A Descriptive Exploration of a Self-Directed Professional Development Approach

Derek R. Riddle
teachdriddle@gmail.com

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A DESCRIPTIVE EXPLORATION OF A SELF-DIRECTED PROFESSIONAL DEVELOPMENT APPROACH

By

Derek R. Riddle

Bachelor of Arts – Secondary Education
University of Nevada, Las Vegas
2010

Master of Education – Literacy Emphasis
Idaho State University
2013

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This dissertation prepared by

Derek R. Riddle

entitled

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Doctor of Philosophy – Teacher Education
Department of Teaching and Learning

Jori Beck, Ph.D.
Examination Committee Chair

Emily Lin, Ph.D.
Examination Committee Co-Chair

Steven Bickmore, Ph.D.
Examination Committee Member

David Vallett, Ph.D.
Examination Committee Member

Lisa Bendixen, Ph.D.
Graduate College Faculty Representative

Kathryn Hausbeck Korgan, Ph.D.
Graduate College Interim Dean
Abstract

Teachers, who are deemed the greatest in-school factor of student success, are often invited or mandated to engage in some form of professional development (PD) to continue in improving their practice. However, an empirical understanding of how teachers learn from PD offerings remains elusive and incomplete. Often teachers report not learning from the models where they have little autonomy. While there is small body of research on teacher-driven models, there is a lack of sufficient evidence on whether these models enhance teacher learning and ultimately their practice. Therefore, this study employed grounded theory methods coupled with a descriptive research approach in order to explore the process of a teacher-driven professional development approach and to describe the teachers’ practices during this process. Teachers were found to self-direct their own PD in an iterative cycle where they would set professional learning goals, decide on learning activities, apply their learning to their practice, reflect on the process, and re-engage in the process if needed. Teachers also reported encountering barriers while engaged in this process. The teachers in this study showed higher mean scores in aspects of their practice from the beginning of the study to the end. The study has implications for using self-directed PD as an alternative approach to teacher professional learning. This study also highlights implications for professional development practice, policy, and future research.
Acknowledgements

And I was led by the Spirit, not knowing beforehand the things which I should do. – 1 Nephi 4:6

Book of Mormon

How eternally grateful I will be for a Father in Heaven who has inspired me to travel a path I had not previously intended to pursue. As I reflect on my educational journey, I would not be here if it were not for His infinite love and wisdom to gently nudge one of his sons to reach higher. I am thankful for the opportunities He has provided me to learn, to serve, and to gain knowledge from the experiences I had during my doctoral program. I look forward to using this newly acquired knowledge to continue to serve and bless.

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Likewise, I have been humbled and honored to work with an incredible committee of talented scholars and mentors. Dr. Steven Bickmore showed me potential layers and versatility to my identity for which I owe him a great deal of gratitude. Allowing me to see that I can place my mark in the world of English education, teacher education, and literacy education has expanded
my vision for the work I can do. I am eager to pursue these avenues further as I move forward.

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Last, but certainly not least, when Dr. Beck informed me she would be leaving UNLV and that I needed to seek a co-chair, I was hesitant and a bit reluctant to do so. I had encounters with other teacher education faculty and worried about who could provide me the support I needed. When I learned that Dr. Emily Lin might be a willing faculty member to serve on my committee, I was in awe. Not only did I have a great respect for her and her work, which I had been introduced to in some of my classes, I was dumbfounded that she would take time out of
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I had been told many times I should save this study for my post-doc work, but I knew this project was what I wanted to tackle. I knew I needed the right people on my committee to help me see this through. Again, I am thankful to you all for being willing to help me tackle this work and see it through to its fruition.
Dedication

This dissertation is dedicated to my incredibly supportive eternal companion who allowed me to follow the Lord, to my three boys for whom I pray will always have great teachers to guide them on their own journeys through life, and to my former students who inspired and motivated me to pursue a path that would allow me to help create the educational experiences they deserved.
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Chapter 1: Introduction

Current accountability systems (e.g., Every Student Succeeds Act, 2015) regard student achievement as the ultimate outcome measure of education effectiveness (Jimenez & Sargrad, 2017). In order to improve student achievement, research in education focuses either directly or indirectly on understanding how to reach that outcome (Jimenez & Sargrad, 2017; Hightower et al., 2011). Prior research has suggested the most influential in-school factor affecting student achievement is a well-qualified teacher (Strong, 2007). As a result, professional development (PD) has been often a primary research interest on the teacher education continuum aimed at the ongoing development of a well-qualified teacher (Feiman-Nemser, 2001; Koellner & Jacobs, 2015).

However, PD research has yet to fully grasp a steady awareness of how PD programs and activities affect teacher change and student achievement. For example, in terms of student achievement nationwide, the National Center for Education Statistics (NCES) (2015a) reported only 29% of eighth grade male students and 39% of female eighth grade students scored at or above proficiency level on the literacy portion of the National Assessment of Educational Progress (NAEP). These students would subsequently enter high school where close to a third of this entering freshmen class could not read proficiently. One would hope by the time students exit high school that their literacy rates would raise. Unfortunately, only 37% of 12th graders, who took NAEP in 2015, performed at or above proficiency (NCES, 2015b) suggesting the achievement rates, according to these measures, remain relatively stagnant even through four years of high school. While there are a multitude of variables that can influence student achievement, these data also seem to indicate that teachers may still lack the necessary
knowledge and skills needed to affect change in student performance (NCES, 2015a; NCES, 2015b).

Based on data like these, education reformers turn to PD as a means to curb these trends in student achievement. In theory, this appears to be promising in accomplishing that outcome; however, self-reported data from teachers suggest that most of the PD provided to them rarely meets their needs or result in a change in pedagogical knowledge and practice (Boston Consulting Group, 2014; Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Hill, 2009; Hill, 2011; Wei, Darling-Hammond, Adamson, 2010). This is troubling in light of the amount of fiscal resources used to fund PD initiatives. The United States spends roughly 1.8 billion dollars annually on PD endeavors for teachers (Boston Consulting Group, 2014). It becomes obligatory to inquire, with such a large sum of money spent on improving teacher quality and student achievement, whether current PD offerings are effectively achieving that outcome. If the goal of PD is to affect teacher change, yet the PD provided to teachers rarely accomplishes that objective according to the perspectives of teachers (e.g., Boston Consulting Group, 2014) which may also contribute to a repetitive cycle of stagnant results in student achievement, it then becomes essential to strive for a better understanding of which types of PD can produce a positive change in teacher quality.

Examining the Limitations of Past PD Research

PD research in education has, up until recently, utilized a cause-and-effect approach to understand PD’s effects on teacher improvement and student achievement (Opfer & Pedder, 2011). This relational thinking has followed a basic line of inquiry: provide an effective PD program for teachers that will subsequently improve teacher knowledge and practice and that will consequently improve student achievement. Most of the research in PD has inquired about
the first step: What constitutes effective PD design (e.g., Garet, Porter, Desimone, Birman, & Yoon, 2001; Desimone, Porter, Garet, Yoon, & Birman, 2002; Koellner & Jacobs, 2015)?

In answer to this query, past PD research consistently indicated the design of the PD activity can affect teacher change in practice and knowledge (Desimone et al, 2002; Garet et al., 2001; Koellner & Jacobs, 2015). Numerous studies suggested effective PD centered around six design features that could produce a change in teacher practice and knowledge (e.g., Desimone et al, 2002; Garet et al., 2001; Penuel, Fishman, Yamaguchi, & Gallagher, 2007). Hence, research affirmed the effective features of PD design consisted of a focus on content (specifically how students best learn the content), active learning opportunities, a coherent link to teachers’ practices connected to state and federal mandates, and the delivery form of the PD should use coaching and teacher study groups where there are opportunities to collaborate for an extended period of time (i.e., longer than a day). Nonetheless, this notion that effective PD is often attributed to the design of the PD activity had been challenged recently (Kennedy, 2016; Opfer & Pedder, 2011). In fact, Opfer and Pedder (2011) even went as far as to suggest that this prior research may have “committed an epistemological fallacy” (p. 377). They advocated that prior PD research had produced simplistic explanations of teacher learning and had failed to thoroughly consider the teacher and the learning context (i.e., school) and had focused solely on the PD programs and activities. Furthermore, Kennedy (2016) asserted that the field of PD lacked strong theoretical understanding of how in-service teachers learn and especially what types of PD activities motivate teachers to learn. Therefore, the field of PD continues to seek answers to the same question: What constitutes effective PD? This is a complex question to attempt to answer as there are many variables at work that could constitute effective PD including the teachers, the PD providers, the environment where the PD is held as well as the
sociopolitical contexts that surround the PD, the content of the PD, and even the various models of PD. All of these variables may play a role in comprising effective PD.

With this in mind, since prior research cited that teachers’ self-report their dissatisfaction with current PD offerings (Boston Consulting Group, 2014; Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Hill, 2009; Hill, 2011; Wei, Darling-Hammond, Adamson, 2010), it may be necessary for the field to explore what types of professional development teachers value. There is a small body of literature that has found teachers prefer to self-direct their own professional development because it allows them the autonomy to meet their own professional growth needs (Colbert, Brown, Choi, & Thomas, 2008). Typically, this involves teachers identifying a problem in their practice and deciding on the best solution to that problem (Bonner, 2006). Self-directed learning does not only mean that all learning happens in isolation and in an individual manner, though (Tough, 1967, 1971; Voltz, Brazil, & Scott, 2004). Often, in the process of being self-directed, learners will reach out to others for assistance in their learning processes (Tough, 1967, 1971; Voltz, et al., 2004). Essentially, the self-directed nature of this PD model is in allowing the teacher to decide what he or she desires or needs to learn and how he or she will best reach the self-prescribed learning objective. Self-directed PD also allows for a more differentiated approach to meet individual learner’s needs, and research has demonstrated the need for more of this type of PD (Lom & Sullenger, 2011; Visser, Calvert, Evering, & Barret, 2014). While the field of PD research continues to discover ways to improve the professional learning of in-service teachers, allowing teachers to self-direct their own professional learning may prove to be a promising approach.
The Current Study

The purpose of this study focused on exploring the self-directed approach of teacher professional learning and sought to determine the process (i.e., the stages) practicing secondary English and math teachers undertook to self-direct their learning. Additionally, a secondary purpose of this study was to describe the practice of these secondary English and math teachers while engaging in the process of self-directed PD. The primary goal was to conceptualize a model for how teachers self-direct their own learning. Recently, the school district where this study took place advocated for a more self-directed learning model where teachers are allowed choices over their professional development offerings in order to improve their performance on their annual teacher evaluations and advance on the district salary table. The process is designed so that teachers collaboratively work with their school leadership team (i.e., the principal or instructional supervisor) to self-select performance goals that would best promote teacher professional growth in targeted areas. After these goals are established, teachers and administrators select PD activities that would help the teacher reach those goals. The role of the administrator becomes that of an instructional leader where he/she observes the teacher and has continued conversations about their practice and professional growth plans while documenting improvement and areas for improvement. Variations of this model are utilized in other states as well (e.g., see Colorado Department of Education Teacher Evaluation, 2016). This model has stemmed from state policy or negotiated collective bargaining agreements between districts and teacher unions. While this model seemed to be gaining popularity among different states and school districts, especially since it provided teachers more autonomy over their professional learning and growth, these models are often implemented with little empirical support. Subsequently, each professional growth plan typically has teachers work through a recursive
process such as meeting with a supervisor, selecting goals, being observed and receiving feedback, etc., but there are gaps in understanding the process teachers undergo while engaging in this process. For example, there is little understanding of how and why teachers self-select their goals or what PD activities teachers engage in to achieve their self-selected improvement goal(s). Therefore, by using qualitative-based inquiry methods—in this study, the tradition and data collection methods of grounded theory—the development and mechanisms by which teachers plan, design, execute, and evaluate their own professional learning projects was explored to clarify the process.

Additionally, coupling a qualitative understanding with descriptive research, a secondary goal was to examine the teachers’ practices while engaging in self-directed PD. This study concurrently measured teacher practice (as defined by the teacher evaluation rubric utilized in this study discussed further in Chapter 3) twice during this study: one the beginning and one at the end while engaged in their own self-directed PD. It was anticipated that this approach would allow for the discovery of specified variables in the self-direction process that may have attributed to changes in teachers’ practices. Using a qualitative approach coupled with descriptive research allowed for the convergence of data to better explain a self-directed PD model while describing what happens to the teachers’ practices during the process.

Definition of Terms

The following terms were used throughout this study and are operationalized here for clarity:

In-service teacher: This study sampled in-service English and math teachers. This term also applied when referencing the participants discussed in the PD studies found in the literature review. An in-service teacher is a provisionally, conditionally, or regularly licensed teacher
through a State Department of Education, who has been hired by a school district, and is actively teaching in an assigned teaching placement in a school district.

Professional Development (PD): There are divergent terms used to describe PD so that often the nuance in their denotations is so subtle that these terms are used interchangeably in the literature. As a few examples, the literature has referred to PD as professional learning (PL), and continuing professional development (CPD) (O’Brien & Jones, 2014). For purposes of clarity in this study, Mitchell’s (2013) definition of PD was used, “the process whereby an individual acquires or enhances the skills, knowledge, and/or attitudes for improved practice” (p. 390).

PD Design Features: The work of Garet and colleagues (2001) and Desimone and colleagues (2002) laid the foundation for the work of inquiring about specific design features of PD that may have an influence on teacher learning. Based on their work, they were able to initiate the conversation about the specific characteristics of the PD activity that had been attributed to change in teacher knowledge, practice, or dispositions. These design features of PD activities and programs are discussed below.

Type of PD: The format or delivery of PD activity. For example, a PD developer may choose to deliver the PD activity through a professional workshop or a school principal may choose to use instructional coaching as a form of PD. While there are many forms of PD, the choice of how to deliver PD to in-service teachers is classified as the type of PD.

Duration: The length of time a PD activity or program is provided or delivered. This design feature refers not only to the length of a PD (e.g., 40 hours or spanning two years), but also the frequency by which the in-service teachers engage in the PD activity or program (e.g., three hours a week or eight hours a day for three weeks during the summer). Both the length and the frequency are considered to comprise duration.
Collective Participation: How the activity allows for teachers to work and learn from one another. Often this design feature refers to teachers from the same school, same grade level, and same content area (in secondary education) working together to learn and implement PD content. This is not always the case, though. Collective participation may also refer to instances where the PD activity allows for group collaboration. For example, some workshops may ask for participating teachers to discuss the content delivered or a PD instructor may ask teachers to plan a lesson together. Any aspect of the PD activity or program that allows for teachers to collaborate and work together towards shared learning and/or implementation of PD content can be considered collective participation.

Content: The main component of the PD. This is what the teachers are learning often comprising content knowledge, pedagogical content knowledge, or affective dispositions such as change in beliefs. The content of the PD is also much more than what the teachers learn. For example, an English teacher may come to a PD and learn strategies for teaching writing. The teachers will first learn for themselves the strategy and they learn about how to help students use it. Thus, it is also equally important for the teachers to learn how the students learn.

Active Participation: The design feature that focuses on how to engage the teachers in the content that they are learning. Active participation can be classified in many ways. For example, the PD activity may ask the teachers to learn through inquiry-based learning or it may require them to have Socratic discussions or it may even ask teachers to engage in practice demonstrations. Any aspect of the PD that allows for teachers to construct meaning or apply learning can be considered active participation.

Coherence: How the PD activity or program aligns with existing school, district, and state goals. For example, if the school expects teachers to use a specified teaching model for
instruction and a science-based PD endeavors to develop the science teacher PD participants to teach using a more inquiry-based approach, this will likely lead the PD to lack the necessary alignment to school goals therefore causing the likelihood of implementing the content of the PD in the teachers’ classrooms to be minimal.

Teacher Practice: The observable actions teachers take to provide instruction to students. This outcome was measured using the teacher evaluation rubric utilized in this study (discussed further in Chapter 3).

**Significance of the Study**

This study sought to address a gap in the literature on understanding of the nature of self-directed PD while describing the practices of teachers who engaged in the process. There are limitations to the study of self-directed PD. First, a majority of the self-directed PD research (to be highlighted further in the next chapter) is heavily reliant on self-reported data (e.g., Carpenter, 2016; Colbert et al., 2008). No other studies within the self-directed PD literature have examined teacher practice using more objective measures, according to my knowledge. Looking objectively at teachers’ practices while engaging in self-directed PD may provide stronger empirical evidence in support of using such models to improve teacher professional learning and subsequent development as well as where further research can explore. This is not to suggest that one form of data collection is superior to others, but rather to suggest every form of data collection can contribute specific additional knowledge and each has its own limitations in doing so. While preliminary studies have suggested that teachers prefer self-directed PD to other forms of PD (Colbert et al., 2008), there are few, if any, studies that have provided an empirical understanding of the process of self-directed PD as well as examine objectively what occurs in teachers’ practices while engaging in this process. If studies reported any data on teacher practice
(i.e., Colbert et al., 2008), the studies relied on self-reported data such as surveys to report it. Desimone (2009) argued that observations might be a better measurement tool for capturing teacher change in practice. Thus, this study sought to examine teachers’ practices while engaging in self-directed PD using more objective measures (Desimone, 2009).

An additional gap in the literature on self-directed PD is the lack of the specific design features that characterize self-directed PD. This creates the same paradox faced by research from the field of general PD (i.e., Kennedy, 2016). Many of the self-directed PD interventions, like some of the studies in the general PD literature, lacked a description or more operational process of how the teachers self-directed their own learning (Lom & Sullenger, 2011). Without a better understanding of the process by which teachers engaged in self-directed PD, there would be a lack of “causal explanation” (Opfer & Pedder, 2011, p. 378) of why or what aspects of self-directed PD may have contributed to changes in teachers’ practices. Therefore, this study sought to additionally explore the process by which teachers exercise their agency to plan, design, implement, and evaluate their own professional learning.

In summary, in order to further understand self-directed PD and to fill this void in the literature, this study described teachers’ practices while engaging in self-directed PD by using more “objective” measures to better explore such an inquiry (Desimone, 2009).

**Research Questions**

Currently, there is very little procedural understanding of the process by which teachers self-direct their individual, professional learning. Therefore, this study utilized grounded theory methods coupled with descriptive research. By employing both qualitative and quantitative data, this study provided a better understanding of the process of self-directed PD and a description of what happened to teachers’ practices during the process. The following two
research questions guided the inquiry:

1. What process do teachers undergo to self-direct their professional development?

2. What do teachers’ practices look like at the beginning and end of a self-directed PD process?
Chapter 2: Literature Review

Policymakers, community stakeholders, and parents have an invested interest in ensuring students are receiving a quality education and are achieving academically in their respective school settings. Research has indicated that the influence of a qualified teacher can have greater gains on student achievement than any other in-school variable (Policy Studies Associates, 2005; Strong, 2007). One of the primary strategies employed to improve teacher quality is professional development (PD) (Feiman-Nemser, 2001; Koellner & Jacobs, 2015; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). However, an understanding of how PD affects teacher practice is still obscure (Hill, Beisiegel, & Jacob, 2013; Kennedy, 2016; Opfer & Pedder, 2011).

