A CASE STUDY OF A PROFESSIONAL DEVELOPER SUPPORTING SCHOOL IMPROVEMENT

A Capstone Project

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by

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Executive Summary

Recently, Virginia schools have struggled to meet accreditation benchmarks and federal accountability measures. Only 77% of Virginia public schools are fully accredited for the 2013–2014 school year, compared to 93% the year prior (Virginia Department of Education [VDOE], 2013b), and only 41% of Virginia public schools met all federal accountability benchmarks (VDOE, 2013c). The Office of School Improvement (OSI) at VDOE provides support to schools in meeting both state accreditation and federal accountability measures by performing academic reviews and connecting the schools to resources. One of the resources available to schools is support services from VDOE Training and Technical Assistance Centers (T/TACs). VDOE T/TACs provide support to professionals who work with students with disabilities to improve academic outcomes. VDOE T/TACs have currently been assigned to work with 174 schools in 73 divisions that have struggled with performance of students with disabilities. Some of the schools are fully accredited, and some are not; but none of the schools met the federal accountability measures for students with disabilities.

Purpose

Virginia Commonwealth University (VCU) T/TAC is staffed by program specialists who provide professional development to personnel who work with students with disabilities in schools with low pass rates for students with disabilities. This type of professional development, related to school improvement, is new to VCU T/TAC, and the organization does not have a set of actions that match the current focus to guide program specialists. The purpose of the study was to explore the way a VCU T/TAC program specialist implements professional development in a school with the goal of

school improvement so that VCU T/TAC can make informed decisions about practices. The study, which focused on the work of a program specialist, explored how a program specialist provided professional development, what professional development looked like (e.g., who was involved, the delivery structure, the focus), and what factors the program specialist considered when planning for and adjusting professional development.

Methodology

The study was structured as a single case study of a program specialist in one school, and data were collected over a 7-week period. The data collection procedures included interviews, observations, and document reviews. Data analysis consisted of a clear, iterative process of data condensation, data display, and conclusion drawing/verification. Additionally, the study was designed with considerations for trustworthiness by addressing credibility, transferability, dependability, and confirmability. Confidentiality and ethical considerations were also significant aspects of the study design.

Findings

The three findings of the case study are as follows:

1. The program specialist provided quality, contextual professional development in multiple delivery structures (after-school session, follow-up sessions, team meetings, and one-on-one meetings) across two main focus strands: teacher collaborative and behavior management. The delivery structure differed by the target level of change: classroom, team, and school.

2. The program specialist provided professional development by acting to build capacity and relationships within the context of the school. Actions to build capacity differed by structure and purpose of professional development activities.
3. The program specialist considered contextual factors (including time, teacher attitude, teachers' knowledge and skills, and relationships among school personnel) when she was making decisions while planning for and delivering professional development.

Implications and Recommendations

Based on the implications of the findings, the recommendations to VCU T/TAC include areas for further exploration of the organization's current work and the development of an applicable set of actions to guide program specialists. The recommendations are as follows.

1. Explore the characteristics of the professional development that program specialists are providing, with a focus on purpose and context.
2. Explore the actions of program specialists in providing professional development through the lens of social capital.
3. Use the outcomes of Recommendation 1 and Recommendation 2 to develop for program specialists a set of guiding actions that promote the organization's mission.

DEDICATION

This capstone project is dedicated to the teachers, administrators, and professional developers who fight the uphill battle of school improvement on a daily basis.

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TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

Introduction

Until recently, federal accountability for public schools in the United States was monitored through the No Child Left Behind Act (NCLB) of 2001. As a part of the law, schools were to incrementally achieve 100% proficiency for all students in reading and math by 2014 (NCLB, 2003). As time progressed, more and more schools were failing to meet the yearly federal proficiency standards, and the goal of 100% proficiency by 2014 became clearly unattainable (Layton, 2013). NCLB was eligible for reauthorization in 2007, but Congress was unable to agree on revisions and the law remained in place (Layton, 2013). In 2011, the Secretary of Education, Arne Duncan, began to grant states waivers that provide relief from the law (Layton, 2013). The waivers essentially nullified the federal accountability portions of NCLB and allowed states to set their own requirements for how federal accountability would be measured. Currently, 42 states have been granted waivers (U.S. Department of Education, 2014). The states that have not been granted waivers are subject to the full terms of NCLB.

In light of the current state of NCLB, federal accountability is a critical, current topic in education. In the following sections of this chapter, I discuss accountability in Virginia and information about the organization under study to provide a contextual background for the capstone project. Included in this chapter are the purpose of this project, an overview of the conceptual framework, the research questions, and an overview of research methods. Definitions of key terms are on page 18.

Accountability in Virginia

Virginia was granted a waiver from NCLB in June 2012, and the new accountability system began in the 2013–2014 school year (Virginia Department of Education [VDOE], 2013a). Virginia's new accountability system contains some key changes, including measures of proficiency and growth, called annual measurable objectives (AMOs), based on subgroups and gap groups (VDOE, 2013a). The subgroups of students are students with disabilities, limited English proficiency students, economically disadvantaged students, White students, Asian students, and proficiency gap groups (VDOE, n.d.a). The proficiency gap groups are groups of students who have had difficulty meeting standards in the past and are

- Proficiency Gap Group 1–students with disabilities, English language leaners and economically disadvantaged students, regardless of race and ethnicity;
- Proficiency Gap Group 2–African-American students, not of Hispanic origin, including those also counted in Proficiency Gap Group 1; and
- Proficiency Gap Group 3–Hispanic students, of one or more races, including those also counted in Proficiency Gap Group 1. (VDOE, 2013a)

For schools to meet AMOs, schools must achieve a specified pass rate for all students, subgroups of students, and each gap group. For each year of accountability, AMO pass rates increase until 2017–2018 when all groups are expected to have a 78% pass rate in reading and a 73% pass rate in mathematics. The specific AMO targets are listed in Appendix A. Pass rates are calculated based on student performance on high-stakes Standards of Learning (SOL) assessments.

High schools also need to meet targets for on-time graduation rates, which are calculated as the percent of students who graduate with a standard or advanced diploma within 4 years of entering ninth grade (VDOE, 2011). For both standard and advanced

diplomas, students need to earn standard and verified credits. Standard credits are earned by passing the course, and verified credits are earned by passing the SOL test for the course. For an advanced diploma, students must earn more standard and verified credits than for a standard diploma. The specific number of credits required differs by division as local school boards set diploma requirements that meet or exceed the requirements set by the Virginia Board of Education.

Also as a part of the NCLB waiver, Virginia uses accountability measures to identify priority and focus schools. Priority schools are the lowest performing 5 % of schools receiving Title I funds (monies that schools receive to support achievement for low-income students), and focus schools are in the lowest 10%. Both priority and focus school are subject to state-approved and state-monitored school improvement initiatives (VDOE, 2013a). School improvement initiatives may include hiring a turnaround partner from an outside organization to advise and coordinate other school improvement efforts.

In addition to federal accountability, Virginia has a separate system for schools to be state accredited. For a school to be fully state accredited, students must meet or exceed the following pass rates on SOL assessments: 75% in English and 70% in math, science, and history (VDOE, n.d.b). For state accountability, Virginia allows schools to use a 3-year average of pass rates; the 3-year average is not allowable for federal accountability. High schools must also meet or exceed 85 on the graduation and completion index (GCI) (VDOE, n.d.b). GCI is calculated similarly to the federal graduation measure, but gives schools partial credit for students who graduate with special diplomas and pass GED® tests.

Virginia has five categories of accreditation: fully accredited, accredited with warning, accreditation denied, provisionally accredited, and conditionally accredited (for new or reconstituted schools) (VDOE, n.d.b). Schools that have been accredited with warning for 2 or 3 years are in danger of having their accreditation denied, and if that happens, the schools would be subject to state takeover through the Opportunity Education Institute (OEI). OEI has the authority to manage the schools however it deems appropriate, including changing the schools over to charter or lab schools (VDOE, 2013b).

Recently, Virginia schools have struggled to meet accreditation benchmarks and federal accountability measures. Only 77% of Virginia public schools are fully accredited for the 2013–2014 school year, compared to 93% the year prior (VDOE, 2013b), and only 41% of Virginia public schools met all federal accountability benchmarks (VDOE, 2013c). Six schools were denied accreditation and are subject to control by OEI, and 19 schools could possibly be under the control of OEI next year (VDOE, 2013b).

The Office of School Improvement (OSI) at VDOE provides support to schools in meeting both state accreditation and federal accountability measures. The current focus for schools to improve on both state and federal measures is through an academic review of curriculum alignment. Curriculum alignment is ensuring that the written, taught, and tested curricula are aligned to the content and level of rigor of the state standards. The written curriculum includes items such as division-created curriculum guides, pacing guides, unpacked standards, and unit plans. The taught curriculum includes lesson plans and lesson observations that confirm the implementation of lesson plans. And the tested curriculum includes both formative and summative assessments at the classroom, school,

division, and state levels.

As a part of the academic review procedures, divisions are assigned OSI contractors. OSI contractors are not employees of the VDOE, but are contracted to support school improvement efforts. A primary role of an OSI contractor is to support the divisions in the academic review process and access additional resources for the school as needed. One of the resources available to schools is support services from VDOE Training and Technical Assistance Centers (T/TACs). VDOE T/TACs provide support to professionals who work with students with disabilities to improve academic outcomes, including on-time graduation. VDOE T/TACs have been assigned to work with 174 schools in 73 divisions that have struggled with performance for students with disabilities. The Special Education Program Improvement (SEPI) Office at the VDOE identified these schools as ones that do not receive Title I funds and did not meet AMOs for students with disabilities; these schools are referred to as "SEPI schools". The schools that receive Title I funds receive primary support through OSI. Some of the schools identified by the SEPI office are fully accredited, and some are not; but none of the schools met the federal accountability measures for students with disabilities. For the 2013–2014 accountability year, schools had to meet or exceed a 30% pass rate in reading and 41% pass rate in mathematics for students with disabilities on 2012–2013 SOL tests. Figure 1 summarizes the organizational structure of services to schools not meeting accountability measures.

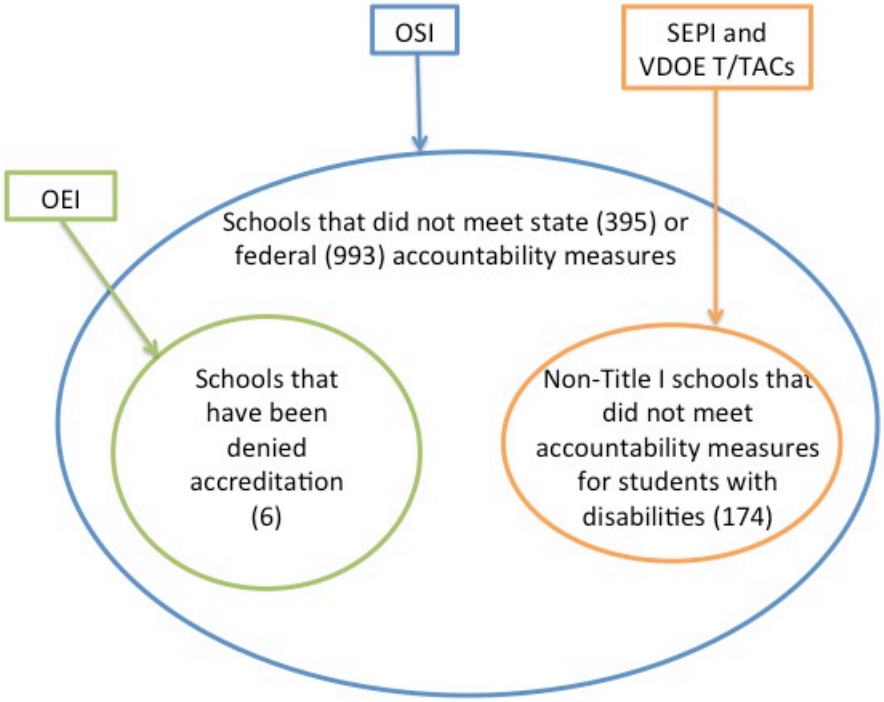

Figure 1. Organizational structure of services to schools not meeting accountability measures. The numbers in parenthesis indicate number of schools.

Organization Background Information

The organization of focus for this capstone project is the VDOE T/TAC at Virginia Commonwealth University (VCU). The formal description of VDOE T/TAC at VCU follows.

> VDOE T/TAC at VCU is a specialty center to improve educational opportunities and contribute to the success of children and youth with disabilities (ages birth to 22). The mission is (a) to increase the capacity of school personnel, service providers and families to meet the needs of children and youth with disabilities and (b) to foster the state improvement goals for personnel, which address improving the performance of children and youth with disabilities by enhancing the knowledge, skills, abilities and performance of all personnel who work with them. (VDOE T/TAC at VCU, n.d.)

VDOE T/TAC at VCU is one of seven T/TACs in Virginia. Other T/TACs are located at College of William and Mary, George Mason University, James Madison University, Old Dominion University, Radford University, and Virginia Polytechnic Institute and State University. T/TACs are funded through federal grant money that is provided to VDOE and managed through state universities. The technical assistance centers began in 1978 as centers to support professionals working in early childhood special education. In 1986, VDOE expanded the centers to include supporting professionals working with children with disabilities (ages birth to 22). At that time, the centers were renamed as T/TACs.

T/TACs provide services to professionals who work with students with disabilities in the following areas: assistive technology, autism, behavior supports, early childhood instruction, elementary instruction, intellectual disabilities, and secondary instruction. Some of the services T/TACs offer include a lending library with resources and technology, workshops, consultations, newsletters, and differentiated technical assistance to divisions and schools. Differentiated technical assistance is accessed for divisions and schools when OSI contractors have identified improving outcomes for students with disabilities to be a specific area of need. Differentiated technical assistance includes a variety of professional development activities provided by VCU T/TAC depending on the needs of the school, including, but not limited to, workshops, consultations, and facilitating team meetings. The goal of providing professional development is to improve the academic outcomes for students with disabilities as measured by end-of-year high stakes SOL assessments and on-time graduation with a standard diploma.

VCU T/TAC has two codirectors, 15 program specialists, one program evaluator, and five office support staff. The program specialists are organized into two levels of teams. The first level provides support SEPI schools. Each of the two teams in level one includes a codirector and seven or eight program specialists. Each team is assigned to a group of school divisions. For the second level of teams, program specialists are organized according to their areas of expertise. Those teams include elementary curriculum and instruction, secondary curriculum and instruction, behavior supports, early childhood instruction, assistive technology, autism, and intellectual disabilities. The primary role of program specialists, regardless of their area of expertise, is to provide professional development to professionals who work with students with disabilities to build their capacity as professionals to improve academic outcomes for their students. Although I am a middle school program specialist at VCU T/TAC, I am not exploring my own work in this capstone project.

VCU TTAC serves professionals in superintendent regions one and eight (Appendix B shows a map of divisions in regions one and eight). As shown in Table 1, 25 schools in 12 divisions across regions one and eight have been identified by SEPI as being in need of support to improve academic achievement for students with disabilities.

Table 1

Number of Schools Accredited with Warning (Warned) and Identified by SEPI (Percentage in Parentheses)

	State		Region 1		Region 8	
	Divisions (n = 132)	Schools (n = 1828)	Divisions (n = 15)	Schools (n = 251)	Divisions (n = 12)	Schools (n = 58)
Warned	96 (72.7)	395 (21.6)	8 (53.3)	68 (27.1)	12 (100)	34 (60.3)
SEPI	23 (17.4)	174 (9.5)	6 (40)	17 (6.8)	6 (50)	8 (13.8)

Note. The division numbers represent the number of divisions that have at least one school in the associated category. Adapted from data accessed on November 22, 2013, from http://www.doe.virginia.gov/statistics_reports/accreditation_federal_reports/accreditation/index.shtml.

Additionally, all divisions in region eight have at least one school that is accredited with warning, and about half of the divisions in region one have at least one school that is accredited with warning. With the large number of schools not meeting state and federal accountability benchmarks, VDOE has requested support from T/TACs for school improvement efforts. Specifically, meeting the needs of SEPI schools are a priority for T/TACs.

VCU T/TAC also participates in state-directed projects including positive behavioral interventions and supports (PBIS), instructional consultation teams (ICT), and the strategic instruction model (SIM) from the University of Kansas. Four program specialists work primarily in supporting schools through the process of implementing schoolwide PBIS by setting common, clear expectations and by reinforcing positive behavior. The schools applied for and received funding through a state grant for PBIS. Some of the schools are schools that program specialists are working with for school improvement efforts, and some are not. One program specialist works with ICT, which is a method of team-based problem solving to improve school and individual student

outcomes. Region one and region eight do not have any ICT schools, but the program specialist provides training and support for ICT to other schools throughout the state. Three program specialists are professional developers for SIM, an evidence-based model for instruction to support adolescent literacy in the content areas with a focus on struggling learners and students with disabilities. These program specialists provide professional development with follow-up to teachers on a variety of SIM routines. The unit organizer routine for unit planning is the most commonly implemented routine. VCU T/TAC also provides support to the I'm Determined project, which promotes self-determination skills for students with disabilities.

Statement of Problem

Program specialists are tasked with providing professional development to SEPI schools to improve academic outcomes for students with disabilities. The schools that are the priority for VCU T/TAC are not meeting federal benchmarks for accountability for students with disabilities and are in school improvement. Working primarily with school improvement is a shift that has occurred slowly over the last few years and has recently become a priority for VCU T/TAC. Program specialists not only work with individual teachers to improve outcomes for students in their classrooms, but also work to impact the greater system of the school in an effort to sustain lasting change.

VCU T/TAC has a systems change model that it has used since 2002 for supporting schools in implementing initiatives related to the students with disabilities. The systems change model consists of four phases over a 3-year period: readiness, planning, implementation, and continuation (Landon, 2002).

1. The readiness phase consists of gathering momentum for change, obtaining administrative approval, forming a team of key stakeholders, and clarifying the purpose of the team.
2. The planning phase consists of gathering information, visiting a site that has the initiative, developing a program philosophy, developing an action plan, developing a proposal, gaining support, developing a description, identifying barriers and solutions, sharing information, developing the initiative, planning for evaluation, and planning for trainings.
3. The implementation phase consists of planning for orientation to the new initiative, piloting, and conducting regular team meetings.
4. The continuation phase consists of revising the description of the initiative and developing policies (Landon, 2002).

The model was primarily used with schools as they began initiatives for inclusive practices (including students with disabilities in general education classrooms). The model was used for both implementing new and expanding existing programs within schools.

VCU T/TAC has shifted its priority from systems change for inclusive practices to school improvement. Some parts of the systems change model do not apply to the current work of program specialists. There are several differences between the work of systems change for inclusive practice and the current work in school improvement. Some of the differences include the initiation of services,

- Schools used to initiate services by completing an application. Currently, services are accessed through school improvement efforts (i.e. OSI contractors).
- VCU T/TAC used to focus on inclusive practices. Currently, VCU T/TAC focuses more broadly on school change to improve student achievement outcomes for students with disabilities.
- Schools used to decide on the main focus for professional development. Currently, VCU T/TAC identifies the focus for professional development.
- VCU T/TAC used to enter schools at the beginning of a school year and provide services for 3 years. Currently, VCU T/TAC is entering schools in late winter or early spring and exiting at the end of the school year.

As a result of these differences, program specialists may be working in lower performing schools than they have in the past and may need additional skills that they have not needed in the past.

Low-performing schools are complex, often dysfunctional, systems with a variety of contextual factors and needs. Low-performing schools tend to have a culture of failure that is fueled by poor leadership, demoralized teachers, and apathetic students (Stein, 2012). Although failing schools may have commonalities, a common reform program has not proven to be effective in improving school performance (Fullan, 2007). As such, program specialists cannot apply a specific program to the schools for improvement as they had done with the systems change model. Each school has a different culture, is a part of a different system, and has a different set of contextual factors. Program

specialists are adapting a mismatched systems change model to meet their current needs and it is not known how they are providing professional development in these schools.

The problem of practice examined in this capstone project is that VCU T/TAC has a systems change model that does not match the focus of its current practices. VCU T/TAC does not have a set of guiding actions for program specialists working with SEPI schools (non-Title I schools that did not meet AMOs for students with disabilities). Additionally, some program specialists who have not previously engaged in school improvement will be working in SEPI schools and do not have a set of actions to guide them. Understanding what is currently happening in schools with T/TAC program specialists can lead to developing guiding actions for program specialists working in SEPI schools.

Purpose of Study

The purpose of the study is to explore the way a VCU T/TAC program specialist implements professional development in a SEPI school so that VCU T/TAC can make informed decisions about its practice. The study focuses on the professional development a program specialist provided in a SEPI school by exploring what professional development looked like (e.g., who was involved, the delivery structure, the focus) and what factors the program specialist considered when planning for and adjusting professional development. In this capstone project, I address the way the professional development provided by a program specialist reflects what is known about school improvement and professional development from current literature. The outcome of the capstone project is a better understanding of the how a program specialist provided

professional development in a SEPI school. The information can be used by VCU T/TAC to develop a set of guiding actions for program specialists working in SEPI schools.

Overview of Conceptual Framework

Systematic study of a T/TAC program specialist requires a framework to make sense of the complex nature of professional development in a school. The conceptual framework for this capstone project is a visual that I created, is drawn from the work of others on the topic, and is used to guide the study (see Figure 2).

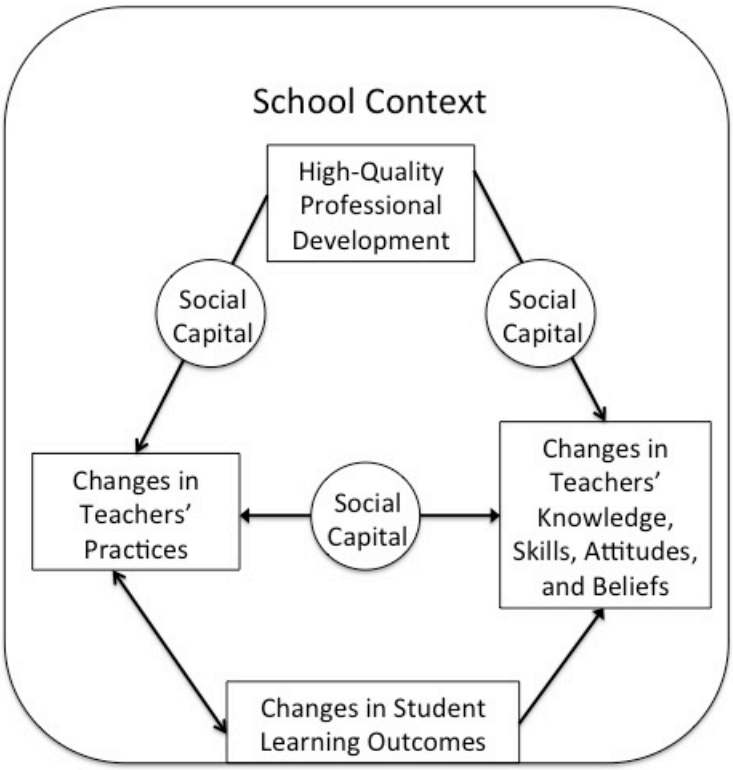

Figure 2. Conceptual framework for capstone project.

The visual shows that professional development leads to school change through the following pathways:

- Teachers engage in high-quality professional development.

- Professional development leads to changes in teachers' knowledge, skills, attitudes, and beliefs and also changes in teachers' practices.
- Teacher changes are mediated by social capital. Social capital is how "social relationships among people affect their access to knowledge and information" (Hargreaves & Fullan, 2012, p. 90) and acknowledges the important relationships teachers have with each other and other professionals within the school.
- Teacher changes through social capital build capacity within the school.
- Teacher changes lead to changes in student learning outcomes.
- The pathways are situated within the specific context of a particular school.

The visual representation results from the review of theoretical and empirical literature on professional development and school improvement. My review of the literature finds that high-quality professional development leads to changes in teachers' knowledge, skills, attitudes, and beliefs, and changes in classroom practices (Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001; Penuel, Fishman, Yamaguchi, & Gallagher, 2007). High-quality professional development activities are ongoing activities that are content focused, align to school goals, provide opportunities for active learning, and involve collective participation of teachers (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). The changes in teachers' knowledge, skills, attitudes, and beliefs, and classroom practices can improve student achievement (Guskey & Yoon, 2009; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). But researchers disagree about the process by which professional development leads to changes in student learning. Guskey (2002) believes that professional development leads to changes in teachers' practices, which in turn impact student

learning outcomes, which in turn change teachers' beliefs and attitudes. An alternate view is that professional development leads to changes in teachers' knowledge and beliefs, which in turn changes classroom practices, which in turn impact student outcomes (Desimone, 2009; Hochberg & Desimone, 2010). As such, the conceptual framework for this capstone project allows for multiple routes of teacher change. Researchers emphasize that professional development is embedded in the culture and context of the school (Avalos, 2011; Borko, 2004; Hochberg & Desimone, 2010; James & McCormick, 2009; Opfer, 2011; Walpole & McKenna, in press; Webster-Wright, 2009) and within that context, social capital is a mediator for teacher learning (Cole & Weinbaum, 2010; Coleman, 1988; Hargreaves & Fullan, 2012; James & McCormick, 2009; Penuel, Riel, Krause, & Frank, 2009). Thus, the conceptual framework that guides this study situates professional development and its impact within the context of the school, and social capital is included as a mediating factor. Additionally, the researchers' findings support professional development as a tool to improve not only the capacity of teachers individually but also the capacity of the school (King & Newmann, 2001; Newmann, King, & Youngs, 2000; Opfer, 2011). The conceptual framework for this capstone project focuses on teachers as a collective within a school, rather than on individual teacher and student outcomes. In Chapter 2 I provide an in-depth review of the literature and thorough explanation of the conceptual framework that guides this capstone project.

