writer seems to lack skill in presenting his/her own ideas and may fall back on plot summary. The writer’s conclusion may be slightly off-base or inadequately developed.
- Paper may have errors in the conventions of written English, some of which interfere with the reader’s comprehension.

2 Little Evidence of Achievement

- Writer provides no introduction or it is brief and unfocused.
- Writer does not seem to understand what a theme is and simply retells what happened.
- Writer may fail to discuss how the authors describe the actions of either the Haitian people or the man in the water.
- Writer may not understand how the author is using language to portray man versus nature.
- Writer may focus solely on what happened and not to the author’s response to how people deal with tragedy.
- Writer may not understand the author’s purpose in writing the article or why the theme is significant.
- Writer talks in generalities and fails to provide specific references to
Conclusion may be abrupt or missing.
Writer has extremely limited facility with language and little command of sentence structure.
Paper has many errors in the conventions of written English, many of which interfere with the writer's message.

1 Minimal Evidence of Achievement
- Context/introduction is missing, abrupt or confusing.
- Writer merely retells the story briefly and does not address the prompt.
- Writer misreads or has a very limited understanding of the article.
- Writer has very poor command of how to construct an essay.
- Paper has so many errors in the conventions of written English that the writer's meaning is obscured.
- Writer may also just copy down chunks of text that are taken directly from the article.
## APPENDIX B

**Lyons and Pinnell (2001): Framework for Professional Development in Literacy Education**

<table>
<thead>
<tr>
<th>Components</th>
<th>Process</th>
<th>Goal</th>
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<tbody>
<tr>
<td>1. Assess the Context</td>
<td>Observe teaching and learning in the school. Identify student factors. Learn about community. Identify teacher factors. Learn to know people in the school.</td>
<td>- To find out what teachers already know and what they want to know. - To discover what teachers are doing that is effective and ineffective. - To gather student achievement data. - To gather information about the school context.</td>
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<td>2. Provide the Basics</td>
<td>Provide limited number of materials for first trials of processes. Provide concrete examples of organization and routines. Walk through routines.</td>
<td>- To equip teachers with the basic materials they will need to try the new approach. - To help them learn how to organize and use materials.</td>
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<td>3. Demonstrate the Process</td>
<td>Demonstrate the procedures explicitly. Provide good examples from experts.</td>
<td>- To provide clear, explicit examples of the approach or procedure to be learned.</td>
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<td>4. Establish the Rationales</td>
<td>Make rationales visible in writing and in talk. Engage participants in stating rationales.</td>
<td>- To help teachers understand why the approach or technique is important to learn. - To bring student learning to a place of high attention.</td>
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<tr>
<td>5. Engage the Learners</td>
<td>Show and discuss examples. Link observation of student behavior to procedures.</td>
<td>- To engage teachers in active learning and exploration. - To help them visualize the approach in action. - To help them imagine performing the techniques themselves. - To help them begin to analyze student behavior and teacher behavior.</td>
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<td>6. Try It Out</td>
<td>Encourage teachers to try the new techniques for themselves. Share the experience and results. Analyze the process for efficiency and good management. Analyze the process for evidence of learning—what was powerful? Why?</td>
<td>- To enable teachers to use specific instructional approaches. - To encourage &quot;risk-free&quot; approximations as a way of getting started. - To work toward automatic use of routines by teachers and children.</td>
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<td>7. Establish Routines and Procedures</td>
<td>Provide concrete suggestions for changes in teacher behavior and/or organization and use of time. Establish plan of action. Support refining of procedures.</td>
<td>- To provide specific guidance for establishing good, efficient routines. - To practice the teaching behavior related to the approach. - To refine and polish the sets of actions that make up the approach.</td>
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<td>8. Coach for Shifts in Behavior</td>
<td>Observe the process in the classroom. Analyze and discuss examples from the teacher's own teaching. Connect teacher behavior and student behavior. Discuss changes for greater student learning and/or better management.</td>
<td>- To provide opportunities for teachers to become sensitive to the impact of their instruction on student behavior. - To help them analyze their own teaching. - To provide specific suggestions for changes in behavior that will make the approach more effective.</td>
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<td>9. Coach for Analysis and Reflection</td>
<td>Coach to support reflection. Coach to widen the repertoire of teaching actions. Coach to promote analysis. Act as a co-investigator.</td>
<td>- To help teachers engage in analysis and reflection on their own. - To support them in the continual refining of their teaching.</td>
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<td>10. Extend Learning</td>
<td>Lead group conversations about theoretical ideas in connection with observations of children's behavior. Use teachers' classrooms as laboratories. Bring teachers together as co-investigators. Bring teachers together so they help one another learn. Provide give-and-take coaching, according to teachers' specific circumstances and needs.</td>
<td>- To help teachers form tentative theories that they then test against the behavior of their own children. - To help them examine examples from their own classroom or from their peers' classrooms and to build theory from their observations. - To help them apply theoretical constructs in their classroom work. - To help them formulate their own goals for extending their understanding. - To encourage self-coaching through assisted reflection. - To support a variety of independent learning experiences for teachers.</td>
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