Furthermore, the research agenda that focused on effects the design features of a PD has on teacher professional learning has been called into question (Hill, Beisiegel, & Jacob, 2013; Kennedy, 2016; Opfer & Pedder, 2011). Therefore, this study sought to investigate an alternative form of PD, namely self-directed professional development, in which teachers are allowed to have more agency over their professional learning and growth. This model is in contrast to traditional models of PD such as workshops that are historically top down models conducted by a school or outside entity. The top down models have also been criticized for causing a lack of teacher engagement (Boston Consulting Group, 2014); whereas, self-directed PD has been found to be more engaging (Colbert et al., 2008). The primary research objective of this study explored the process whereby teachers self-direct their learning and described the teachers’ practices while engaging in that process.

The following review describes the existing knowledge about the effects of PD on teacher learning and practice at the in-service level. This review also delineates some of the current challenges with existing conceptions about effective PD and indicates the direction in
which the field of PD is moving. These challenges may cause PD researchers to formulate a new research agenda as they seek to understand teacher professional learning. While it will be shown that prior research has focused solely on how the design of the PD affects teacher learning and subsequently their practice, this review and study pursued a different course by investigating self-directed PD, which posits that teachers should be given the opportunity to plan, develop, and implement their own PD (Shurr, Hirth, Jasper, McCollow, & Heroux, 2014; Steinke, 2012). Kennedy (2016) discovered in her analysis of past literature describing the effects of PD programs on teacher and student outcomes that there was a negative effect attributed to PD programs where participation was mandated. Therefore she recommended:

Future research should attend more to how PD programs motivate teachers, how they intellectually engage teachers, and to whether programs are meaningful to teachers themselves…We need to ensure that PD promotes real learning rather than merely adding more noise to their working environment (Kennedy, 2016, p. 30).

Since self-directed PD allows for teacher autonomy over their professional learning activities, the choice to investigate self-directed PD answers Kennedy’s call to better understand what motivates teachers to learn and how those motivators effect their learning and subsequent application to practice. Therefore, this review specifically seeks to explore what is known about self-directed PD and how this model may mitigate some of the current challenges with the prior conceptions of PD.

**Methods of Review**

The body of literature examining PD in education is voluminous. To illustrate, there have already been a little over 600 articles published in 2017 alone based on a database search. Therefore, instead of using a database search, I followed Kennedy’s (2016) method used in her
above-mentioned review of PD research in education. Kennedy began by examining past literature reviews on PD in education. To begin to understand the field of PD, I likewise read literature reviews published between 2000 and 2017 that included studies related to the effects of teacher PD and teacher learning on teacher practice. I excluded reviews that focused only on student achievement because I was solely interested in better understanding the impact of PD on teachers rather than on student outcomes. The literature reviews included Avalos (2011); Kennedy (2016); Lauer, Christopher, Firpo-Triplett, and Buchting (2014); Opfer and Pedder (2011); Scher and O’Reilly (2009); and Webster-Wright (2009).

After exploring literature reviews, Kennedy (2016) reviewed specific journals in education with an additional specified criteria to identify further literature for her review. Likewise, I selected to review journals in education based on journals recommended by my graduate program’s handbook (University of Nevada, Las Vegas, n.d.), and relevance to the topic (i.e., Professional Development in Education). The following journals reviewed were: American Educational Research Journal, Action in Teacher Education, Journal of Teacher Education, Teachers College Record, Teaching and Teacher Education, and Professional Development in Education. Criteria used for searching and selecting articles for this second stage of the literature review consisted of using the terms “teacher professional development” and “self-directed teacher professional development” (these terms are the most common terms for articles related to general PD and teacher-led PD), narrowing the time span of the articles searched from 2010 to June 2017, and searching for the prescribed search terms in the abstract of the article. In addition to the above-mentioned literature reviews, this journal-specific search identified 244 articles.

In an attempt to narrow and refine this search further, I applied two additional criteria to the 244 articles. The first criteria continued to follow Kennedy’s (2016) example by retaining
only articles—among the 244 found relevant from the journal search—that reported the effects of the PD intervention on teacher change in knowledge, skills, or attitudes. Some studies discussed findings related to student achievement or discussed PD only as the means to study something else (e.g., new curriculum or a content strategy). These articles were rejected.

The second criterion I applied was Borko’s (2004) phase I classification of PD research as a framework to locate relevant articles from the journal search. Borko (2004) argued that there were three phases that created a progression to enacting quality PD research that can affect teacher learning. The first phase is intended to be used when beginning to study a PD program and its effects, and is meant, “to provide evidence that a professional development program can have a positive effect on teacher learning” (Borko, 2004, p. 5). The second phase of PD research focuses on a single PD program enacted by multiple facilitators at multiple sites and the interaction among facilitators and sites and the effects on teacher learning (Borko, 2004). In this phase, the goal is to see if the integrity of the PD program holds beyond phase I (Borko, 2004). The third and final phase studies multiple PD programs at multiple sites for the purpose of comparison of the PD effects on a larger scale. The reason for using phase I as a framework was the empirical intention of the proposed study. The goal was to examine further the self-directed process, which serves as a beginning to understanding self-directed PD, and not necessarily for a focus on the facilitator/PD/teacher interaction or to generalize the PD model to a larger scale. Therefore, articles were selected if the PD was a single program that was facilitator-directed or teacher-directed and if the research focused the PD’s effect on teacher practice as defined above. The goal was to understand (a) the effects the program had on teacher practice, and (b) the PD design features that created such effects. After eliminating articles using the two additional criteria, I also selected additional articles that were acquired from the references of these
remaining articles. Using these criteria, the total number of articles (not including the literature reviews) used in this review was 65.

The following review disaggregates three themes in the literature on PD in education: effective design features of PD, current challenges of the PD design features, and the nature of self-directed PD. This review will demonstrate findings about the effective design features of PD while simultaneously discussing how the conception developed from these findings has been challenged in recent years. This will be followed with an examination of an alternative method to improving teacher practice—a PD model that allows teachers to design, implement, and evaluate their own PD and learning frequently called self-directed PD. There are gaps that exist in this form of PD, which this review will highlight. Finally, as a result of this review, research questions will be posed to address a specific gap in the literature on self-directed teacher PD.

**Effective Design Features of Professional Development**

Many scholars agree that using workshops for PD is the least effective method of improving teacher quality and student achievement (Borko, 2004; Feiman-Nemser, 2001; Garet, et al., 2001; Scher & O’Reilly, 2009; Wei, Darling-Hammond, & Adamson, 2010). There are several documented aspects that make some workshop designs ineffective for improving teacher learning. The ineffective workshop form of PD is short in duration (e.g., one day), utilizes less active teaching methods such as having teachers just sit and listen (Garet et al., 2001; Loucks-Horsley, Hewson, Love, & Stiles, 1998; Scher & O’Reilly, 2009), lacks sufficient depth of content and critical thinking about how the content should be taught (Borko, 2004); and creates a disconnect from the actual work that occurs in the classrooms of the teachers attending the PD because it takes place outside the teachers’ classrooms and is provided by leaders and experts outside the school setting (Garet et al., 2001; Lauer et al, 2014; Loucks-Horsley, Hewson, Love,
In contrast to the workshop model\(^1\), Garet and colleagues (2001) and Desimone and colleagues (2002) longitudinal work prescribed much of what the field has considered effective PD.

**Conception of Design Features**

Two landmark studies discovered a better conceptualization of effective PD than the traditional workshop model. Garet and colleagues (2001) conducted a cross-sectional survey study with a national sample of math and science teachers seeking to measure directly what aspects of effective professional development related to positive outcomes for teachers. The researchers asked the teachers to report how the design features of the PD affected change in knowledge and practice. Desimone and colleagues (2002) built on this study by examining the effects of the PD design features using a longitudinal survey study spanning three years. The rationale for the follow-up study was to explain the effects of the PD on teacher practice in the third year based on their involvement in the PD from the second year, and measure the change in teacher practice from the first year, which served as a control. Both studies provided evidence of self-reported teacher change connected with six design features (Desimone et al., 2002; Garet et al., 2001).

These design features were broken into two categories: structural design features and core design features (Desimone et al., 2002; Garet et al., 2001). Each category possessed the following unique characteristics: structural design features included type, duration, and collective participation, and core design features included content, active participation, and coherence. The first structural design feature, activity type, was further differentiated between traditional versus reform-type activities. Traditional types of PD were equated to the workshop model (see prior

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\(^1\) The term “workshop” does not connote that all workshop-style PD are inherently ineffective. Only workshops that meet the defined criteria above have been criticized as being ineffective.
definition) and were therefore criticized as ineffective (Loucks-Horsley et al., 1998). Because traditional types were considered less effective, reform-type activities, such as mentoring, coaching, and other types of activities that were embedded into a teacher’s workday, were found to be more conducive to teacher learning and change (Desimone et al., 2002; Garet et al., 2001).

A second structural characteristic was duration. Longer duration of PD activities was found to be more effective in producing teacher change (Desimone et al., 2002; Garet et al., 2001). Duration included contact hours spent engaging in an activity as well as the span of time the PD lasted. According to their findings, less effective PD lasted only a week and had a median of 15 contact hours (Desimone et al., 2002). The authors suggested two reasons that longer duration affected teacher knowledge and practice. The first reason was that longer activities allowed for teachers to discuss new content and pedagogy and how to best translate it into practice. Second, PD that lasted longer than a day afforded teachers the opportunities to try what they learned in their classrooms and receive feedback (Garet et al., 2001).

The third and final structural feature that teachers self-reported affected their practice was collective participation. Teachers reported greater change as a result of PD activities that allowed teachers from the same school, department, or grade level to collaborate (Desimone et al., 2002; Garet et al, 2001). The reason the authors provided for this finding was that teachers from the same school, department, and/or grade level are more likely to discuss PD content amongst themselves, which would lead to increased understanding and ultimately teacher growth (Garet et al., 2001). Desimone and colleagues (2002) found that teachers in their study rarely had this opportunity before they engaged in the PD intervention in the study.

The three “core” features of PD design that teachers found to affect their own practice were content (what the teachers were learning in their professional development activity),
opportunities for active participation (allowing teachers alternative forms of engagement rather than the traditional workshop), and coherence (the content is aligned to teachers’ needs and school and district goals; Desimone et al., 2002; Garet et al., 2001). The core feature of content was not meant to describe what teachers were learning in the PD, but specifically to help teachers understand how students learned the content.

The second core design feature was active learning. The authors conceptualized this feature in four different ways. Teachers could observe classrooms or be observed and provided feedback. They could plan lessons based on the content of the PD allowing for opportunities to apply PD content to classroom contexts. Teachers could also review student work in order to understand student thinking and misconceptions which subsequently allows for teachers to plan better lessons. Finally, teachers could present in the PD in order to delve deeper into the PD content taught.

The final core design feature focused on the coherence of the PD. Coherence meant that the PD experiences aligned with teachers’ needs and district and state goals (Desimone et al., 2002). Often, teachers participated in PD activities that had little relevance to their classroom contexts and the goals set forth by the district and state. These PD offerings did little to connect new learning to prior learning and created tension when the goals of the PD did not match the goals communicated to teachers by their school and district leaders as well as state assessments (Garet et al., 2001). As a result of these self-reported data from teachers, PD designers and researchers began to focus more on these six PD design features and how they could support teacher change.
Further Research Supporting Design Features

These two studies led to further research throughout the next decade that adopted the design features approach to PD in order to build upon this significant work. For example, Penuel, Fishman, Yamaguchi, and Gallagher (2007) used the design features from the Garet and colleagues (2001) framework to examine which PD design features had an effect on 454 science teacher practices and curriculum implementation. Their survey design study found that all of the design features with the exception of duration had a significant effect on teacher self-reported change in science pedagogy, practice, and higher levels of curriculum implementation (Penuel et al., 2007). A second study examined a U.S. Department of Education funded PD program that sought to improve teachers’ integration of technology in their classrooms (Mouza, 2009). Using the design features as a guide to design their PD, this longitudinal qualitative multi-case study found sustained changes in teacher technology integration (Mouza, 2009).

There are also studies that focused on specific design features. For example, Corcoran, McVay, and Riordan (2003) found PD that had durations of 80 hours had an effect on science teacher practice in their study, specifically in implementing reform-based teaching practices such as inquiry. Truesdale (2003) conducted a mixed-methods dissertation that used randomization to compare an experimental group of teachers who received accompanying coaching, a reform type of activity, combined with a workshop compared to a control group who attended the workshop but did not receive accompanying coaching. He found teachers in the experimental group transferred the content of the PD to practice more than teachers who received no coaching. The findings from this study supported that reform-type activities enhanced teacher learning better than traditional conceptions of the workshop model.
Because of these studies, Desimone (2009) argued that the field had reached a consensus concerning what constituted effective PD. She concluded that effective PD should use the design features suggested from this body of research—specifically a focus on content, active learning, coherence, duration, and collective participation. Desimone (2009) argued that the field of PD research should now use the design features as a conceptual framework to guide the development of future PD studies. She also recognized that there was little evidence to suggest that these design features had a subsequent effect on student achievement and called for the field to begin using the design features framework in studies that seek to measure the impact of PD on student achievement.

While this conception provided guidelines in improving the workshop model, the design features are too broad in their conception as to make it difficult to understand how these design features can predict teacher learning and change. For example, active participation can be interpreted in a variety of ways. Is it the teachers’ discussion of the PD content, the design of inquiry-based learning, or the application of technology (all of which can be considered active learning) that affects teacher change in knowledge and practice? Prior literature only offered examples but not theoretical explanations. This research is limited in its explanation of exactly what aspects of active learning, or any of the design features for that matter, led to teacher change and how this happens. The design features model also ignores teachers’ affect such as motivation and choice. This conception explains what outside providers of PD can do to better design PD activities, but fails to explain how teachers choose to learn. These challenges will be further discussed in the next section.
Challenges with Past Conceptions of Professional Development

While research has identified and conceptualized what constitutes effective PD, most teachers are not presented with this type of high-quality PD (Darling-Hammond, et al., 2009; Hill, 2009; Hill, 2011; Wei et al., 2010). DellaBovi (2013) discovered that 90% of teachers in the United States participated in workshops or conferences as a majority of their PD activities. In a study done by the Boston Consulting Group (2014), teachers reported that much of their PD activities contradicted the principles that constituted effective PD. For example, teachers reported reform-type activities like coaching were rare, collaboration was contrived, and only one in five teachers surveyed had agency in determining their professional development activities contributing to a lack of coherence that aligns PD activities to teachers' needs. Ultimately, the Boston Consulting Group (2014) study found that teacher engagement in PD was low and ineffective. Similar research on engagement with teacher PD found that little over half of the teachers reported their PD opportunities were useful (Darling-Hammond et al., 2009). Instead, most teachers reported PD only confirmed their existing practices, and it had no effect on their instruction (Hill, 2009). These studies indicate further the influence that ineffective PD can have on teacher development.

Another challenge involves the conception of the design features framework (i.e., Desimone et al., 2002; Desimone, 2009; Garet et al., 2001). The prior “consensus” about the design features framework that had been reached (Desimone, 2009) had, unfortunately, hit a “crossroad” (Hill, Beisiegel, & Jacob, 2013, p. 476) due to recent quantitative studies conducted that used a national sample that produced poor results after the studies applied the design features framework to their PD design (Arens et al., 2012; Bos et al., 2012; Garet et al., 2008;
Garet et al., 2011; Santagata, Kersting, Givven, & Stigler, 2011). For example, Garet and colleagues (2008, 2011) conducted two randomized experimental studies. One study examined two early reading PD interventions designed to improve second grade teacher content knowledge and practices of early reading for elementary students in high poverty (Garet et al., 2008). His second study was a PD math intervention for seventh grade math teachers focusing on rational numbers topics (Garet et al., 2011). Both were two-year longitudinal studies that measured impact and sustainability of a PD that utilized the six design features. While both of these studies showed promise in the first year, they concluded that the PD intervention sustained no statistical difference on teacher knowledge or practice. Santagata, Kersting, Givvin, and Stigler (2011) conducted a randomized experimental study where they examined whether a math PD program affected middle school teachers’ knowledge and practice. Likewise, their study found no significant change in teacher mathematical pedagogical content knowledge (MPCK) and the application of that MPCK in practice. Arens and colleagues (2012) also conducted a randomized experimental study to examine the use of curricular materials coupled with a PD to examine if these two interventions combined could have an impact on the teaching of English language learners (ELLs). Bos and colleagues (2012) also conducted a randomized experimental study examining the impact of an ELL PD intervention on teacher change. For both studies, the results showed no statistical significance on teacher change in knowledge, beliefs, or practices. Of interest to this review, all of these studies either wholly adopted or partially adopted Desimone’s (2009) framework of effective PD designs (see Appendix E).

Although some of the prior studies listed above have found poor outcomes with the design features, there have been additional studies conducted after the above-mentioned studies that continued to use the design features framework and have found success (see Appendix E).
This is where the paradox exists. This leads to the question: How can the design features work in some studies and not in others? This paradox makes it difficult to determine what constitutes effective professional development. This is likely the reason Opfer and Pedder (2011) went as far as to claim the design features body of literature “committed an epistemological fallacy” (p. 377).

Part of uncovering this paradox and fallacy may begin to become apparent in analyzing where prior research may have committed some of these potentially fallacious conclusions. One fallacy may be in the high level of variability in the design features themselves. For instance, the successful design features studies all assert that their PD interventions have adopted the design features framework, yet the interpretation of how those design features were implemented into the studies’ PD interventions are largely different (see Appendix E). This is apparent in the study done by Barr and colleagues (2015) which reported the intervention was indeed successful in transforming teacher knowledge and practice but did not fully describe the intervention’s design features. On the other hand, the other group of successful studies interpreted the design features differently so that each design feature varied from study to study (see Appendix E). Again, the high level of variability among these interpretations of these several studies that claimed to align with the design features framework and the lack of operational definitions for these design features make faulty casual explanations a possibility.