A VCU T/TAC program specialist engages directly in the input for teacher change—the professional development. When providing professional development, the program specialist acts within the context of the school and engages in social capital with school personnel. The capstone focuses on the way a program specialist provided

professional development in a school. In the study, I analyze the professional development (the input) and the factors that a program specialist considered when providing professional development (e.g., context). The study does not seek to explain teacher changes or student outcomes, but focuses solely on the work of the program specialist.

Research Questions

The questions for this study were derived from the work of T/TAC program specialists in school improvement.

How does a T/TAC program specialist provide professional development to support school and classroom-level change?

a. What does professional development provided by a program specialist look like (e.g., who is involved, what is the delivery structure, what is the topic)?
b. What factors does a program specialist consider when providing professional development within a classroom, team, and/or school?

Overview of Methods

This study is designed as a single case study and analyzes a VCU T/TAC program specialist in one school. Data for this study were gathered from interviews, observations, and documents. The primary method of qualitative data analysis includes data condensation, data display, and conclusion drawing/verification. In Chapter 3 I detail the research methods for this study. The final outcome of this capstone project is findings and recommendations to VCU T/TAC presented in Chapters 4 and 5. The findings and recommendations are communicated to the organization as an action memo in Chapter 6.

Definition of Terms

The following is a list of definitions of key terms for this study.

- *Annual measurable objectives (AMOs)* are pass rates on high-stakes tests that are used as benchmarks for federal accountability in Virginia.
- *Graduation completion index (GCI)* is the state graduation benchmark calculated as the percentage of students who graduate within 4 years with a standard or advanced diploma. Schools receive partial credit for students who graduate with special diplomas and pass GED® tests.
- The *No Child Left Behind Act (NCLB)*, a federal law, guides accountability for public schools in the United States.
- The *Opportunity Education Institute (OEI)*, an organization overseen by the governor of Virginia, assumes responsibility for schools that are denied accreditation.
- The *Office of School Improvement (OSI)*, the branch of the Virginia Department of Education, provides support to schools that receive federal Title I funding.
- *Professional development* refers to a variety of activities including, but not limited to, workshops, professional learning communities, and consultations, that build teachers' capacity by changing teacher's knowledge, skills, beliefs, attitudes, and classroom practices to improve student outcomes. *High-quality* professional development includes ongoing activities that are content focused, align to school goals, provide opportunities for active learning, and involve collective

participation of teachers (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007).

- A *program specialist* is the formal job title of a professional development provider at the Virginia Department of Education Training and Technical Assistance Center at Virginia Commonwealth University.
- *School improvement* and *school change* are synonymous terms and refer to the process of building capacity in a school to improve student outcomes.
- *Social capital* is "how the quantity and quality of interactions and social relationships among people affects their access to knowledge and information; their senses of expectations, obligations, and trust and how far they are likely to adhere to the same norms or codes of behavior" (Hargreaves & Fullan, 2012, p. 90).
- The *Special Education Program Improvement (SEPI)* office at the Virginia Department of Education provides support to non-Title I schools that have not met federal benchmarks for students with disabilities.
- The *Standards of Learning (SOLs)* assessment are the high-stakes tests used in Virginia to measure accountability.
- *Virginia Department of Education Training and Technical Assistance Center (VDOE T/TAC)* provides support to professionals to meet the needs of students with disabilities.

Summary

In this chapter I provide the background information needed to frame the problem of practice, on overview of the proposed capstone project, and the conceptual framework

used to guide the study. In Chapter 2 I examine the literature on teacher professional development and the relationship between professional development and school improvement. In Chapter 3 I outline the methodology for the capstone project including a description of the participant, data collection procedures, and data analysis methods. In Chapters 4 and 5 I detail the findings of the study, implications, and recommendations. Chapter 6 is an action communication about the findings, implications, and recommendations written to VCU T/TAC.

Review of Literature

Reform in the United States public education system is not a new phenomenon. The push for educational change can be traced from the Progressive Era through the launch of Sputnik and into the 1980s when large-scale reform shifted focus to accountability (Fullan, 2007). Whole-school reform and comprehensive school reform models were implemented and realized to not be effective by the early 2000s (Fullan, 2007). The current challenge to the American education system is improving so called "failing" schools that struggle to meet rigorous accountability standards (Elmore, 2008a). Additionally, there has been a shift from a focus on using policy as the mechanism for school reform to a focus on improving the practice of educators (Elmore, 2008a).

In general, there are four broad approaches of school change: bureaucratic, professional, market, and democratic (Darling-Hammond, 2009). The bureaucratic approach relies on top-down management and policy decisions (Darling-Hammond, 2009; Fullan, 2007). The professional approach focuses on improving the knowledge and skills of educators to make appropriate decisions (Darling-Hammond, 2009; Hargreaves & Fullan, 2012). The market approach focuses on choice and competition and is the basis for school vouchers and charter schools (Darling-Hammond, 2009). The democratic approach values stakeholders and involves students, parents, and teachers in making decisions (Darling-Hammond, 2009). The approach that aligns with the thinking of leading researchers in the field is the professional approach (Darling-Hammond, 2009; Elmore, 2008a; Elmore, 2008b; Elmore, 2009; Hargreaves & Fullan, 2012). Moreover,

"education reform is often synonymous with teachers' professional development" (Desimone, 2009, p. 181). In my opinion, the professional approach is the most viable for supporting low-performing schools. I believe that teachers in low-performing schools need support in working collectively for improvements in culture and student achievement outcomes within their specific school context. Other approaches, such as the market and bureaucratic approach, do not account for contextual differences and needs and ignore the connections that teachers form within the milieu of the school. The professional approach is the most responsive to the specific needs of the school.

Conceptual Framework

The conceptual framework that guides this capstone project (see Figure 2, p. 14) is a synthesis of the work of others. Visual conceptual frameworks have been applied to teacher professional development, but not specifically to professional development for school change (Desimone, 2009). As such, I created a visual depiction of the way professional development acts as a mechanism for school change to support and guide this capstone project. This framework informed every aspect of the capstone project, including how I reviewed and analyzed related literature, how I collected and interpreted data, and how I made recommendations to VCU T/TAC for supporting and improving the work of program specialists. Using the conceptual framework as an organizer, in this literature review I summarize research on teacher professional development, situate the findings within the context of school change, and address the components of the conceptual framework.

Teacher Professional Development

Professional development is an integral piece of improving teachers' practice to achieve high standards of learning for all students (Desimone et al., 2002; Fishman, Marx, Best, & Tal, 2003; Garet et al., 2001; Hochberg & Desimone, 2010; Penuel et al., 2007; Yoon et al., 2007). The goal of professional development initiatives is to provide structures to build "the capacity [of teachers] to effect the instructional changes necessary to enable students to achieve proficiency on content and performance standards" (Hochberg & Desimone, 2010, p. 91). The intended outcome of professional development is that teachers develop their practice and increase their capacity to teach high standards to all students (Desimone et al., 2002; Garet et al., 2001; Hochberg & Desimone, 2010; Yoon et al., 2007). In fact, the federal accountability system through NCLB requires states to ensure that high-quality professional development is available for teachers (NCLB, 2003). As shown in Figure 2 (p. 14), professional development is more than a change in teacher practice—it increases the opportunity for and outcomes of student learning.

In this section of the literature review I address the current research on professional development for teachers. The topics addressed include components of high-quality professional development, the relationship between context and professional development, the connection between professional development and student achievement, collaborative professional learning models, and current conceptual frameworks in the literature.

Components of Professional Development

A number of researchers have studied the components of professional development that lead to increases in teachers' knowledge and beliefs and changes in classroom practices (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). In general, in these studies, the researchers analyzed common core components of professional development including type of activity, duration, coherence, content knowledge, opportunities for active learning, and collective participation of teachers. Those core components served as the conceptual framework for high-quality professional development in all of the studies. The researchers used similar methodology in the studies, but each highlighted a specific focus. An overview of each study and the connections between the studies provides a context for evaluating the findings on each of the components of professional development.

Research by Garet et al. (2001) was foundational for following studies by Desimone et al., 2002 and Penuel et al., 2007 on components of high-quality professional development. Garet et al. (2001) conducted a survey from a nationally representative sample of 1,027 teachers (72% response rate) inquiring about characteristics of professional development activities. The researchers controlled for context through both teacher and school characteristics to allow for causal path analysis between the components of professional development and changes in teacher practice (Garet et al., 2001). The studies following Garet et al. (2001) also analyzed survey data (Desimone et al., 2002; Penuel et al., 2007). In fact, the studies by Desimone et al. (2002) and Garet et al. (2001) used the same survey designs, and both used teacher-level data. The study by Desimone et al. (2002) extended the Garet et al. (2001) study by adding a longitudinal

component. Desimone et al. (2002) surveyed 125 teachers from 30 schools (one elementary, one middle, and one high school from 10 districts) over a 3-year period. The methodology aimed to explain changes in year 3 practices based on professional development provided in 2 two by using year 1 as a control (Desimone et al., 2002). Penuel et al. (2007) analyzed survey data of both teachers and those providing professional development over a 2-year period using some of the same survey items used by Garet et al. (2001) and Desimone et al. (2002). Penuel et al. (2007) analyzed survey responses from 454 teachers (out of a random sample of 1,467) and 28 professional developers nationally from a specific earth science education curricular program (GLOBE). For analysis, Penuel et al. (2007) used hierarchical linear modeling to allow for associations between the teachers and the professional developers. The analysis was situated within the context of the GLOBE program, whereas Garet et al. (2001) and Desimone et al. (2002) did not sample teachers involved in a specific curricular program. All of the data were in the studies was teacher-reported survey data; as such, the data may not be objectively measuring teacher changes. With that caution in mind, the findings of these interrelated studies follow.

Type of activity and duration. In the studies, Garet et al. (2001), Desimone et al. (2002), and Penuel et al. (2007) describe two types of professional development: reform and traditional. Reform models include activities similar to professional communities whereas traditional models are workshop based (Butler, Lauscher, Jarvis-Selinger, & Beckingham, 2004; Desimone et al., 2002; Garet et al., 2001). Reform practices are more likely to include the key components of professional development and yield more change in teachers' knowledge, beliefs, and practices than traditional activities (Desimone et al.,

2002; Garet et al., 2001). Traditional professional development workshops have been criticized for not providing teachers with enough time or content to lead to changes in practice (Butler et al., 2004; Garet et al., 2001). A key difference between reform and traditional models are that reform models tend to be embedded in the teachers' school day and, therefore, may be more responsive than traditional models to teachers' contextual learning needs (Garet et al., 2001). Reform models also include a focus on collaboration and aim to improve not only individual teachers' practices but also the practices of peers and, in turn, the school as a whole (Butler et al., 2004; Hargreaves & Fullan, 2012). The reform models align with the conceptual framework for this capstone (see Figure 2, p. 14) in which teacher collaboration, in the form of social capital, mediates teacher changes and builds capacity within a school.

The research on the impact of the type (reform versus traditional) of professional development is conflicting. Garet et al. (2001) found that the duration of the professional development, frequent and sustained, was more important than the type of professional development. Whereas Desimone et al. (2002) and Penuel et al. (2007), using the same framework of core components of high-quality professional development, found that reform types of activities were more impacting on changing teachers' practice regardless of the duration. All of the researchers agree that reform practices yield more change in teachers' knowledge, beliefs, and practices than traditional professional development, but the process by which the change occurs remains a question (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). I explore reform activities further in the Collaborative Professional Learning section of this chapter.

The findings from an American Institutes for Research (AIR) review of studies (Yoon et al., 2007) on teacher professional development and a synthesis of the findings by Guskey and Yoon (2009) clarify some conclusions from this earlier research on traditional workshop-style professional development and the duration of professional development. Of the nine studies included in the AIR review, all used some sort of expert-led workshop or summer institute and all but one included follow-up sessions (Yoon et al., 2007). Therefore, workshops, which have been criticized, may be effective professional development practices when paired with follow-up and delivered by experts directly to teachers (Guskey & Yoon, 2009). The nine studies varied in duration and intensity of professional development activities, but studies that had greater than 14 professional development contact hours showed a positive and significant effect on student achievement (Yoon et al., 2007). Thus, the time itself may not be as important as the way the time is used. Although the small number of studies makes identifying patterns of characteristics difficult, a common set of best practice activities was not present across the studies (Yoon et al., 2007).

Coherence. A common thread in the articles exploring high-quality components of professional development is the concept of coherence (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). Coherence occurs when the topics and goals of the professional development activity are aligned to the goals of the teachers and school (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007)**.** The researchers in all three studies found coherence to be correlated to positive changes in teachers' classroom practices (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). Penuel et al. (2007) reported coherence to be a significant predictor of both changes in teacher practice

($p < 0.001$) and teacher knowledge ($p < 0.001$). These findings are consistent with the findings from Garet et al. (2001) who found that coherence impacts both teacher knowledge and skills and changes in teacher practice. Desimone et al. (2002) also found coherence to impact teachers' classroom practices. The evidence is strong for ensuring that professional development activities are linked to schools' and teachers' goals.

Content focus. Professional development that was focused on content knowledge led to changes in teachers' classroom practices in two of the studies (Desimone et al., 2002; Garet et al., 2001). Garet et al. (2001) found that professional development that focused on content knowledge impacted both teachers' knowledge and skills, and teaching practices. Penuel et al. (2007) reported that a focus on content in the GLOBE program prepared teachers to implement the program but did not report a significant impact on teacher knowledge or practice. Desimone et al. (2002) found positive, significant relationships between a focus on content and the following three variables: the teachers' use of technology ($p < 0.01$), higher order instructional practices ($p < 0.001$), and assessment practices ($p < 0.001$). The researchers' findings suggest a positive relationship between professional development that is focused on a discipline-related topic and the likelihood that a teacher will implement that practice in the classroom.

Active learning. Including opportunities for active learning in professional development activities was also found to be important across studies (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). Active learning occurs when teachers are "actively engaged in the meaningful analysis of teaching and learning, for example, by reviewing student work or obtaining feedback on their teaching" (Desimone et al., 2002, p. 83). Garet et al. (2001) used path analysis to clarify that active learning led to a change

in teachers' knowledge and skills and then, in turn, changed teaching practices. Penuel et al. (2007) looked at active learning from the perspective of support for implementation of the GLOBE program and found that support increased teacher preparedness for the program ($p < 0.01$) and implementation ($p < 0.001$). Desimone et al. (2002) found that active learning had a positive, but not significant, effect on teacher practice of technology and higher order instruction, but not for assessment. Active learning does seem to be an important variable in leading to changes in teacher knowledge and practice, but perhaps the differences in significance are due to the process by which active learning leads to change, not merely whether or not it is present.

Collective participation. Collective participation in professional development, the opportunity for multiple teachers from a department or grade-level to participate together in the activity, led to positive changes in teachers' practice in all three studies (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). Garet et al. (2001) did not find collective participation to have a direct effect on changes in either teacher knowledge or practice; the path model shows that changes were mediated through active learning and coherence. Penuel et al. (2007) reported that collective participation had a significant ($p < 0.01$) impact on changes in teacher practice, but not on teacher knowledge. And Desimone et al. (2002) reported that collective participation had a positive, significant effect ($p < 0.05$) only on the use of technology. Similar to active learning, collective participation does appear to impact professional development, but the process is not accounted for in the studies. I explore collective participation further in this chapter in the Collaborative Professional Learning section.

Summary. There is consensus in the literature on characteristics of professional development that are key for facilitating change in teacher knowledge, skills, and practices (Desimone, 2009). But Hill, Beisiegel, and Jacob (2013) caution that when the characteristics of professional development are looked at in isolation, the overall impact of the professional development program may be lost. In the studies, the researchers measured the presence or absences of the characteristics and whether or not teacher changes were present. It is possible that the binary focus, which controlled for context, ignored important mediating variables. Additionally, the researchers focused on changes in teacher knowledge, skills, and practices and assumed that changes in teacher behavior would lead to changes in student outcomes.

Context

Researchers have addressed the importance of context in professional development and emphasized that professional development is embedded in the culture and context of the school (Avalos, 2011; Borko, 2004; Hochberg & Desimone, 2010; James & McCormick, 2009; Opfer, 2011; Walpole & McKenna, in press; Webster-Wright, 2009). In 2004, Borko reviewed the current status of professional learning and development for teachers and outlined current findings. Borko (2004) identified key variables of professional learning programs that research should address: the program, the teachers, the facilitators, and the context. Furthermore, since both the individuals and the school have interrelated beliefs and practices, the professional learning of the individual cannot be isolated from the school (Opfer, 2011). The structures, practices, and culture of the school can "both enable and constrain teachers" (Opfer, 2011, p. 390). Therefore, the

professional development activities for teachers should be responsive to the multiple contexts in which the teachers are involved (Opfer, 2011).

The concept of a nested system has been used to model the complexity of the way teachers are influenced within their context. The nesting of systems within systems describes the way the classroom is nested within a school, within a local district, within a state, and within the nation (Elmore, 2009; Opfer, 2011). Subsystems of departments and other groups also exist within schools (Opfer, 2011). The systems are interdependent and have the ability to influence each other and the individuals within them and should be considered when evaluating professional development (Opfer, 2011).

Because of the importance of context in professional development, there has been a movement in the research from collective professional development to collaborative professional learning. Webster-Wright (2009) has called for a paradigm shift in the way professional development is addressed in research. Webster-Wright (2009) first calls for the term professional development to shift to continuing professional learning. Additionally, she and others have encouraged research approaches that address that professional learning is mediated by context and social interactions (Hochberg & Desimone, 2010; Opfer, 2011; Webster-Wright, 2009).

Collaborative Professional Learning

Collaborative professional learning activities include many of the core components of professional development in the studies discussed above. Additionally, collaborative professional learning activities involve social interactions and are situated within the context of the school. Collaborative professional learning activities, such as communities of practice and professional learning communities, are considered to be

reform practices (Garet et al., 2001). Collaborative professional learning activities have inherent coherence since the models are embedded within the context of the school and the teachers' classrooms (Butler et al., 2004; DuFour, 2004; Garet et al., 2001). Additionally, the models use a collective inquiry process for learning which supports the teachers learning together as a team or group (Avalos, 2011; Borko, 2004; Butler & Schnellert, 2012; Crafton & Kaiser, 2011; Vescio, Ross, & Adams, 2008).

Specific research has looked at collaborative professional learning models. The first model with a body of research is professional learning communities. In professional learning communities, teachers work together toward a common goal of increasing student learning (DuFour, 2004). DuFour (2004) noted that professional learning communities shift the focus from teaching to learning, create a culture of collaboration, and focus on results. Because professional learning communities quickly gained popularity, articles are easy to find on how to implement the practice, but articles on the impact on professional learning communities are rare (Vescio et al., 2008). Vescio et al. (2008) conducted a literature review of the research focusing on the impact of professional learning communities on teacher practice and student learning. The researchers found 11 studies that included empirical data connecting professional learning communities to either teacher practice or student achievement (Vescio et al., 2008). Vescio et al. (2008) reported that effective professional learning communities had the following characteristics: shared values and norms, focused on student learning, included reflective dialogue, made teaching public, and focused on collaboration. Additionally, the professional learning communities led to change in both teaching practices and school culture (Vescio et al., 2008). In all 11 of the studies, the researchers

explored the process by which professional learning communities led to change and found that they all focused on student learning, allowed teacher autonomy, and included continuous teacher learning (Vescio et al., 2008). In four of the studies, researchers reviewed specifically linked professional learning communities to increases in student learning as measured by state achievement tests (Vescio et al., 2008). Furthermore, Vescio et al. (2008) reviewed one study in which the researchers found that stronger professional learning communities led to greater student achievement.

Similar to professional learning communities are communities of practice. Communities of practice "are characterized by three interdependent constructs: mutual engagement, joint enterprise, and shared repertoire" (Crafton & Kaiser, 2011, p. 111). Communities of practice support significant shifts in teacher practice (Butler et al., 2004; Crafton & Kaiser, 2011). Butler (2004) conducted a case study of 10 teachers across four schools in a community of practice focused on ways to engage students in meaningful discussions and self-regulation of learning. The case study included data from interviews, observations, and document collection over a 1-year period (Butler et al., 2004). Butler et al. (2004) reported that through communities of practice teachers construct learning by reflecting on classroom practices and communicating with other professionals. Although the study is not generalizable, the study confirms the importance of interactions between professionals for growth. Both professional learning communities and communities of practice are professional development opportunities that are responsive to school contexts and included opportunities for teachers to construct knowledge and skills and alter attitudes and beliefs through social interactions with peers.

Connection to Student Achievement

Linking teacher professional development to student achievement outcomes has been a challenge for researchers (Desimone, 2009; Hill et al., 2013; Wayne, Yoon, Zhu, Cronen, & Garet, 2008; Yoon et al., 2007). The literature is not clear about the reason the link between professional development and student learning has been difficult to capture. One cause may be that the programs evaluated have suffered from poor implementation and lack of fidelity (Hill et al., 2013). Another cause may be that the majority of the data on professional development are teacher self-reported and may not produce the data necessary to measure the connection between professional development activities and student achievement (Desimone, 2009). In fact, a study by AIR on the impact of professional development on student achievement found only nine studies (out of 1,300) that met the rigorous standards set by the What Works Clearinghouse (Yoon et al., 2007). Positive effects were reported in each of the nine studies (average effect size 0.54) (Yoon et al., 2007). In individual cases as described by Joyce and Showers (2002), well-structured programs that focus on content, include extensive staff development, maintain strong implementation, and aim for specific learning goals lead to positive effects on student achievement. But as a result of the challenges in this area of the literature, more research focuses on the impact of professional development on teachers' knowledge and skills and less on the impact on student achievement (Yoon et al., 2007). Because the focus of this capstone project is not on connecting professional development to student achievement, the literature in this area, although worth mentioning briefly, is out of the scope of this literature review.

Conceptual Frameworks

Building off the body of research on high-quality professional development, Desimone (2009) offers a conceptual framework for professional development. The model uses a two-way linear relationship between professional development activities, the teacher, and the student. The two-way relationships are critical—changes in instruction are mediated by both the teacher's knowledge, skills, attitudes, and beliefs and the impact on student learning and vice versa. Other models by Hochberg and Desimone (2010) and Guskey (2002) use a one-way relationship between professional development and changes in teacher beliefs and attitudes and classroom practices. Desimone (2009) and Hochberg and Desimone (2010) use a model showing that professional development impacts teacher beliefs, which, in turn, impacts changes in instruction. In contrast, Guskey (2002) presents a model in which professional development leads to changes in classroom practices, which causes changes in student outcomes, and then teachers change their beliefs and attitudes. Because the literature conflicts on the way change in teacher beliefs, attitudes, and practices occur, the conceptual framework for this study allows for multiple routes of teacher change (see Figure 2, p. 14).

Summary

Upon review of the conceptual frameworks in the literature, I did not find a framework that encompassed the way professional development is used as a tool for school improvement. The conceptual frameworks in the literature are focused on individual teachers and do not address the interactions between teachers. As such, for this study, I used the conceptual framework presented in Figure 2 (p. 14). This framework

aligns with the research reviewed on teacher professional development, begins with high-quality professional development, and is not limited to a specific method of delivery. High-quality professional development includes key core features: content focus, active learning, coherence, duration, and collective participation and these features may exist in a variety of models, such as professional learning communities or workshops with structured follow-up. Additionally, the professional development is situated within the context of the school, which has been identified as an important factor impacting professional development. Because the order of the way professional development leads to changes in teachers' knowledge, skills, attitudes, and beliefs and practice varies in the literature, multiple routes of change are possible. And finally, the teacher changes lead to changes in student learning outcomes, which is the established goal of professional development. At this point, all of the research on professional development has focused on an individual teacher. The conceptual framework for this capstone project aims to connect professional development to school improvement.

Professional Development and School Change

Improving teachers' performance (and, in turn, student outcomes) is facilitated by high-quality professional development. The intended outcome of professional development is that teachers develop their practices and increase their individual ability to teach high standards to all students (Desimone et al., 2002; Garet et al., 2001; Hochberg & Desimone, 2010; Yoon et al., 2007). "Theoretically, high-quality professional development can build capacity for improving student outcomes by producing superior teaching, which would translate to higher levels of achievement" (Hochberg & Desimone, 2010, p. 94).

A longitudinal study of 390 Chicago public elementary schools over 7 years in the 1990s found that "high-quality professional development in the context of a supportive professional community and where teachers were oriented toward improvement appears powerfully related to gains in academic productivity" (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010, p. 113). The data included student outcome data (yearly achievement tests); school administrative records; teacher, student, and principal surveys; and data on the Chicago community, including census, crime, and social services data (Bryk et al., 2010). The data were analyzed across five essential supports: school leadership, parent-community ties, professional capacity, student-centered learning climate, and instructional guidance (Bryk et al., 2010). In the essential support of professional capacity, the presence of professional development alone was not connected to student achievement (Bryk et al., 2010). The researchers found that professional development was a strong predictor of gains in schoolwide student achievement when the professional development was high quality, school based, and included a professional community (Bryk et al., 2010).

For a school to consistently improve achievement for all students, individual teachers must integrate their knowledge, skills, attitudes, and beliefs to build a collective capacity within their specific contextual circumstances (Elmore, 2008a; Newmann et al., 2000). Capacity is simply defined as the ability of an item, person, or group to meet a goal (Newmann et al., 2000; O'Day, Goertz, & Floden, 1995). School capacity can be defined as "the collective power of the full staff to improve student achievement" (Newmann et al., 2000, p. 261) or "help all students meet more challenging standards" (O'Day et al., 1995, p. 1).

Influences on School Capacity

The United States Department of Education funded a 3-year study of the role of capacity building in systemic reform through case studies at 12 schools in six school districts across three states (O'Day et al., 1995). The researchers considered four dimensions of teacher capacity: knowledge, skills, dispositions, and views of self (O'Day et al., 1995). The researchers report that the data suggest, "it may be the teachers' immediate daily context–the school or subunit of the school–that has the greatest influence on their capacity and practice" (O'Day et al., 1995, p. 3). The context of the school includes the formal and informal networks to which teachers belong and those networks play a factor in the capacity of both an individual and the system (O'Day et al., 1995). The organizational focus implies that strategies to improve schools should focus not only on individual teacher professional development but also on organizational capacity (O'Day et al., 1995). The researchers identified five factors of organizational capacity from the data vision and leadership, collective commitment and cultural norms, organizational structure and management, knowledge or access to knowledge, and resources (O'Day et al., 1995). Additionally, from the case studies, the researchers reported that in each of the schools there was "an infusion of ideas from outside the immediate organizational context" (O'Day et al., 1995, p. 4). This finding aligns with Guskey and Yoon's (2009) conclusion that experts from outside the school facilitate effective professional development.

Newmann et al. (2000) proposed a framework for the factors on school capacity. The five interacting components of school capacity align with the findings of O'Day et al. (1995) and were teacher's knowledge, skills, and dispositions, professional

community, program coherence, resources, and leadership (King & Bouchard, 2011; Newmann et al., 2000). Newmann et al. (2000) further suggested that professional development activities should be structured to influence all factors of school capacity. Newmann et al. (2000) conducted a study to explore the ways schools use professional development to address school capacity. The researchers in this study included case studies of seven low-performing elementary schools across the United States that serve low-income students, have histories of low-achievement, had shown progress in the past 3 to 5 years, attribute the success to professional development, participated in site-based management, and had assistance from at least one external agency (Newmann et al., 2000). Finally, using purposeful sampling, each of the seven schools was chosen because the approach to professional development was different from the others (Newmann et al., 2000). Data collection methods over 2 years included field notes, audio recordings, and artifacts from site visits, interviews, and observations of professional development activities (Newmann et al., 2000). The researchers noted a large range in how comprehensive the professional development program was in addressing the components of school capacity (Newmann et al., 2000). A key finding from the cross-case analysis was that schools that began with a strong levels of capacity were more able to provide professional development to strengthen existing capacity than schools that began with a weak level of capacity (Newmann et al., 2000). Additional findings were that leadership and funding impacted how well professional development addressed the capacity of the school, but external agency support and policy support did not (Newmann et al., 2000).

King and Bouchard (2011) extended the work on building capacity in schools and continued to use the framework developed by Newmann et al. (2000). Using the

framework, King and Bouchard (2011) conducted a case study, using similar methods to that of Newmann et al. (2000), of a reforming elementary school. King and Bouchard (2011) suggested that the support needed to build capacity of both individuals and the collective group is extremely contextual. This implies that one-size fits all approaches will fail to build capacity because of a failure to meet the needs of individuals and collective groups within the school (King & Bouchard, 2011).

The research on capacity building in schools has identified key influences including teacher's knowledge, skills, and dispositions, professional community, program coherence, resources, and leadership. Explorations of the influences and professional development imply that professional development can affect all aspects of capacity (Newmann et al., 2000). The research is limited but provides insight as to the multiple contextual factors on school capacity and the ability of professional development to influence those factors.

Process of Building School Capacity

The case studies on building capacity by O'Day et al. (1995), Newmann et al. (2000), and King and Bouchard (2011) all rely on high-quality professional development strategies to build school capacity. The researchers identified factors of building school capacity but did not address the process by which capacity is strengthened in individuals and the collective group. In an attempt to address process, James and McCormick (2009) explored the way knowledge and skills travel through education networks. The researchers particularly explored a concept of "learning how to learn" with 41 teachers in 20 schools (James & McCormick, 2009). The researchers used a mapping task with participants to identify formal and informal networks within the school (James &

McCormick, 2009). The networks were analyzed for weak and strong links and for types of links, embedded (personal) or affiliation (James & McCormick, 2009). From the findings of their study, James and McCormick (2009) suggested that networking with other teachers "builds the social capital (mutual support and trust) that supports the exchange of intellectual capital (ideas and practices)" (p. 982). The opportunity for teachers to network was strongly influenced by contextual factors such as organizational structures, context, and leadership characteristics (James & McCormick, 2009). The process of building capacity is hypothesized to occur through networking and exchanging intellectual capital through social interactions. This finding is consistent with writings from other researches that teacher learning is social (Avalos, 2011; Daly, 2010; Elmore, 2008a; Hargreaves & Fullan, 2012; O'Day et al., 1995; Opfer, 2011; Webster-Wright, 2009).

Social Capital

The notion of social capital is recurrent in the literature on the ways schools improve through building capacity. Social capital theory states "that valued resources and expertise are embedded within social networks and that it is through social ties that one gains access to and can make use of resources to effect change" (Penuel et al., 2009, p. 124). The social networks that exist within a school are the conduits for teachers to make meaning of professional development experiences. Professional development aims to increase teacher's knowledge and skills, which is human capital. Human capital is "created by changes in persons that bring about skills and capabilities that make them able to act in new ways" (Coleman, 1988, p. S100). In addition, social capital plays a critical role in developing human capital (Coleman, 1988).

Researchers have recently begun to explore social capital in schools by using network analysis. Penuel et al. (2009) conducted a comparative case study of a K-8 and K-6 school over a 3-year period and applied social network analysis. Social network analysis explores the social structure in the school by assigning teachers to subgroups and analyzing similarities and differences between the subgroups (Penuel et al., 2009). Qualitative data from surveys and interviews were merged with the network analysis for both triangulation purposes and to gain better insight into the context of the school (Penuel et al., 2009). The findings suggest that the quality of interactions between educators is more important than the quantity (Penuel et al., 2009). Specifically, looking just at time available for collaboration may not suffice; schools can look very similar from that respect but have very different forms of collaboration (Penuel et al., 2009).

Teacher attitude has been noted as an important aspect of change in the professional development literature. Using survey analysis of teachers across nine high schools, Cole and Weinbaum (2010) reported that peers influenced the attitudes of teachers more than other formal school-based structures, such as departments. Because of the strong connection between attitudes and behaviors, this finding implies that informal peer networks are an important factor for reform efforts in a school and should not be overlooked during reform efforts (Cole & Weinbaum, 2010).

Hargreaves and Fullan (2012) have proposed a model of school change that is built on professional capital. They describe professional capital (PC) as a function of (f) human capital (HC), social capital (SC), and decisional capital (DC) − PC = f (HC, SC, DC) (Hargreaves & Fullan, 2012). Human capital is knowledge and skills (ability); social capital is the relations between and among people (collaboration); and decisional capital

is one's ability to make decisions in complex situations (judgment) (Hargreaves & Fullan, 2012). Human capital is typically the focus of professional development efforts but is influenced by social capital. The change model of professional capital focuses on building sustainable change by fostering all three types of capital. The three types of capital do not occur in isolation, but rather support each other (Hargreaves & Fullan, 2012). Social capital is key for growth in both human and decisional capital and the interaction of the three is regenerative in building professional capital (Hargreaves & Fullan, 2012).

Conclusion

Professional development is a common tool used for improving school performance, but the research on how professional development leads to school change is minimal. The contextual factors of the school have been highlighted to have critical influence on building school capacity. Additionally, both Penuel et al. (2009) and Cole and Weinbaum (2010) suggest that when exploring reform and changes in teachers the social aspects of the school cannot be ignored. The researchers suggest that social capital may play a mediating role as teachers change their practice and beliefs when engaged in professional development activities. The conceptual framework in Figure 2 (p. 14) represents social capital as a mediating factor for teacher changes. Furthermore, the interactions through social capital build the capacity within the school.

Summary

Extensive study of the literature about professional development and school improvement has led to the following key points, which are reflected in the conceptual framework that guides this capstone project (see Figure 2, p. 14).

- High-quality professional development leads to changes in teachers' knowledge, skills, attitudes, and beliefs, and changes in classroom practices (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007).
- The process by which professional development leads to changes in student learning is not known. There is a disagreement as to whether professional development leads to changes in teachers' practices, which in turn impact student learning outcomes, and finally change teachers' attitudes and beliefs (Guskey, 2002). An alternate view is that professional development leads to changes in teachers' attitudes and beliefs, which in turn changes instructional practice and impacts student outcomes (Desimone, 2009; Hochberg & Desimone, 2010).
- Professional development is embedded in the culture and context of the school (Avalos, 2011; Borko, 2004; Hochberg & Desimone, 2010; James & McCormick, 2009; Opfer, 2011; Walpole & McKenna, in press; Webster-Wright, 2009).
- Professional development is a tool by which to improve not only the capacity of teachers individually but also the capacity of the school (King & Newmann, 2001; Newmann et al., 2000; Opfer, 2011).
- Teacher professional learning is social, and social capital is a mediator for teacher learning (Cole & Weinbaum, 2010; Coleman, 1988; Hargreaves & Fullan, 2012; James & McCormick, 2009; Penuel et al., 2009).

The literature on professional development and school change undoubtedly has gaps. The researchers' findings imply that outside experts may be valuable in providing professional development, but the literature has not addressed this topic. Although it is known that context and social influences are important for building both teacher and

school capacity, it is not known how social capital mediates professional learning or how social capital can be managed to increase professional learning. Both of these gaps could be explored through the conceptual framework for this capstone project.

Although the conceptual framework that is presented in this study reflects the current literature on professional development and school change, there are limitations. The professional development is embedded in the context of the school, but schools are incredibly complex and exist within nested systems. The framework does not account for systems outside of the school mainly because those systems are out of the realm of influence of the personnel within the school. Additionally, leadership has emerged as a key variable for school capacity and is not highlighted in the model, but rather included as a part of the context of the school. Since the focus of this framework is on the process of how professional development leads to school change as mediated by social capital, the influences of context on the school are considered, but not disaggregated. Further research could explore the way different contextual factors influence the process.

VCU T/TAC program specialists work to provide professional development within complex school settings. The key findings from researchers on professional development directly relate to the way program specialists conduct their work. By using the conceptual framework derived from the literature as a lens through which to view the work of a program specialist, I explore in the capstone project the way a program specialist works within a school to provide professional development for school improvement.

Research Design and Methodology

In this chapter I discuss the research methodology for the capstone project. Specifically, I address the research approach, the research site and participants, data collection methods, data analysis methods, trustworthiness, ethical considerations, and research bias and assumptions.

Purpose and Research Questions

In this study I explore how a program specialist implements professional development in a school so that VCU TTAC can make informed decisions about its practices. The questions for this study are derived from the work of T/TAC program specialists.

How does a T/TAC program specialist provide professional development to support school and classroom-level change?

a. What does professional development provided by a program specialist look like (e.g., who is involved, what is the delivery structure, what is the topic)?
b. What factors does a program specialist consider when providing professional development within a classroom, team, and/or school?

The study focuses on the way a program specialist provides professional development within a school by examining the professional development and the factors that a program specialist considers.

Research Approach

The study is structured as a single case study of a program specialist in one school. Case study methodology is the most appropriate approach because of the research questions and the contextual nature of the work of a program specialist. The research questions focus on the "how" of real-time events that I, as the researcher, cannot control. In such circumstances, a case study is most appropriate (Yin, 2014). Additionally, case studies are favorable when the research questions are dependent on the contextual setting of the events (Yin, 2014). For this study, the research questions are dependent on the school setting in which the program specialist works. Therefore, case study methodology is the most appropriate and logical choice for this study.

A case study is defined as "an in-depth description and analysis of a bounded system" (Merriam, 2009, p. 40). In this study, the bounded system is the personnel in the school in which the program specialist is working. Within the system, there are subunits of professionals, including grade level teams and co-teaching partners in a classroom. There are a variety of types of case studies; this study is considered particularistic because it "focus[es] on a particular situation, event, program, or phenomenon" (Merriam, 2009, p. 43). Specifically, this study focuses on the work of a program specialist in school improvement. Case studies are also classified by their specific design. An embedded single-case design is appropriate for this study because the case includes one unit of analysis (the program specialist within a school) and subunits within the school (grade-level teams and classroom) (Yin, 2014).

Research Site, Participant, and Access

For this study, purposeful sampling was used to identify the participant. The two sampling criteria were that the program specialist works in at least one SEPI school and that I have access to observing the program specialist in the school. Only one program specialist met the sampling criteria.

The participant for the study, Elizabeth,[1] is a middle school program specialist in curriculum and instruction at VCU T/TAC. Elizabeth is a White female in her early 40s who has worked for VCU T/TAC as a program specialist for a total of 7 years. From 2002 through 2007, she worked as a program specialist in secondary transition and returned to teach at a public middle school in January of 2008. She has since returned to VCU T/TAC as a middle school program specialist and has been in her current role for 2 years. Elizabeth has a bachelor's degree in dual majors in English and special education and two master's degrees in special education and administration. She is enrolled in the doctoral program at VCU in special education and disability policy. She has always been interested in working with students with disabilities, and, in our initial interview, recalled a story from when she was 16 working as a lifeguard:

> We had two children at our local pool that were deaf; they had a congenital defect and could not hear. And the water safety instructors couldn't figure out how to teach them how to swim because between the water and them not being able to look at us. And I took it on as a challenge, and we did it. And by the end of the summer, they were on the swim team…I think that started, you know, this idea that if you put the energy into it, you know, you can help those children learn and overcome what they have. (interview, January 13, 2014)

The research site for the study, Afton Middle School, is a public middle school in a rural area of Virginia. According to publically available demographic information from

[1] All names of people and schools in this report are pseudonyms.

the Virginia Department of Education, Afton Middle School has a school population of approximately 350 students in grades 6 through 8. More than half of the students identify themselves as White (54%), 37% identify as Black, and the remaining students are split between Hispanic and mixed race/ethnicity. Afton Middle School is the only middle school in the division. The division has two elementary schools and one high school. Afton Middle School, along with the other schools in the division, is accredited with warning for the 2013–2014 school year as a result of not meeting state accreditation requirements in math. Additionally, Afton Middle School missed several federal AMOs, including math for all students and math for students with disabilities. Because of the missed AMOs for students with disabilities, Afton Middle School has been identified as a SEPI school. Table 2 shows the pass rates for Afton Middle School in math by subgroup over the past 3 years. A new, more rigorous mathematics test was implemented beginning in the 2011–2012 school year.

Table 2

Mathematics Pass Rates by Subgroup for Afton Middle School from 2012–2013

Student Groups	2010–2011	2011–2012	2012–2013
All students	75	57	59
Black	65	50	42
Hispanic	Not reported	42	63
White	80	62	70
Students with Disabilities	28	20	21
Economically Disadvantaged	71	48	49

Note. Information gathered from the School Report Card. Accessed February 23, 2014 at https://p1pe.doe.virginia.gov/reportcard/

At the start of the study, Elizabeth had worked with Afton Middle School for about a year. She has also worked with the high school in the division. Elizabeth visits the school on a weekly basis, which she considers to be a high level of support (interview, January 13, 2014). I, as a colleague of Elizabeth, had also been visiting Afton Middle School since August of 2013.

Data Collection Methods

Data sources for the case study included interviews, observations of school visits, and documents/artifacts (Merriam, 2009). Data were collected over a 7-week period from January 2014 through February 2014. The length of the case study was determined based on data saturation. Data were collected until no new codes and themes emerged during analysis. Multiple sources of data were used to strengthen the credibility of the findings of the study by triangulating the data through crosschecking (Cohen & Crabtree, 2006; Merriam, 2009). Additionally, each data source was selected based on its appropriateness for the purposes of collection based on the research questions. A full log of all data collected, interviews, observations, and documents is in Appendix C.

Interviews. Interviews are appropriate when it is not possible to "observe behavior, feelings, or how people interpret the world around them" (Merriam, 2009). In this case study, the purpose of the interview was to gather information on a program specialist's thought process, which is not observable. The interviews were primarily focused on gathering data for research question 1b, which addresses the factors that a program specialist considers.

The interviews consisted of an initial interview at the beginning of the case study and then 10 short interviews before and after each school visit. The initial interview was

conducted to gather primarily demographic information about the program specialist and the school in which she was working. The interview was semistructured (see Appendix D for the interview guide). The purpose of the before- and after- visit interviews was to gather information on the thought process of the program specialist about what factors she considered to address research question 1b. The before- and after- visit interviews were conducted in person immediately preceding and following a school visit to allow for real-time responses by the participant and opportunities for follow-up questions by the researcher. Table 3 displays the questions that were asked before and after the school visits and lists the question types according to Patton (2002).

Table 3

Questions Asked Before and After School Visits and Question Type

Questions	Question Type
Before Questions	
1. Can you describe what professional development activities you have planned for today?	Experience and Behavior
2. What did you consider when you planned the activities?	Opinion and Values
After Questions	
1. What was the same and different from what you planned to do today?	Experience and Behavior
2. What did you consider when you made changes in the plan?	Opinion and Values

Patton (2002) highlights that different questions are asked for different purposes. The purpose of the first question in each of the before and after interviews is to gather information on professional development activities and allow for comparisons between what the participant perceived to happen and what I, as the researcher, observed to happen. These first questions address research question 1a. The second questions are

aimed at understanding the thought process of the participant and what factors she considered for professional development. The second questions address research question 1b.

The interview questions are structured as open questions so as not to lead the participant in responding in a certain way (Patton, 2002). Additionally, the order of the questions was considered and follows the pattern suggested by Patton (2002) as beginning with noncontroversial experience and behavior questions and then moving into other types. All in-person interviews were recorded and transcribed, as is best practice in qualitative research (Merriam, 2009; Patton, 2002). During the transcription, all personally identifiable information was removed and pseudonyms were assigned to preserve the confidentiality of the participant and the school.

The process of interviewing is considered in itself to be an intervention (Patton, 2002). The interview process not only provides data to the researcher but also leads the participant through a process of reflection, which could lead to change (Patton, 2002). It is not possible to predict the impact of interviewing prior to conducting the study (Patton, 2002). Even so, the study is structured to minimize the impact of the interviews. In this study, the before-visit interview occurred immediately before the school visit (as we are entering the building). If the before interview had been earlier, there would have been a possibility that the interview itself could have changed the decisions of the program specialist as she planned for the professional development.

Observations. The purpose of an observation is to allow the researcher to observe "a firsthand encounter with the phenomenon of interest rather than a secondhand account of the world obtained in an interview" (Merriam, 2009, p. 117). During the 7-week case

study, there were 10 school visit observations totaling approximately 16 hours of observation. At least one visit occurred each week, except for the week of January 20 when the school division was closed because of snow. The observations occurred between the before- and after-visit interviews and were intertwined, meaning the interview was related to what occurred during the observation, which is best practice in qualitative fieldwork (Merriam, 2009). During the observations, I kept field notes on the participant's behavior and dialogue. The field notes included data on setting, the participant, activities and interactions, conversation, subtle factors, and reflections of my role (Merriam, 2009). The observation protocol, included in Appendix E, captures field notes for the full visit to the school and separate activities that occur during the visit. My role in the observations was participant as observer. My observer activities were subordinate to my role as a program specialist at the school (Merriam, 2009). The intent of the observations is to provide a "narrow angle" focus on the program specialist as a participant and her interactions with others (Merriam, 2009). The field notes were taken by hand and typed the same day while the observation was fresh. The field notes did not include personally identifiable data as to preserve the confidentiality of both the participant and the schools she is working in.

Document Reviews. The final source of data for the study was documents. For this study the documents that were collected were emails and other written documents (letters, notes) that pertained to the participant and the schools in which she was working. The documents included communications between the participant and school personnel, communications between the participant and the OSI contractor, and notes that the

participant took related to the school. All personally identifiable data were removed from the documents reviewed to preserve confidentiality.

Data Analysis Methods

In this capstone project, the data collection and data analysis occurred concurrently. The real-time aspect of the data collection and analysis allowed for determination of the point at which the data were saturated. At the saturation point, no new findings arose from the data collected. At the point of saturation, two more visits were conducted to verify that saturation had occurred. By using the data saturation point as a guide, the stopping point of the study was more meaningful than an arbitrary cut off date. The study ran for a total of 7 weeks and included 10 school visit observations during that time.

The primary method of data analysis, as outlined by Miles, Huberman, and Saldana (2014), included three interrelated stages: (a) data condensation, (b) data display, and (c) conclusion drawing/verification (see Figure 3). Data condensation is the process of combining data from multiple sources and includes “writing summaries, coding, developing themes, generating categories, and writing analytic notes” (Miles et al., 2014, p. 12). Data display consists of organizing the data in meaningful ways to support drawing and verifying conclusions. The processes were interconnected, and the analysis was concurrent with data collection (see Figure 3). This process for data analysis was chosen over others because it is concurrent with data collection and includes a clear procedural process. A qualitative data analysis program (nVivo, version 10) was used as a tool for data analysis.

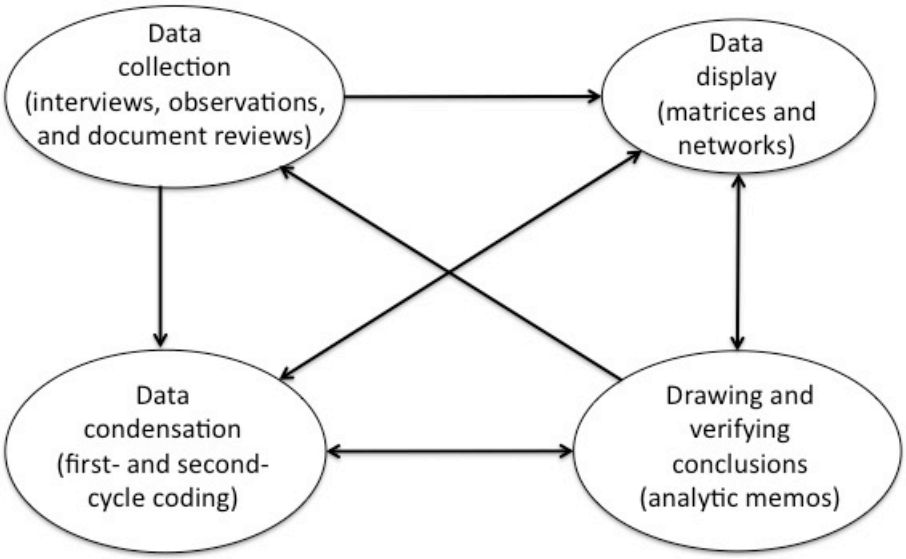

Figure 3. Interactive model of data analysis. Adapted from *Qualitative Data Analysis: A Methods Sourcebook*, by M. B. Miles, A. M. Huberman, and J. Saldana.

Although the process was iterative, the first process for analysis was data condensation through coding (see Figure 3) (Miles et al., 2014). The process began with first-cycle coding, where initial codes were assigned to the data (Miles et al., 2014). The first-cycle coding process was both deductive and inductive. Deductively, a start list of codes was used based on the conceptual framework for the study (see Table 4).

Table 4

Research Questions and Hypothesis Start Codes

Research Question	Start Codes
1a. What does professional development provided by a program specialist look like (e.g., who is involved, what is the delivery structure, what is the topic)?	Type of activity (workshop, one-on-one, team meeting) Duration Coherence Content focus (behavior, curriculum/instruction) Active learning Collective participation
2b. What factors does a program specialist consider when providing professional development within a school?	Social capital teacher-teacher Social capital teacher-administrator School culture Leadership Funding Resources

Inductively, other codes emerged during the data collection process through descriptive codes that were assigned. Allowing for inductive codes to emerge rather than forcing codes onto the data was important (Miles et al., 2014). As is best practice, the codes were revised as the study progressed: some codes were merged, some were deleted, and some were parsed out (Miles et al., 2014). All of the coding changes were captured in an analytic log. The second cycle of coding was inducing pattern codes from the first-cycle codes that emerged (Miles et al., 2014). Pattern codes consisted of categories and themes (Miles et al., 2014). The full descriptive codebook with sample excerpts of data is included in Appendix F. Both the participant, in the form of a member check, and the peer reviewer, reviewed the codebook. The participant gave feedback as to whether she felt the codes were inclusive of her practices, and the peer reviewer gave feedback on the descriptions and possible overlaps in codes. The peer reviewer also reviewed sets of coded fields notes and provided feedback regarding the way the data was coded, the

exhaustiveness of the code list, the definitions of codes in the codebook, and the organization of codes into themes from second-cycle coding.