It is pertinent to examine reasons why the unsuccessful studies failed. Unfortunately, there is little substantial discussion for the failures of these studies. For example, in their discussion section, Garet and colleagues (2008) could only provide their own conclusions and

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2 It is necessary to note that according to my knowledge there have not been many meta-analyses done among the PD literature cited in this study and specifically among the literature reviews cited in this study.
unsupported theories and stated they “lacked data to test these [self-asserted] hypotheses” (p. 68). The other unsuccessful studies provided limited discussion for the poor results, but they briefly hypothesized and attributed the poor results to variables such as participant mobility, the length of time of the PD, and a greater need to understand specific variables and their interaction in the study (Bos et al., 2012; Garet et al, 2008; Garet et al, 2011; Santagata et al., 2011). Again, this was only their assumption. They lacked data to make these assertions more valid. However, the lack of controlling for these variables supports the need to conduct more research or speaks to the weakness of the research design in order to better conceptualize effective PD.

Interestingly, some of these unsuccessful studies pointed to a lack of understanding of the teacher and their learning processes, which may have caused the poor results (Bos et al., 2012; Santagata et al., 2011). This is significant when most of the prior research has had a positivist approach to improving teacher practice. The studies suggested a focus on the design would change the teacher without any consideration of the teacher as a variable in this process. This will be discussed further towards the end of this section.

The failure to make these PD issues clearer makes it difficult to ascertain whether the PD program caused the teacher change. Opfer and Pedder (2011) argued in their review that a focus only on design features exacerbated this faulty causation problem: “we [professional development researchers] are still unable to predict teacher learning based on these characteristics [the design features]” (p. 377). They further argued that while there may be some causal relationships between the research designs and teacher change, the field still lacks the knowledge as to why this change occurs (Opfer & Pedder, 2011). They recommended the field move the research away from cause-and-effect approaches and more toward understanding “causal explanations” that help the field understand “under what conditions, why, and how
teachers learn” (p. 35). Even Kennedy’s (2016) most recent review of professional development literature discovered that the typical design features identified from prior studies may be “unreliable predictors of program success” (p. 27). In fact, some of the studies in Opfer and Pedder’s (2011) review used effective design features such as a focus on content, the use of collaboration, and increased program duration, but were less effective in teacher change. However, some studies they reviewed used none of the prior research-based design features and were effective in improving teacher practice or knowledge (Opfer & Pedder, 2011). As a result, Kennedy (2016) concluded her review by suggesting, “we [professional development researchers] do not have well-developed ideas about teacher learning” (p. 29), and that further research needs to focus “on more nuanced understandings of what teachers do, what motivates them, and how they learn and grow” (p. 30). This sentiment is echoed in other literature and reviews of literature of PD research—a consistent push to move the field of PD research away from the design of the activities and towards a better understanding of how teachers learn (Easton, 2008; Fore, Feldhaus, Sorge, Argawal, & Varahramyan, 2015; Scher & O’Reilly, 2009; Webster-Wright, 2009).

The field of PD research is currently experimenting with different approaches to studying what makes PD effective. For example, Allen and Penuel (2015) used a multiple case study to examine the coherence design feature by exploring how teachers made sense of their PD and the barriers to implementation of PD training to practice. The researchers found that teachers experienced feelings of ambiguity and uncertainty with aligning and implementing their PD with their instructional goals within their assessment and accountability systems, and a lack of resources (Allen & Penuel, 2015). These authors concluded that PD developers need to allow for collaborative opportunities within the PD sessions for teachers to engage in discussions about
how to make sense of the PD content and implement these newly acquired ideas and skills in the contexts of the teachers’ own classrooms.

Other studies examined the role of the facilitators of PD in producing teacher change (Gonzalez, Deal, & Skultety, 2016). They found that facilitators more frequently engaged teachers in discussion through an inquiry stance such as questioning teachers and allowing them to examine students’ thinking. Their findings helped the field better understand that critical work of a PD facilitator and their relationship to enhancing teacher learning. Likewise, Girvan, Conneely, and Tangney (2016) examined the effect of using an experiential PD learning model on teacher change. They found by allowing teachers to first observe a curriculum program in action and then engage in learning the program enhanced the likelihood that teachers would successfully implement the goals set forth by the PD program.

Additionally, Hofman and Dijkstra (2010) studied the characteristics of networks or collaborative learning groups on teacher change and were able to better explain the type of collaboration that produced teacher change such as self-reflective, content-focused, or motivating instructive, and allowed for teachers to apply ideas to the classroom. Pella (2015) sought to better understand how the Japanese PD model of lesson study created a change in teacher pedagogy. These researchers found four characteristics of lessons study—collaborative lesson planning, observation, data analysis, and reflection—contributed to teacher change. Kleickmann, Trobst, Jonen, Vehmeyer, and Moeller (2015) expanded the research on curriculum materials to study whether self-study of curriculum materials was adequate for teacher change or if there needed to be some expert scaffolding to produce teacher change. As a result, they found that expert scaffolding of curriculum materials is more favorable than self-study. Finally, Rinke and Valli (2010) studied the effects of PD delivery in three different schools under the high-stakes
accountability movement. They were interested in how the PD would be delivered in various school contexts that were shaped by the accountability movement. They discovered that while accountability increases the quantity of teacher PD that more PD does not necessarily equate to higher quality PD. They concluded that higher quality PD depended upon the quality of the context in which the PD is delivered.

All these studies have found positive effects on teacher knowledge and/or practice and continue to move the field closer to understanding what makes effective PD. However, all of these studies and models continue to fall short of Opfer and Pedder’s (2011) recommendation to provide causal explanations. The reason for this is that the PD models focus less on the teacher and more on the design’s effect on the teacher. Little research to date has focused on the teacher and how the individual teacher learns (Opfer & Pedder, 2011).

Fortunately, a small finding in Kennedy’s (2016) review may begin to provide a window into teacher learning. She found that mandated PD created a barrier to teacher learning (Kennedy, 2016). Much like trends and barriers to student learning, Kennedy (2016) noted, for teachers, PD “attendance is mandatory, but learning is not” (p. 29), which creates a challenge for both teachers and teacher educators who desire to produce and be a product of change. Thus, Kennedy (2016) called for further research that, “should attend more to how PD programs motivate teachers, how they intellectually engage teachers, and to whether programs are meaningful to teachers themselves” (Kennedy, 2016, p. 30). Studies suggest the remedy for low teacher engagement in PD is allowing teachers the opportunity to design, implement, and evaluate their own PD (Mokhele & Jita, 2010; Nir & Bogler, 2008). Unfortunately, teachers are not given the chance to do so (Boston Consulting Group, 2014). In fact, Lom and Sullenger (2011) argued, “There has been much less attention paid to what teachers themselves think is
important to know and to learn, how they would like to engage in this learning process and what they are already doing in this regard” (p. 58). For those who have been allowed to direct their own PD activities, a small body of literature has focused on learning and the effects of PD of this nature.

**Self-Directed Professional Development**

Self-directed PD is a form of PD that is defined as “arising from teachers’ own initiative” (Mushayikwa & Lubben, 2009, p. 376). Typically, this involved teachers identifying a problem in their practice and taking the initiative on how to best solve that problem (Bonner, 2006). Self-directed learning does not mean that all learning happens in isolation and in an individual manner, though (Tough, 1967, 1971; Voltz et al., 2004). Often, in the process of being self-directed, learners will reach out to others for assistance in their learning process (Tough, 1967, 1971; Voltz et al., 2004). Essentially, the self-directed nature of this PD is in allowing the teacher to decide what he or she desires or needs to learn and how he or she will best reach the self-prescribed learning objective. Self-directed PD also allows for a more differentiated approach to meet an individual learner’s needs, and researchers have argued for more of this type of PD (Lom & Sullenger, 2011; Visser et al., 2014). For instance, Minott (2010) argued self-directed PD is often the model of choice because it better meets individual needs. Although the literature is sparse, the following section will discuss: (1) characteristics that have been found to foster self-directed PD, and (2) how self-directed PD research has measured the effects on teachers’ change.

**Characteristics That Foster Self-Directed Professional Development**

There are many different activities that can be considered self-directed PD. With the introduction of technology, new opportunities for self-directed PD have become available. For
instance, Visser and colleagues (2014) studied Twitter as a self-directed PD activity. They found teachers were using Twitter to reach out to external resources (e.g., conferences) that they would otherwise be unable to attend. Teachers perceived Twitter as an effective activity to collaborate and search for solutions to problems of practice. Thus, engaging in self-reflection can be a form of self-directed professional development simply by enacting the inquiry-based learning process to overcome problems in practice (Grosemans, Boon, Verclairen, Dochy, & Kyndt, 2015; Minott, 2010). Other activities can be action research (Grootenboer, 1999), experimenting and collaborating (Grosemans et al., 2015), peer classroom observations (Hamilton, 2013), and reading and study groups (Voltz et al., 2004).

Other studies focused on the environment that fosters self-directed PD. Jurasaitė-Harbison and Rex (2010) used ethnography to explore how school culture fosters informal learning opportunities and how teachers engage in their own learning in these environments. Studying schools in an international context by looking at schools from Lithuania, Russia, and the United States, the researchers found that school cultures that foster informal learning (i.e., more self-directed learning) are schools that have physically and socially stable and positive environments where there is a consensus on educational policies, and where there are both on-site and off-site collaborative networks. Additionally, Jones and Dexter (2013) found that it was the shortcomings of formal PD, which can be classified as a PD provided by an external provider that motivated teachers to seek out and utilize more self-directed forms of PD.

In addition to the exploration of the environment, a couple of studies examined the reasons teachers chose self-directed PD. Jones and Dexter (2014) also found that the inability of formal PD to affect teacher knowledge and practice spurred an interest to seek other informal and more individualized learning opportunities. Mushayikwa and Lubben (2009) found that
teachers engage in self-directed PD ultimately to improve their efficacy both in the classroom and outside of it. Most teachers sought to become more effective in their ability to teach students and in their professional identity. This finding concurs with Tang and Choi (2009) who found teachers enacted self-directed PD because they were driven by a greater moral purpose to serve students and their needs. Mushayikwa and Lubben (2009) also found that most often teachers engage in self-directed PD under conditions of adversity, “when teachers are fighting for professional survival, they tend to become tenacious in their bid to improve themselves” (p. 381). This can be seen when teachers may feel ineffective in their roles (e.g., struggling with technology implementation, or poor classroom management) or simply desire to grow in their professional responsibilities for new challenges or increase in pay.

Self-Directed Professional Development and Teacher Change

Research in this area has generally measured the effects of self-directed PD on teacher satisfaction (i.e., engagement, motivation, and self-satisfaction). For example, Carpenter (2016) examined the effects of Edcamps as a form of self-directed professional development on the teachers who participated in them. Edcamps have been described as informal conferences where teachers come together to collaborate and share expertise about issues that matter to them. Often these sessions are planned on the day they occur in pre-conference brainstorming sessions attended by all the conference participants (Carpenter, 2016). Since there had been limited research in this area of PD, Carpenter (2016) sought to understand why participants attended the conference and their perceptions about the conference. Carpenter (2016) found that teachers attended the Edcamps because of word-of-mouth recommendations that praised the learning environment and the opportunity for autonomy to select the content and structure of their learning opportunities. Attendees also self-reported the greatest benefits of the conference were
the positive levels of engagement and the autonomy given to learn ideas that meet specific needs of the teachers attending. Similar studies found that teachers preferred self-directed PD to the other forms of PD they had experienced prior because self-directed PD allowed for autonomy to make decisions about the content and the manner in which the teachers learned it to meet their varying needs (Beatty, 2000; Grierson & Woloshyn, 2013; Grootenboer, 1999; Grosemans, et al., 2015; Hamilton, 2013; Lom & Sullenger, 2011; Nir & Bogler, 2008; Steinke, 2012; Sullivan & Westover, 2015; Voltz et al., 2004).

One study attempted to measure the effects of self-directed PD on teacher practice and student achievement. Colbert and colleagues (2008) used a mixed methods phenomenological research design to study a self-directed PD model based in California. The teachers were given a $30,000 grant over two years to design and implement their own professional development. The study sought to examine the effects of this form of PD on teacher knowledge, practice, and student achievement. Using surveys and interviews, the researchers found that teachers self-reported changes in their pedagogical content knowledge, practices, and student learning.

This study showed promise that teachers can be empowered to plan, design, and implement their own professional development. However, this study is limited in two major ways. First, this study relied heavily on self-report data, and was limited in providing evidence of change in practice. Second, this study described some of the activities the teachers chose to engage in, but did little to explain how those activities may have effectively produced the change in teachers that the study described. Therefore, the theme of a lack of causal explanation continues to reoccur even in the literature on self-directed PD. Lom and Sullenger (2011) confirmed, “While becoming recognized as a legitimate form of professional development, we know little about the nature of self-directed professional development that
takes place in informal contexts” (p. 67). Without knowing much about the process by which teachers engaged in self-directed PD activities, it is difficult to replicate this type of PD model.

**Limitations of Self-Directed Professional Development and Further Research**

There is also some contradicting evidence to self-directed PD. Kleickmann and colleagues (2016) examined the effects of expert scaffolding of curriculum materials on teacher outcomes and compared this form of PD to a control group that self-studied the curriculum materials. They found that the groups who received expert scaffolding had greater teacher change than the control group suggesting self-study as an ineffective form of PD. However, Kleickmann and colleagues (2016) did not fully disclose whether the control group had any form of teacher network to assist their learning or if they were truly controlled and limited to the use of outside assistance for the sake of the study. Again, these variables highlight the need to fully disclose all aspects of the PD intervention. In addition, Brown Ferrill, Hinton, and Shek (2001) argued that not all teachers will fully embrace self-directed PD and that they may rely heavily on formal PD opportunities. He argued the reason for this is that teachers need to adopt an attitude of inquiry and want to foster the desire to engage in self-inquiry and assessment. Some may not see the necessity for doing so suggesting that beliefs still play a role in teacher change (Brown et al., 2001; Guskey 2002).

There are further limitations to the study of self-directed PD. First, a majority of the research highlighted above follows the same growing pains that general PD research faced, which is a heavy reliance on self-report data. No other studies (according to my knowledge and database searches) have explored self-directed PD using more “objective” measures. This is not to suggest that one form of data collection is superior to others, but rather to suggest every form of data collection can contribute specific additional knowledge and each has its own limitations.
in doing so. While these preliminary studies have tended to support the notion that teachers prefer self-directed PD to other forms of PD, there are few, if any, studies that have provided an empirical understanding of the effects of self-directed PD on teacher practices. If studies reported teacher change in practice (i.e., Colbert et al., 2008), the studies relied on self-reported data such as surveys to report it. Desimone (2009) argued that observations might be a better measurement tool for measuring teacher change in practice. Thus, the current study examined self-directed PD effects on teacher practice using more “objective” measures as recommended by Desimone (2009).

The second limitation is that many of the studies lack description of the process that characterizes self-directed professional development. This creates the same paradox faced by research from the field of general PD (i.e., Kennedy, 2016). Many of the self-directed PD interventions, like some of the studies in the general PD literature, lacked a description or more operational process of how the teachers self-directed their own learning (Lom & Sullenger, 2011). Without a better understanding of the process by which teachers engaged in self-directed PD, there lacks a “causal explanation” (Opfer & Pedder, 2011, p. 378) of why or what aspects of self-directed PD caused the change in teacher knowledge and, more specifically, in practice. The current study sought to additionally explore the process by which teachers exercise their agency to plan, design, implement, and evaluate their own professional learning.

In summary, in order to further understand self-directed PD and to fill this void in the literature, this study explored the effects of self-directed PD on teacher practice following the guidance of Desimone (2009) by using more “objective” measures to best answer such an inquiry. An additional purpose of this study was to better understand the process teachers undergo to drive their own professional learning.
Theoretical Framework

In order to better understand teachers as adult learners and the process whereby teachers self-direct their own learning, this study used andragogy and Self-Directed Learning theory as frameworks for exploring the characteristics of self-directed learners and the process whereby teachers enacted their own self-directed PD. Malcolm Knowles is credited for discovering and advancing andragogy in the United States (Merriam, Caffarella, & Baumgartner, 2007). He originally discovered this term and concept from European adult educators who contrasted this term with that of pedagogy—the art and science of teaching children (this comparison is highlighted in Table 1). Knowles (1980) originally defined andragogy as “the art and science of helping adults learn” (p. 43). However, Knowles (1980, 1984) later revised his work and moved away from the notion that his theory solely dealt with adult learners. He found, after receiving reports from elementary and secondary teachers that these teachers were experimenting with the principles of andragogy in their own settings and “were producing superior learning” (Knowles, 1980, p. 43). In light of this new evidence, Knowles (1980) then believed that, “andragogy is simply another model of assumptions about learners to be used alongside the pedagogical model” (p. 43). Furthermore, he claimed, “the models are probably most useful when seen not as dichotomous but rather as two ends of a spectrum” (Knowles, 1980, p. 43). Merriam and colleagues (2007) explained this spectrum as “representing a continuum ranging from teacher-directed to student-directed learning and that both approaches are appropriate with children and adults, depending on the situation” (p. 87). Thus andragogy was re-conceptualized to be a model that explained not the adult learner but rather qualities of the self-directed learner.

Knowles (1980, 1984) generated six underlying assumptions about self-directed learners and their behaviors as they relate to their learning (see Table 1). These assumptions are: (a) as a
person matures, they naturally move from a state of being dependent to being independent; (b) over time, self-directed learners\(^3\) acquire a rich reservoir of experience that can be useful in their learning; (c) self-directed learners become ready to learn something when they experience a need to learn it in order to cope more efficaciously with current challenge(s) they encounter; (d) self-directed learners become more problem centered than subject centered in their approach to learning and move away from the perspective of obtaining knowledge for future application (e.g., a teacher saying, “this will be useful in your future”) to the need for immediate application of their learning; (e) intrinsic motivation is a more potent motivator than extrinsic motivation; and (f) self-directed learners need to know why they need to learn something (Knowles, 1980, 1984). These assumptions are more fully described below in Table 1.