The second process in the Miles et al. (2014) analysis method is data display as matrices or networks to support drawing and verifying conclusions (see Figure 3, p. 55). Both matrices and networks were used to display the data. Matrices were primarily used for this study because they are appropriate for the descriptive nature of the research questions (Miles et al., 2014). Networks were also used to explore changes in time and interactions between variables (Miles et al., 2014). Multiple forms of matrices and networks were used throughout the process of data analysis to explore and draw conclusions from the data, including checklist matrices, conceptually clustered matrices, time-ordered matrices, and event-state networks (Miles et al., 2014). Each of the matrices or networks was chosen based on its match the question being explored. The matrices were paired with analytic memos, which "document the researcher's reflections and thinking processes about the data" (Miles et al., 2014, p. 95). A sample matrix and analytic memo is included in Appendix G. The analytic memos were important tools for conceptual thinking during the data analysis process. The full codebook, analytic memos, and matrices served as the foundation for my findings in Chapter 4. The peer reviewer reviewed a sampling of the matrices and the analytic memos to provide feedback on both the process of the analysis and the conclusions drawn.

The final analytic process is drawing and verifying conclusions (see Figure 3, p. 55) (Miles et al., 2014). Analytic memos were used to capture this process. The tactics for drawing conclusions are making meaning included counting, noting patterns and themes, and making conceptual coherence (Miles et al., 2014). Counting provided

opportunity to compare and contrast frequencies and identify when something was not present. Patterns of both variables and processes (relation to time) were explored in both the matrices and networks. And finally, the conceptual framework that guided this study also guided the analysis and was represented as conceptual coherence. For each finding, one or more of the tactics was employed and is detailed in Chapter 4. The findings were also verified using a variety of techniques, including triangulating with multiple data sources, looking for negative evidence, considering alternate explanations, following up surprises, and getting feedback from the participant (Miles et al., 2014). Each of the techniques applied is detailed in Chapter 4 with the associated finding.

To keep track of the specific steps of analysis and decisions made during the analysis process, I kept an analytic log. The log is adapted from Miles et al. (2014) and each entry included the data set analyzed, the procedural steps applied, the decision rules used, the memos discussing related conclusions, and any associated research comments and reflections. The purpose of the log was to ensure that the analytic process was clear, could be replicated, and the decisions were made logically. The peer reviewer reviewed the log and provided feedback on the clarity and process. An excerpt of the analytic log is in Appendix H.

Trustworthiness

In qualitative research, the value of a study is evaluated based on its trustworthiness (Cohen & Crabtree, 2006). Trustworthiness is based on credibility, transferability, dependability, and confirmability (Cohen & Crabtree, 2006). This study was designed to maximize trustworthiness by addressing each of the components.

Credibility

Credibility is whether or not the findings are appropriate and represent the data collected (Merriam, 2009, p. 213). One way of improving credibility is triangulation data, or cross-checking multiple data sources to explore the same question (Merriam, 2009). In this case study, some of the findings were triangulated through interview, observation, and document review. A second way to improve credibility is through member checks, in which the participant provides feedback during the analysis process (Merriam, 2009). The purpose of member checks is to ensure that the researcher does not misanalyze the statements of the participant (Merriam, 2009). In this case study, the participant provided feedback at two intervals. During initial analysis, the participant provided feedback on first- and second-cycle coding. The feedback was both on the codebook and the coding of the data. At the conclusion of the study, the participant provided feedback on the findings and conclusions. The feedback was documented and any changes that occurred in the analysis process were also documented in the analytic log. Additionally, some of the participant's comments during member checks are included in the position paper. A third method for improving credibility is the concept of saturation. The data from a study become saturated when nothing new arises during data collection (Merriam, 2009). Because the analysis occurred concurrently with the data collection, the point of saturation was recognized. Additionally, after the point of saturation was reached, data collection continued for verifying saturation and confirming conclusions. The final consideration to support the credibility of the study was on minimizing researcher effects. One way to minimize research effects is to spend an extended period of time at the research site, so as to not draw attention (Miles et al., 2014). Although the data collected

for this study was only over a 2-month period, I had been at the site, since August of 2013, and the participant and teachers were both familiar with me.

Transferability

Transferability allows for readers to determine if the case applies to their specific situation (Cohen & Crabtree, 2006). A technique for establishing transferability is using thick description (Cohen & Crabtree, 2006). Thick description means that the researcher provides detailed descriptions of observations (Cohen & Crabtree, 2006). The thick descriptions allow others to determine the degree of similarity between their experience and the research to determine whether or not the findings can be transferred (Merriam, 2009). In this study, I used thick description when writing field notes on what I observed during school visits with the participant to allow others to determine if the findings are transferable. The field notes were written both on what I observed and heard and were written in an attempt to re-create the experience. The goal of the field notes was to provide rich, thick descriptions so the reader could almost feel as though he or she were there. Excerpts from the field notes are included, as appropriate, in Chapter 4.

Dependability

Dependability addresses whether or not the case study could be replicated and whether or not the findings are logical and consistent (Cohen & Crabtree, 2006). A technique to support dependability is external auditing, in which a researcher who is not involved in the study, reviews both the process of data collection and data analysis. For this study, a peer reviewer served as the external auditor. The peer reviewer provided feedback on process and product by reviewing field notes, coding, the codebook, analytic memos, the analytic log, and findings. The peer reviewer and I worked closely

throughout the data collection and data analysis processes. We met in-person once and communicated through email and video chat at least weekly. Meetings and feedback from the peer reviewer were documented in the analytic log.

Confirmability

The final aspect of trustworthiness is confirmability in which the researcher's biases and motivations impact data analysis is considered (Cohen & Crabtree, 2006). Both external audits and triangulation of data support the confirmability of the findings by allowing feedback from others and providing multiple sources of data for findings. Reflexivity is also used as a technique for establishing confirmability and consists of the researcher reflecting critically as a researcher and being aware of biases and assumptions (Cohen & Crabtree, 2006; Merriam, 2009). To support my self-awareness as a researcher, I kept an analytic log in which I included my reflections. Additionally, it was important for me as the researcher to be aware of my biases, assumptions, and role in the study.

Ethical Considerations

A primary focus in the case study is to preserve the confidentiality of the participant and the school she visits. As such, any personally identifiable information from interviews, observations, and documents were removed and pseudonyms were assigned. Additionally, the plans for the case study were subject to approval by the University Institutional Review Board (IRB) and were approved on January 9, 2014. The participant in the study was provided with a thorough explanation of the study and provided with an informed consent letter (see Appendix I). Additionally, letters were written to both the codirectors of VCU T/TAC and the division superintendent of Afton Middle School requesting consent to conduct the study (see Appendix J and K). Data

collection did not begin until all parties granted consent. For this study, there were no foreseeable risks.

Researcher Bias and Assumptions

To support both the confirmability of the study and the ethics it was important that I, as the researcher, was aware of my biases and assumptions. I am a program specialist with VCU T/TAC with a focus on middle school curriculum and instruction. I have been with VCU T/TAC since June 2013 and serve on a division team and the secondary team. I am also a professional developer with the SIM state-directed project. Prior to joining VCU T/TAC, I taught math for 7 years at the middle and high school levels. I am certified and have taught as both a general and special educator. Primarily, my experience is in collaborative math teaching settings where students with disabilities are included in general education classrooms and taught by a general education and a special education teacher. For my last 3 years of teaching, I taught at a priority high school. During the 3 years, I was able to experience the school improvement process from the teacher perspective. I was involved in the school improvement efforts and served on several committees, including the School Improvement Team and Student Assistance Team. Those experiences peaked my interest in school improvement and provided me with knowledge and skills that I need as a program specialist with VCU T/TAC.

As a researcher engaging is qualitative research as a participant-observer, I cannot discount or overlook my own biases and assumptions. My interest in professional development and school improvement efforts are a product of my experiences in the field. Outside of this study, I have a professional relationship with the participant. In fact,

as a relatively new program specialist, I was assigned a mentor program specialist. My mentor was the participant in this study. As such, we have a previous working relationship that establishes trust, and I value her opinions and actions as a mentor. A part of that relationship is the practice of questioning on my part and reflecting on her part. Our relationship continued through this study and continues. The comfort in our relationship supported the ease of data collection.

Furthermore, I strongly believe that public education can be improved and meet the needs of all students. Through a model of professional development, teachers and schools can improve to meet the needs of struggling students. I value my position and the position of the participant as a program specialist and believe that we have an impact on the teachers with whom we work and, in turn, they on their students.

Additionally, the conceptual framework for this study is a visual depiction of the way I interpreted and synthesized the literature on teacher professional development for the purpose of school improvement (see Figure 2, p. 14). The underlying assumption for this study is that the framework is a logical, reasonable model through which to explore the work of program specialists. This conceptual framework best represents what is currently known in the literature and provides a framework through which to explore what is not known.

Summary

This capstone project is a case study of a program specialist in one SEPI school. The data collection procedures included interviews, observations, and document reviews. Data analysis consisted of a clear, iterative process of data condensation, data display, and conclusion drawing/verification. Additionally, the study was designed with

considerations for trustworthiness by addressing credibility, transferability, dependability, and confirmability. Confidentiality and ethical considerations were also significant aspects of the study design.

Analysis and Findings

This capstone project explores the way a VCU T/TAC program specialist provides professional development with the goal of school improvement. The findings and recommendations that resulted from this case study provide VCU T/TAC with information about its practices to help the organization make informed decisions. The case study was guided by the following research questions:

How does a T/TAC program specialist provide professional development to support school and classroom-level change?

a. What does professional development provided by a program specialist look like (e.g., who is involved, what is the delivery structure, what is the topic)?
b. What factors does a program specialist consider when providing professional development within a classroom, team, and/or school?

In this chapter I describe the participant, setting, and findings through vignettes. I present implications and recommendations based on the findings in Chapter 5.

Vignette 1 is based on field notes collected during the case study and serves to describe Elizabeth, the participant, entering the school, Afton Middle School, on a typical day.

Elizabeth and I arrive at Afton Middle School and park in visitor spaces to the left of the front entrance of the school. The school is a clean, one-story brick building; the front of the building has a traffic circle with a flagpole and neat, small shrubbery. As

Elizabeth and I head up the sidewalk to the main entrance of the building, I ask her what professional development activities she has planned for today.

She replies, "I am planning to meet with the sixth grade team of teachers about their behavior management plan and provide support and guide them in a positive direction."

When I ask about what she considered when she planned the activities for today, she says, "I considered where the teachers are in the process and also the relationship between the teachers and the principal, which, as you know, can be testy." We enter Afton Middle School through one of four doors that are painted bright green and open into a light and sunny atrium area. The guidance counselor's and resource officer's offices are to the right, and the main office is to the left. The doors ahead that lead to the rest of the building are locked for security. We enter the main office and sign in as visitors on the computer. The main office has a high secretary's desk, and as we enter, the two secretaries stand to greet us as with a friendly good morning. The principal's office, a small conference room, and teacher mailboxes are in the main office. Instead of having the secretaries buzz us through the main doors, we exit the office through a back door into the wide main hallway of the building. The library with a computer lab is straight ahead, the cafeteria and gym are to the left, and all classrooms are to the right. The wall trim in the hallways matches the bright green of the main doors. Today we are a few minutes early, so we head to the library to wait for the bell. We sit on the green two-person couches that are arranged in a square with a table in the middle and chitchat before heading to the teacher's classroom. A few students are quietly working on the computers in the center of the library. When the bell rings, we exit the library and turn

left to a main central area. The walls are decorated with math word wall cards and student projects on constitutional rights. Four classroom hallways splay off from the central area. The student bathrooms are in the central area, and the school uses a staggered bell schedule so not all students are passing through the central area at the same time. Each hall is assigned a grade level (sixth, seventh, or eighth), and the fourth hallway is for the career development classrooms. Teacher workrooms are between each pair of hallways. The hallways are each painted a different color (red, yellow, and green) and are lined with two rows of small green lockers, one stacked above the other. The building is dirt free, but not dust free, and the custodial staff are often seen during the day sweeping and cleaning. We take the first hall on the right and head down to meet with the sixth grade team of teachers. As we are walking the hallway to the classrooms, the sixth graders are headed in the opposite direction to either gym or a career development class. The students are chatting and giggling with their friends as they walk. Some stop at their lockers, but most are carrying their books and binder. The students are used to seeing us in the building and we exchange a few "good mornings" and "hellos" as we pass. By the time we get to the classroom for the team meeting, the hallway is clear of students.

This team meeting was a part of the professional development that Elizabeth provided while at Afton Middle School. The focus of this case study is the professional development that she provided teachers at Afton Middle School. The findings of the case study are the outcome of careful, rigorous analysis and are guided by the research questions. In this section I present the findings and the data analysis that led to them and

situate the findings in the conceptual framework for the study (see Figure 2, p. 14). The findings are summarized in Table 5.

Table 5

Summary of Findings

	Findings
Finding 1	The program specialist provided quality, contextual professional development in multiple delivery structures (after-school session, follow-up sessions, team meetings, and one-on-one meetings) across two main focus strands: teacher collaborative and behavior management. The delivery structure differed by the target level of change: classroom, team, and school.
Finding 2	The program specialist provided professional development by acting to build capacity and relationships within the context of the school. Actions to build capacity differed by structure and purpose of professional development activities.
Finding 3	The program specialist considered contextual factors (including time, teacher attitude, teachers' knowledge and skills, and relationships among school personnel) when she was making decisions while planning for and delivering professional development.

Finding One

Finding 1: The program specialist provided quality, contextual professional development in multiple delivery structures (after-school session, follow-up sessions, team meetings, and one-on-one meetings) across two main focus strands: teacher collaboration and behavior management. The delivery structure differed by the target level of change: classroom, team, and school.

Description of Professional Development

While collecting data for the case study, I observed Elizabeth deliver professional development at Afton Middle School during seven school visits. Although other activities were observed (meetings with the principal, division administrative meetings, and classroom observations) those activities were not for the purpose of providing professional development and were not included in the data analyzed for this finding. The purpose of professional development is to build capacity of school personnel to improve outcomes for students (Desimone et al., 2002; Garet et al., 2001; Hochberg & Desimone, 2010; Yoon et al., 2007). The delivery of professional development is the input, or the first step of the pathway, of the way professional development leads to school change in the conceptual framework that guides this study (see Figure 2, p. 14). Therefore, coding for capacity-building activities by the program specialist was used to determine which activities were professional development activities and which were not. These codes were not start codes, but open codes that emerged from the data and reflect the behaviors of the program specialist while delivering professional development. The codes were collected into the theme of capacity building during second-cycle coding. The data from the activities analyzed for this finding all included capacity-building actions by Elizabeth. Additionally, the selected professional development based on capacity-building activities align with both my perception from observations and Elizabeth's perception expressed in interviews about which activities were for professional development. For example, before one visit, Elizabeth explained that she had "planned for professional development on Google Drive and Google docs" as a tool for teacher collaboration (interview, February 11, 2014). When I coded field notes from this visit, I found evidence of capacity-building actions by Elizabeth, and this visit was categorized as professional development in

alignment with Elizabeth's perception. As another example, on a day when Elizabeth observed classrooms, she explained that the visit did not include any professional development activities but was "a check along the way and then [she would] design more professional development" (interview, February 20, 2014). When I coded field notes from this visit, I did not find any evidence of capacity-building actions, and this visit was not categorized as professional development. As such, the selection of the data to include in the analysis is supported through triangulation of multiple data sources (coded field notes, researcher perception, participant perception as verbalized in interviews).

During the seven school visits, I observed 11 professional development activities in eight different configurations. Table 6 is a conceptually clustered matrix used to visually display data from related variables in the case study (delivery structure, participants, topic, level of change). Finding 1 is an outcome of patterns and themes discovered from the matrix.

Table 6

Conceptually Clustered Matrix of Professional Development Activities

Structure	Participants	Topic	Level of change
Team meeting	Sixth grade teacher team	Behavior management	Team
Team meeting	Sixth grade teacher team with principal	Behavior management	Team
After-school training	Collaborative teachers	Teacher collaboration	School
Follow-up meeting	Collaborative teachers (not with partners)	Teacher collaboration (Google Drive)	School
Follow-up meeting	Collaborative teaching partners	Teacher collaboration (Google Drive)	School
Follow-up meeting	Sixth grade teacher team	Teacher collaboration (Google Drive)	School
One-on-one meeting	Individual teacher	Teacher collaboration	Classroom
One-on-one meeting	Individual teacher	Curriculum	Classroom

Description of professional development structures and participants. During the seven school visits, there were 11 different professional development activities in four structures: team meeting, after-school training, follow-up meetings, and one-on-one meetings. The following vignettes describe each of the professional development activity structures.

Vignette two. In Vignette 2 I describe the after-school training. The after-school training session was approximately one hour and included 17 general education and special education teachers who taught collaboratively.

Elizabeth and I arrive at the school around 2:45 p.m. and set up for the training, which is scheduled to begin at 3:15 p.m. The training is to help support teachers in communicating and working collaboratively to meet the needs of students with disabilities in their classrooms. All of the teachers who teach collaboratively were invited to attend the meeting by the principal. The principal let us know we would be meeting in the library. The area is arranged with four tables, each with six chairs, three on each side. We set snacks out on the table for the teachers to enjoy as they enter. After the students leave the building, the teachers filter in a few at a time and choose their seats. Elizabeth begins the meeting with an activity. She hands out sets of cards, to pairs or triads of teachers. Each card has a different classroom description, and Elizabeth asks the teachers to sort the cards into one of two categories: "inclusion is…" or "inclusion is not..." As the teachers work, Elizabeth and I walk around to monitor. Elizabeth asks for a teacher to share some cards that his/her group has put in the "inclusion is" category. Mr. Abrams shares the following descriptions: involves all students, students may be working on differentiated activities, and teachers work with all students in the classroom. Elizabeth thanks Mr. Abrams for his participation and asks him which prize he would like, pens or a chocolate bar. Without hesitation, Mr. Abrams chooses the chocolate bar. After the warm-up activity, Elizabeth explains the purpose of the training to the teachers. She says that a challenge at Afton Middle School is that the special education and general education collaborative teachers do not all have common planning time, so communication and planning for class is challenging. Elizabeth transitions the teachers into a gallery walk. On separate sheets of paper, she has printed six ways to support communication between collaborative teachers. The communication tools include Google

Drive, formative assessment checklists, and accommodations tables. She distributes one paper to each table. Elizabeth asks the groups to rotate from one table to the next and write comments on each piece of paper.

Mrs. Lawrence asks, "Instead of moving our bodies, can we move the papers?"

Elizabeth says, "That's fine." The teachers begin discussing and writing their thoughts and reactions to the communication tools. Elizabeth uses a timer and switches the papers at 3-minute intervals. While the teachers discuss and comment, Elizabeth and I walk around to answer questions. Many times, teachers have questions about the tools, such as the following: What is a formative assessment checklist? What is an accommodations table? What is Google Drive? At the conclusion of the activity, Elizabeth hands out appointment cards. She asks the collaborative pairs to select a time that she can come see them and work on one of the six communication tools that they have discussed during the activity. Most teachers quickly locate their collaborative partner to identify a tool and a time that would work for them and fill out the card.

One of the special education teachers says, "I don't have any time to meet with my collaborative teachers," and she turns in a blank card with only her name on it. After handing in the appointment cards, the teachers quickly leave. Elizabeth and I pack up and leave shortly thereafter.

Vignette three. In Vignette 3 I describe a follow-up session to the after-school training presented in Vignette 2. The follow-up meetings took place in small groups during teachers' planning periods and lasted 20 to 30 minutes.

Elizabeth and I arrive at the school just as the school day begins. We sign into the office and head to one of the special education teacher's classrooms. Miss. Maddox is expecting us for this follow-up session and greets us.

When I ask who else has planning time during first period, she says, "Mr. Parker, Mrs. Ferguson, and Mrs. Green." I walk to the rooms of those three teachers and invite them to join us.

They all join, but Mrs. Ferguson comments, "I am swamped and have only a few minutes." Elizabeth tells the teachers that the meeting will be brief and the purpose is to show them how to access Google Drive to support collaboration.

Elizabeth shares, "You all have Google Drive because you have gmail, and it's a nice feature that you can use to collaboarate." She hands out color-printed booklets showing step-by-step instructions for accessing and sharing files on Google Drive. She spends a few minutes explaining the information in the booklet. She then asks the teachers, "What do you think about using Google Drive?"

Miss Maddox says, "It would be nice if we could have an address book loaded so that when we share files we don't have to guess someone's email address." The teachers agree that this is a challenge and oftentimes if they don't know the spelling of a person's first and last name they are unable to send that person an email. Elizabeth says that she will follow up on that and see what she can do.

Mrs. Green says excitedly, "I could give lesson plans to my collaborative teacher this way."

Elizabeth explains, "Yes, you can also put resources into Google Drive for your collab teacher to access." Elizabeth also shares, "you can use it for more than just work;

you can use it for pictures and to backup files." She tells a story about how she dropped her computer and smashed the hard drive, but luckily everything was backed up to Google Drive. Elizabeth asks the teachers to explore Google Drive and let her know how it goes. The teachers agree and disperse to their classrooms.

Vignette four. In Vignette 4 I describe a team meeting. The weekly team meetings were with a sixth grade team of five general education teachers and lasted between 45 minutes to 1 hour during the teachers' common planning time.

We walk into Mrs. Lawrence's classroom at the beginning of fourth period just as the other teachers were also walking in. Mrs. Carter says to Elizabeth, "Thank you for the candy bar that you left in our mailboxes. I was just starving, and it saved me the other day."

Ms. Walters also said, "Thank you."

Elizabeth officially started the meeting by asking, "So, how are things going with the behavior plan? Do you have concerns?"

Mrs. Lawrence updates Elizabeth about two students who have been suspended– one for 10 days and the other for 2 days. She adds, "The student that is out for 10 is out with a recommendation not to return because of threatening a teacher."

Elizabeth comments, "There is a question as to what placement is most appropriate for that student."

Mrs. Battle adds, with frustration in her voice, "There is one student who has a bad attitude and doesn't care. I don't see the point of writing him up."

Mrs. Lawrence tells her, "There is an IEP meeting scheduled for him."

Elizabeth nods and interjects, "That is what I had suggested to happen." Elizabeth looks to the other teachers and asks if they have any concerns.

Mrs. Walters says, "I had some classes that could have been redirect, redirect, redirect." (Redirect refers to behavior redirections that are counted as warnings before consequences occur. After two redirects students are assigned silent lunch.)

Mrs. Battle asks, "Was it in the afternoon?" Ms. Walters confirms with a nod.

Mrs. Carter jumps in, "There is a problem coming back from lunch. They are so loud that they lost the privilege to choose their seats."

Mrs. Miller adds with frustration in her voice, "They are laughing and giggling about silent lunch. So they have silent lunch again…for the third day in a row." As the teachers share their frustrations, Elizabeth listens supportively by making eye contact with the teachers. She then summarizes, "What's going on is that they are now testing as a group. The snow disruptions continue, and their world is chaotic. It's unpredictable."

Mrs. Battle says, "I also notice that they are saving their redirects until the afternoon. Almost like they are playing the game. They know if they can get through the morning then they can burn their warnings in the afternoon without getting to a consequence."

Elizabeth pauses and looks up to the corner of the room. She then asks, "What do you think about giving a surprise reward at the end of the day to students who haven't had any redirects?" The teachers gesture to indicate agreement and briefly discuss the timing among themselves. They decide to wait and give the reward on Monday to start next week fresh.

Ms. Walters tells the group, "When the students start the end-of-the-day 'business,' I just tell them how easy it is to get to a silent lunch."

Elizabeth names the strategy, "reality talk." Elizabeth, in an attempt to redirect the conversation, asks, "What's going well?"

Mrs. Battle honestly responds, "Nothing…you should have asked last week." The negativity in the meeting continues.

Mrs. Carter adds, "I had some girls get rude who are aren't usually rude."

Elizabeth posits that the problem may be a lack of acknowledgement that students choose their behavior. She asks, "Does the health teacher do anything on personal responsibility?" The teachers say they think she does but don't seem eager in taking that route.

Elizabeth says, "It seems like there is a lot going on. Would it be okay with all of you if I observe some classes next week?" The teachers indicate that that will be fine. Elizabeth says she will see them next week. The teachers continue to chat as we quietly leave.

Vignette five. In Vignette 5 I describe a one-on-one meeting. The one-on-one meetings with individual teachers took place during the teacher's planning period and lasted 45 minutes to one hour.

Mrs. Morris, a science teacher, asks that Elizabeth and I come in to help her work through some curriculum questions that she has. Mrs. Morris says that she has found some discrepancies between the curriculum framework and the enhanced scope and sequence. She is especially concerned about a strand in which her students performed poorly on the SOL tests the year before. We sit down with the teacher at a science lab

table, and the teacher pulls out two binders of resources. She begins looking for her notes as she sorts through the materials. The documents are highlighted, and she has made extensive notes in the margins. Mrs. Morris is very passionate and focused on her content. It takes her some time to find the notes that she wants to show us, and we wait patiently. She finds what she is looking for and shows us where she has highlighted specific instances of a discrepancy between the curriculum framework and the sample lessons from the state. The discrepancy is that topics in the curriculum framework noted as "hold until high school" are included in the middle school sample lessons. Mrs. Morris continues through her binders pointing out several instances of the discrepancy. She then turns to Elizabeth and asks what she should do.