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\(^{3}\) In his original work, Knowles (1980, 1984) continued to use the term “adult” to describe his theory even though in his later work he accepted the notion that his theory could be applied to adults and children alike. Therefore, in this paper, his term “adult” has been replaced by “self-directed” to more appropriately fit his theoretical assumptions.
Table 1

**Pedagogical Assumptions Versus Andragogical Assumptions**

<table>
<thead>
<tr>
<th>Role of the learner</th>
<th>Pedagogy</th>
<th>Andragogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of the learner's experiences</td>
<td>\textit{Learning is more passive.}</td>
<td>\textit{Learning is experiential.}</td>
</tr>
<tr>
<td>Readiness to learn</td>
<td>\textit{Learning progression is prescribed.}</td>
<td>\textit{Learning progression is experiential.}</td>
</tr>
<tr>
<td>Orientation to learning</td>
<td>\textit{Learners are subject-centered.}</td>
<td>\textit{Learners are performance-centered.}</td>
</tr>
<tr>
<td>Role of motivation</td>
<td>\textit{Learners are extrinsically motivated} by better grades, employment advancement, or pressure from others (e.g., parents or employers).</td>
<td>\textit{Learners are intrinsically motivated} and seek learning to gain more self-satisfaction.</td>
</tr>
<tr>
<td>Role of relevance</td>
<td>\textit{Learners typically learn of necessity} to pass a class. Application is not as important.</td>
<td>\textit{Learners need a reason for learning before they engage} (how it will impact their lives in the near to immediate future).</td>
</tr>
</tbody>
</table>

\textit{Note:} Adapted from “The Modern Practice of Adult Education: From Pedagogy to Andragogy (2\textsuperscript{nd} ed)” by Malcom S. Knowles, 1980, Cambridge Books, p. 43-44
Andragogy can provide a useful framework for understanding the characteristics of teachers and their preferences for their professional learning. This lens could serve useful in understanding the rationale behind the decisions teachers make when planning and implementing their own PD. Kennedy (2016) argued the need to understand what motivates teachers is lacking in the PD research. Andragogy could serve as an initial lens to explain the nature of what motivates teachers to engage in professional learning. Indeed, much of the self-reported data, researcher arguments, and empirical evidence that highlight the weaknesses of PD in education can be explained by the assumptions andragogy sets forth. For example, one of the most cited problems with PD and its incongruence with adult learning theory involves planning. Most PD is designed or recommended by someone other than the teacher (Gregson & Stuko, 2007; Jones & Dexter, 2014; Steinke, 2012) and teachers are mandated to attend these PD sessions. Prior research suggests that fewer than 30% of teachers are allowed to choose their own PD activities, and 1 in 5 teachers have no choice at all in their own professional learning (Boston Consulting Group, 2014). These PD sessions tend to be a comprehensive type of model that assumes all teachers learn the same way, have the same needs, and require no active learning to acquire the desired outcomes of the PD (Colbert et al., 2008; Franey, 2015; Hunizicker, 2011). Essentially, most of the professional development currently offered to teachers takes on the pedagogical stance that Knowles operationalized in his inaugural work (Gregson & Stuko, 2007; Knowles, 1980; Steinke, 2012). In fact, 90% of the teachers in the United States have reported participating in this type of PD (Darling-Hammond, et al., 2009). Lucas (2005) argued, “the traditional deficit-based, teacher-centered model that predominates in the majority of programs leaves much to be desired. Workers seldom have a say in program planning” (p. 316-317).
Often teachers complain that these top-down approaches to PD fail to meet their needs by not aligning to the challenges they face in their classrooms (Boston Consulting Group, 2014; Gregson & Stuko, 2007). In fact, a study done by the Boston Consulting Group (2014) examining teacher perspectives about their PD experiences; reporting teachers wished their PD opportunities were more personalized, less controlled by administrators, and treated them “as adults rather than children” (p. 4). These findings led to teachers reporting little use for the PD activities offered (Darling-Hammond et al., 2009; Hill, 2009). Many of them reported minimal effects on their instructional practices, as they deemed the PD inapplicable to their classroom context (Boston Consulting Group, 2014; Gregson & Stucko, 2007; Darling-Hammond et al., 2009; Hill, 2009; Hunzicker, 2011; Jones & Dexter, 2014). These findings also demonstrate that implementation of the discussed theories is lacking. It is commonly assumed that teachers need to focus on teaching students according to their diverse abilities, yet this assumption is rarely considered for teachers as learners (Sackstein, 2015). Therefore, using andragogy as a framework provides a lens that allows for a clearer understanding of the teacher as an adult self-directed learner and may provide an understanding of how, “PD programs motivate teachers, how they intellectually engage teachers, and to whether programs are meaningful to teachers themselves” (Kennedy, 2016, p. 30).

Additionally, Tough (1967, 1971) provided an understanding of the process self-directed learners use to drive their own learning. Since much of the prior literature provides a limited understanding of the process whereby teachers enact self-directed PD, Self-Directed Learning (SDL) can be a useful framework for understanding that process in this study. Tough (1967, 1971) found that self-directed learners engaged the following steps in order to obtain knowledge and skills. The steps and process are described in Figure 1.
Figure 1. Tough’s (1967) Self-Directed Learning Theory

In studying teacher PD, SDL allows for an understanding of the process by which teachers self-direct their own professional learning. For this study, SDL could be used to examine the planning, learning, and evaluation process of teacher PD. The application of this theory to the current study provides opportunity to understand how these steps are enacted in teacher PD. For instance, certain questions may be able to be better explored as a result of this framework such as: (a) what factors mediate the planning process for teachers?, (b) what resources are available to teachers as they drive their own learning?, and (c) how does motivation play a role in the process of teacher PD? For example, both Knowles (1980) and Tough (1967) discussed that a self-directed learner will estimate their learning needs based on comparison to others or their social role. Teachers may often drive their own learning from the context of their job (i.e., their work with students) or from their evaluation from their supervisor (Grosemans et
al., 2015). Thus, this framework can provide a lens for how self-directed learning theory is enacted and embedded in the day-to-day work of teachers seeking to improve their professional knowledge and skill base. This is vital to this study which seeks to develop a model for how teachers self-direct their own PD.

As prior literature has suggested, teachers are rarely given an opportunity to self-direct their own learning (Gregson & Stuko, 2007; Jones & Dexter, 2014; Steinke, 2012). However, Merriam and Bierema (2014) argued that not everyone is innately self-directed and that, therefore, the assumption that all adult learners are more self-directed may be too presumptuous. This is a common criticism from principals, teachers, and other scholars who have shared their opinions about self-directed PD. Research has highlighted that principals are hesitant to allow teachers to drive their own PD because of a lack of empirical findings that describe the process and the effects on teachers (Visser et al., 2014). Some of the common criticisms are that some teachers will not plan their own PD and therefore teacher quality will diminish or that early-career teachers may not have the ability to engage in self-directed learning. Therefore, SDL provides a starting point for this study to design an intervention that allows for teachers to self-direct their own learning. Likewise, this framework can be used to measure what aspects of self-directed learning lead to improvement in teacher quality.

This review has suggested that teacher PD needs a better explanatory theory of teacher learning and change as a result of PD and that there exists a need to focus more on the learner (teacher) than the design (Opfer & Pedder, 2011). Merriam (2001) argued, “we [the field of adult learning research] have no single answer, no one theory or model of adult learning that explains all that we know about adult learners, the various contexts where learning takes place, and the process of learning itself” (p. 3). Consequently, Merriam (2001) compared the field of adult
education to a “mosaic” (p. 3), suggesting that the broad base of knowledge on adult education is intertwined and interrelated where each piece of systematic research done on adult learning has contributed to the whole body of knowledge that explains the nature of adult learning. She later noted the future of adult learning depended on “more holistic and inclusive theories and practices of adult learning for *all* learners” (emphasis added; p. 255). This study seeks to provide understanding for how teachers drive their own professional learning and describe their practice while engaging in this process through answering the following questions:

1. What process do teachers undergo to self-direct their professional development?

2. What do teachers’ practices look like at the beginning and end of a self-directed PD process?
Chapter 3: Methods

With the increase in educational accountability from both the federal and state governments, schools are asked to demonstrate that students are reaching a prescribed set of academic standards (ESSA, 2015). While many stakeholders (e.g., teachers, administrators, researchers, etc.) seek various ways to increase student achievement, research has indicated that teachers are one of the greatest influences in the school on that outcome (Fong-Yee & Normore, 2013). One strategy that has been used to increase teacher learning and subsequent practice in hopes to bolster student achievement is professional development (PD) (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). However, what constitutes effective PD is still elusive (Hill, Beisiegel, & Jacob, 2013; Kennedy, 2016; Opfer & Pedder, 2011). Consequently, the purpose of this study was to investigate a specific model of PD, self-directed PD, by further exploring the process whereby teachers self-direct their learning and describe the teachers’ practice while engaging in the self-directed learning process.

Based on the gaps in prior literature, this study employed a qualitative and descriptive research design. The first section of this chapter provides a rationale for the use of a qualitative and descriptive research design. The second section describes the proposed site selection and participants and the rationale behind these choices. The third section describes the instruments to be used for data collection, the data collection phases, and the analytical procedures that will be used to answer the research questions and the rationale behind these choices. The fourth and final section discusses validity and reliability issues involved with this study.

Research Methods Rationale

The research design in this study utilized a specific qualitative research approach coupled with quantitative descriptive statistics. The prior literature on PD has exemplified the weakness
of using a single data set in attempting to fully explain a PD intervention’s effects on teacher professional learning and practice (Hill, Beisiegel, & Jacob, 2012; Kennedy, 2016; Opfer & Pedder, 2011). For example, in both the literature on general PD and self-directed PD, quantitative methods have been utilized to measure the effects of a PD intervention on teacher knowledge, practice, and/or satisfaction (e.g., Colbert et al., 2008; Desimone et al., 2002; Garet et al., 2001), but these studies have been limited in their explanations of the qualitative process that may have helped better explain why or how the quantitative findings resulted as they did. Likewise, considering the converse of this example, utilizing only a qualitative approach to explain the process of a PD intervention is of little utility if there is not some description/examination of what is occurring in a teacher’s practice. Therefore, a study that includes both qualitative and quantitative description complements the PD literature that to date has been limited in its explanation of what constitutes effective professional development (Hill et al., 2013; Kennedy, 2016; Opfer & Pedder, 2011).

The qualitative strand utilized a grounded theory approach (Creswell, 2007; Strauss & Corbin, 1990). Kennedy (2016) explained that there is no “single, overarching theory…of teacher learning” (p. 2) and “we [the field of PD research] do not have well developed ideas about teacher learning” (p. 29). Therefore, she argued that the field of teacher education “cannot learn from this body of research unless we find a way to distinguish among these different conceptions of what teachers are actually doing and how we can help them improve” (p. 2). Kennedy’s use of the word “doing” has implication for the types of methods that can be used to provide evidence to the questions being asked currently in the field. Strauss and Corbin (1990) established that a grounded theory approach is an appropriate method to use to provide an explanation for a process, action, or interaction. Additionally, Creswell (2007) also provided
three rationales for use of a grounded theory approach: (1) a theory does not exist, (2) there are
theories and models available but have been tested on samples and populations other than those
of interest to the researcher, and (3) the available theories are incomplete because they do not
address the variables of interest to the researcher. Creswell’s rationale for use of grounded theory
aligns well with Kennedy’s (2016) call for a clearer conception of teacher learning. While this
study did not seek to generate a theory, the intent of this study was to use the methodological
approach of grounded theory to better understand the process whereby teachers self-direct their
own PD, which has had limited attention in teacher education PD literature.

The primary goal of descriptive research is to “describe a phenomenon and its
characteristics” (Nassaji, 2015, p. 129). Unlike prior reviewed PD literature that employed
quantitative research designs to examine the relationship between PD interventions and some
measure of a dependent variable involving the teachers participating in the PD (e.g., practice,
beliefs, satisfaction, etc.), descriptive research “is more concerned with what rather than how or
why [emphasis added] something has happened” (Nassaji, 2015, p. 129). Utilizing descriptive
research allows for an exploration of what occurred in teachers’ practice over time instead of
causal research that seeks to examine only that teachers’ practices have changed over time as a
result of a variable or a combination of variables. In this way, the rationale for using a
descriptive research design rather than a design that seeks causality allowed for data and findings
to answer the prior reviewed literature’s call for an explanation for how or in what ways teachers
learn and grow (Kennedy, 2016; Opfer & Pedder, 2011). Therefore, this study first and foremost
sought to understand the process whereby teachers self-directed their professional learning.
However, there was a secondary purpose to describe what was occurring in the teachers’
practices during the time teachers were engaging in self-directed PD. By using this design, the
goal and purpose was to provide added nuance and understanding to the process of self-directed PD and to highlight episodes in teachers’ practice that can be further explored with future research.

Research Context

Recently, a change in policy has occurred in the school district where this study took place. A new professional growth model has been created to allow teachers more autonomy to self-direct their own PD to meet their professional learning and growth goals (citation withheld to preserve confidentiality). The model directs the teachers to engage in a six-step recursive process where the teachers (1) develops an action plan based on their needs and/or their students’ needs, (2) designs collaboratively with their administrative supervisor a professional growth plan that will meet their current needs, (3) finalizes the plan with the teacher’s supervisor, (4) collects evidence of progress towards meeting the self-directed professional growth plan, (5) reviews yearly progress through administrative observations and follow-up conferences, and finally (6) documents evidence of accomplishing the professional growth plan. This model also aligns to teachers’ evaluations and can affect how teachers receive higher compensation on the district pay scale.

A setting like this is ripe for an exploration of the process whereby teachers self-direct their own learning. Other than being provided professional growth activity options (e.g., conferences, online courses, university courses, etc.) that “count” towards compensation on the pay scale, there has been little guidance from building-level or district-level administration on what activities teachers should select to improve their professional practice. In fact, the district only provides the teachers with a pamphlet that outlines the choices of PD activities and how those activities relate to the teachers’ evaluation and requisites for obtaining a higher salary. For
example, the teachers could select to take university classes. The pamphlet describes the amount of credit hours the district would count towards salary increases. In the process of selecting these activities, it would be assumed during administrative pre-conferences (i.e., Step 2) that administrators may guide teachers not only in recognizing areas where professional growth may be needed, but also assist teachers in activities that might help them foster such professional growth. However, this is only an assumption lacking sufficient evidence. Ultimately, it is the teachers who are making their own decisions and enacting their own plans regarding their own professional growth.

This new professional growth model allows for a great deal of teacher self-direction, but there are still many unanswered procedural questions congruent with the gap in the prior literature on self-directed PD. For example, in the district’s six-step model, teachers develop an action plan, but how do these teachers select professional goals for that plan? Additionally, teachers are also supposed to enact their plan, which elicits the question of how teachers select activities, what activities do they select, and what other aspects are encountered in this process? The ultimate question that this study addressed remains: What is the process teachers undergo to self-direct their professional learning and growth?

**Research Participants**

The research participant selection for the study was purposeful (Creswell, 2007, 2012); however, the purposive sampling was slightly more nuanced. Typically, accountability measures bear more weight for secondary math and English teachers because of annual testing in these content areas. Therefore, the rationale for selecting teachers from only those content areas stemmed from the idea that this subgroup of teachers would be more focused on their
professional development efforts since accountability measures create a higher expectation of performance from these teachers in order to demonstrate student achievement.

At first, select schools in the northwestern part of the district where the study took place were selected as they were within a closer proximity to the researcher. Since I was a graduate student and a full-time teacher, time had to be prioritized and maximized to conduct the study. These participants were recruited through face-to-face meetings after school after having obtained permission from the university and school district institutional review boards as well as the building-level principals. However, after attempting to recruit at those schools, the sample size was not yet sufficient to achieve statistical significance. Therefore, recruitment efforts were expanded to other secondary schools. These participants were also recruited through face-to-face after school meetings and some were recruited via email. While these efforts improved the participant sample, it was still insufficient. Therefore, the recruitment efforts were expanded to every secondary school within the district, excluding district schools that were outside the city boundaries because of the distance being too great that it would have been too difficult to travel. At this point, a recruitment video was made and sent with prior recruitment materials via email. As a result of these recruitment strategies, a total of 24 secondary math and English teachers volunteered for the study. Retention also became an issue once data collection began. As a result, two participants dropped the study and five participants did not respond to requests for data. Thus, the final sample size included 17 secondary teachers (3 math teachers and 14 English teachers).

In the original design of the study, the research questions were intended to examine effects of self-directed PD on teacher practice. Because the sample size was small, adjustments to the design were made where it was no longer necessary to have a large enough sample size to run inferential statistics.
Table 2

*Participant Description*

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Content Area/Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rachel</td>
<td>Female</td>
<td>English/11,12</td>
</tr>
<tr>
<td>Sadie</td>
<td>Female</td>
<td>Math</td>
</tr>
<tr>
<td>Courtney</td>
<td>Female</td>
<td>English/9</td>
</tr>
<tr>
<td>Kevin</td>
<td>Male</td>
<td>Math/9,11,12</td>
</tr>
<tr>
<td>Luther</td>
<td>Male</td>
<td>English/9</td>
</tr>
<tr>
<td>Blake</td>
<td>Male</td>
<td>English/9</td>
</tr>
<tr>
<td>Madison</td>
<td>Female</td>
<td>English/9</td>
</tr>
<tr>
<td>Hannah</td>
<td>Female</td>
<td>English</td>
</tr>
<tr>
<td>Travis</td>
<td>Male</td>
<td>English/9</td>
</tr>
<tr>
<td>Evelyn</td>
<td>Female</td>
<td>Math/8</td>
</tr>
<tr>
<td>Harrison</td>
<td>Male</td>
<td>English/12</td>
</tr>
<tr>
<td>Fiona</td>
<td>Female</td>
<td>English/9</td>
</tr>
<tr>
<td>Natalie</td>
<td>Female</td>
<td>English/10</td>
</tr>
<tr>
<td>Madelyn</td>
<td>Female</td>
<td>English</td>
</tr>
<tr>
<td>Kristen</td>
<td>Female</td>
<td>English/12</td>
</tr>
<tr>
<td>Heather</td>
<td>Female</td>
<td>English/11</td>
</tr>
<tr>
<td>Felipe</td>
<td>Male</td>
<td>English/7</td>
</tr>
</tbody>
</table>

**Qualitative sampling.** The qualitative sampling strategy was maximal variation sampling (Creswell, 2012). To obtain a more comprehensive perspective of how diverse teachers in the sample self directed their PD, it was necessary to sample teachers who possessed characteristics that vary in terms of teaching experience (i.e., novice and veteran), age, race, gender, content area, and grade level (PreK-12). Much like students, teachers vary in their

5 The names of the rubric, participants, and places are pseudonyms in order to protect confidentiality.
approaches to learning and teachers who possess the above-mentioned criteria may vary as well. For example, how and what novice teachers need to learn may vary from veteran teachers. Elementary teachers may vary from secondary teachers and so forth. In order to generate a more complete understanding of self-direction among teachers, maximal variation was necessary to understand diverse perspectives (Creswell, 2012).

Additionally, Corbin and Strauss (2008) discussed the idea of theoretical sampling, which is a type of purposeful sampling. Corbin and Strauss (2008) explained this type of sampling is when the researcher goes to “places, persons, and situations that will provide information about the concepts they want to learn about” (p. 144). Therefore, the Self-Directed Learning Readiness Scale (SDLRS) (Fisher & King, 2010; Fisher, King, & Tague, 2001), was administered after participants were consented to ascertain the level of self-directedness of the sample. There were two reasons for this. First, the data from this survey served to add another descriptive layer to the maximal variation description of the qualitative sampling. Their SDLRS score as either high, mid, or low, classified the teachers. Therefore, the survey results were used to sample participants for qualitative data collection. The qualitative sample was evenly distributed with teachers classified based on the SDLRS as either high, mid, or low in their self-directed readiness. Second, since this study sought a duality of purpose to better understand both the process of self-direction and to describe teachers’ practice, the need to explain and further describe the nuance of the results on the latter outcome could be enhanced through an understanding of the level of self-directedness of the teachers selected for participation in the study.
Table 3

*Qualitative Participant Sample Description*

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Ethnicity</th>
<th>SDLRS Score</th>
<th>Content Area/Grade Level</th>
<th>Years of Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sadie</td>
<td>Female</td>
<td>Black</td>
<td>100 (Low)</td>
<td>Math</td>
<td>14</td>
</tr>
<tr>
<td>Courtney</td>
<td>Female</td>
<td>White</td>
<td>107 (Low)</td>
<td>English/9</td>
<td>2</td>
</tr>
<tr>
<td>Kevin</td>
<td>Male</td>
<td>Black</td>
<td>107 (Low)</td>
<td>Math/9,11,12</td>
<td>8</td>
</tr>
<tr>
<td>Luther</td>
<td>Male</td>
<td>White</td>
<td>109 (Low)</td>
<td>English 9</td>
<td>9</td>
</tr>
<tr>
<td>Blake</td>
<td>Male</td>
<td>White</td>
<td>114 (Mid)</td>
<td>English/9</td>
<td>10</td>
</tr>
<tr>
<td>Evelyn</td>
<td>Female</td>
<td>White</td>
<td>128 (Mid)</td>
<td>Math/8</td>
<td>1</td>
</tr>
<tr>
<td>Madelyn</td>
<td>Female</td>
<td>White</td>
<td>133 (High)</td>
<td>English 6</td>
<td>26</td>
</tr>
<tr>
<td>Kristen</td>
<td>Female</td>
<td>White</td>
<td>133 (High)</td>
<td>English/12</td>
<td>13</td>
</tr>
<tr>
<td>Felipe</td>
<td>Male</td>
<td>White</td>
<td>142 (High)</td>
<td>English/7</td>
<td>8</td>
</tr>
</tbody>
</table>

**Data Collection**

In order to understand the process of self-directed PD and to describe the occurrences in teachers’ practice during their time engaging in self-directed PD, data collection occurred in three phases. This section will discuss those three phases and their sequence in the research design. Figure 2 demonstrates the study’s organization.
**Figure 2. Research Design**

**Phase 1: Quantitative Description of Teacher Practice: Beginning of the Study**

To answer research question two: What do teachers’ practices look like at the beginning and end of a self-directed PD process?, two lesson plans coupled with open-ended surveys were collected: one at the beginning of the study and one at the end of the study. The first set of lesson plans and surveys were collected during the first semester of the 2017-2018 school year for the teacher participants specifically between October 2017 and December 2017. The second set of lesson plans and surveys were likewise collected during end of the second semester beginning in early April 2018 and finishing in early May 2018 at the end of the study. The lesson plans were meant to describe teachers’ practice during those times.

Desimone (2009) argued that observations are typically the best measurement tool for assessing and/or describing teacher practice. However, there are logistical and ethical concerns to consider when conducting classroom observations. First, classroom observations can be time-consuming depending on the sample size. Plus, observations of a teacher likewise mean the

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<td>Data Collection</td>
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<td>SDLRS</td>
<td>Semi-Structured Interview (Round 1)</td>
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observation of students where the need to solicit parental consent and student assent may cause issues and/or delays with data collection. Additionally, typically an observation tool is used to measure teacher practice; however, the emergent nature of this study (i.e., describing various teachers’ practices as they align to their self-directed professional learning goals) makes a valid and reliable construction of a pre-assessment designed to assess varying teachers’ needs and self-directed professional learning goals very difficult if not highly unlikely. Consequently, there was a need for another type of data collection tool that could allow for an “objective” measurement of teacher practice.

In a PD study done by Greenleaf and colleagues (2011), the researchers used teacher assignments and students’ work as a proxy for classroom observations. Teachers in this study were asked to provide lesson materials and student assignments. In addition to that request, teachers were also asked to fill out an open-ended questionnaire asking about the instruction related to these materials. For example, the questionnaire asked teachers to discuss the sequencing of instruction, the knowledge and skills of students, and the types of learning activities the students were involved in. Based on these responses, a quality rating was determined based off a rubric. Greenleaf and colleagues (2011) cited the Center for Research on Evaluation, Standards, and Student Testing (CRESST) in support of this type of data collection as a proxy to measure practice.

This same rationale and methods were applied to this study for collecting lesson plans and surveys rather than conducting classroom observations. A total of 14 lesson plans were collected from the 17 participants in the first semester starting in October 2017 with the final plan collected in December 2017. The open-ended survey elicited further thinking about the design of the plan and implementation fidelity (see Appendix B). A total of 16 survey responses
were collected from the 17 participants at the same time the lesson plans were collected. For those participants who did not provide a lesson plan during this time period their survey was used to describe their practice.

Additionally, the SDLRS was administered at the same time that the lesson plans were collected between October 2017 and December 2017. All 17 participants took the survey. The survey was then analyzed before the second stage of data collection in order for the data to be utilized for sampling the qualitative group. The analysis will be discussed more in-depth in the analysis section below.

**Phase II: Qualitative Process Exploration**

The qualitative design followed a grounded theory approach (Creswell, 2007; Strauss & Corbin, 1990) to understand the process(es) teachers enacted to drive their own professional learning, which was research question one: What process do teachers undergo to self-direct their professional development? Semi-structured interviews began shortly after the first semester and early in the second semester around February 2018. Nine teacher participants were chosen based upon teaching experience (i.e., novice and veteran), age, race, gender, content area, grade level (PreK-12), and level of self-directedness (see Table 3). The diversity of this participant sample allowed for nuance, divergence, and commonalities in how these diverse teachers self directed their own professional learning. These nine teachers agreed to participate in a semi-structured interview. There were two rounds of interviews. In the first round of interviews, each of the nine teachers were interviewed using the interview protocol (see Appendix C). These interviews were conducted between early February 2018 and mid March 2018. This first round of interviews comprised 66 pages of transcript data and a total of 3 hours and 31 minutes of audio recording. The second round of interviews included follow-up email interviews, which took place with the
nine teachers from early April 2018 through early May 2018. Each of the nine participants
received an email with follow-up questions specific to the data analyzed from their first round
interview.

Additionally, the remaining eight participants in the sample were invited to participate in
a survey (see Appendix F) after both lesson plans were analyzed. The purpose of this was to also
add nuance and insight into the descriptions of their practice. The survey was administered via
email in early May 2018. The four questions in that email were formulated as a result of the self-
directed PD process discovered from the qualitative sample (n = 9) through their semi-structured
interviews.

**Phase III: Quantitative Description of Teacher Practice: End of Study**

Using the same approach as phase 1, a second set of teacher lesson plans coupled with
the same open-ended survey were collected at the end of the study in early April 2018. During
this round of data collection, 17 lesson plans were collected. The open-ended survey again
elicited further thinking about the design of the lesson plan and implementation fidelity. Only 10
surveys were collected during the second semester.
Table 4

Qualitative and Quantitative Research Questions, Objectives, Data Sources and Analysis, and Timeline

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Objectives</th>
<th>Data Sources</th>
<th>Data Analysis</th>
<th>Timeline</th>
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<tbody>
<tr>
<td>What process do teachers undergo to self-direct their professional development?</td>
<td>Develop a theoretical model of self-directed PD</td>
<td>Semi-structured interviews</td>
<td>Open coding, axial coding, selective coding, and memo writing</td>
<td>January 2018 – May 2018</td>
</tr>
<tr>
<td>What do teachers’ practices look like at the beginning and end of a self-directed PD process?</td>
<td>Describe teacher practice</td>
<td>Lesson plans, surveys (SDLRS and open-ended surveys from lesson plans) and semi-structured interviews</td>
<td>Descriptive Statistics, Visual joint display</td>
<td>October 2017 – May 2018</td>
</tr>
</tbody>
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Data Analysis

The data analysis proceeded through distinct phases (see Table 4). The qualitative data were analyzed fully first, whereas the quantitative data were analyzed both before the qualitative data were collected and again after the qualitative data had been analyzed. The third and final phase included the integration of the two data sets, including the SDLRS. The following analytical procedures for the separate data sets and the integration phase will be described further below.

Phase I: Qualitative Analysis

Creswell (2007) described six stages of analysis for the use of grounded theory methods, which were utilized in this study (see Figure 3). Those stages are (1) data managing, (2) reading and memoing, (3) describing, (4) classifying, (5) interpreting, and (6) representing and visualizing (see Figure 3). In the first stage, data managing, the individual interviews were
transcribed. They were also organized using two organizational techniques. First, each participant was given a pseudonym, and the second technique was labeling each transcription file with that pseudonym, providing the date of when the interview was conducted and recording the length of the interview. All the interview transcriptions were stored in an online, password-protected, and encrypted database (i.e., Google Drive).

The next two stages of analysis comprised the reading and memoing coupled with the coding (i.e., describing) of the interview data. First, transcripts were read over to ensure proper and accurate transcriptions. The transcripts were also read to get an overall sense of the data. While reading the transcripts, I wrote memos that were reflective of the research questions and the procedural steps teachers were initiating to self-direct their own learning (Saldaña, 2009). Memoing was done after each interview was read and again during the coding of each interview. Memos were written to reflect emerging insight into the data (Corbin & Strauss, 1990; Saldaña, 2009). Saldaña (2009) suggested:

The purpose of analytical memo writing is to document and reflect on: your coding process and code choices; how the process of inquiry is taking shape; and the emergent patterns, categories and subcategories, themes, and concepts in your data—all possibly leading towards a theory (p. 32).

The memo writing used throughout the open, axial, and selective coding phases allowed for “a place to ‘dump [my] brain’ about the participants, phenomenon, or process under investigation by thinking and thus writing and thus thinking even more about them” (Saldaña, 2009, p. 32).

Coding also began simultaneously with memoing. Open coding proceeded with two cycles of coding. In the first cycle, I used emergent codes (i.e., descriptive, in-vivo, and process codes) and in the other cycle, I used a priori codes established from a codebook created using the
theoretical framework of this study (Saldaña, 2009). In the first round of coding, the purpose was to identify the process steps whereby teachers engaged in self-directed PD. The rationale behind using emergent coding before a priori coding was to identify any nuances to self-directed learning theory (Tough, 1967) in teacher education. After I coded the data using emergent codes, I then coded the interviews again using the a priori codes. The purpose for using the theoretical (a priori) codes was highlighted in Chapter 2 under the theoretical framework section. Since Andragogy and Self-Directed Learning Theory have had limited application in teacher education, the use of the two coding cycles allowed for the opportunity to see both theoretical congruence and nuance/insight within the data. In this open coding stage, a single category needed to be selected as the “central phenomenon” (Creswell, 2007, p. 160). Since this study used grounded theory methods not for the purpose of generating a theory, but to add insight to how self-directed learning looked in teacher education, the central phenomenon was the self-directed learning process and grounded theory methods were implored to add insight to that process.

Axial coding was employed next as part of the classifying stage by either reviewing the data further or by collecting new data to “provide insight into the specific coding categories that relate or explain the central phenomenon” (Creswell, 2007, p. 161). Specifically, data were sought to classify causal conditions that influenced the central phenomenon; strategies related to the central phenomenon; and context, consequences, and intervening conditions connected to the central phenomenon. Other reviewed studies using grounded theory methods re-coded these categories and reassembled them into larger conceptual codes (e.g., Leko & Brownell, 2011); however, in this study, after using constant comparison and reexamining the data for the above-mentioned conditions and strategies, it became apparent that these categories were the answer to some of that further examination. For example, choosing a goal seemed to be a causal condition
to the self-directed learning process whereas deciding upon learning activities was a strategy employed in order to meet the goal. Therefore the data began to be reassembled through connecting these categorical codes to one another and through a reanalysis of the data. In this stage, the themes were developed through integrating emergent and a priori codes and categorizing those codes into the categories of causal conditions, strategies, and context, consequences, and intervening conditions.

In the final stages of the analysis, which represented the interpretive and visualization stages of the analysis process (Creswell, 2007), the researcher, “generates propositions or statements that interrelate the categories” (Creswell, 2007, p. 161). It was during this stage that it became clear that certain participants highlighted iterations of their experiences throughout their interviews and how these procedural steps were interrelated. For example, Blake’s interview showed that he had engaged in the process more than once and that he repeated the categorical stages in a cyclical process. Therefore, I returned to the data to confirm or disconfirm this hypothesis that the process was iterative and was able to confirm that each participant showed signs of iteration throughout their interviews. The final selective coding stage connected the themes from axial coding by interrelating them by order or process to generate the emergent model discovered in this study.

**Constant comparative analysis.** Throughout the above-mentioned analysis, I followed the analytical procedure of constant comparative analysis (Creswell, 2007; Strauss & Corbin, 1990). This inductive process allowed the researcher to gather data, sort those data into initial categories, use that sorting to collect further information, and compare the new information to prior information in order to generate a procedural explanation and answer the research question(s) (Creswell, 2012). Data were likewise collected and analyzed concurrently through
the cyclical process of engaging in semi-structured individual interviews with the participants, analyzing the data, and reengaging with the participants via email to continue to collect data. The process continued until saturation was met across all individuals, meaning the process of self-directed PD became clear and was supported by the data (Creswell, 2012).
Phase II: Quantitative Analysis

The first data analyzed were the SDLRS data. These data were put into SPSS and descriptive statistics were run including mean. As indicated previously, participants were selected using the mean scores from this survey.

The lesson plans and open-ended survey were scored using the Teacher Practice Evaluation Rubric (TPER). The TPER was developed in the Department of Education in the state where the study was conducted. The rubric was generated specifically as a result of a piece of state legislation seeking to create a statewide evaluation system for teachers and administrators. The legislation mandated the formation of a committee of teachers and leaders to create this teacher evaluation rubric (citation withheld to preserve confidentiality). This council relied on other evaluation models such as ones established by Marzano (Carbaugh, Marzano, Toth, 2017) and the Charlotte Danielson Framework (The Danielson Group, 2013). There were three rationales for using the TPER. First, teacher PD is often aligned to teacher evaluation (Smylie, 2014). In fact, the TPER was conceptualized as a result of accountability measures from both the federal and state levels in an attempt to improve student achievement through the explicit process of measuring and providing feedback to teachers and administrators based on specified criteria. The use of an evaluation tool that measures teacher practice while simultaneously aligning to their evaluation seemed beneficial to this study because prior research suggested barriers to change often stemmed from a misalignment between administration’s expectation and the expectations of the PD program (Allen & Penuel, 2015).

The second reason is the nature of an emergent design. Since at the onset of the study it was not known what goals the participants would have for their own professional learning, it was impossible to create a rubric that measured all the individual variables teachers would have self-
selected to focus on. Therefore the use of a generic overarching rubric was better suited to describing teacher practice in this study.

Additionally, this rubric was advantageous because it allowed for differentiated measurement. The entire rubric did not have to be used to describe teacher practice. Based on the goals teachers self-selected to focus on, the rubric allowed for some flexibility for what aspects would be employed. For example, if the teacher decided to focus their self-directed PD efforts on increasing the quantity and quality of formative assessment opportunities provided throughout their instruction, the rubric has a section that can be used to measure that teacher’s progress and growth in practice in that specific aspect (see Appendix A). All of these aspects allow for this rubric to best measure teacher growth in practice in varied settings.

In order to prepare the data for scoring, the lead researcher and another researcher individually chunked each lesson plan and negotiated those chunks according to the rubric’s categories. For example, a teacher described in one of the lesson plans, “[students] will probably need the theme templates from the previous lesson to help formulate a theme.” Based on that chunk the researchers labeled this chunk, in accordance with the TPER Rubric, “Standard 2,” which describes and has the following caption: “Learning Tasks have High Cognitive Demand for Diverse Learners” and “Indicator 1” which describes and has the following description: “Tasks purposefully employ all students’ cognitive abilities and skills” and “Indicator 2” which describes and has the following caption: “Tasks place appropriate demands on each student.” This was done individually first and then compared between researchers to ensure agreement. If chunking was different, these differences were discussed and organization of the chunks was negotiated. Afterwards, each researcher then gave each chunk a code (1-4) individually and then the lead researcher ran interrater reliability on the coding. If lesson plan coding between the
researchers was under 70%, then the two discussed their scoring and sought agreement on misaligned scores. The average IRR percentages ranged between 75% - 90%. The lead researcher and another researcher did this process until interrater reliability was met. Then the lead researcher chunked and scored a maximum of four lesson plans individually without the outside member. After those four lesson plans were analyzed, another lesson was then co-coded and scored again to ensure interrater reliability was still consistent. This process was followed until all the lesson plans were analyzed.

These data were entered into Excel spreadsheets. Using Excel, mean scores were calculated for each standard and indicator measured in each lesson for both first and second semester. These mean scores represented and were classified as mean scores for aspects of teacher practice (e.g., the ability to engage students in meaning making and discourse, the level of challenge in the cognitive task, etc.).

In this final phase of analysis, at the conclusion of the study, the quantitative and qualitative data were integrated to provide further description. In order to effectively do this, Guetterman and colleagues (2015) suggested using a visual joint display “that compares themes about the processes individuals have experienced with outcome data” (p. 150). These analytical tools make integration of data clear to the researcher and the reader.

There are many different types of joint displays that highlight various integration methods and strategies. The strategy used for this study is what Guetterman and his colleagues (2015) described as the statistics-by-theme display (see Table 5). Creswell and Plano Clark (2011) also suggested that this strategy could allow the researcher to “review changes in individual experiences over time on a case-by-case or group basis” (p. 244). Based on the data, the table was organized to show the integration of data on the individual outcomes. In any case,
this particular joint display integration strategy assisted in answering the second research question and allowed a richer perspective and understanding.

Table 5

*Statistics-by-Theme Display Example by Group*

<table>
<thead>
<tr>
<th>Name</th>
<th>Standard Indicator</th>
<th>Standard Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beginning Mean Score</td>
<td>End Mean Score</td>
</tr>
<tr>
<td>Theme Label</td>
<td>Qualitative Evidence</td>
<td></td>
</tr>
</tbody>
</table>

**Reliability and Validity**

Reliability and validity concerns exist for all studies. This final section will discuss some of these issues separately for the quantitative aspects of the design, the qualitative aspects of the design, and then the merging of these data in the mixed methods aspects of the design.