Elizabeth advises her, "Organize the instances of the discrepancy into a t-chart so the information is clearly organized. Then go through your channels at the division level (principal, central office) to ask if you can contact the Department of Ed. I will email you the contact information for the person at who handles science at DOE. We at T/TAC don't work directly with curriculum."

Mrs. Morris asks, "Well, why do you think my students are performing poorly on the genetics strand? I didn't teach the 'high school' topics, but those shouldn't be on the test." Mrs. Morris pulls out her student performance by question sheets and shows us that only 8% of the students answered the question on genetics correctly.

Elizabeth says, "It's hard to look at just one data point and identify where the problem may have been. It could have been the way the test item was written, it could have been some content that wasn't covered, or it could have been the instruction. If you

want, we could come help you when you get to that unit in structuring the unit and your lessons."

Mrs. Morris says, "I have already taught that unit, but maybe you can come help me with the review at the end of the year."

Elizabeth replies, "That's fine." Mrs. Morris says she will follow up on the discrepancy and let Elizabeth know when she is getting close to review time. The meeting wraps up with polite conversation about family, and Mrs. Morris shares a story about caring for her elderly parents.

Each of the professional development structures (team meeting, after-school training, follow-up sessions, and one-on-one meetings) was identified based on observations and Elizabeth's description of activities in the interview before each visit. Professional development was provided only to teachers in the building, although the principal was present in one team meeting. Elizabeth met with the principal individually, but I did not observe Elizabeth engage in any capacity-building actions with her. During the observations, 17 teachers were involved in professional development activities; some teachers were involved in multiple activities. The teachers are both special and general education teachers and were involved in professional development as an individual, group, team, or collaborative pair. The teachers on a team were formally organized by existing school structures as a grade-level team. The team had established meeting times and a designated leader. Elizabeth worked within this existing structure to meet with the team during their preexisting team meeting time and coordinated meetings through email with the team leader. In this way, Elizabeth provided professional development within the specific context of Afton Middle School. Other schools may not have designated team-

meeting times in which professional development could be integrated. The individual and group meetings occurred primarily during the teachers' planning periods, and one training session took place after school.

Description of professional development topics. Elizabeth focused the professional development on two strands: teacher collaboration between special education and general education teachers and classroom behavior management (see Table 6, p. 71). Both topics of professional development are specific to the context of Afton Middle School. Teacher collaboration was identified as a need of the school through an academic review process, and the sixth-grade teacher team requested professional development on behavior management. Elizabeth viewed teacher collaboration as the priority focus and the work on behavior management to be a way to build relationships with the teachers. She explained this as follows:

> The primary focus of the current work [of T/TAC] was originally to be in the collaborative classroom and try to help fix that structure and communication. The barriers there are just profound, right now. So, we are very, very slowly building relationships by doing other things. We worked with other people with behavior and classroom management…. We are just in there trying to build relationships because the work that lies ahead with collaboration is going to be significant. (interview, January 13, 2014)

During the school visits, I observed Elizabeth provide professional development on both teacher collaboration and behavior management.

Differences in professional development by level of change. I observed Elizabeth provide professional development at three target levels of change: classroom, team, and school (see Table 6, p. 71). Classroom-level change targets improving the practices of one teacher or a pair of teachers in a single classroom. Team-level change targets the practices of a team of teachers who work with the group of students. School-

level change targets the practices of all teachers' in the school who provide content instruction. Both classroom- and team-level change have the potential to facilitate school-level change through social capital, in which teachers share information and practices. The data collected in this study, did not allow me to explore that potential. As such, the data analysis focuses on the level at which I observed Elizabeth provide the professional development.

When Elizabeth targeted the team-level of change, she organized professional development as team meetings. When Elizabeth targeted the school-level of change, she organized professional development as an after-school training session with follow-up meetings. The individual meetings targeted classroom-level change. This pattern, which emerged from the conceptually clustered matrix of professional development activities (see Table 6, p. 71), indicates that the delivery structure differed by the target level of change: classroom, teacher, and school. Team-level change was addressed through team activities, school-level change was addressed through activities that included all teachers, and classroom-level change was addressed through meeting with individual teachers.

I confirmed this finding by looking for negative evidence and getting feedback from the participant. Looking for negative evidence is exploring the data to see if any data oppose or differ from the conclusion (Miles et al., 2014). I explored the data for an instance in which the target level of change did not align with the associated delivery structure. I found one instance when the target level of change and delivery structure was misaligned. In this instance, a team of teachers was included in professional development that was not targeted for team-level change (see Table 6, row 6, p. 71). Upon further exploration of this instance, I found that although a team of teachers was involved, the

professional development activity was not structured as a team meeting, but rather as a follow-up meeting on teacher collaboration. This follow-up meeting with the team is described with an excerpt from field notes:

> We met briefly with one teacher from the sixth grade team about Google Drive.… We didn't have an 'official meeting.' Elizabeth explained Google Drive to Mrs. Battle as a means to collaborate and gave her extra copies of the information booklets to pass out to the rest of her team. (field notes, February 4, 2014)

In addition, the exploration for negative evidence revealed that the topic of the professional development might also be related to differences in structure. All of the team meetings focused on behavior management, and the after-school training and follow-up sessions focused on teacher collaboration. There is an instance, though, where the topic of teacher collaboration crosses over to a different structure–an individual team meeting (See Table 6, p. 71). This instance of crossover shows that the same topic may be addressed with a variety of structures and implies that the structure is tied to the target level of change rather than to the topic. If the topic and structure were tied together, the same topic would always be addressed in professional development with the same structure. The explorations of negative evidence did not reveal any evidence to disconfirm the finding that in the professional development Elizabeth provided, the delivery structure differed by the target level of change: classroom, teacher, and school.

Furthermore, a relationship between the topic and level of change is possible. Certain topics may be appropriate for change at the team level; others, school level. In a member check, Elizabeth explained, "Typically change within the collaborative setting is seen as within the control of the teaching pair. [But] in this instance, there are significant challenges at the school level" (member check, March 5, 2014). Her feedback suggests that some topics may be appropriate for change at multiple levels, depending on the

nature of the problem within the school. For example, at one school she may address collaborative teaching with a collaborative pair of teachers at the classroom level because the problem may be between the teachers and at the classroom level. But at Afton Middle School she addresses collaborative teaching at the school level because she identifies that the challenges are structural at that level. This is an example of Elizabeth providing professional development that is specific to the context of the problem at Afton Middle School.

High-quality Professional Development

The conceptual framework that guides this study (see Figure 2, p. 14) begins with the delivery of high-quality professional development. The core components of high-quality professional development are the duration, coherence, content focused, opportunities for active learning, and collective participation of teachers (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). I conclude that the professional development I observed Elizabeth provide during the case study is classified as quality professional development by analyzing the coherence between the conceptual framework and the observations in the study.

Type of activity and duration. Type of activity and duration are discussed together because of their interrelationship (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). Researchers agree that high-quality professional development includes reform-type practices, in contrast to traditional-type workshop practices, which are ongoing, frequent, and sustained (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). Elizabeth's practice of facilitating team meetings reflects the reform practice of collaborative professional learning in which teachers meet as a group within the

context of the school and learn through interactions with each other. During the observation period, she met with the sixth-grade team in 4 out of 7 weeks; three meetings were cancelled due to snow that resulted in school closings. Elizabeth was meeting with the team on a regular basis (weekly) before this case study began and continues to work with them for the remainder of the school year. As such, this weekly practice constitutes ongoing, frequent, sustained professional development. Elizabeth also structured professional development activities as an after-school workshop with follow-up sessions. Although this is not a reform practice, the structure is consistent with current research that workshops may be effective professional development practices when paired with follow-up sessions and directly delivered by experts to teachers (Guskey & Yoon, 2009). The professional development that I observed Elizabeth deliver aligns with researchers descriptions of high-quality professional development regarding type of activity and duration.

Coherence. Coherence occurs when the topics and goals of the professional development activity are aligned to the goals of the teachers and school (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007)**.** The team meetings and group follow-up sessions that Elizabeth provided can be considered collaborative learning activities because they involve interactions between the teachers toward a common goal. Collaborative professional learning activities have inherent coherence because the models are embedded within the context of the school and the teachers' classrooms (Butler et al., 2004; DuFour, 2004; Garet et al., 2001). Additionally, when I asked about the way the focus of professional development is identified in schools, Elizabeth told me, "If individual concerns come up, either through the administrator or through the teachers,

once we are in the school, we can address [the concern]" (interview, January 13, 2014). This flexibility allows Elizabeth to address specific concerns that arise within the school, which allows her to align her professional development activities to the goals of the teachers. Both of the professional development strands (behavior management and teacher collaboration), observed in this case study, aim to improve academic outcomes for students with disabilities, a goal of both the teachers and principal at Afton Middle School, as expressed by Elizabeth and the SEPI office. The professional development that Elizabeth provided at Afton Middle School was coherent with the goals of the school.

Content focused. Only one of the professional development activities in this case study was focused specifically on content. The activity was a one-on-one meeting (see Vignette 5, p. 77) with a teacher about science curriculum. This meeting was initiated by the teacher and was not a part of either of the two main topic strands of the professional development I observed Elizabeth provide at Afton Middle School. Interestingly, T/TAC program specialists are able to provide professional development on content-specific pedagogy but are not permitted to provide professional development on content knowledge per directives from the VDOE. This directive arose because program specialists were working with special education teachers who were unable to perform their job because of a lack of content knowledge. For example, in this study, a teacher assigned as a collaborative special education teacher in science expressed that "she is not familiar with the content, and that is a problem for her" in planning (field notes, February 3, 2014). The reasoning for the directive is that program specialists are to support teachers in doing their job, not to provide training on basic job requirements. In this example, a program specialist would not spend time teaching the science content to the

teacher but would provide her with resources and support in designing instruction in which she could participate without a strong content background. Program specialists walk a fine line because content and pedagogy are so closely related. In my observations, Elizabeth did not deliver professional development that was content focused on a regular basis.

Opportunities for active learning. Active learning occurs when teachers are actively engaged in the process of teaching and learning (Desimone et al., 2002). The sixth grade team of teachers was engaged in collecting student data. Specifically, teachers focused on the number of behavior redirections and consequences given to students under their behavior management plan. The teachers collectively kept a record on a roster of the number of consequences, silent lunches, and referrals that students received. Elizabeth collected the data and looked for trends (field notes, January 28, 2014). So although the teachers were engaged in the data collection, they were not engaged in the data analysis. The teachers discussed anecdotally the way the behavior management plan had positively impacted their classrooms, as illustrated by the following excerpt from field notes.

> Mrs. Carter, with her arms crossed, calmly stated, 'The students now know we are communicating.'
>
> Mrs. Lawrence added, 'It has also been quicker to redirect the students; it can be blended better into instruction.' She does not have to stop instruction to address behaviors as she did before. (field notes, January 14, 2014)

I did not find evidence that the teachers were actively involved in discussing the behavior management plan within the frame of teaching and learning. The professional development on teacher collaboration had just begun, and Elizabeth did not collect data with the teachers during my observations. As such, I did not observe Elizabeth providing

the teachers with opportunities to actively engage in connecting collaboration with teaching and learning.

Collective participation of teachers. Collective participation is the opportunity for multiple teachers from a department or grade level to participate together in a professional development activity (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). In the behavior management strand, all teachers on the team participated in the team meetings. In the teacher collaboration strand, all teachers involved (general education and special education) attended the after-school session and follow-up sessions. The teachers were invited to attend the after-school session by the principal, and all did. All of the teachers except one fully participated in the activities by completing the appointment card and participating in discussions during the gallery walk activity (see Vignette 2, p. 71). Altogether, I observed collective participation of teachers in team meetings, follow-up sessions, and the after-school training session.

Summary. Because some components of high-quality professional development as defined by researchers in the literature were not present (content knowledge and opportunities for active learning) in the observed professional development, I have classified the professional development as "quality" in Finding 1. The term quality is used to describe the level of professional development observed in the case study when situated within the current literature on high-quality professional development. Quality is not used to quantify the impact or result of the professional development activities. To confirm this conclusion, I considered rival explanations that the professional development delivered by Elizabeth was of low or high quality. The quality of something can be considered on a continuum: no quality, low quality, quality, and high quality. The

professional development observed is neither void of the majority of core components nor inclusive of all of the core components. Therefore, I conclude that the professional development observed is quality. In a member check, Elizabeth agreed that the professional development can be described as quality and expressed frustration that she cannot discuss content more with teachers and explained that she would usually incorporate more active learning into professional development (member check, March 5, 2014).

Summary

As a result of my analysis of the data related to what the professional development Elizabeth provided at Afton Middle School looked like, I found that she provided quality professional development in multiple delivery structures and that the delivery structure differed by the target change level. A theme within the finding is that Elizabeth provided professional development that was specific to the context of Afton Middle School. Researchers have addressed the importance of context in professional development and emphasized that professional development is, and should be, embedded in the culture and context of the school (Avalos, 2011; Borko, 2004; Hochberg & Desimone, 2010; James & McCormick, 2009; Opfer, 2011; Walpole & McKenna, in press; Webster-Wright, 2009). The conceptual framework that guides this study also situates the professional development within the context of the schools (see Figure 2, p. 14). I observed the following evidence that Elizabeth provided professional development specific to the context of Afton Middle School:

- Elizabeth embedded professional development within existing team meeting structures.

- Elizabeth identified the level of change and determined the structure for professional development activities based on her assessment of the problem.
- The professional development topics were identified through two processes: teacher requests and academic review.
- Elizabeth used a reform model of professional development (team meetings), which is embedded in the context of the team and school.

I confirmed the theme of context by considering the rival explanation that the professional development was not specific to the context of Afton Middle School. If the professional development was not specific to the context, Elizabeth would have applied predetermined structures to the professional development activities and provided professional development on set topics of her, or T/TAC's, choosing. Additionally, she may have chosen traditional professional development structures in which there is one-way delivery of information from Elizabeth, as the expert. I am not able to find evidence that supports this rival explanation. Therefore, I can conclude that the professional development that Elizabeth provided to Afton Middle School was specific to the context of the school.

Finding Two

Finding 2: The program specialist provided professional development by acting to build capacity and relationships within the context of the school. Actions to build capacity differed by both structure and purpose of professional development activities.

Description of Actions to Build Capacity

During the case study, Elizabeth was observed acting to build capacity in five ways: facilitating, advising, providing information, creating conduits for information transfer, and validating attitudes/beliefs/feelings/actions. I coded the field notes for each of the five actions to build capacity.

I coded facilitating when I observed Elizabeth eliciting input, reflections, thoughts, or feelings from participants. For example, "Elizabeth asks each of the special education teachers how they are feeling" (field notes, February 3, 2014). The facilitating questions were open ended including "How are things going? Do you have any concerns?" (field notes, February 11, 2014).

I coded advising when I observed Elizabeth advise a teacher or group of teachers on next steps or actions to take (or not to take). For example, in response to a request for help from a teacher about a concern with her collaborative teacher, Elizabeth responded,

> There are two avenues you can take. One is professionalism, and you can talk to the administrator about concerns about the person not doing their job. The second is communication; we can facilitate a conversation between you and your co-teacher. (field notes, February 4, 2014).

Sometimes the teacher elicited the advice from Elizabeth, and sometimes Elizabeth offered it.

I coded providing information when I observed Elizabeth directly providing information. For example, "Elizabeth handed out Google Drive booklets…that gave step-by-step directions on how to access the drive and share files" (field notes, February 3, 2014).

I coded creating conduits when I observed Elizabeth ask others to carry specific information to their colleagues. For example, at the conclusion of a follow-up session,

"Elizabeth asked the teachers, 'How do you feel about sharing this information with your general education counterparts?'" (field notes, February 3, 2014). Both providing information and creating conduits are related to the transfer of information.

Finally, I coded validating when I observed Elizabeth provide verbal and/or non-verbal positive feedback on thoughts, feelings, actions, or beliefs of participants. Sometimes the validation was short and succinct: "Elizabeth confirmed their decisions as a 'good, unified step'" (field notes, February 11, 2014). And sometimes the validation was more sincere and emotive: "Elizabeth listened sincerely, her hands crossed in front of her, and she periodically nodded her head and agreed with an, Mhm.' She made eye contact with the teacher and leaned in slightly to show support" (field noted, February 4, 2014).

Vignette six. Vignette 6 describes a team meeting and illustrates some of Elizabeth's actions to build capacity that I observed.

We are first ones in the classroom for the team meeting, and each of the five teachers comes in one at a time over the next few minutes. Ms. Walters shares a booklet with Elizabeth that she has made in her technology recertification class. Ms. Walters made the booklet with images of her cat that were paired with "life lessons." The teachers, Elizabeth, and I chitchat for a few minutes about our pets.

Elizabeth transitions to get everyone on the task of the team's behavior management plan, "So how's everything going?"

And the negativity begins—Mrs. Lawrence laments, "We are just waiting for things to settle down."

Mrs. Carter adds, "I am done with every student I teach. They don't do anything, and everybody now is a problem."

Elizabeth confirms their feelings by saying, "It is the time of year when the middle schoolers start to get full of themselves." The teachers are not consoled. They are worked up and frustrated, commiserating with each other over their disappointment in the students. The conversation continues as the teachers share their frustration about the lack of involvement of students in the class.

Elizabeth latches on to the mention of student engagement, "Can I throw out a radical idea? What about changing up instruction to get them moving? Is anyone interested in trying?" The teachers are quiet and look away from Elizabeth. You could hear a pin drop—a stark difference to a few minutes ago when they were fully engaged in complaining about the students.

Mrs. Miller speaks up, "I have recently started having my students work in pairs on vocabulary and that has helped them get the work done."

Elizabeth adds, "I am thinking more about an activity that gets the students up and moving. Is anyone was willing to try?"

Again silence.

Elizabeth says, "I will come be an extra person in the room if that helps."

Mrs. Lawrence expresses her concern that she has only "37 class periods left before the SOL test, and is nervous about getting everything in with the time left." Mrs. Walters is the first brave teacher to join Elizabeth and says she will try if someone comes to help her. Elizabeth gives examples of some quick (non-time-consuming) active learning strategies: quiz/quiz/trade and inside-outside circle. Elizabeth asks me to

explain quiz/quiz/trade to the teachers (it's my personal favorite!). I have the teachers make flash cards and engage them in the activity for a few minutes. They are reluctant– get up slowly with a little grumbling, but they do participate.

Elizabeth then briefly explains inside-outside circle. She adds that the key to success with the activities is "to give clear expectations and have a consistent behavior management plan, which they do." The teachers do not seem interested in the active learning strategies at all. No one asks questions or for follow-up. Elizabeth asks again if anyone would like to try the active learning strategies.

Ms. Walters says, "I am willing to try."

Elizabeth says to the rest of the group, "If you are interested, email me your topics and SOL numbers, and I will prepare materials and bring them to you next week." I sense disappointment from Elizabeth that only Ms. Walters takes her up on her offer. The following day, Elizabeth receives an email from Mrs. Lawrence, the teacher who said she doesn't have any time for active learning strategies, asking if Elizabeth can swing by the school to pick up cards to laminate for the team to use for quiz/quiz/trade.

This vignette includes examples of the actions to build capacity that I observed and coded. Elizabeth facilitated the conversation with open-ended questions. She validated the teachers' frustration in the beginning by acknowledging that middle school students can be difficult. She also provided information on active learning strategies to the teachers. Although the actions were coded as discrete units, the actions are woven together to create a professional development experience. Additionally, the actions to build capacity did not occur in isolation of the context of the school. Elizabeth and I were both surprised to receive an email from Mrs. Lawrence that the teachers were interested

in using the active learning strategies in their classes. This relates to the conceptual framework that guides this study (see Figure 2, p. 14) in that the professional development is situated within the context of the school. After we left, the teachers likely discussed the active learning strategies and decided to pursue them. In this example, the social relations among the teachers may have served as a mediator between the professional development and the decision of the teachers to pursue steps to include active learning strategies in their classrooms. The conversation by the teachers about the professional development may or may not be an outlier; in this study, I did not observe the teachers without the presence of Elizabeth.

Actions to Build Capacity and Professional Development Structures

I explored the way Elizabeth's actions to build capacity are related to the professional development structures with a conceptually clustered matrix. I was interested to explore whether the same actions were present across all types of professional development structures. Table 7 is a conceptually clustered matrix that shows the frequency of Elizabeth's observed actions to build capacity during the different delivery structures. I counted and compared frequencies as a tool for making meaning of the matrix (Miles et al., 2014).

Table 7

Number (Percentage) of Times Actions to Build Capacity Present by Type of Professional Development Structure

	Facilitating	Advising	Providing information	Conduit	Validating
Team meetings	13 (46)	6 (21)	2 (7)	0	7 (25)
After-school workshop	4 (80)	0	0	1 (20)	0
Follow-up meetings	2 (15)	0	5 (38)	4 (31)	2 (15)
One-on-one meetings	0	2 (33)	2 (33)	0	2 (33)

From analyzing the patterns in the matrix, I discovered that each professional development structure contained a different combination of actions to build capacity. Overall, the observed actions in each structure were expected but did present surprises. In team meetings, Elizabeth used facilitating the most frequently and never created a conduit for the transfer of information. Because the team meetings were dominated by discussion, facilitating is expected as the most common action. Additionally, the team meetings observed were focused on change within the team, so there was not a need for anyone from the team to transfer information to anyone else outside of the team. At some point, based on my conceptual framework, as a tool to build collective capacity in the school, the team could transfer information on behavior management and active learning strategies to other teachers in the school. This is not to say that the teachers did not discuss either of the topics with colleagues, but that I did not observe Elizabeth creating a conduit for the transfer of information.

The one-on-one meetings did not present any surprises. The most commonly observed actions to build capacity were advising, validating, and providing information. Neither facilitating nor arranging a conduit to pass information applied when Elizabeth worked with one person for the goal of change in one classroom. As with the team meeting, Elizabeth did not arrange for the transfer of information to other teachers, but the teacher may have discussed the topic with others.

In the after-school training session, I perceived Elizabeth's primary role to be delivering knowledge, and I was surprised that providing information was not coded in that set of field notes. To follow up on the surprise, I re-read the field notes and confirmed that there was no evidence of Elizabeth's providing information during the after-school session. This surprise suggests that it is possible that not only the structure, but also the purpose of the professional development is related to the actions to build capacity because in a workshop-style structure the primary role of the professional developer is delivering information (Garet et al., 2001). To explore the purpose of the after-school session, I reviewed the pre-interview before the after-school session in which I asked Elizabeth to tell me what she had planned for the activity. She told me,

> An identified need is the fact that the collaborative teachers don't have planning time together on the master schedule. And so as a result, they don't plan, and some of them don't communicate at all, which results in instead of accommodations and differentiated instruction being done before hand, [the special education teachers] show up to class without knowing what's going on and then simply pull the special [education] kids and so we need to try to find a way to reverse that trend. So we are going to be talking about how we can creatively find planning time. (interview, January 16, 2014)

Elizabeth expressed that her goal in the after-school session was to facilitate a conversation, which aligns with my observations of primarily facilitation and the absence providing of information.

In the follow-up meetings, which were also concerning teacher collaboration, providing information was the primary action to build capacity. In the pre-interview before the follow-up sessions, Elizabeth told me that the goal was to "train [the teachers] and get them going on Google docs" as a communication tool (interview, February 3, 2014). The purpose of the follow-up meeting was training and aligns with my observations of providing information. Additionally, organizing a conduit for passing information was present more in the follow-up meetings than in any other structure. This appears to be intentional by Elizabeth. A letter she delivered to teachers about the follow-up sessions read, "If your name is not on the schedule, you will be updated by a colleague" (letter, January 31, 2014). This implies that the passing of information between teachers was consciously planned by Elizabeth and was observed in the sessions.

Vignette seven. Vignette 7 describes a part of a follow-up session and illustrates how I observed Elizabeth provide information and arrange for the transfer of information.

We meet with three special education teachers and one general education teacher in one of the special education teacher's rooms. The room is small (for a self-contained class) with a rectangular table, which seats six, and eight desks. We opt to sit at the table.

Elizabeth explains, "the purpose of the meeting is to provide an introduction and some information on Google Drive. This is a follow-up to the after school collaborative teacher meeting, when everyone asked for more information about Google Drive." Elizabeth hands out Google Drive booklets that we created with step-by-step directions and screen shots on how to access the drive and share files. Elizabeth explains how Google Drive can be used as a tool for communication. Elizabeth then asks the special

education teachers, "How do you feel about sharing this information with your general education counterparts?"

The general education teacher says, " I will take some books to my team." Elizabeth handed her some booklets and the special education teachers did not respond. This vignette includes a different arrangement of actions by Elizabeth to build capacity than the actions in Vignette 6 (p. 91), which describes a team meeting. In this vignette, there is more delivery of information and arranging for transfer of information as opposed to facilitating and validating, which she did in the team meeting.