Although the SDLRS was validated from a factor analysis (Fisher & King, 2010), the measurement tool has to date been used with nursing students only. Guglielmino (1977) originally designed the SDLRS, but validity issues were raised. Fisher and colleagues (2001) designed their version of SDLRS (see Appendix D) for nursing students to overcome these validity and reliability issues. Cronbach’s alpha coefficients were calculated for each subscale including the, “self-management subscale, the desire for learning subscale, and the self control subscale were 0.92, 0.85, 0.84 and 0.83 respectively” (Fisher et al., 2001, p. 520). The authors noted their analysis of their tool had internal consistency and that “this scale could potentially be used in other student populations” (Fisher et al., 2001, p. 522). Furthermore, a confirmatory factor analysis was conducted on each of the three subscales (i.e., self-management subscale, the desire for learning subscale, and the self-control subscale) of this survey (Fisher & King, 2010). Of the original 40 items, the factor analysis found the 11 items were redundant (Fisher & King,
Thus, a revised 29-item survey had a high degree of validity (Fisher & King, 2010). This version of the survey was utilized in this study.

Since the current study focused on teachers, an additional Cronbach Alpha reliability test was needed. Additionally, it was decided between the researcher and another researcher that a factor analysis was not possible due to its small size (n = 17). In order to check for internal consistency of the above-mentioned survey for this study, Cronbach’s Alpha was repeated for the sample in this study. An overall reliability coefficient for the whole survey was 0.92 for the 29-item version. Additionally, a reliability test was run for each subscale again for this sample. The self-management subscale, the desire for learning subscale, and the self-control subscale were 0.88, 0.67 and 0.85 respectively. Therefore, using demographic data and the SDLRS scores, 9 participants were selected for individual semi-structured interviews (see Table 4).

For the quantitative aspect of this study, there were a few issues that arose involving reliability and validity. The first issue involved the use of the TPER as a reliable measurement tool. This tool is new to the area where the study was conducted and the validation and reliability research is still underway to determine whether this instrument can reliably measure the quality of teacher practice (citation withheld to protect confidentiality). Therefore, the use of interrater reliability was used to control for bias that any one individual may bring in analyzing the lesson plan and open-ended survey data.

**Qualitative Credibility**

Validity is not often a word used in qualitative research, but rather credibility and trustworthiness are more appropriate terms (Maxell, 2013). Maxwell (2013) cited two specific threats to credibility and trustworthiness: *researcher bias* and *reactivity* (p. 124). Since the instrument for data collection in qualitative research is the researcher, these two threats were
serious to the study if procedures were not indicated regarding how the researcher (the instrument) can produce reliable and valid data. Maxwell (2013) provides a checklist for ensuring the researcher does this. This study used three validity tests: *rich data, respondent validation*, and *searching for discrepant evidence* (pp. 126 – 127). Grounded theory procedures account for and acknowledge these threats and have procedures built in to minimize them. The use of multiple iterative interviews allowed for the researcher to collect large amounts of data that are “detailed and varied enough that they provide a full and revealing picture of what is going on” (Maxwell, 2013, p. 126). Additionally, grounded theory suggests, once selective coding is finished, the theory can be articulated and participants can verify the themes that emerged from the data as a form of member checking. Narratives were written for each of the 9 participants who participated in semi-structured interviews to explain the emerging theory and to seek validation from them. All of the participants (n = 9) confirmed their narratives. Finally, Strauss and Corbin (1990) discussed the need during the axial and selective coding stages to search for evidence that contradicts the emerging theoretical constructs. Discrepant cases were searched for using the constant comparative analysis method to validate the findings. While there were slight nuance between the participants, none of the teachers were found to be extremely varied cases within the sample.
Chapter 4: Findings

In this chapter, I will elaborate on the major findings and themes related to the process of self-directed PD and a description of teachers’ practices during that process. The findings are organized in accordance with the two research questions. Since the prior literature reviewed in this study provided little clarity as to what constituted self-directed PD, the first section will seek to explore and describe the process of self-directed PD through qualitative data answering the research question: What is the process of self-directed professional development? Following that section, the descriptive statistics combined with the qualitative data will describe the teachers’ practices at the beginning and at the end of the study to answer the second research question: What do teachers’ practices look like at the beginning and end of a self-directed PD process?

What is the Process of Self-Directed Professional Development?

Teachers engaged in an iterative process when self-directing their own professional development. The stages of that process were (1) choosing a goal based on a specific impetus, (2) deciding which learning activities would assist in learning and obtaining the goal, (3) applying learning to practice to experiment with their newly acquired learning, and finally (4) reflecting on the process to facilitate further learning, which then lead the teacher to begin the process anew by either revising their goal, deciding on other learning activities, or applying their learning in different ways. Figure 4 displays the iterative model. The rest of this section discusses each stage in depth.
Figure 4. The process of self-directed PD and its four stages including the sub-phase of “encountering barriers” that may occur while “deciding on learning activities” and/or “applying learning.”

**Choosing a goal.** All of the teachers in this study began the process of their self-directed PD by choosing a goal. Tough (1967) found in his exploration of self-directed learning that his participants typically chose a goal as a result of some specific impetus. Knowles (1980) likewise theorized that self-directed learner readiness “is closely related to the development tasks of his or her social role” (p. 44). These concepts from prior theoretical literature reviewed in this study closely align with the experiences the teachers in this study underwent when self-directing their own PD. Teachers likewise chose their goal as a result of some specific impetus. In this study,
the specific impetus for a teacher to choose a goal was attributed to either (a) a problem teachers faced in their practices, (b) the context and instructional focus of the school where the teachers work, or (c) an intrinsic interest that the teachers had in the content they had chosen to learn. It is also interesting to note that the problem(s) teachers faced in their practices or the change(s) in the context and the instructional focus of the schools where these teachers worked stimulated intrinsic interest demonstrating overlapping motives driving the teachers’ self-directed learning.

Felipe, for example, had the professional learning goal to work, “towards the BlendEd certification” because he wanted to “eventually have everything online so that a student can be in my class either physically or in the digital space and still get the same instruction.” His rationale for choosing this goal stemmed from a desire to meet the needs of 21st Century learners. He remarked in an interview:

What can I do that does that [puts everything in an online space] that I'm interested in and the BlendEd stuff gives me some of it... more tech integration and I can get the rest. That was really the impetus for seeking these things out. That is the direction that education seems to be moving and I don't want to be left behind or stuck with whatever tools other people developed and then I'm just supposed to make it work. I would like to be more involved in developing these tools so it does what I think it should do.

Felipe’s goal then derived from the instructional focus of 21st Century learning. He recognized that, in order to continue to be effective in terms of the future of education, he needed to choose to learn about technological integration to meet the needs of his current learners and the shifts and trends that currently exist in education. It also helped that this professional learning goal “just seems a bit more interesting at the moment.” This highlights the overlap between choosing a goal as a result of contextual factors and self-interest. Sadie and Evelyn chose their goals as a
result of an external instructional focus. Sadie told me during an interview, “Now, we are getting ready to become a magnet school so our focus is now going to be on cross-curricular projects—project-based learning. I need to come up to speed on that.” Her school was preparing to experience a transition and, as a result, the school leadership provided the staff a new instructional focus of project-based learning. That was the impetus for Sadie to make project-based learning her goal for her professional learning. Evelyn’s impetus for her professional learning goal was also similar to Sadie’s motivation. Her school’s shift in focus changed her goal from technology integration to project-based learning. She reported in her interview:

But project-based learning, the principal is pushing and it's something that a lot of our SBCT [site based collaboration time] are on. We are doing all the training on them. There are all of these workshops that I am going to about them. I can't put my energy in both places 100%. I am adopting some technology; I have not given up on it, but I can't commit the time to it that I need whereas project-based learning, we are in. My kids are active in doing, so I'm seeing more success with project-based learning than with technology.

Therefore, Evelyn chose her new professional learning goal for two reasons: (a) her school, specifically her administration, had encouraged a new instructional focus in project-based learning, and (b) she is finding more success with this revised professional learning plan and therefore is more intrinsically interested in learning further about it. This again highlights the overlapping impetuses driving these teachers’ learning.

Other teachers had similar impetuses for choosing their goals. For instance, Kevin, who was focusing on going into school administration, chose his goal because he, “want[ed] to have more input in the direction of instruction and discipline and all those things on a school and
district basis” and also because, “For me, it really came down to something I want to use.” Kristen chose her goal to help her students develop a growth mindset, “because I think our student population is in need of all of that” and, “I wanted to teach my students a way to change the way that they felt without swallowing anything, drinking anything, acting out physically with aggression, or something like that.” Additionally, Kristen remarked, “Fixed mindset and growth mindset are a lot of interest to me.” Luther, Courtney, and Blake also chose their goals as a result of issues facing their practices. Luther explained his goal was, “trying to continue to figure out better ways of getting technology into the classroom and turning the cell phone from an addiction into something that will actually help them get the grades up.” Courtney decided to pursue her doctorate in literacy, “because I want to better help—I see so many of my students—they are so far behind as far as reading levels goes, so I see a lot of opportunity to use it in the classroom in order to help them become better readers.” On the other hand, Blake faced problems in a new role given to him. He had recently been given a leadership role as the ninth grade coordinator, who is typically the person who takes the responsibility of leading the grade level in ensuring cohesion within the curriculum and other aspects of effective teaching. He stated, “I've never done that [serving as the ninth grade coordinator] before at all, so I said maybe for my professional growth I can focus more on...how I'm going to be better at this job that I was given.” All of the above-mentioned teachers’ experiences highlighted that their goals were formulated as a result of problems they faced in their practice, which arose in consequence of a district or site-based instructional change of focus, and/or the desire to want to learn something that might change or solve those problems.

Madelyn also chose her goal as a result of challenges she faced in her practice, but discussed an extrinsic motivator as an impetus for her professional learning. What is interesting
about Madelyn is that she explained in the beginning of her interview, “I love professional growth, but right now it is all about how can I maximize my retirement.” She commented further that she is “sadly regulating myself for looking for opportunities for professional development that are going to maximize my pay.” As a result, she chose to pursue National Board Certification (National Board for Professional Teaching Standards, 2018) because:

National Board was 100% for finances. That is what—is it a 10% increase to your pay? It is a pretty good gig for a teacher like me who is at the very—I don't have a lot more that I can do. Before they changed our pay structure I was at the very bottom corner. There was nowhere for me to go. I topped out in years and I had my masters + 32 and I had an advanced Graduate Studies degree / license whatever it’s called, so I couldn't do any more. That was the one way I can make money and when you're old like me and you realize that's the difference between like $350 a month in my pension, it is worth it to do that.

This quote shows how the context of the district and its salary advancement policies can shape the direction of teachers’ learning to the point of pressuring them to choose professional development, as Madelyn also stated in her interview, “just as a means to make more money and not really looking at how we can benefit our sites or benefit students at our sites.” However, Madelyn spoke about her change from pursuing National Board Certification to becoming a licensed special education teacher. Her rationale was:

I have students every year—like the RTI process is abysmal. I think it's abysmal everywhere. The elementary schools keep kids in RTI for four years. Hello, they are not responding to interventions […] Kids are in RTI forever and I know that testing isn't the answer to everybody's—and getting into special ed. certainly isn't the answer to all of the
students’ woes, but I feel like I could be of benefit to those kids that [sic] end up in that—in those circumstances because we have a huge list at my site.

Her comment here begins to align with similar impetuses for learning as the rest of the participant group. She wanted to pursue being a licensed special education teacher because she was facing problems in her practice or at her school that fostered a desire in her to direct her professional development in a way to alleviate this problem. Even at the end of the interview, she confirmed that professional development for her is not solely about an increase in pay when she stated, “I don't know any more about the National Board [National Board for Professional Teaching Standards, 2018] thing. I know I need to do that because it's that whole 10% jump in my pay, but I am ready to learn something new and maybe try something different.” Her final comment demonstrates her intrinsic interest to learn new things in order to improve her teaching. Therefore, all the teachers in this study chose a goal based on some specific impetus as self-directed learning theory suggests (Tough, 1967). However, the specific impetuses for teachers in this study to self-direct their learning included (a) problems in practice, (b) a change in the instructional focus within the context of their school settings, and (c) an intrinsic desire to improve their practice.

Deciding on learning activities. After choosing a goal, the teachers in this study engaged in the next step of their self-directed professional development process, which was to decide on learning activities that would help them achieve their professional learning goal. The teachers in this study engaged in many of the following learning activities to help them reach their professional learning goal: (a) seeking assistance and learning from peers, (b) reading source materials, (c) observing other teachers, and/or (d) attending events organized by others (e.g., conferences).
Teachers in this study often sought out peers to assist them with reaching their professional learning goals. These peers were classified in two different categories: (a) collaborative peers, defined as colleagues who teachers sought after to collaborate about their professional learning and (b) more knowledgeable peers, who were people the participants knew were more knowledgeable about the content they were seeking to learn. Felipe, for instance, had been trying to learn about ways to integrate technology into his classroom with the goal of eventually having his classroom and instruction all in an online space. As a result, he made a professional connection with a company that seemed interested in assisting him to pursue his goal:

I am in the talks with McGraw/Hill to help them develop StudySync [2018] over the summer because there are a lot of suggestions that they have gotten from me this year that they have implemented already, and they want me to do more of that.

Evelyn had been working with another teacher at her school to develop interdisciplinary projects for her project-based learning goal. She also planned to work with this teacher further as their school shifted fully to that instructional focus in the upcoming school year. She expressed this in her interview:

My plan is I have a science teacher and another math teacher that [sic] I plan on collaborating with over the summer. Like, we have made pretty good relationships and bonds outside of school and inside of school. We have each other's back type of thing. We are talking about the lessons that I am doing and that she is doing and how they can relate because I want a lot of the interdisciplinary [sic] and the projects we want them to roll over to each other.
Courtney also saw the need to rely on peers to help her meet her goals to improve literacy in her classroom. She stated in her interview, “With our site-based collaborative training or whatever it's called where we have an opportunity to kind of talk—it gives me a chance to talk with other teachers, ninth grade teachers, who are teaching the same class that I am.” While the district mandated these site-based collaborative times, there were no prescribed protocols for what teachers could do during this time. Therefore, Courtney relished the opportunity to discuss her practice with her colleagues. Kevin relied on peer assistance as well but from his principal, a more-experienced peer, as he pursued his degree in educational leadership. He explained that, “I usually have a weekly or bi-weekly meeting with [current principal] as far as where we talked because he's the mentor principal. We talk about class assignments and the things in leadership.”

Kevin also relied on others to help him learn about aspects of becoming an administrator:

I've met with [our school's learning strategist] talking about our school’s three budgets. I met with the banker about specific prices. I've met with [our schools' graphic arts person] talking about how much it costs for this, this, and this. I've also talked with [a professor] from one of my legal classes. I had to get an idea basically on how school policy works, so I interviewed him for a couple of hours in addition to interviewing [current principal] and also in addition to interviewing the special education district coordinator.

Kristen mentioned that she has a group of teachers she called a “tribe” who “are amazing in incorporating growth mindset and mindfulness.” In Kristen’s case, her tribe of teachers consisted of “people who have spent the time to go get certified professionally for it.” Kristen also had the opportunity “to spend time with John Kevinson [sic], who is a professor from MIT who first brought mindfulness to the United States in a legit form.” Luther relayed that he often used peers to help him find the trainings to assist him in reaching his learning goal. He stated, “I talk to
another teacher and they're like, ‘Hey I'm going to this training.’” However, he also spoke with teachers, intentionally veteran and novice teachers alike, to gain insight on how to reach his goal to be a better literacy teacher. When asked how he actively seeks learning to resolve his classroom issues and/or how to learn certain concepts, he stated he would, “talk to other teachers. It is not just the veteran teachers. I will talk to the new teachers because the new teachers…got a different take on it because they're seeing education through a different lens.” Luther also felt the need to seek assistance from his immediate supervisors, “I will talk to my boss because my bosses have always been English teachers.” He also observed other teachers in his school to learn from them, but typically went along with another colleague and they “went through together and we actually talked about what we saw.” Even though Luther described these walkthroughs as a prescribed mandate from his school’s administration, these conversations were elicited from Luther. He said he learned about new strategies and ideas from the conversation. Sadie felt that peer assistance was an important part of her learning process. She stated:

The only way I think we do learn is by collaboration…professional development gives you that opportunity to meet with peers, discuss an activity or a method or a strategy, and hear some feedback from people with all different kinds of backgrounds that [sic] are coming together for that one topic. That, to me, is the value of it.

In his attempt to become a better teacher leader to his ninth grade colleagues Blake recognized, “There's not going to be any administration-like growth on campus here for that.” Consequently, Blake sought out peers he knew who were in similar positions to help him with his learning:

I was emailing back with a teacher from [another school in the district] who I knew from a few years ago and he's doing this similar thing over at his school and we have just been back and forth. He's in the same position I am in like this leadership position and just
talking about, “Okay, what are you doing? How are you working with this?” And these vent sessions, which have become professional growth sessions because school is all about collaboration. It is inter-school collaboration. What was being communicated in this vent session was this isn't working for me, what's working for you, but that is entirely self-pushed. Like, no one told me, “Well go over and talk to so-and-so at this school.” It was, “This isn't working. I know a guy. Let's see what happens.”

It became clear that the teachers relied heavily on peers to assist them and facilitate their learning.

Another learning activity teachers utilized in their self-directed PD process was reading source materials usually found online that could help them learn how to achieve their goal. For instance, Felipe discussed that he would,

Go into the user manuals [...] always. I go into the support pages, I go into the forums where people are discussing bugs, problems, things like that and I read all that stuff and usually when they develop a tool, they develop some type of user guide, just the frequently asked questions even, or they have videos of teachers using the tool and I just consumed that as much as I can.

Evelyn also read a book that helped her better assess project-based learning, which was a specific aspect of her goal to get better at project-based learning. She received this book as “unanticipated help” (Tough, 1969, p. 98), which has been defined as assistance that the learner was not actively seeking out. She described her unanticipated help in this way:

Some of them [ideas for learning activities] started to stem from my principal because as he did one of my observations, which I had back a few weeks ago. As he did one of my observations, he asked the question, “Well how are you going to assess the students in
doing this? I love the activity. How are you going to assess them?” I said, “I haven't thought that far ahead.” “You know what I got this awesome book,” and he gave me the book. It is a phenomenal book.

For Evelyn, the book she received seemed to help her in her goal to improve in using project-based learning as a teaching method. Although it was not a resource she sought after, it was nonetheless one she chose to read because she saw it as a good resource to help her learn how to achieve her goal. Kristen mentioned research she read in her interview such as Ruby Payne (2005) and other authors connected to her goal of developing a growth mindset with her students. Luther, Madelyn, and Sadie all sought online resources such as journal articles to learn about concepts that would assist them in their learning goals. Luther stated that when he wanted to learn that he “will go do some research online” and Madelyn stated likewise, “when I want to learn about something usually I look for current research.” Sadie mentioned, “Most of what I am doing right now has been reading online searches, reading what other schools have done, and I think that is probably the beginning of everything.” Additionally, Blake searched and read source materials online, “So I began looking for avenues around town, on campus, even online of how to fulfill a more leadership role amongst peers.” For Courtney, reading source materials was a preferred activity because she was, “just reading everything I can find about the condition of literacy.” Tough (1969) noted in his research that “printed materials [were] especially common” in self-directed learning (p. 101). However, in this study, the onset of technology may have increased accessibility to the reading sources that drove the learners’ self-directed learning.

A third activity teachers pursued was observing other teachers. As mentioned previously, Luther had a structure at his school that allowed him to go observe teachers on a regular basis. He utilized that structure, “looking for stuff that...I can use that in my classroom.” Thus, as
Luther sought to reach his goal of providing better literacy instruction for his students through technology integration and other effective literacy strategies, he used this observation time as a learning activity to meet his self-directed goal. Madelyn discussed that she felt like she does not really learn something until she can apply it to her classroom, but commented, “I would like to watch other teachers teach things that I am interested in doing more of” because she felt, “If I watch somebody—because then again in my mind while it's all happening, I could have this, I would tweak that, and I would tweak this.” Observation becomes a platform for Madelyn to see how these learning strategies could apply in her classroom, which was her preferred method of learning. Sadie reverted back to using technology, but this time as a means to observe how to teach those things she was seeking to learn:

If I'm looking for a method or strategy, a lot of times it is as simple as going to Khan Academy [2018] and watching a video. YouTube [n.d.] has some great videos out there on everything from classroom management to how to teach Calculus.

Evelyn expressed her preferred method of learning would be to observe other teachers. She commented in her interview when she struggled with aspects of learning about project-based learning, “I went and observed another class. Like the school will cover me for a day so I can observe a school that is totally project-based learning.” Kristen also observed people and that is what assisted her in learning to help her students develop mindfulness and a growth mindset. She explained, “I have not seen other teachers weave growth mindset and mindfulness and yoga together. To me, they're a natural match...but I've only seen others teach them in isolation of one another.” Kristen then blended what she had observed others do to help her achieve the goal she had for her students. Blake felt leaving his site to observe how other leaders were spearheading the efforts with curriculum design was important. He stated:
All of it [my professional learning] being pushed by me because no one's really going to give me a day or two, “Hey can I go observe the school over here?” “Why are you going to go see other groups on other campuses? Why can't you just see groups here on campus?” which was what I was told last year because they're different schools, different environments, so I have to do this all on my own time.

Even though he was receiving push back from his school administration, this quote exemplifies Blake’s desire to observe others as a preferred method of learning. Additionally, Courtney commented she also likes, “observing other teachers, in part, and learning what I can from them.”

Finally, many teachers decided to attend events organized by others to meet their self-directed professional learning goals. Felipe attended various trainings to help him integrate technology in his classroom. One of them he felt was very useful:

    The grant stuff has some stuff—the R21 grant—they have some trainings and I have actually done some of their trainings. Those have been some of the most helpful trainings I have done this year and I have done two of them.

Evelyn mentioned, “I have attended now two seminars that are total project based learning and math at the same time.” Kevin wanted to have more control of instructional decisions, which led him to want to pursue educational leadership. His graduate program therefore was classified as a program organized by others. Kristen also attended a few trainings for growth mindset one of which she described this way, “Another personal professional development that I sought out for myself was online Berkeley University was offering the Science of Happiness.” Luther said he “went to the CUE [Computer Using Educators] Conference this year that they had at [another
Sadie discussed how much she enjoyed taking professional development through district-offered trainings that she found interesting:

I don't have a math background, and I am only able to stay competitive in math as an instructor because I have had so much professional development and that includes the seminars and things that are often offered nationwide, the NCTM [National Council of Teachers of Math, 2018] and all those guys.

Sadie also planned on attending an event organized by her school towards the end of the year that would hopefully help her with her goal of using project-based learning, “We have a week-long training right after school is out that the school provides. I will start there.” Courtney also attended professional development that was organized by others, “Meeting with other teachers, observing other teachers, doing professional development when I can [emphasis added], taking advantage of the resources that are available to me have all been a part of just learning to be better at this.” Even though events organized by others may not seem to be classified as self-directed professional development, they are still classified as such based on the way self-directed professional development has been defined in this study as “arising from teachers’ own initiative” (Mushayikwa & Lubben, 2009, p. 376). Accordingly, if a teacher chooses to attend professional development that is organized by others, it can still be classified as self-directed.

**Encountering barriers to learning.** A final insight that appeared during this stage and was also discovered in the next stage of the self-directed learning process is that most, if not all, teachers during this stage encountered barriers to deciding what activities would help them achieve their professional learning goal. Sometimes that barrier was in the form of reluctant administration, or sometimes it was lack of resources and/or time. Sometimes the barrier was the participant. Either way, the common theme in the data highlighted that barriers were present in
the process. For example, Felipe was trying to find a way to integrate technology into his classroom, but found that some parts of the tool(s) worked for some aspects of his professional learning goal whereas the other parts of the tool(s) did not pertain to his technology integration goal. Therefore, he struggled to find a cohesive tool that could smoothly integrate technology in the ways he would have desired. He stated the cause for this when he said, “The challenge is everything is all over the place. There are different tools, different trainings, different companies, and everybody has a different slice of the pie and nobody wants to play well together.” Evelyn found her beliefs about how to educate students to be a potential barrier to her professional learning goal. She explained:

I think I am my biggest barrier. I am older than you are. I am sure of it. I come from a completely different learning environment. You know rows of desks, and your notebook, and paper, pencil, and agendas, and homework every night, and written tests, and Scantrons [Scantron Corporation, 2018]. I came from that whole you read the chapter; you answer the questions at the end. You take notes on the math and you do the math homework and then you take a test at the end of the chapter. That is the learning that I came from. I turned out okay. I am respectful. I turned out okay. I am pretty bright, so it's like, why are we changing this?

Her views about her prior experiences as compared to the education she felt she needed to provide her current students could have served as a barrier for her to become motivated to learn how to teach in different and possibly more engaging ways. Kevin expressed that his choice of learning activity, which was to take courses for his graduate program, were not as conducive to learning as he would have hoped. This barrier was also coupled with the barrier of having limited time. He expressed that:
I feel like there's not a whole lot of guidance…. the hardest part for me is scheduling to the point where I might schedule two hours to do my homework but then the assignment will be unclear and then it takes me about an hour just to get a grasp on what the assignment is asking for. There are no examples. Yeah, I'm really thinking that the whole online education thing is—it must be nice to post something—to just post a couple articles, give an assignment, never even have to prepare a lesson or even a PowerPoint. There's not even a PowerPoint where it's okay, like I prepared this, watch this slide, and then answer this question. It's all, “read this article, read the section of the book, prepare this.”

Madelyn likewise mentioned having issues with time and lack of resources. She expressed in her interview:

It's not always easy to get it. It is not always easy to make time to read about something that I'm not going to be—it is just not always easy to make time to learn new things. Sometimes the things that I'm interested in aren't—there is not a lot of information about them.

For Madelyn, what was the most interesting barrier for her was sacrificing time with her students to be able to participate in professional development opportunities such as observing that would facilitate her learning to reach her goal:

When I think about going out to other teachers’ classrooms, then I have to give up time with my students. Not only time, but I think being able to—like I don't like having substitute teachers. My kids need me to be there with them and not because I'm some great teacher, but the kids need consistency. I think as a model going to observe other
teachers even though I think it would be really powerful; there is a loss there to your students.

This is an interesting barrier. While Madelyn would like to observe classes and attend events organized by others that might help her become a better teacher, she forgoes them because of her need to fulfill her responsibility as a teacher. Luther expressed the same sentiment, “One thing I refuse to do is to go to a training during instructional time.” Sadie mentioned “time is always the thief” because “it takes a lot of time to research and to study.” Sadie also mentioned travel distance to attend certain worthwhile trainings as a barrier:

One of the disappointments I have with professional development of the district is that you have to go to the training. We're technology-based now; I should be able to sit in my classroom and take any class that they are offering. Because the stress of driving through the rush hour traffic to go to an hour or 2-hour training sometimes a lot of people will just say it's not worth it.

Sadie also mentioned that self-directed professional development becomes hard when there are a lack of resources, “Relevant professional development is harder to find as we transition more to project-based learning and STEM [science, technology, engineering, and math] activities. I am usually able to find at least one idea in any training session but as our school becomes more specialized this is going to be harder.” Blake faced a similar barrier to deciding how to meet his goal or becoming a better leader, “There's not going to be any administration-like growth on campus here for that.” Both of these teachers had set the goal to self-direct their learning, but were encountering challenges to the process when the resources to support teachers in their learning are unavailable.
Blake noted previously his administration’s reluctance to allow him to go off campus to get informal training at other schools also served as a barrier to choosing a learning activity that would potentially help him learn to become a better leader. His administration allowed him to go off campus to attend a teacher leadership conference, but was more hesitant to send him off-campus to observe another school. He mentioned this in his interview:

Namely, there was an instance where our site AVID [Advancement Via Individual Determination] team was supposed to go off campus and work with a middle school for recruitment, and it fell apart. It was clear there was no intention on the part of the administration to book this trip. That was frustrating for our team, as it essentially puts all of the placement for AVID 9 next year in question.

Kristen encountered similar reluctance from her administrator, “When [current principal] took over [former middle school where she worked] he was looking sideways at this activity because it wasn’t something that was part of the components of the effective lesson.” Courtney also discussed time as a factor hindering her process of deciding what to learn and how to achieve her goal. She described:

I guess just not having enough time to devote to it. Because I would love to read just everything I could find about it and just become an expert in my own right about it. At the same time, meeting the other obligations that I have. I would say time is the biggest barrier there.

These barriers are interesting and necessary to note in the process these teachers encountered to achieve their professional learning goal.

**Applying their learning.** Tough (1967) found that people who self-direct their learning might also decide as a learning activity to learn by practice, experimentation, or, in other words,
as a trial and error process. In this study, teachers reported this step as a necessary yet separate stage in their self-directed learning process. For instance, as Felipe pursued his goal of integrating technology into his classroom, he would learn about various tools from the activities described above, but then “play with it, try to figure out how to use it.” His reasoning for applying his learning is, as he said, “I want to pick it apart and see what it can do.” In Evelyn’s case, her goal of trying to teach using the instructional model of project-based learning, she mentioned, “In fact one of the projects that we did hands on there, I plan on in two weeks bringing into the class and doing it. I am kind of taking some of those and practicing them in here.” Kevin felt the same way. While learning to take a more educational leadership role, he said, “During football season, I was attending football games as far as extra eyes and ears from a supervision standpoint.” By doing so, he felt these moments were opportunities to apply his learning from his graduate program. Luther thought much like Felipe. He stated, “If I go to a training, I want to implement it.” For Madelyn, she felt without applying her learning to her practice she could not sufficiently learn it. For example, she noted in her interview, “For me none of it really comes to life for me until I do it.” Likewise, Sadie talked about the need to apply her learning, “I may have tweaked a little bit to make it [the content and strategies] more conducive to what I want I want to do.” As Blake reached out to others for help in his leadership role, he commented that he needed to try it out and see how it works, “It's just that trial and error process of well this school’s program didn't work and I have to evolve this.” Courtney saw the need to apply her learning of improving the literacy of her students as well, “Yeah, in order to—I want to complete more coursework so that I can apply it to my classroom in order to help get them to the level they need to be.” While self-directed learning theory postulates that often learners who plan their own learning will decide to learn by practice (e.g., for one to learn tennis,
they need to go practice tennis), in the case of teachers in this study, they decided what to learn
to reach their goal, but due to the practical nature of the teaching profession, all of the teachers
felt the need to apply what they learned to their own individual contexts to see how it would
work in their classrooms with their students. In this way, this step served as a self-assessment for
the teachers to determine how and to what degree they were reaching their professional learning
goal(s).

Encountering barriers to learning. Much like the last step, Luther faced a barrier in
applying his learning, which was to integrate technology. He attributed a lack of resources as a
barrier for him to apply his new learning, “I haven't used it [newly acquired learning] yet because
I don't have the technology.” Most of the teachers’ barriers when applying their learning were
that they were unsuccessful in achieving their goal. For example, Felipe mentioned that he tried
different tools until he would, “find its limitations usually break it to the point where I realize
that this tool is just not enough.” While this facilitated and furthered his learning, it was also a
barrier in that his application did not always produce the desired results and therefore caused him
to begin anew the process. Evelyn felt the same way commenting, “I'm trying, and that project
that we did, I needed to find a better way to assess it.” Kevin felt unsupported when he tried to
make sense of his learning. He stated, “There is no actual class to say well how does this work.”
Blake and Courtney also felt as others did. Blake revealed this when he stated, “it's just that trial
and error process of well this school’s program didn't work and I have to evolve this” and
Courtney experienced this same barrier, “when you are trying to incorporate it in real life and it
is like, wow that did not go well.” These quotes all demonstrate the greatest challenge faced in
the application of learning stage was the realization that their learning was not successful.
Both Sadie and Kristen felt the greatest barrier to applying their newly acquired learning was the lack of feedback and follow-up from administrators, instructional coaches, or peers to help guide them in their assessment of their practice. For example, Kristen stated:

In that mid-cycle review, we never discussed it. We never discussed it. So it is just another hoop to jump through, which is kind of disheartening because the idea of treating professionals like us to allow us to have self-guided professional development. That is beautiful on paper. But you are kind of off on your lonesome and you do not get to share any cool stuff with anybody unless you are running up to them and saying this is what we are doing. Then you kind of feel like a 3rd grader like “look at me.” It would be nice to have these conversations.

Likewise, Sadie stated after attending conferences of her choice:

How do I test to see if it really was of value because that is a lot of time and a lot of money at the district level, but how do I know I am getting the bang for my buck? If there was anything, I would be critical of its follow-up. No one ever comes out and observes to see you use it.

Both of these teachers felt the need to have peer assistance in this critical stage of applying their learning to practice. Overall, teachers described a lack of resources such as lack of peer support and tools as well as failures to achieve their goal as barrier in this stage to their learning.

**Reflecting on the process.** Once teachers had applied their newly acquired learning to the classroom, they took time to reflect on the process. The process then became iterative because the reflection served as a catalyst to re-engage in the process by either refining the goal, deciding upon new learning activities, or applying their learning in different ways. For instance, Felipe discussed his process after trying to integrate new technological tools:
I would find different tools to facilitate it and then play with it, try to figure out how to use it, and then I would find its limitations, usually break it to the point where I realize that this tool is just not enough.

Felipe sought different learning tools, experimented with them in his practice, and discovered through that process limitations and that the tool was not meeting his goal or as he put it, “is just not enough.” The reflection stage facilitated Felipe’s next steps. This can be seen when he said, “It turns out it's not what I wanted, ditch it, find another one.” He did not stop the learning process when it did not work. Instead, Felipe looked for new tools and new ways to learn about them. Thus, Felipe’s reflection that the tool did not work transitioned him back into the process of looking for new tools, which then lead him to other learning activities to learn about other tools that he can then apply and reflect on. Furthermore, this process helped to refine the learning goal. Felipe shared how, when he first engaged in this process, that his goal was too broad. Because of the iterative nature of this process, the goal he originally created became more focused:

That was just a habit I had when it came to professional learning. Okay, I want to do something in my class, find a tool that does it, and learn how to use it. That has been the process the whole time and I really didn’t have a direction. Now I feel I have a direction; now I feel I have a focus, and I can stick to that.

The process of choosing a goal, deciding how to learn how to achieve the goal, applying that learning, and then reflecting on it, lead Felipe and others to nuance the goal and make it more focused to lead him to a clearer conception of how to achieve the professional learning goal.

After Evelyn experimented with project-based learning in one of her units she found, “I'm trying, and that project that we did, I needed to find a better way to assess it.” It was this
reflection that led her to set this as her new goal and to go back through the learning process to decide what activities she needed to engage with to learn how to assess project-based learning. She described the process in this way:

Now, I know before you assign a project, you need to have a solid rubric. But I got that because I am like where did yours fall short? Then I went and observed another class. Like the school will cover me for a day so I can observe a school that is totally project-based learning, and I am like, oh they have rubrics. They actually have written rubrics that they handed the kids that were on their Google Classroom.

Her explanation of her learning process highlighted the iterative process. She set a goal at the beginning of the year to use project-based learning. She found methods like collaborating with peers or reading source materials. She applied it, and then she also received some unanticipated help from her principal who made her aware of her need to find a way to assess this new method of instruction. This helped her to nuance her goal, decide to observe other teachers, and read the book her principal suggested that would give her new ideas to apply and reflect on. Sadie explicitly described her own process:

If I don't know how to do something, how do I normally—I watch somebody. I listen to a tutorial, I watch somebody, I try it, and then I see where I make my mistakes and then I go back and watch. What am I missing?

The phrase “go back” exemplifies the re-engagement with the self-directed learning process and its iterative nature.

Kristen’s reflection led her to try a different way to apply her learning to meet her goal of helping her students to develop a growth mindset,
Instead of having it be something just done on Thursdays and Fridays, maybe try to incorporate the mindfulness into the lesson more effectively instead of it be something we just go here and there with. Learn how to masterfully weave it through my lessons. I have not done that. That would be a good thing to work on.

In Luther’s case, reflection was necessary for him to know if his efforts to learn were fruitful. He said,

That is the process that I usually go through is once it is something I can use, I try it, I reflect on it, and make sure it wasn't my fault on the delivery or it didn't match the skill set that I was trying to get them to master and that is how I know the training worked or not.