By exploring patterns in the conceptually clustered matrix (see Table 7, p. 97), following up the surprise of facilitating in the team meeting, and contrasting the actions to build capacity observed in different structures (as illustrated in the vignettes), I conclude that the actions to build capacity differed not only by the structure of the professional development but also by the purpose of the professional development activity. When the purpose of the professional development activity was to build knowledge, as in a follow-up meeting, I expected and observed more instances of providing information. But if the purpose of the professional development activity was group problem solving, as in a team meeting, I expected and observed more facilitating. I further confirmed this finding by receiving affirmative feedback from the participant. To explored the relationship between the actions to build capacity and the purpose of the professional development further, I analyzed when the actions occurred within the professional development activities and hypothesized that different structures, with different purposes, included different patterns of actions.

Actions to Build Capacity within Professional Development Activities

I used event-state networks to further analyze Elizabeth's actions related to actions to build capacity. Event-state networks are appropriate for the analysis because they display both the actions (in rectangles) of the participant and the states (in circles) related to the actions over time (Miles et al., 2014). An event-state network was created for each of the professional development activities that I observed. The event-state networks allowed me to explore what preceded and followed each of Elizabeth's actions. An excerpt from one of the event-state networks from a team meeting on behavior management (see Vignette 6, p. 91) is presented in Figure 4. Elizabeth's actions to build capacity are highlighted.

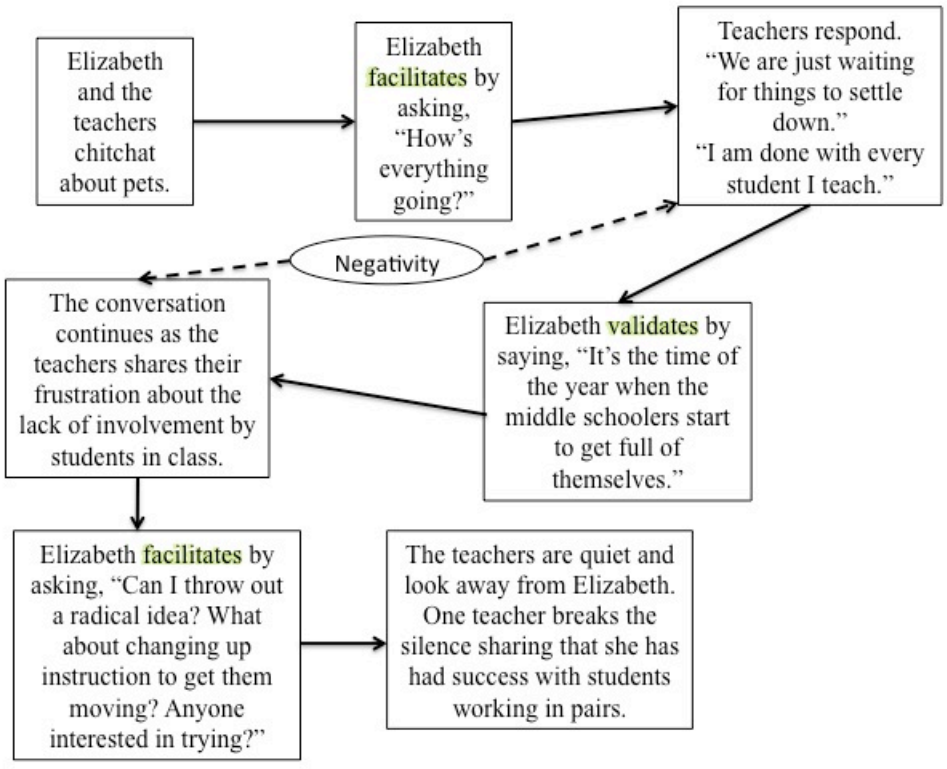

Figure 4. Excerpt from event-state network. Data from observed team meeting on February 25, 2014.

Facilitating. The patterns in the event-state networks from the team meetings reveal that Elizabeth facilitated the beginning of the meetings with open-ended questions (see Figure 4). Elizabeth also facilitated to engage more teachers in the discussion or to change the path of the conversation, such as in the second highlighted instance of facilitates in Figure 4. By facilitating in this way, Elizabeth provided professional development that was specific to Afton Middle School. She did not bring with her a pre-determined set of questions to ask, but rather facilitated in reaction to the teachers responses. Overall, facilitating appears to be a tool that Elizabeth used to start and guide a discussion. In agreement with earlier analysis (see Table 7, p. 97), Elizabeth facilitated more than she directly provided information. She called the facilitating action "guided-self discovery" and described it as "put[ting] the bread crumbs down and they get there" (interview, February 25, 2014). She facilitated the discussion, but with a goal in mind to lead the teachers in a specific direction. The conceptual framework that guides this study (see Figure 2, p. 14) shows that professional development leads to changes in teachers' knowledge, skills, attitudes, beliefs, and practices (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). Elizabeth's practice of "guided-self discovery" can be considered a method to change teachers' knowledge, skills, attitudes, beliefs, and practices through initiating and guiding conversations.

To confirm the pattern of facilitating to guide a discussion, I looked for negative evidence. I found one team meeting where Elizabeth did not facilitate with an open-ended question to begin the meeting. Upon further review, this team meeting began with the following statement from Elizabeth,

> The purpose of this meeting is to discuss the pros and cons regarding the newly implemented behavior plan. But we first need to address the miscommunication between the teachers and the administration. (field notes, January 13, 2014)

This meeting was different from the others because there was a conflict between the teachers and principal, and Elizabeth addressed the conflict in the meeting. Elizabeth was conscious of the conflict between the teachers and principal and considered the management of that relationship as a subtext in her work in the school.

> While I've been here…[I have been] acting as a go-between between the principal and the teachers because there's a lot of misunderstanding between those two groups and oftentimes just having someone clarity what's been said has been helpful. And I find myself pulled into that a lot. I'm not doing anything special; there's no magic wand. I'm just re-stating what one party has said to the other. (interview, February 11, 2014)

This exploration of negative evidence suggests that Elizabeth did guide discussions by facilitating, except for when a situation needed to be addressed. In this instance, Elizabeth structured the opening of the meeting to clearly address the issues she knew were present at the school at the time. Elizabeth was aware of the relationships in the building and the way the relationships related to her work (member check, March 5, 2014). This reiterates the theme in Finding 1 that the professional development Elizabeth provided was intertwined with the context of the school.

Providing Information. Elizabeth provided information directly to teachers during the follow-up meetings, team meetings, and one-on-one meetings. In the event-state networks, providing information was consistently present at the beginning of each of the follow-up meetings, as described in Vignette 7 (p. 97). Elizabeth also provided information when a teacher expressed concern or interest in a topic during other professional development structures. For example, in Vignette 6 (p. 91), which described

a team meeting, Elizabeth provided information to the teachers on active learning strategies after they expressed concern about student engagement.

During the follow-up sessions, as noted earlier in analysis, Elizabeth's purpose was to build knowledge and skills for using Google Drive as a tool for teacher collaboration. Elizabeth also provided information during other meetings, but sparingly (only three times). By providing information, Elizabeth seems to be aiming to improve the knowledge of the teachers, which is a purpose of professional development activities (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). The sparing use of providing information reinforces that Elizabeth prefers facilitation as the primary method of acting to build capacity. Elizabeth agreed in a member check and added that from her experience providing information doesn't necessarily lead to change (member check, March 5, 2014). She added, "the staff is not empowered to make change independently yet, so I use more of a 'shoulder-to-shoulder' approach of facilitation" (member check, March 5, 2014).

Conduits. Patterns in the event-state networks reveal that coordinating for the spread of information through a conduit is paired with providing information and occurred at the end of the follow-up sessions. In the follow-up sessions, Elizabeth provided information to one or a few teachers and then asked them to share the information with colleagues and/or collaborative teachers. If the aim of professional development is to build the capacity of not only individual teachers but also the school the information must transfer from one teacher to another (King & Newmann, 2001; Newmann et al., 2000; Opfer, 2011). Researchers have concluded that teacher professional learning is social, and social capital is a mediator for teacher learning (Cole

& Weinbaum, 2010; Coleman, 1988; Hargreaves & Fullan, 2012; James & McCormick, 2009; Penuel et al., 2009). Elizabeth, by facilitating the transfer of information, supported social capital as a means for teacher learning and collective capacity building.

Advising. Elizabeth advised by providing suggestions on next steps during both team meetings and one-on-one meetings. The event-state networks reveal that Elizabeth ended all of the team meetings and one-on-one meetings by advising. Elizabeth advised on clear next steps, highlighted by the following two excerpts: the first from a one-on-one meeting and the second from a team meeting.

> 1. The teacher asked Elizabeth what she should do. Elizabeth advised [the teacher] to organize discrepancies she had found into a *t*-chart...[and] go through her channels at the division level to ask if she can contact VDOE. Elizabeth said she would email the contact information for the person at VDOE who handles the science standards. (field notes, February 4, 2014).
> 2. Looking at the clock, Elizabeth began to wrap up, "What we are going to do between this week and next week is design an incentive for kids who make it through a class period without any redirects" (field notes, January 14, 2014).

In the one-on-one meetings, Elizabeth advised in direct response to an inquiry for advice, whereas in the team meetings, Elizabeth advised to identify next steps in the behavior management plan. In both situations, she provided advice when it appeared that the teachers were unable to resolve their concern independently. Elizabeth took some time to think about how she advises during a member check and shared that she thinks her advising is tied to her belief system. She expressed that she "believe[s] that individuals who are empowered to address their own concerns are more independent" (member check, March 5, 2014). By advising, Elizabeth seems to be aiming to improve the practices of the teachers, which is a purpose of professional development activities (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007).

Validating. Elizabeth validated when the teachers shared concerns, ideas, problems, and actions. In analyzing this pattern in the event-state networks, I looked for negative evidence and found that sometimes when a teacher shared a concern, Elizabeth provided information or advised. The patterns in the event-state networks show that validating often occurred with other actions to build capacity, including facilitating, providing information, and advising. Validating was also sometimes observed as a stand-alone action. In all professional development activities, I observed Elizabeth validate after a teacher shared. Elizabeth added in a member check that validating "can be tricky…[because she] never want[s] agreement or lack there of to be used by one side against the other" (member check, March 5, 2014). By validating, Elizabeth expressed her agreement with the thoughts, feelings, actions, or beliefs of the teacher. Elizabeth seemed to be molding the attitudes and beliefs of the teachers by expressing her approval. Change, in the attitudes and beliefs of teachers, can occur during high-quality professional development activities (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). Because the data collected in this study focuses on Elizabeth, the attitudes and beliefs of the teachers were not explored. I am unable to comment on whether changes in the teachers' attitudes or beliefs occurred. Elizabeth celebrated changes and alluded to changes in teachers' attitudes and beliefs. In reference to the sixth-grade team of teachers' work on the shared behavior management plan she shared, "I take it as a small victory that all of them had something positive to say. For a group of people that were determined that this was not [going to] work. It was nice" (interview, January 14, 2014).

Actions to Build Relationships within Professional Development Activities

During the case study, in addition to actions to build capacity, I observed Elizabeth acting to build relationships in four ways: chitchatting, bringing items or gifts, giving teachers the option to say yes or no, and sharing personal stories. Actions to build relationships, in some form, were present in almost all of the visits. Vignette 6 (p. 91) illustrates chitchatting about pets at the beginning of a team meeting and giving the teachers the option to say yes or no to trying active learning strategies. I analyzed the data further with a time-ordered matrix (see Table 8). A time-ordered matrix is appropriate for this analysis because it emphasizes the timing of events and allowed me to explore the actions to build relationships that occurred before, during, and after the professional development activities.

Table 8

Time-Ordered Matrix of Actions to Build Relationships

	Before	During	After
Chitchat	X		X
Option to say yes or no	X	X	
Providing items or gifts	X	X	
Sharing a personal story		X	

Chitchatting preceded almost every observed team meeting and ranged in topics from pets to snow day plans. Since chitchat occurred only before and after the professional development activities, evidence implies that the professional development activities

were focused on the professional development task at hand. Few actions to build relationships occurred after the professional development activities, possibly because of time limitations. Most of the professional development activities took place during planning periods, and at the conclusion of the activity, teachers were preparing for their next class.

I find the option to say yes or no to be the most interesting of the actions to build relationships. By offering a teacher the option to say yes or no, Elizabeth gave the teacher choice and possibly diminished the difference between the teacher role and her role as an expert. When given choice, the teachers did not always say yes as in Vignette 6 (p. 91) when the teachers did not immediately agree to explore active learning strategies. Building relationships appears to be important to Elizabeth. In her initial interview she commented that she is "trying to build relationships because the work that lies ahead…is going to be significant" (interview, January 13, 2014). This comment implies that Elizabeth builds relationships as a bank so when she has to have difficult conversations she can use the relationship as a foundation. Interestingly, Elizabeth's actions to build relationships suggest that the transfer of information between the teachers and her may be mediated by social capital. The relationship building creates the social relationship by which the information can transfer. Social capital has been explored as a mediator for teacher learning in professional development (Cole & Weinbaum, 2010; Coleman, 1988; Hargreaves & Fullan, 2012; James & McCormick, 2009; Penuel et al., 2009). And in this case, Elizabeth interacted with social capital in two ways: by arranging connections between teachers to transfer information and by building relationships between the teachers and herself to transfer information.

Summary

The analysis of how Elizabeth provided professional development at Afton Middle School led me to conclude that she provided professional development by acting to build capacity and build relationships within the context of the school. Her actions to build capacity differed by both structure and purpose of professional development activities. To confirm the finding, I looked for negative evidence, followed-up on surprises in the data, used data from multiple sources, and received feedback from the participant through member checks. The professional development that Elizabeth provided is the input, or the initial action, in the conceptual framework (Figure 2, p. 14), but her actions to build relationships and build capacity are related to the process by which professional development leads to changes in teachers' knowledge, skills, attitudes, and beliefs, and practices.

And as in Finding 1, context emerged as a theme within Finding 2. For a school to consistently improve achievement for all students, individual teachers must integrate their knowledge, skills, attitudes, and beliefs, and practices to build a collective capacity within their specific contextual circumstances (Elmore, 2008a; Newmann et al., 2000). By facilitating discussions, Elizabeth provided real-time professional development within the context of the school in an attempt to build collective capacity through her work. Moreover, the actions to create conduits and build relationships to transfer information are tied to the mediator of social capital. In the conceptual framework that guides this study (see Figure 2, p. 14), teacher changes through social capital builds the collective capacity within a school.

Finding Three

Finding 3: The program specialist considered contextual factors (including time, teacher attitude, teachers' knowledge and skills, and relationships among school personnel) when she was making decisions while planning for and delivering professional development.

Description of Decision Making

In the interviews before and after the professional development activities, Elizabeth shared multiple ways that she makes decisions about professional development in response questions about what she considered when planning (before interview) and making changes (after interview). Elizabeth reported this data on decision making; her thought processes were not observable. This section includes my analysis of what she expressed related to her decision making and discusses decision making when planning, the factors considered in decision making, and decision making during professional development activities.

Description of Decision Making when Planning

To make decisions about the topic of professional development, she explained that she identified an area of need through interactions with teachers and classroom observations. For example, before the after-school training, she shared, "An identified area of need is the fact that the collaborative teachers don't have planning…time together on the master schedule. And so as a result, they don't plan and some of them don't communicate at all" (interview, January 16, 2014). In this quote, Elizabeth explains that she identified a need through interactions with teachers. Figure 5 shows a portion of notes

that Elizabeth wrote during a classroom observation identifying the needs to address the tones of the classrooms in professional development.

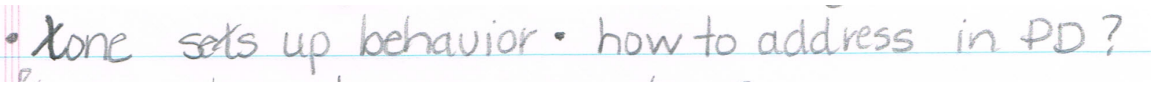

Figure 5. Excerpt of observation notes. Extracted from Elizabeth's observation notes on February 20, 2014.

To check if the professional development was on track she identified change in two ways: by identifying trends in data and by celebrating milestones related to interactions with teachers. The following excerpt from an interview before a team meeting about behavior management highlights the way Elizabeth used data to make decisions and identify change.

> Researcher: How are you deciding whether or not [the teachers] are ready to move to the next step?
>
> Elizabeth: One of the major reasons I know they're ready to move on is because I did evaluate their data that they've been keeping…and there's been a significant drop in consequences for the kids. And so in theory, as you increase the positive supports, the negative consequences will decrease. And that's occurring. So we have confirmation that they are, in fact, doing something in the classroom that is decreasing negatives. (interview, February 11, 2014)

Elizabeth used the data to identify the change that the negative consequences (silent lunch and referrals) had decreased for students. She attributed this change to the professional development through team meetings on the behavior management plan the teachers were working on.

The following vignette describes a one-on-one meeting and follows with Elizabeth's reflection and celebration of this milestone.

Vignette eight. Vignette 8 describes the interaction with a teacher in a one-on-one meeting.

As we walk down the hall to leave after a team meeting, Mrs. Carter asks if she can speak with us for a few minutes. Elizabeth says, "Sure." We follow Mrs. Carter into her room. She asks me to close the door; I do.

Mrs. Carter opens the conversation by asking Elizabeth, "What is collaborative supposed to be, isn't it supposed to be a partnership?" She emphasizes the word "collaborative" with her tone as she asks the question.

Elizabeth pauses and says, "That's a loaded question. There are lots of models of collaboration, there is one teach one assist, which isn't advised, and there is co-teaching where the teachers work together and are responsible together for all of the students in the room, and that's what we do advise."

Mrs. Carter responds, "We have very nice people here, but I do everything. All I ever get is, 'I'll pass out the papers.'"

Elizabeth listens sincerely, her hands are crossed in front of her, and she periodically nods her head and agrees with an "Mhm." She makes eye contact with the teacher and leans in slightly to show support.

Mrs. Carter continues emphatically, "I hear, 'I don't know the material.' If I were told that I was going to teach science, I would go learn the material. Sometimes it's almost like having another student in the class. I have to give all of the directions. Even if she takes a group out, I have to tell her exactly what to do. If we could just move toward 'let's work together.' The students look at the other teacher as an assistant; she doesn't get the same level of respect."

Elizabeth responds, "There are two avenues you can take. One is professionalism, and you talk to the administration about concerns about the person doing their job. The

second is communication; we can facilitate a conversation between you and your co-teacher."

Mrs. Carter pauses and looks up to the corner of the room before responding, "I don't want to be critical or be a complainer."

Elizabeth encourages, "I don't see you as being a complainer; let's rephrase it to being reflective. You are reflecting. You can approach it as trying something new—like station or parallel teaching—where you both are learning. I think the piece that is missing, though, is the critical conversation of expectations."

Mrs. Carter asks for advice, "How do I break the ice?"

Elizabeth advises, "It's hard to do, but set aside personal feelings and have a conversation about how you both can grow."

Mrs. Carter reflects, "You know it could be me. She might not feel comfortable in the room because I can be controlling and do everything. I might be the problem also. I'm going to try to have a conversation, and I'll let you know how it goes. I just wanted your point of view. You are safe people that I can say something to."

Elizabeth replies, "Just let us know how it goes and what we can do to support you." We walk out of the room.

In Elizabeth's reflection on this interaction, she celebrated a perceived milestone.

> The teacher that stopped us and asked us to talk about her collaborative situation, confidentially, I thought that was a huge milestone. It was a huge celebration…I mean I felt like doing like a touchdown dance because we've been working for over a year to get into the collaborative classrooms, and this is an official invitation to help work on the collaborative relationships in the building, which are significantly lacking. And so I got home last night and was just…on cloud nine. I was like, 'someone wants the help.' … My initial reaction of that teacher was that she didn't want our help at all. I had…gotten the standoff perception from the beginning completely. And the fact now that there is buy-in, something has turned around. Something we've done has caused an impact for her. And I

> just, you know, I went and shared that with our colleague this morning. 'Cause I really feel like that's a turning point; that's a major turning point in the school. (interview, February 4, 2014).

This celebration was so profound for Elizabeth that, as she said, she shared it with a colleague who works in the same division at the elementary level. During the 7 weeks, I observed Elizabeth share only four times: once with a colleague, once with the principal, once with the OSI contactor, and once with the division administrative team. Just because I observed sharing only four times does not mean that it did not occur more frequently outside of the times I observed. But the sharing was not ongoing and frequent, so this celebration can be noted as significant in the course of the case study observations.

In addition to considerations for planning, Elizabeth shared that she considered the way to engage with a need. To determine whether or not to engage with a topic or issue she shared that she prioritizes and considers whether the issue, is within the purview of T/TAC. In an interview before a professional development session, Elizabeth related an instance when she prioritized professional development.

> [Teacher collaboration is] actually going to take longer because the phenomenon is [that] when you have something in your face, such as [the teachers] were assigning over 50 silent lunches a day, and they have less than 100 students on their team, so when you have that significant of a perception of behavior, you want help immediately. And so it's easier for me to address that first. Even though I really wanted to address collaboration just as much at the same time, it was easier to use that door versus the other. (interview, February 11, 2014).

During this interview, she explained that she made a judgment call and decided to provide professional development on behavior management with the teachers because that is what they asked for, even though she really wanted to address the issues surrounding teacher collaboration. In two instances, Elizabeth determined that the issue at hand was out of the purview of her job as a program specialist. In both instances, she

passed the information to the deemed appropriate people (the OSI contactor and the principal).

And finally, to plan for professional development, she also shared that she considered teachers' current knowledge and skills. She discussed teachers' knowledge and skills in the interviews before and after the follow-up sessions on using Google Drive as a tool for collaboration. She shared, "At each session, I asked how comfortable people were with Google Drive…[and] tailored it to their level" (interview, February 3, 2014). She also considered teacher ability while planning: "I considered the fact that not all of them are at the same level of computer skills, so the instructions are very basic—color coded with pictures and screen shots" (interview, February 3, 2014). These quotes illustrate that Elizabeth planned for and adjusted professional development activities based on her perception of teachers' knowledge and skills.

Description of Factors Considered in Decision Making

Although Elizabeth's decision-making process was not visible, I was able to observe the factors of professional development that presented and can compare and contrast the factors that I observed to the factors that Elizabeth discussed. During the phase of data condensation, the factors were inductively open coded. The codes were then organized into themes. The factors that presented in the data were both factors that appeared to support the delivery of professional activities and factors that appeared to pose a challenge for delivering professional development. The factors were sorted as such into two themes: facilitators and barriers. The themes are descriptive and not causal; the facilitators were observed factors that could be helpful in the delivery of professional development, not factors that did facilitate professional development. Table 9 is a

checklist matrix displaying the frequencies of codes for facilitators and barriers by the type of data source. Descriptions of each code with examples are in Appendix F. The barriers and facilitators rows include the sum of the frequencies of the subcodes in each associated category.

Table 9

Checklist Matrix of Facilitators and Barriers by Data Type

	Interview before	Observations	Interview after
Barriers	8	17	15
Conflict between teacher and principal	3	3	2
Crisis	1	2	2
Weak leadership	0	1	4
Negativity	0	5	4
Negative teacher-teacher relationships	1	0	1
Time	3	6	2
Facilitators	1	13	3
Teacher asks	0	3	1
Teacher confides	0	1	0
High teacher ability	0	2	0
Positive teacher-teacher relationships	1	1	0
Teacher interest	0	6	2

A review of Table 9 for patterns reveals that both facilitators and barriers were observed and discussed by Elizabeth in interviews. Elizabeth, though, attended to barriers more often than facilitators in interviews. Time and negativity were the most frequent barriers coded, and Elizabeth discussed both in interviews. During the data collection for the case study, there were multiple snowstorms and school closings. Time was discussed in terms

of time missed because of school closings and in terms of the time that teachers had during the school day for collaborating. Both strands of time (time lost due to school closings and lack of time to collaborate) were barriers for professional development. Review of negativity showed that the majority of the negativity coded was associated with the after-school training session, and some of the negativity that was coded in the follow-up sessions was related to the same teachers. The negativity may not be prevalent in the school culture, but rather housed with individual teachers.

In general, the facilitators and barriers that Elizabeth discussed in interviews were observed. The absence of observation does not mean that it did not occur, just that I did not observe it during my scheduled observations. Interestingly, I observed and coded facilitators more often than Elizabeth discussed them in interviews. Only once in a before-visit interview did Elizabeth discuss positive teacher relationships as a facilitator. Again, I cannot conclude from the absence of the code that Elizabeth did not consider facilitators, just that she did not discuss them when asked about her considerations. In a member check, Elizabeth agreed that she does attend to barriers more often than facilitators because they "preclude the next step" (member check, March 5, 2014). The facilitators and barriers observed and considered by Elizabeth are specific to Afton Middle School. Although in broad terms they are likely present in other schools, the context of each is specific to Afton. Elizabeth considered those contextual facilitators and barriers when planning for and providing professional development. This reaffirms earlier findings that the professional development that she provided was grounded in the context of the school.

Decision Making During Professional Development

In an interview after a professional development activity, when asked about what she considered when making changes to her plan, Elizabeth and I had the following exchange:

> Elizabeth: It's really strange. You go into a school and you think you have a plan and you think you know where you're gonna go and what you're gonna do and you just get the sense that that's not the direction you need to go and you need to go a different way. And that's…what happened today and…I think it will get us where we need to be in a way that they choose.
> Researcher: Some in-the-moment decision making.
> Elizabeth: A lot of in-the-moment decision making when you're in these schools. (interview, February 25, 2014)

As a result of this interaction, I explored this concept of "in-the-moment" decision making with a time-ordered matrix. Table 10, the time-ordered matrix, displays the plans that Elizabeth explained in the interview before the professional development and the changes that she discussed in the interview after the professional development. The data in the cells are paraphrased from what Elizabeth said in the interviews before and after professional development activities.

Table 10

Time-Ordered Matrix on Plans for and Changes to Professional Development Activities

Visit	Plans	Changes
1	Check on sixth grade behavior management plan and identify challenges	No changes
	Address conflict between principal and teachers	Planned to talk more about conflict, but that didn't happen because the principal came to the meeting
2	Talk about collaborative planning with all collaborative teachers	Changed the way activity was debriefed because of negativity of the teachers
3	Deliver rewards and check in with 6th grade team about reinforcing behavior	Couldn't have an extensive conversation about reinforcers because the schedule changed to early release because of snow
4	Training on Google Drive for collaborative teachers	Didn't meet with the people we planned to, but that's because it's the first day back after snow and we were just trying to catch people
5	Training on Google Drive for collaborative teachers	Quicker version with sixth grade team because they didn't know we were coming
	Meet with teacher about science curriculum	No changes
6	Check in on sixth grade behavior management plan and reconfirm they are all doing the same thing	Dealt with the crisis, so it really changed into getting them into the right direction
7	Discuss collaborative planning with principal	No changes
	Move sixth grade teachers from negative focus to positive	Discussed collaboration more with the sixth grade teachers than planned for; they seemed to want to talk about it and relieved that it was discussed; also seemed to turn themselves positive, so didn't focus on that; engagement was mentioned, went down that road, knew it was key

Every visit included some changes to the plan indicating that Elizabeth made in-the-moment decisions during professional development activities. When asked about this, Elizabeth shared,

> No matter how much research you explore or what any expert says, there is no clear script to [professional development] that will successfully turn around a low performing school. A great deal of what I do *has* to be in the moment. I have to be flexible because I never know what I might find when I walk into a school. I would say this is consistent with the majority of schools I work with. You have to meet them where they are, and only being there once a week leaves a wide-open window for unexpected changes. (member check, March 5, 2014)

This type of decision making indicates that the professional development is responsive to the context of the school. If the professional development was not responsive, then the plans would not have changed, and the same professional development could be provided in any context. This further affirms that the professional development that Elizabeth provided was grounded within the context of Afton Middle School.

Summary

In the analysis of what Elizabeth considered when planning for and providing professional development, I found that she considered contextual factors, including facilitators and barriers of professional development. This finding aligns with the theme of context in Finding 1 and Finding 2 and emphasizes the importance of the context of the school when providing professional development. The conceptual framework for this study (see Figure 2, p. 14) illustrates the way professional development builds capacity and situates the professional development within the context of the school. As mentioned throughout the descriptions of the analyses of the findings, researchers have addressed the importance of context in professional development and emphasized that professional

development is, and should be, embedded in the culture and context of the school (Avalos, 2011; Borko, 2004; Hochberg & Desimone, 2010; James & McCormick, 2009; Opfer, 2011; Walpole & McKenna, in press; Webster-Wright, 2009). Finding 3 was primarily confirmed through member checks.

Summary

The findings of this case study are the outcome of rigorous qualitative data analysis methods. The findings discuss the way a program specialist provides professional development in a specific school setting. The findings are specific to the case study but carry implications for the organization as a whole. I discuss the implications and recommendations to VCU T/TAC in Chapter 5.

Implications and Recommendations

The findings of this capstone project addresses the way a program specialist provided professional development within a school context (see Table 5, p. 68) and have implications for VCU T/TAC as an organization in current work. The problem of practice examined in this capstone project is that VCU T/TAC does not have applicable guidelines to support program specialists in working with schools in need of improvement. There is not a collective set of beliefs or actions to inform behaviors of program specialists' as they work to facilitate change in schools. The purpose of the case study is to explore the way a program specialist provides professional development in a school and to use the findings to guide recommendations to VCU T/TAC related to the problem of practice. Because the purpose of the professional development provided by program specialists is to improve the capacity of those working with students with disabilities, and, in turn, improve the academic outcomes of students with disabilities, I explored the way a program specialist provided professional development. I did not seek to connect the professional development the program specialist provided to changes in either teacher or student outcomes. Furthermore, linking teacher professional development to student achievement outcomes has been a challenge for researchers for a variety of reasons, including poor implementation of professional development and the sole use of teacher-reported data (Desimone, 2009; Hill et al., 2013; Wayne, Yoon, Zhu, Cronen, & Garet, 2008; Yoon et al., 2007). Because of the unclear complexity of

connecting professional development to student achievement, I chose to focus only on the professional development provided by the program specialist.

The conceptual framework that guides this study (see Figure 2, p. 14) begins with the input of professional development, provides multiple pathways for changes in teachers, which are mediated by social capital, and results in changes in student outcomes. This study focuses on the professional development that the program specialist provided, which is the input, or the first step in the pathway, of how professional development leads to changes for teachers and then changes for students. Additionally, the study focuses on the actions of the program specialist to facilitate professional development. The actions of the program specialist reveal that she engaged in social capital on two levels—among teachers and between teachers and herself. She acted both to provide connections among teachers to transfer information and to build relationships between her and teachers. In light of these interactions, I revised the conceptual framework to include the program specialist as a professional developer (see Figure 6).

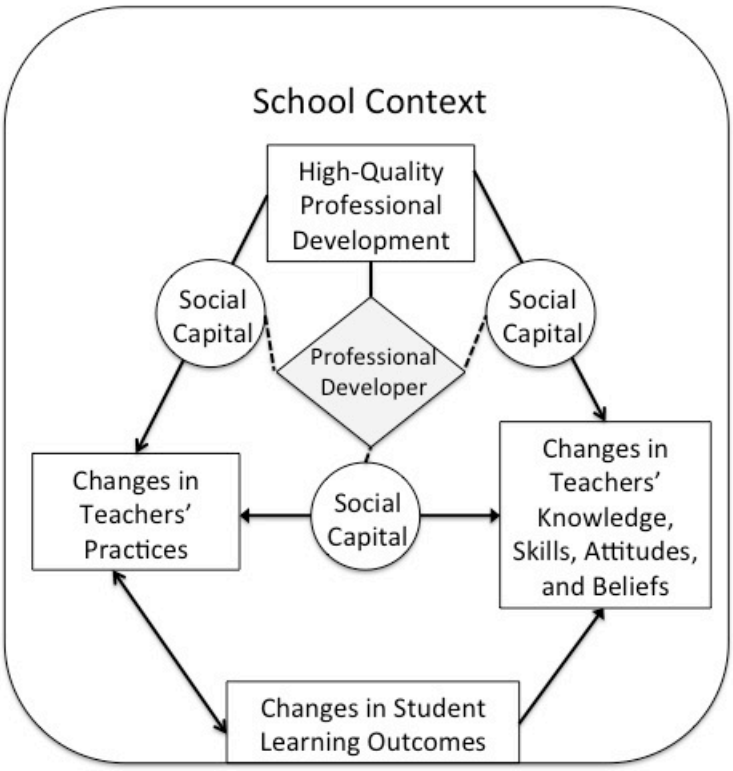

Figure 6. Revised conceptual framework.

The professional developer is tied to the delivery of the professional development and is tethered to social capital, which mediates changes in teachers. The findings and revised conceptual framework have implications for VCU T/TAC as an organization.

Implications

Context is a theme throughout each of the three findings. This theme implies that the work of program specialists in schools may be contextual within the given school. The contextual nature of the work presents a challenge to VCU T/TAC in the way to support program specialists as they engage in their work.

Finding One

Elizabeth provided professional development in a variety of delivery structures that differed based on the focus level of change and the specific needs of Afton Middle School. In the instance of collaborative teaching, she commented, "Typically change within the collaborative setting is seen as within the control of the teaching pair. [But at Afton Middle School], there are significant challenges at the school level" (member check, March 5, 2014). She implied that the professional development was structured and planned specifically for the needs of Afton Middle School. Additionally, in the strand of behavior management, she took advantage of established team meeting times to infuse professional development into the existing structure. Not all schools organize teachers into teams with common planning. Other schools emphasize teacher collaboration through team configurations.

Finding Two

Elizabeth engaged in both actions to build capacity and actions to build relationships while providing professional development at Afton Middle School. Facilitating was the most common action to build capacity observed, and Elizabeth shared that facilitating is her preference in the form of "guided self-discovery" (interview, February 25, 2014). By facilitating, rather than providing information, Elizabeth elicited teacher input and responded to reactions. She was not applying a prescribed or predetermined set of questions or information when providing professional development but was adjusting to feedback from the teachers. Additionally, she was aware of relationships in the building and the way they related to her work as evidenced by her responses to conflict in the building between the administrator and the teachers

(see Table 9, p. 114). And finally, Elizabeth also focused on building relationships with the participants. Elizabeth's actions and reflections about building relationships imply that she did so to facilitate the transfer of information. The ways that she acted to build relationships may be specific to Afton Middle School. Chitchatting was the most common action to build relationships observed but may not have been in another school (see Table 8, p. 105).

Finding Three

When planning for and providing professional development, Elizabeth considered contextual factors, including facilitators and barriers of professional development. Specifically when planning, she identified needs specific to Afton Middle School and considered the teachers' knowledge and skills. She also adjusted the professional development she provided by flexibly responding to contextual factors within Afton Middle School. In every school visit that I observed, Elizabeth made some change to the professional development activities planned (see Table 10, p. 117). These in-the-moment changes allowed her to react to the specific context of Afton Middle School.

Summary

Context emerged as a theme in all three findings of the study. In Finding 1, by providing professional development tailored to the needs of Afton Middle School and embedding professional development into existing school structures, Elizabeth provided professional development that was infused into the specific context of Afton Middle School. In Finding 2, by facilitating discussions, reacting to relationships in the school, and acting to build relationship, Elizabeth provided professional development that was responsive to the context of the school. And in Finding 3, by considering contextual

factors and making in-the-moment decisions, Elizabeth provided professional development that was intertwined with the context of the school. The theme of context in the findings demonstrates that the professional development that Elizabeth structured and provided was specific to Afton Middle School and not an unknown, generic middle school. This implies that the work of program specialists may be contextual within a given school.

Limitations

By observing Elizabeth in only one school, I cannot determine the degree to which her actions are related to the context of the school or to her preferences. Further study may include observing Elizabeth in multiple settings and observing other program specialists to compare and contrast with the findings in this study. Additionally, as the only researcher, I cannot check for researcher bias effects by comparing the data collection from multiple researchers. As such, I acknowledge that my researcher bias is embedded in the findings.

Recommendations

In this section I present specific recommendations for action for VCU T/TAC and the challenges that may impede implementation of the actions. The findings and implications are tied to the following recommendations for action by the organization. The recommendations are summarized in Table 11.

Table 11

Summary of Recommendations

	Recommendations
Recommendation 1	Explore the characteristics of the professional development that program specialists are providing, with a focus on purpose and context.
Recommendation 2	Explore the actions of program specialists in providing professional development through the lens of social capital.
Recommendation 3	Use the outcomes of Recommendation 1 and Recommendation 2 to develop for program specialists a set of guiding actions that promote the organization's mission.

Recommendation One

Recommendation 1: Explore the characteristics of the professional development that program specialists are providing, with a focus on purpose and context.

In the literature, researchers agree that high-quality professional development leads to changes in teachers' knowledge, skills, attitude, and beliefs, and changes in classroom practices (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). The findings of this study indicate that there may be some differences between the characteristics of high-quality professional development described in the literature and the professional development that program specialists are providing. Program specialists are providing professional development with the goal of increasing the capacity of personnel to work with students with disabilities within schools that have been labeled as being unsuccessful in the goal. Because of the specificity of the work, exploring the characteristics of the professional development that program specialists provide by focusing on the purpose and context would be beneficial. The program specialists and

organization would gain from a better understanding of what professional development looks like in action.

The differences in professional development may be linked to the purpose of the professional development, the school's contextual characteristics, or the program specialist's experience and background knowledge. In this study, the structure of the professional development that Elizabeth provided varied based on the intended level of change of the professional development. For example, Elizabeth addressed collaborative teaching at the school level with an after-school session and follow-up sessions. The after-school session and follow-up sessions allowed her to meet with all of the general education and special education teachers. This is in contrast to when the purpose of the professional development was targeted at the team level and she facilitated team meetings. The structure of the professional development differed based on the intended level of change.

Additionally, research and the findings of this study suggest that professional development is embedded in the culture and context of the school (Avalos, 2011; Borko, 2004; Hochberg & Desimone, 2010; James & McCormick, 2009; Opfer, 2011; Walpole & McKenna, in press; Webster-Wright, 2009). In this study, Elizabeth was observed providing professional development that was responsive to Afton Middle School's context. She did this by considering contextual factors when planning for professional development (scheduling, relationships, etc.) and making in-the-moment adaptations to her professional development plan. In one instance, Elizabeth altered her professional development plan to specifically address a conflict in the school between the administrator and the teachers. In every school visit that I observed, Elizabeth made

changes in her professional development plan and shared that she made those changes based on specific contextual factors of the school, including relationships among school personnel, time for professional development, teacher ability, and teacher negativity. As such, the professional development that she provided was responsive to the context of the school.

Finally, because the case study included one participant in one school, I was unable to separately analyze the program specialist and the school. Differences in professional development that exist may relate to differences in the preferences, knowledge, and skills of program specialists. Different program specialists may structure and provide professional development according to their personal and professional preferences. In summary, the differences in professional development may be related to the purpose of the professional development, the context of the school, and/or the program specialist's background knowledge and experiences. All of these avenues are worth exploring to better understand the way program specialists are providing professional development in schools and the way the organization can encourage the delivery of high-quality professional development.

Recommendation Two

Recommendation 2: Explore the actions of program specialists in providing professional development through the lens of social capital.

While providing professional development in schools, program specialists engage in a variety of actions. This study highlights both actions to build capacity (e.g., facilitating, validating, providing information, and advising) and actions aimed at building relationships. According to the mission of the organization, the goal of the

professional development by VCU T/TAC program specialists is to build the capacity of individuals and the school. Professional development builds capacity by facilitating changes in teachers' knowledge, skills, attitudes, and beliefs, and changes in classroom practices. The actions to build relationships and capacity are related to the process by which professional development leads to changes in teachers' knowledge, skills, attitudes, and beliefs. Specifically, building relationships to transfer information is tied to the concept of social capital, according to which information is exchanged through social connections. Social capital has emerged in the research, and in this study, as a mediator of teacher learning and a tool for building collective capacity in a school (Cole & Weinbaum, 2010; Coleman, 1988; Hargreaves & Fullan, 2012; James & McCormick, 2009; Penuel et al., 2009). In this study, Elizabeth engaged in social capital on two levels—among teachers and between teachers and herself. First, she created conduits for the transfer of information among teachers by providing one teacher with the information and specifically making a plan for that teacher to share the information with others. Second, she engaged in chitchat and other relationship building actions and implied that she did so to build relationships to support difficult topics that would be addressed in future professional development. Exploring the actions of program specialists through the lens of social capital would contribute to a better understanding of the work of program specialists.

Recommendation Three

Recommendation 3: Use the outcomes of Recommendation 1 and Recommendation 2 to develop for program specialists a set of guiding actions that promote the organization's mission.

The mission of VCU T/TAC is to build capacity in school personnel by increasing their knowledge, skills, and abilities, which should, as a result, improve the performance of students with disabilities. The current focus of program specialists is working in SEPI schools in which students with disabilities are not achieving at levels to meet federal benchmarks. VCU T/TAC's current model of change does not map to the current charge of providing professional development in these schools. Without a common set of possible actions, the program specialists are working independently in the schools new program specialists and current program specialists who are not comfortable with implementing professional development of this nature do not have any a blueprint to guide them. Because the current model of change no longer applies, VCU T/TAC should develop a new set of actions for program specialists, which provides guidance for providing professional development in a variety of contexts. The explorations described in Recommendation 1 and Recommendation 2 should be used to guide the development of this set of actions so that program specialists understand the way the organization promotes professional development through capacity building.

The findings of this case study focus on the work of a program specialist and do not address changes in teachers or changes in student outcomes that may result from the professional development that program specialists provide. Program specialists could work within the guiding actions as they provide professional development to achieve the organization's desired impact on teachers and students. The set of actions can also be used as the foundation for further program evaluation, which can address changes in teachers and students.

To support the process of developing guiding actions, VCU T/TAC should review literature on high-quality professional development, school change, and the conceptual framework of this study. The organization could both focus on creating guiding actions based on research and be specific to the nature of the current work of VCU T/TAC program specialists in SEPI schools. The guiding actions should reflect the outcomes of Recommendation 1 and Recommendation 2 and allow for the multiple contexts in which program specialists works and not be directive or prescriptive. Within the set of guiding actions, program specialists should have the flexibility to provide professional development that is responsive to the context of the given school and allows for in-the-moment decision making.

Challenges

A challenge for the implementation of these recommendations is that change can bring with it resistance. Some of the program specialists at VCU T/TAC are recent hires, and some have been working with the organization for over 10 years. Change can be difficult, and stakeholders may not have identified a need for change. The leadership at VCU T/TAC will decide the best way to facilitate the recommendations given the state of the organization. Additionally, the organization's decision making is focused on consensus. Before any action or change can occur, all members of the organization must agree that they can live with the decisions being made. Thus, change tends to be slow, and implementation of these recommendations will likely require discussion and study and be a time-consuming process.

The contextual nature of providing professional development in schools presents an added challenge for reaching consensus. If program specialists have different

experiences in the schools in which they work, different foci and concerns may make reaching consensus within the organization difficult. Although the program specialists work toward a common goal, the work is so individualized that a common set of guiding actions may be difficult to create. Developing a set of actions that are both detailed enough to be meaningful, and flexible and broad enough to allow for program specialists to provide professional development that is responsive to the context of an individual school may be difficult for the organization. And because a program specialist may work with several schools and within varying school contexts, a too detailed or prescribed set of actions may make an individual's work more complex and frustrating.

Summary

The recommendations to VCU T/TAC are based on the findings and implications of the study, and the conceptual framework of this project. The recommendations encourage VCU T/TAC to explore its current work and develop guiding actions for program specialists. Chapter 6 includes the action communication in which I present both the findings and recommendations to VCU T/TAC.

Action Communication

To: VCU T/TAC Codirectors
700 E Franklin Street
Richmond, Virginia 23284

From: Samantha Martin, M.T.
Doctoral Candidate
University of Virginia
902 High Street
Farmville, Virginia 23901

Dear VCU T/TAC Codirectors:

I am reporting findings and recommendations based on a 7-week case study of a program specialist from your organization. During the case study, I observed the program specialist provide professional development, interviewed her before and after each professional development session, and collected documents for review.

The focus of the work of program specialists has transitioned from the old long-term technical assistance process to the current work in SEPI schools. The systems change model that program specialists were using no longer applies to the current work. The purpose of the study is to explore the way a program specialist implements professional development in a school with the goal of school improvement. The findings and recommendations of the study can be used to make informed decisions about VCU T/TACs practices. The case study is exploratory, and the findings are not meant to be generalized to the organization, but rather to used as starting points for further exploration and growth.

The findings of the study are:

1. The program specialist provided quality, contextual professional development in multiple delivery structures (after-school session, follow-up sessions, team meetings, and one-on-one meetings) across two main focus strands: teacher collaborative and behavior management. The delivery structure differed by the target level of change: classroom, team, and school.
2. The program specialist provided professional development by acting to build capacity and relationships within the context of the school. Actions to build capacity differed by structure and purpose of professional development activities.
3. The program specialist considered contextual factors (including time, teacher attitude, teachers' knowledge and skills, and relationships among school

personnel) when she was making decisions while planning for and delivering professional development.

Based on these findings, I recommend the following actions for the organization to explore the nature of their current work in SEPI schools.

Recommendation 1: Explore the characteristics of the professional development that program specialists are providing, with a focus on purpose and context.

In the literature, researchers agree that high-quality professional development leads to changes in teachers' knowledge, skills, attitude, and beliefs, and changes in classroom practices (Desimone et al., 2002; Garet et al., 2001; Penuel et al., 2007). The findings of this study indicate that there may be some differences between the characteristics of high-quality professional development described in the literature and the professional development that program specialists are providing. Program specialists are providing professional development with the goal of increasing the capacity of personnel to work with students with disabilities within schools that have been labeled as being unsuccessful in the goal. Because of the specificity of the work, exploring the characteristics of the professional development that program specialists provide by focusing on the purpose and context would be beneficial. The program specialists and organization would gain from a better understanding of what professional development looks like in action.

The differences in professional development may be linked to the purpose of the professional development, the school's contextual characteristics, or the program specialist's experience and background knowledge. In this study, the structure of the professional development that Elizabeth provided varied based on the intended level of change of the professional development. For example, Elizabeth addressed collaborative teaching at the school level with an after-school session and follow-up sessions. The after-school session and follow-up sessions allowed her to meet with all of the general education and special education teachers. This is in contrast to when the purpose of the professional development was targeted at the team level and she facilitated team meetings. The structure of the professional development differed based on the intended level of change.

Additionally, research and the findings of this study suggest that professional development is embedded in the culture and context of the school (Avalos, 2011; Borko, 2004; Hochberg & Desimone, 2010; James & McCormick, 2009; Opfer, 2011; Walpole & McKenna, in press; Webster-Wright, 2009). In this study, Elizabeth was observed providing professional development that was responsive to Afton Middle School's context. She did this by considering contextual factors when planning for professional development (scheduling, relationships, etc.) and making in-the-moment adaptations to her professional development plan. In one instance, Elizabeth altered her professional development plan to specifically address a conflict in the school between the administrator and the teachers. In every school visit that I observed, Elizabeth made changes in her professional development plan and shared that she made those changes based on specific contextual factors of the school, including relationships among school personnel, time for professional development, teacher ability, and teacher negativity. As

such, the professional development that she provided was responsive to the context of the school.

Finally, because the case study included one participant in one school, I was unable to separately analyze the program specialist and the school. Differences in professional development that exist may relate to differences in the preferences, knowledge, and skills of program specialists. Different program specialists may structure and provide professional development according to their personal and professional preferences. In summary, the differences in professional development may be related to the purpose of the professional development, the context of the school, and/or the program specialist's background knowledge and experiences. All of these avenues are worth exploring to better understand the way program specialists are providing professional development in schools and the way the organization can encourage the delivery of high-quality professional development.

Recommendation 2: Explore the actions of program specialists in providing professional development through the lens of social capital.

While providing professional development in schools, program specialists engage in a variety of actions. This study highlights both actions to build capacity (e.g., facilitating, validating, providing information, and advising) and actions aimed at building relationships. According to the mission of the organization, the goal of the professional development by VCU T/TAC program specialists is to build the capacity of individuals and the school. Professional development builds capacity by facilitating changes in teachers' knowledge, skills, attitudes, and beliefs, and changes in classroom practices. The actions to build relationships and capacity are related to the process by which professional development leads to changes in teachers' knowledge, skills, attitudes, and beliefs. Specifically, building relationships to transfer information is tied to the concept of social capital, in which information is exchanged through social connections. Social capital has emerged in the research, and in this study, as a mediator of teacher learning and a tool for building collective capacity in a school (Cole & Weinbaum, 2010; Coleman, 1988; Hargreaves & Fullan, 2012; James & McCormick, 2009; Penuel et al., 2009). In this study, Elizabeth engaged in social capital on two levels—among teachers and between teachers and herself. First, she created conduits for the transfer of information among teachers by providing one teacher with the information and specifically making a plan for that teacher to share the information with others. Second, she engaged in chitchat and other relationship building actions and implied that she did so to build relationships to support difficult topics that would be addressed in future professional development. Exploring the actions of program specialists through the lens of social capital would contribute to a better understanding of the work of program specialists.

Recommendation 3: Use the outcomes of Recommendation 1 and Recommendation 2 to develop for program specialists a set of guiding actions that promote the organization's mission.

The mission of VCU T/TAC is to build capacity in school personnel by increasing their knowledge, skills, and abilities, which should, as a result, improve the performance of students with disabilities. The current focus of program specialists is working in SEPI schools in which students with disabilities are not achieving at levels to meet federal benchmarks. VCU T/TAC's current model of change does not map to the current charge of providing professional development in these schools. Without a common set of possible actions, the program specialists are working independently in the schools new program specialists and current program specialists who are not comfortable with implementing professional development of this nature do not have any a blueprint to guide them. Because the current model of change no longer applies, VCU T/TAC should develop a new set of actions for program specialists, which provides guidance for providing professional development in a variety of contexts. The explorations described in Recommendation 1 and Recommendation 2 should be used to guide the development of this set of actions so that program specialists understand the way the organization promotes professional development through capacity building.

The findings of this case study focus on the work of a program specialist and do not address changes in teachers or changes in student outcomes that may result from the professional development that program specialists provide. Program specialists could work within the guiding actions as they provide professional development to achieve the organization's desired impact on teachers and students. The set of actions can also be used as the foundation for further program evaluation, which can address changes in teachers and students.

To support the process of developing guiding actions, VCU T/TAC should review literature on high-quality professional development, school change, and the conceptual framework of this study. The organization could both focus on creating guiding actions based on research and be specific to the nature of the current work of VCU T/TAC program specialists in SEPI schools. The guiding actions should reflect the outcomes of Recommendation 1 and Recommendation 2 and allow for the multiple contexts in which program specialists works and not be directive or prescriptive. Within the set of guiding actions, program specialists should have the flexibility to provide professional development that is responsive to the context of the given school and allows for in-the-moment decision making.

I hope that these findings and recommendations will be of use to VCU T/TAC as an organization. Please contact me with any questions and/or concerns. I have attached a list of references cited that may be helpful as you begin your exploration.

Sincerely,

Samantha Martin

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Appendix A

Annual Measurable Objectives (AMOs) for Reading and Mathematics

Table A1

Reading AMOs

Accountability Year	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
All Students	66	69	72	75	78
Proficiency Gap Group 1	52	59	65	72	78
Proficiency Gap Group 2	49	57	64	71	78
Proficiency Gap Group 3	53	60	66	72	78
Students with Disabilities	30	42	54	66	78
LEP Students	44	52	61	69	78
Economically Disadvantaged Students	52	59	65	72	78
White Students	74	75	76	77	78
Asian Students	80	Continuous Progress			

Note. Adapted from "Accountability and Virginia Schools" accessed November 22, 2013 at http://www.doe.virginia.gov/statistics_reports/school_report_card/accountability_guide.pdf.

[a] Accountability data is calculated from the prior assessment year, for example accountability in 2013-2014 is based on assessment data from 2012-2013.

Table A2

Mathematics AMOs

Accountability Year	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
All Students	64	66	68	70	73
Proficiency Gap Group 1	52	57	63	68	73
Proficiency Gap Group 2	51	56	62	67	73
Proficiency Gap Group 3	56	60	65	69	73
Students with Disabilities	41	49	57	65	73
LEP Students	46	53	59	66	73
Economically Disadvantaged Students	52	57	63	68	73
White Students	69	70	71	72	73
Asian Students	Continuous Progress				

Note. Adapted from "Accountability and Virginia Schools" accessed November 22, 2013 at http://www.doe.virginia.gov/statistics_reports/school_report_card/accountability_guide.pdf.

[a] Accountability data is calculated from the prior assessment year, for example accountability in 2013-2014 is based on assessment data from 2012-2013.

Appendix B

Map of Superintendent's Regions One and Eight in Virginia

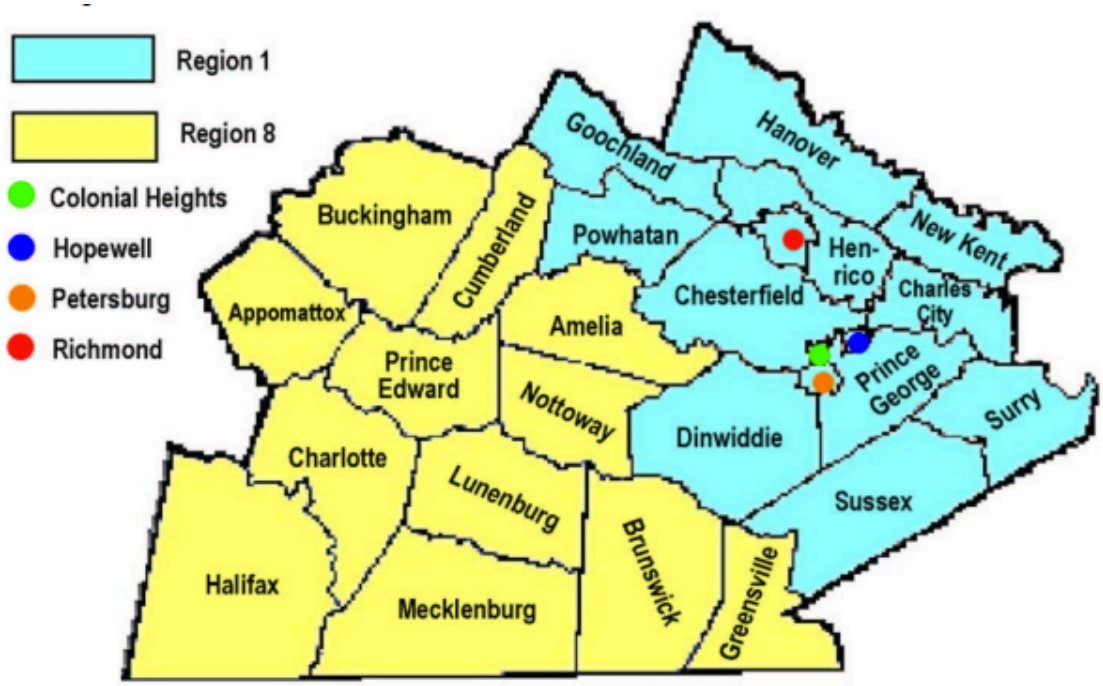

Figure B. Map of school divisions served by VDOE's T/TAC at VCU. "Localities" accessed November 17, 2013 at http://www.vcu.edu/T/TAC/localities.html.

Appendix C

Log of Data Collected

Date (hours of visit)	Professional development activities	Data collected
January 13, 2014	N/A	Initial interview
January 14, 2014 (1)	Team meeting	Pre-visit interview Observation of school visit with field notes Post-visit interview
January 16, 2014 (1)	After-school session	Pre-visit interview Observation of school visit with field notes Post-visit interview Document: Email correspondance
January 28, 2014 (0.5)	Team meeting	Pre-visit interview Observation of school visit with field notes Post-visit interview
February 3, 2014 (1)	Follow-up sessions (2)	Pre-visit interview Observation of school visit with field notes Post-visit interview Document: letter
February 4, 2014 (2.5)	Follow-up sessions (2) Individual teacher meetings (2) *Meeting with principal (not a professional development activity)*	Pre-visit interview Observation of school visit with field notes Post-visit interview
February 11, 2014 (1)	Team meeting	Pre-visit interview Observation of school visit with field notes Post-visit interview
February 20, 2014 (5)	*Classroom observations (not a professional development activity)*	Pre-visit interview Observation of school visit with field

		notes Post-visit interview Document: Notes taken by participant
February 25, 2014 (1.5)	Team meeting *Meeting with principal (not a professional development activity)*	Pre-visit interview Observation of school visit with field notes Post-visit interview
February 26, 2014 (2.5)	*Division Administrative Team Meeting (not a professional development activity)*	Pre-visit interview Observation of school visit with field notes Post-visit interview

Appendix D

Initial Interview Guide

Introduction

The purpose of this initial interview is to gather information about you as a program specialist and the SEPI schools that you are currently working in. It is ok with you if I record the interview today? I will be transcribing the interview and any personally identifying information about you or the schools will be replaced with a pseudonym. Would you like to pick the pseudonym that will be used for you?

Note. Follow-up questions and are allowable and may include: Can you tell me more about that? What do you mean by that? Can you be more specific?

Program Specialist Questions

The purpose of this first set of questions is to find out more about you as a program specialist.

1. How long have you been a program specialist with VCU T/TAC?
2. Can you describe your role as a program specialist?
3. Can you explain your background and what led you to become a program specialist?

School Questions

The purpose of this second set of questions is to find out background information about the schools that you are working in.

1. What SEPI schools are you currently working in?

The next set of questions will be repeated twice, once for each school.

4. Can you give me a description of the school?

   a. Would you classify the school as rural, urban, or suburban?
   b. Can you describe the school division?
5. How long have you been working at the school?
6. How often do you go to the school?
7. How long is each typical visit?
8. What is the primary focus of your work?
9. Are there any documents, such as action plans, that you can provide me to better understand what you have been working on at the school?
10. Who do you primarily work with at the school?
11. Is there anything else you would like to tell me about the school?

Is it ok if I observe you in each of the schools over the next two months? Just like the interview, all information about you and the schools will be confidential. I would like to conduct brief interviews with you before and after each visit, would that be ok? They shouldn't take more than 5 minutes before the visit and 15 minutes after. We will need to meet together though after each visit. Do you have any questions?

Appendix E

Observation Protocol

Date: _____ School: _____
Start Time: _____ End Time: _____

Activity:_____ Location:_____
Who was involved: _____
My role: _____
Start Time:_____ End Time: _____

Observation Notes:

Reflection:

Activity:_____ Location:_____
Who was involved: _____
My role: _____
Start Time:_____ End Time: _____

Observation Notes:

Reflection:

Appendix F

Descriptive Codebook with Data Excerpts

Code	Description	Sample Excerpt
PD Who	The individuals and groups who participate in the professional development provided by the program specialist.	
Teachers – team	Teachers who are arranged formally in a team involved in professional development.	*The 6th grade teachers were arranged as a team by the principal and had set meeting dates and a formally identified team leader.*
Teachers – group	Teachers who meet as a group, but are not a formal team involved in professional development.	*We met with one special education teacher and three general education teachers.*
Teacher – individual	An individual teacher involved in professional development.	*As we walked down the hall, Ms. Adams asked if she could speak with us for a few minutes.*
Teachers - partners	Collaborative teaching partners (one general education teacher and one special education teacher who are assigned to one class of students) involved in professional development.	*We met in a teacher's classroom with an English general education teacher and the collaborative special education teacher.*
Administrator	A building-level administrator (e.g. principal, assistant principal) involved in professional development.	*We walked to the front office and met briefly with the principal.*
Initiation	The individual[s] who initiate the professional development interaction/activity.	
Teacher	A teacher initiates contact with the program specialist.	*A science teacher asked that we come in to help her…*
Program specialist	The program specialist initiates contact with the teachers and/or administrator.	*Elizabeth went by her office to ask if she would like to meet with us before or after…*

Code	Description	Sample Excerpt
PD focus	The focus topic for the professional development activity.	
Teacher collaboration	The topic of the professional development relates to teacher collaboration in a co-taught setting.	*Elizabeth said that a challenge is that the special education and general education collaborative teachers do not all have common planning; so, communication is challenging.*
Behavior management	The topic of the professional development relates to classroom-level behavior management.	*Elizabeth began the meeting by explaining the purpose of the meeting, "The purpose of this meeting is to discuss the pros and cons regarding the newly implemented behavior plan.*
Curriculum	The topic of the professional development relates to curriculum.	*A science teacher asked that we come in to help her work through some curriculum questions that she had.*
Sharing	The individuals with whom the program specialist shares information.	
OSI	The program specialist shares information with OSI contractor.	*I'm going to call our OSI contractor…to talk to her about this whole planning thing.*
Principal	The program specialist shares information with principal.	*Elizabeth said [to the principal], "I have to share something unpleasant…"*
Coworker	The program specialist shares information with a coworker.	*I went and shared that with our colleague this morning.*
Relationship Building	The ways in which the program specialists builds relationships with those involved in professional development.	
Chit-chat	The program specialist discusses personal and/or non-work related topics briefly with school personnel.	*The meeting wrapped up with polite conversation about family and the teacher shared stories about caring for her parents.*
Items	The program specialist brings tangible items for the teachers/administrator.	*Elizabeth brought with her a plastic grocery bag full of reinforcers.*

Code	Description	Sample Excerpt
Option to say yes/no	The program specialist gives teachers the option to say "yes" or "no" to professional development.	*Elizabeth quietly knocked on teachers' doors and asked if they were available to meet for a few minutes during second period.*
Personal story	The program specialist shares a personal story.	*Elizabeth shared a story about how she dropped her computer and smashed the hard drive, but luckily everything was backed up on Google Drive.*
Decision-making	The factors and ways the program specialist makes decisions.	
Data	The program specialist gathers data from teachers or discusses data gathered.	*Elizabeth went to Ms. Lynn's desk to get the lists the teachers were using of the number of redirects.*
Observation	Program specialist observes to gather information or discusses observation.	*So the next step really after today is to set up an observation and come back and spend a day in the program like I did in the beginning…*
Out of purview	The program specialist identifies that the topic is out of the purview of TTAC.	*"These … are not under the purview of TTAC…"*
Teacher ability	Program specialist considers teacher ability (high or low) when making decisions about professional development activities.	*"Not all of them are at the same level, so the instructions were very basic…"*
PS ID change	The program specialist identifies change that has occurred.	*"So, since all of them were able to express something positive, then that tells me that the change is working."*
PS ID need	The program specialist identifies an area of need.	*"An identified area of needs is the fact that the collaborative teachers don't have planning…some of them don't communicate"*
Prioritize	The program specialist prioritizes needs.	*"Even though I really wanted to address collaboration just as must at the same time, it was easier to use that door versus the other."*

Code	Description	Sample Excerpt
PS Celebration	The program specialist celebrates something that has occurred	*"I take it as a small victory that all of them had something positive to say…"*
Building capacity	The actions of the program specialist to build knowledge/skills and change or affirm the thoughts/feelings/beliefs/attitudes of others through professional development.	
Providing information	The program specialist directly provides information.	*She went over the information in the booklet about uploading files and sharing.*
Facilitating	The program specialist elicits input/reflection/thoughts/feelings from participants	*Elizabeth asked each of the special education teachers how they are feeling.*
Conduit	The program specialist asks others to carry specific information to others.	*Elizabeth then asked the teachers, "How do you feel about sharing this information with your general education counterparts?"*
Advising	The program specialist advises on next steps.	*Elizabeth advised her to organizer the discrepancies that she found into a t-chart so the information is clearly organized.*
Validating	The program specialist provides positive verbal and/or non-verbal feedback of the thoughts/feelings/actions/beliefs of participants	*Elizabeth listened sincerely – her hands crossed in front of her and periodically nodded her head and agreed with an "Mhm."*
Barriers	The factors that interfere with or inhibit professional development activities.	
Time	Teachers, administrators, or the program specialist identify time as a limited resource.	*One of the teachers said that she is "just trying to figure out how to get the time to work with it."*
Conflict - TA	A conflict arises and/or is addressed between the teachers and administrator.	*"…we need to address the miscommunication between the teachers and the administration."*
Crisis	A matter that needs to be handled immediately.	*"They were in a crisis, so we had to address the crisis."*

Code	Description	Sample Excerpt
Negativity	Teachers respond or act negatively toward a question or task.	*Elizabeth, in an attempt to redirect the conversation, asked, what's going well? Ms. Baker flatly said, "Nothing"… The negativity in the meeting continued.*
Relationships TT -	Negative relationships between teachers are discussed or observed.	*"Others are avoiding [collaborating] because of personality issues."*
Weak leadership	The program specialist identifies or teachers discuss weak leadership structures.	*"We need to fix the structure, but the principal refuses to show me a master schedule."*
Facilitators	The factors that support or facilitate professional development.	
Relationships TT +	Positive relationships between teachers are discussed or observed.	*The teachers are very much a team. They support each other and are able to discuss and use compromise and consensus in decision-making.*
Teach ability high	A high level of teacher ability is observed or expressed by the program specialist	*Both of the teachers said that they were very comfortable with Google Drive…"if you guys could talk it up…that would be great."*
Teacher interest	Teachers engage and express interest in the professional development topic/activity.	*[Two teachers] shared that they would be willing to meet at lunch to learn about some of the communication strategies and then share it with other teachers.*
Confides	Teachers or administrator confides in program specialist by disclosing private work-related information or feelings.	*The principal said, "What's said in this room, stays in this room."*
Asks PS	Teacher asks the program specialist for advice or input.	*Ms. Adams asked, "How do I break the ice?"*

Appendix G

Matrix and Paired Analytic Memo

	A : Observation	B : Postvisit Interview	C : Previsit Interview
1 : **Barriers**	13	15	7
2 : conflict – TA	3	2	3
3 : crisis	2	2	0
4 : lack of leadership	0	3	0
5 : Lack of teacher buy-in	1	1	0
6 : Negativity	2	4	0
7 : Relationships TT -	0	0	1
8 : teacher ability – low	0	1	1
9 : Time	5	2	2
10 : **Facilitators**	11	6	1
11 : Relationships TT +	1	0	1
12 : Teacher ability – high	2	3	0
13 : Teacher buy-in	4	2	0
14 : Teachers ask PS	3	1	0
15 : Trust	1	0	0

Figure G1. Frequency matrix of facilitators and barriers by data type. The query is extracted from data analysis in nVivo 10 during the study.

	A : Feb 11 Visit	B : Feb 3 Visit	C : Feb 4 Visit	D : Jan 14 Visit	E : Jan 16 Visit	F : Jan 28 Visit
1 : **Barriers**	7	4	3	9	11	2
2 : conflict – TA	1	0	0	7	0	0
3 : crisis	3	0	0	1	0	0
4 : lack of leadership	0	0	0	0	3	0
5 : Lack of teacher buy-in	0	1	0	0	1	0
6 : Negativity	1	0	0	1	4	0
7 : Relationships TT -	0	0	0	0	1	0
8 : teacher ability – low	0	1	1	0	0	0
9 : Time	2	2	2	0	2	2
10 : **Facilitators**	1	5	8	1	2	1
11 : Relationships TT +	1	0	0	0	1	0
12 : Teacher ability - high	0	3	2	0	0	0
13 : Teacher buy-in	0	2	1	1	1	1
14 : Teachers ask PS	0	0	4	0	0	0
15 : Trust	0	0	1	0	0	0

Figure G2. Frequency matrix of facilitators and barriers by visit. The query is extracted from data analysis in nVivo 10 during the study.

Analytic Memo on Figure G1

The frequency tables show that barriers are discussed/observed more than facilitators and are present across all data types, implying that Elizabeth attends to them more frequently because they appear more frequently. Both teacher ability and teacher buy-in appears more frequently as a facilitator than a barrier. Elizabeth rarely (only once on January 16) mentioned a facilitator (positive teacher relationships) in a pre-interview when asked about what she considered in planning. This was for the only visit that was structured as a workshop.

Analytic Memo on Figure G2

The visit on January 16 was an after-school workshop and presented with barriers that were less common on other visits; negativity was coded 4 times on January 16 and only once in each of two other visits. The lack of leadership was also mentioned by Elizabeth in the post- interview and was not mentioned in any other visits. Elizabeth perceived the behavior of the teachers as a group to be an outcome of a perceived lack of leadership in the building. Leadership, as a barrier, was not absent form other visits. January 14th stood out as a visit where the conflict between the teachers and the administration was a barrier (coded 7 times – only once in all other visits). Although Elizabeth noted managing the conflict between the teachers and the administrator as a "subtext", it was only explicitly observed once (one January 14th) and only mentioned one other time in a pre-interview (Feb 11th). But, when it did present itself (such as on Jan 14th) it was a focus. Time is the only barrier that is consistent across all visits (except January 14th – before all of the snow days). The visits on Feb 3rd and 4th (on Google Drive and

individual teacher meetings) presented the most facilitators – teacher ability, teacher buy-in, and teachers asking for advice. Both of the instances where teachers asked for advice were in the individual teacher meetings, initiated by the teachers.

Need to explore – when a barrier/facilitator was present in an observation, did Elizabeth discuss it in the post-interview?

Possible Conclusions to Explore:

- *Elizabeth attends to barriers more than facilitators and they present themselves more often.*
- *Teacher ability plays a larger role as a facilitator than barriers.*
- *Elizabeth rarely discusses facilitators when planning for professional development, but acknowledges when they help.*
- *When teacher-administrator conflict arises, Elizabeth reacts quickly focuses on resolution*
- *Workshop-style professional development presented different challenges than other types of professional development – specifically negativity*
- *Elizabeth perceived the behavior of the teachers as a group at an after-school meeting to be an outcome of a perceived lack of leadership in the building, she then, in turn emailed the OSI contactor – explore further as unique instance*

Appendix H

Excerpt from Analytic Log

Data Set In Use	Procedural Steps	Decision Rules	Analysis Operations		Conclusions Drawn
			Readying data for analysis	Drawing conclusions	Confirming conclusions	
All data collected	Conceptually clustered matrix created in nVivo Matrix query: rows: nodes on PD descriptors (who, delivery, focus, initiation) Columns: dates of visits	Include all data sets Include all nodes that relate to characteristics of the PD		Drawing themes/patterns Counting		See memo #3

Summary and reflections: This query gave a counting/reporting of types of pd activities. Need to continue to dig deeper to look for possible connections between PD characteristics and facilitators/barriers. This query addresses the answer to the "what" 1a research question, but does not yet look to the "how."

Appendix I

Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study.

Purpose of the research study: The purpose of the capstone project is to explore how a program specialist implements professional development in schools so that the organization that is providing support to the school can make informed decisions about their work. I hope to learn about the characteristics of the professional development that you are providing to the schools and about the factors that you consider when planning for professional development. You will not be compensated for participation.

What you will do in the study:

The study will consist of an initial interview, school visits, and before and after visit interviews. During the school visits, I will observe your work in the schools. I will also be asking to review any documentation that you complete related to the professional development activities and are willing to share. The interviews will be audio taped and all files will be kept in password-protected locations. During any of the interviews, you are welcome to skip any question that makes you uncomfortable and you can stop the interview at any time.

Time required: The study will take place in January - March 2014 and will consist of an initial interview (approximately 1 hour), school visits (two per week), and before and after visit interviews (approximately 15 minutes each). The study will require about 1 hour of your time each week, in addition to your typical school visits.

Risks: There are no anticipated risks to this study.

Benefits: There are no direct benefits to you for participating in this research study. The study may help us understand the work of your organization.

Confidentiality:

To protect your privacy, you, the schools in which you work, and anyone you interact with during observations will be assigned pseudonyms. The pseudonyms will be used during all parts of the study, including data collection, analysis, and reporting. At no point in the study will any personally identifiable information be included. The interviews will be audio recorded and transcribed. All electronic materials for the study will be stored in a password-protected folder on my password protected computer that will either be with me or secured in a private locked location. All hard-copy materials will be either kept with me or in a private locked location.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty.

How to withdraw from the study: If you want to withdraw from the study, tell the researcher to leave the room. There is no penalty for withdrawing.

Payment: You will receive no payment for participating in the study.

Appendix J

Letter to VCU T/TAC Codirectors

January 8, 2014

Dear Virginia Department of Education Training and Technical Assistance Center at VCU Codirectors,

A requirement for a Doctor of Education degree at the Curry School of Education at the University of Virginia is a capstone project. The capstone project is a study that is of direct benefit to practitioners. The purpose of my capstone project is to explore how a program specialist at the Virginia Department of Education Training and Technical Assistance Center implements professional development in schools so that the organization can make informed decisions about their work. I hope to learn about the characteristics of the professional development that is being provided to the schools and about the factors that are considered when planning for professional development.

The project is designed as a multiple-case study and analyzes one program specialist in two public middle school contexts. Data for this study include interviews, observations, and documents focused on the program specialist as the participant. I will be asking the participant to participate in one initial interview at the beginning of the study to gather information about her and the schools in which she works. This initial interview will be approximately one hour. Then, I will be asking the participant to allow me to observe her providing professional development in two schools. Each school visit will have a short before and after interview. The before interview will be approximately 5-10 minutes and the after interview approximately 30 minutes. I will also be asking the participant to review any documentation that she completes related to the professional development activities. The participant will not be compensated for her participation. To protect the privacy of the participant and the schools, pseudonyms will be used for the participant, the schools, and anyone she interacts with during observations.

UVA IRB for the Social and Behavior Sciences has approved the study and the SBS Protocol number is 2013-0475. A copy of the full protocol form has been attached to this letter for your review. I will not begin data collection until I receive written permission from you that I may proceed with the study. Please contact me with any questions, comments, and/or concerns.

Sincerely,

Samantha Martin

Appendix K

Letter to Superintendent of Afton Middle School

January 8, 2014

Dear Superintendent and/or Designee,

A requirement for a Doctor of Education degree at the Curry School of Education at the University of Virginia is a capstone project. The capstone project is a study that is of direct benefit to practitioners. The purpose of my capstone project is to explore how a program specialist at the Virginia Department of Education Training and Technical Assistance Center implements professional development in schools so that the organization can make informed decisions about their work. I hope to learn about the characteristics of the professional development that is being provided to the schools and about the factors that are considered when planning for professional development.

The project is designed as a multiple-case study and analyzes one program specialist in two public middle school contexts. One of the middle schools that serves as a setting for this capstone project is in your district. Data for this study include interviews, observations, and documents focused on the program specialist as the participant. I will be asking the participant to participate in one initial interview at the beginning of the study to gather information about her and the schools in which she works. Then, I will be asking the participant to allow me to observe her providing professional development in two schools. Each school visit will have a short before and after interview. I will also be asking the participant to review any documentation that she completes related to the professional development activities. I will not be interviewing any school personnel, but school personnel will be present during the school visit observations. To protect the privacy of the participant and the school, pseudonyms will be used for the participant, the school, and anyone she interacts with during observations.

UVA IRB for the Social and Behavior Sciences has approved the study and the SBS Protocol number is 2013-0475. A copy of the full protocol form has been attached to this letter for your review. I will not begin data collection until I receive written permission from you that I may proceed with the study. Please contact me with any questions, comments, and/or concerns.

Sincerely,

Samantha Martin