Finally, Blake’s example further demonstrated the iterative cycle of self-directed PD. Blake was asked at the beginning of the year to be the ninth grade coordinator. As mentioned above, because of this appointment, he began searching for avenues and activities to learn how to be an effective teacher leader. In his interview, he mentioned that he thought he was doing a good job at being a coordinator, but there was an event that showed him he was not meeting his goal:

A lot of it was here I am, I'm doing what I think is a good job, and then I learned probably around November—oh no! They [two teachers in the department] have been going to [administrator], my supervisor, all quarter freaking out about, “We don't know how to do this. We've talked to him. We just don't want to stir the waters” and I learned that the view from underneath me—even though I thought everything was cool— I'm doing a good job, I'm communicating, I'm emailing, I'm doing weekly check-ups and literally the response was, “We are terrified of this man. He is—we don't want to stir the water. It seems to be his way or the highway,” which is so not even me and I can't even
stress that enough. So in that I was like literally I was sitting in a meeting when I was told that, “Oh, they were terrified of—they didn’t want to talk to you. They don't want to stir the waters” and I'm like oh, everything I thought I was doing well... it was the opposite. Like, none of—here I was with this list of what I was doing well: I’m emailing, I'm checking up, I'm having bi-monthly meetings, we're all coming together, and literally those are things I thought they were working and then I learned I needed to scrap everything. None of that was working.

Blake reflected and saw what he learned and applied previously from other schools was not working when he applied it. He even mentioned his prior learning activities from other schools and implied that he had been applying those things to his practice of being a better teacher leader:

But I've been told that “This works” and “We do it at our school” and “This works fine” and no, it wasn't even close to being able to work here…. So, literally, at the semester, I scrapped everything and started over and rebuilt almost everything I was doing because it was wrong.

When I interviewed Blake, he expressed how he was working on refining his goal and, through peer assistance, was planning on attending an event organized by others to help him again try to become an effective teacher leader:

I think that was too lax with what was required at the beginning of the year, which led to too much confusion. I take responsibility for that. Hey, this is my fault. I wanted to fall back into: I’m like you. I’m not your boss. I’m not your supervisor. Like we’re all friends here. That’s not what needed to be done especially since half of the people doing the curriculum, it’s their first year doing it. I needed to be more hands-on and part of that….I
need to be more involved and again I think based on how this conference would go on

Wednesday that probably will change.

Since Blake did not have a chance to see the application of his leadership in action (i.e., he did not mention going to observe the instruction of his colleagues for whom he supervised and provided leadership), he was able to self-assess whether his professional learning of teacher leadership was effective only through the comments of his supervisors and the indirect comments of his peers. While others seemed to reflect on their practice as it happened in their classroom, Blake’s reflections stemmed from peer feedback because of the nature of his goal.

To recapitulate, after applying their new learning to their practice, the teachers in this stage reflected on what was effective and what was ineffective and from these reflections re-engaged in the process again by either (a) refining their goal, (b) choosing a new learning activity, or (c) deciding if the way the learning was applied needs to be done differently to achieve different results. This is the process whereby teachers self-directed their own professional development in this study.

What Do Teachers’ Practices Look Like at the Beginning and End of a Self-Directed Professional Development Process?

This section will describe teachers’ practices during the course of their engagement in the above-mentioned process. This section is organized in the following manner. Aspects of each teacher’s practice (n = 17) will be individually described (i.e., the standards and indicators that comprise the Teacher Practice Evaluation Rubric [TPER]) while considering their Self Directed Learning Readiness Scale (SDLRS) and narrative aspects of what occurred during their self-directed learning process including their professional learning goals.
Table 6

*Blake’s Statistics by Theme Joint Display*

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blake</td>
<td>Self-Directed Professional Learning Goal</td>
<td>114 (Mid)</td>
</tr>
</tbody>
</table>

**Self-Directed Professional Learning Goal**

How to fulfill a more leadership role amongst peers. So, that was kind of my goal because I’ve never done something like this before.

<table>
<thead>
<tr>
<th>Standard 1</th>
<th>Indicator 3</th>
<th>Standard 1</th>
<th>Indicator 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning</td>
<td>End</td>
<td>Beginning</td>
<td>End</td>
</tr>
<tr>
<td>2.76</td>
<td>3.00</td>
<td>2.25</td>
<td>3.00</td>
</tr>
</tbody>
</table>

**Reflecting on the process facilitated further learning**

Now being that instructional leader… I need to be more consciously aware—hey, this is your role. You need to be more active in understanding what's working and not working [within the grade level and its implementation of the curriculum]. None of that was working because one of the people under me wasn't doing anything, two of the people under me are terrified to talk to me, and they were changing things to the curriculum without saying anything, and then there's me thinking everything was fine. So, literally, at the semester, I scrapped everything and started over and rebuilt almost every everything I was doing because it was wrong.

When I was doing this [being the ninth grade coordinator]—first of all, I literally took the position—hey look we all teach differently. It's fine!... I thought I was conveying that [idea] but...that doesn't work. That is not helpful to anybody because I thought I was being generous and what was happening was just a lot of confusion.

I think if I was to do it again from the beginning, if I was to do it different next year, if I was coming back next year, it would be like everybody's second year but even then be more hands-on from the beginning.
Blake’s SDLRS score was 114, which—compared to the rest of the sample and their scores—fell in the middle of the range (see Table 6). Blake had higher mean scores at the end of the study for Standard 1, Indicators 3 and 4 compared to the lesson plan collected at the beginning of the study. These indicators both focus on how teachers connect new learning to prior knowledge and experiences. Specifically, Indicator 3 on the rubric assessed how teachers make clear the purpose and relevance for new learning and Indicator 4 examined how teachers provided opportunities to build on or challenge initial understandings. The focus of Blake’s self-directed PD involved teacher leadership, specifically “how to fulfill a more leadership role amongst peers. So, that was kind of my goal because I’ve never done something like this before.” During Blake’s interview, he mentioned frequently sentiments similar to this one, “now being that instructional leader…I need to be more consciously aware—hey, this is your role. You need to be more active in understanding what's working and not working [within the grade level and its implementation of the curriculum].” Much of Blake’s struggles were that he thought, as a result of his leadership, his ninth grade team were all unified in their purpose in teaching the same curriculum. However, he quickly learned early in the year that:

None of that was working because one of the people under me wasn't doing anything, two of the people under me are terrified to talk to me, and they were changing things to the curriculum without saying anything, and then there's me thinking everything was fine. So, literally, at the semester, I scrapped everything and started over and rebuilt almost everything I was doing because it was wrong

Thus, Blake was struggling to make his purpose clear to his ninth grade colleagues. His reflections on his professional learning led him to realize:
When I was doing this [being the ninth grade coordinator]—first of all, I literally took the position—hey look we all teach differently. It's fine![...]I thought I was conveying that [idea] but […] that doesn't work. That is not helpful to anybody because I thought I was being generous and what was happening was just a lot of confusion.

Ultimately, Blake demonstrated higher levels in making clear the purpose and relevance for learning (i.e., Standard 1, Indicator 3), which was exactly what he was learning to do more effectively among his colleagues as a teacher leader. He also demonstrated higher levels in the second lesson plan in how to provide opportunities to build on or challenge initial understandings. He commented further in his reflection on how he would improve as an instructional leader, “I think if I was to do it again from the beginning, if I was to do it different next year, if I was coming back next year, it would be like everybody's second year but even then be more hands-on from the beginning.” Thus, Blake was learning how to help his colleagues by implementing a strategy (i.e., being more hands-on) that might have helped build on or challenge his colleagues’ understandings of how to more effectively implement the ninth grade curriculum. Therefore, one explanation for why Blake might have demonstrated higher mean scores under this standard and among these two indicators might have been because of his ability to reflect on his experiences that he was having serving as a teacher leader to his colleagues that he was learning to make clearer his purpose for what needed to be learned and done and being more “hands-on” may have transferred over to how he taught his own K-12 students.
Courtney’s Statistics by Theme Joint Display

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courtney</td>
<td>Self-Directed Professional Learning Goal</td>
<td>107 (Low)</td>
</tr>
<tr>
<td></td>
<td>Setting goals based on a specific impetus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I have not been able to spend much time on my</td>
<td></td>
</tr>
<tr>
<td></td>
<td>professional learning this year.</td>
<td></td>
</tr>
</tbody>
</table>

Courtney’s SLDRS score was in the lower range of the scores compared to the group (see Table 7). Her professional learning goal was to help improve the literacy abilities of her students. When asked about the self-directed PD process, she indicated, “I have not been able to spend much time on my professional learning this year.” Therefore, one reason she had lower mean scores for her practice according to the TPER might be explained in that she did not engage in the self-directed learning process as often as she indicated in her interview or she required further engagement and more iterations of the self-directed process.

Fiona’s Statistics by Theme Joint Display

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiona</td>
<td>Self-Directed Professional Learning Goal</td>
<td>131 (High)</td>
</tr>
<tr>
<td></td>
<td>I want to increase student proficiency on the Evaluate test by 6%.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard 3 Indicator 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard 3 Indicator 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td>2.80</td>
<td>3.00</td>
</tr>
</tbody>
</table>

Reflecting on the process facilitated further learning Mostly data analysis. Since we do testing each month, I have been able to use that [sic] data to help drive my instruction.
Fiona’s SDLRS score of a 131 fell in the higher range of the scores compared to the group. She also had higher mean scores in aspects of her practice based on the TPER (see Table 8). Fiona had slightly higher mean scores at the end of the study on Indicator 1 on Standard 3. This indicator described how the teacher provided extended opportunities for discourse. Her self-directed PD goal was much like Courtney’s, which was to improve her students’ literacy abilities, but Fiona specifically wanted to demonstrate her students achievement through a formative assessment given annually at her school. When asked about her self-directed professional learning this year, she discussed how she spent most of her time choosing to learn about, “Mostly data analysis. Since we do testing each month, I have been able to use that [sic] data to help drive my instruction.” Her focus on trying to help herself and her students track and reflect on their assessment data throughout the year may explain the higher score in providing opportunities for student discourse since she highlighted in her lesson plan opportunities for students to think critically and discuss with her and their peers about their assessment data.

Table 9

_Harrison’s Statistics by Theme Joint Display_

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harrison</td>
<td>Self-Directed Professional Learning Goal</td>
<td>129 (High)</td>
</tr>
<tr>
<td></td>
<td>My professional learning goal for this year is too increase student performance on a retake of the ACT test by as much as 7%.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard 2 Indicator 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning End</td>
<td>3.00 3.50</td>
</tr>
<tr>
<td></td>
<td>Setting goals based on a specific impetus/Applying learning to practice</td>
<td>My professional learning goal has been data driven and linked in to seeing how my students will apply test-taking strategies.</td>
</tr>
</tbody>
</table>
Harrison’s SDLRS score of 129 was also in the higher range like Fiona’s score. He did have higher mean scores at the end of the study in aspects of his practice according to the TPER (see Table 9). Harrison had higher mean scores at the end of the study on Indicator 1 on Standard 2, which examined how teachers provided high cognitive tasks to support deeper learning.

Harrison described his goal, “My professional learning goal has been data driven and linked in to seeing how my students will apply test-taking strategies.” He also commented that he applied his learning by teaching these “test-taking strategies” to his students. Thus, Harrison’s professional learning goal and application of learning of test-taking strategies may help explain why his ability to provide higher levels of cognitive tasks to support deeper level learning such as helping his students become more metacognitive as they take assessments.

Table 10

*Heather’s Statistics by Theme Joint Display*

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heather</td>
<td>Self-Directed Professional Learning Goal</td>
<td>134 (High)</td>
</tr>
<tr>
<td></td>
<td>I want to increase student proficiency on high stakes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>assessments by 5%.</td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td>Indicator 1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Beginning 2.80 End 3.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indicator 2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Beginning 2.80 End 3.00</td>
<td></td>
</tr>
<tr>
<td>Deciding</td>
<td>learning activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I participate in the Title I Conference where I had the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>opportunity to learn about different approaches and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>strategies for working in a Title I school. I have also</td>
<td></td>
</tr>
<tr>
<td></td>
<td>researched information about strategies for teaching</td>
<td></td>
</tr>
<tr>
<td></td>
<td>writing, and improving student reading.</td>
<td></td>
</tr>
<tr>
<td>Applying</td>
<td>learning to practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I did pick up a few writing strategies such as using</td>
<td></td>
</tr>
<tr>
<td></td>
<td>writing samples as models which I used in class.</td>
<td></td>
</tr>
</tbody>
</table>
Heather likewise had a higher SDLRS score of 134 compared to the rest of the group. She like the others had higher mean scores for aspects of her practice (see Table 10). Heather had higher mean scores for Indicators 1 and 2 under Standard 2 according to the TPER. Her self-directed learning goal was much like others who wanted to improve student literacy achievement as measured by high-stakes assessment. When asked about her professional learning this year, she responded, “I participated in the Title I Conference where I had the opportunity to learn about different approaches and strategies for working in a Title I school. I have also researched information about strategies for teaching writing, and improving student reading.” Additionally she stated, “I did pick up a few writing strategies such as using writing samples as models which I used in class.” Her choice of learning activities and application of her learning to her practice highlight explanations for her higher scores at the end of the study in providing deeper cognitive tasks, especially in writing. Having students analyze writing models is a high cognitive activity that she described learning this year from her self-directed professional learning. Thus, Fiona, Harrison, and Heather all showed higher levels in aspects of their practice after their involvement in aspects of the self-directed learning process.
Table 11

*Travis’s Statistics by Theme Joint Display*

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travis</td>
<td>Self-Directed Professional Learning Goal</td>
<td>123 (Mid)</td>
</tr>
<tr>
<td></td>
<td>Increase student achievement in terms of writing ability,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>more specifically, the ability to cite evidence and support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>with analysis with a 75% success rate.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 1</th>
<th>Indicator 3</th>
<th>Beginning</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2.56</td>
<td>2.75</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Setting goals based on a specific impetus</th>
<th>Increase student achievement in terms of writing ability, more specifically, the ability to cite evidence and support with analysis with a 75% success rate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciding upon learning activities</td>
<td>I've taken PD courses in classroom management, and BlendED learning PDE courses online. Both of these courses help to achieve my professional learning goal, since they help how I manage a classroom, and how I deliver content to students.</td>
</tr>
<tr>
<td>Applying learning to practice</td>
<td>The BlendED courses I took will be applied next year when we transition to digital learning.</td>
</tr>
<tr>
<td>Reflecting on the process facilitated further learning</td>
<td>I think I'm a much better teacher now at the end of the year, than I was at the beginning. Most of that comes from getting to know more about my students, but the professional learning plays a role in that as well.</td>
</tr>
</tbody>
</table>

Travis’s SDLRS score was in the mid-range of scores compared to the rest of the participant group (see Table 11). He also had a higher mean score in one aspect of his practice at the end of the study according to the TPER. Travis originally set a goal to self direct his professional learning to be able to, “increase student achievement in terms of writing ability, more specifically, the ability to cite evidence and support with analysis with a 75% success rate.” However, when asked about his self-directed professional learning, he explained that he did in fact attend, “numerous professional development courses this year” but most of them were
focused on “courses in classroom management, and BlendED learning PDE courses online.” In order to provide good instruction, a teacher needs to have good classroom management (Manning & Bucher, 2013). This was not a skill that was measured on the TPER rubric, which may explain why this aspect of his practice could not be measured by the TPER. However, Travis did have a higher score in making his purpose clear and the learning relevant for his students. Travis explained that some of the courses he has taken have helped him “deliver content to students” and he also wrote that he felt he was a, “a much better teacher now at the end of the year, than I was at the beginning. Most of that comes from getting to know more about my students, but the professional learning plays a role in that as well.” Overall, as a first year teacher, Travis reported that his learning has helped him deliver his content more effectively as well as get to know his student which can make teaching more purposeful and relevant. These insights from his self-directed learning process may explain the higher scores in that aspect of his practice at the end of the study compared to the beginning.

Table 12

Felipe’s Statistics by Theme Joint Display

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felipe</td>
<td></td>
<td>142 (High)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Self-Directed Professional Learning Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>My goal is to eventually have everything online so that a student can be in my class either physically or in the digital space and still get the same instruction.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Reflecting on the process facilitated further learning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I feel like I’ve reached a conclusion on where I want my professional learning to go now. I really didn’t have a direction. Now I feel I have a direction; now I feel I have a focus, and I can stick to that.</td>
</tr>
</tbody>
</table>

Felipe had the highest SDLRS score of the group. As discussed when reporting the findings for this study’s first research question, Felipe had engaged in the self-directed learning
process. His professional learning goal focused on creating a digital space for instruction for students in his class. However, his scores were lower for aspects of his practice at the end of the study according to the TPER (see Table 12). Some of his reflections may suggest why that might have been the case. Felipe commented:

I feel like I’ve reached a conclusion on where I want my professional learning to go now.
I really didn’t have a direction. Now I feel I have a direction; now I feel I have a focus, and I can stick to that.

The self-directed learning process was iterative for the participants who engaged in the process. Therefore, just because Felipe engaged in the process did not automatically mean his practice would show differences as a result. As in Blake’s case, he was found doing the process throughout this study more than once. It may be possible that Felipe engaged in the self-directed learning process, but the time of data collection may have contributed to his lower end of study mean scores. His quote conveys how, as a result of his reflection, he had a clearer focus and was ready to reengage in the self-directed learning process. Had he had more time and continued in the process his outcomes may have been different.

Table 13

*Kristen’s Statistics by Theme Joint Display*

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kristen</td>
<td>Self-Directed Professional Learning Goal</td>
<td>133 (High)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My professional growth plan includes mindfulness, which has to do with meditation, yoga, and teaching the students growth mindset.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard 4</td>
<td>3.00</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Indicator 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting goals based on a specific impetus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Includes mindfulness which has to do with meditation, yoga, and teaching the students growth mindset</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
According to the SDLRS, Kristen self-directed readiness score was a 133, which was in the higher range of scores for the group. Kristen did show higher scores at the end of the study in aspects of her practice according to the TPER (see Table 13). Specifically, she was the only participant to have higher scores on Indicator 2 on Standard 4. This indicator focused on how a teacher structured opportunities for self-monitoring for his or her students. Kristen’s entire self-directed professional learning process focused on helping her students become more metacognitive by doing a professional learning plan that “includes mindfulness which has to do with meditation, yoga, and teaching the students growth mindset.” Because Kristen focused her professional learning efforts in this way, this may explain why this aspect of her practice was higher because that was the very aspect she was focusing on.
Madelyn was also a teacher who had higher SDLRS scores compared to the group. She was also among the majority of the teachers who had higher scores in aspects of her practice—specifically in providing higher cognitive tasks and assessment as measured by the TPER (see Table 14). Standard 2, Indicators 1 and 2 have been explained previously as indicators that focus on the level of cognition of the learning tasks provided by teachers, but she also had higher scores on Indicator 3 on Standard 5 which focused on how teachers generate evidence of student learning during an assessment. While Madelyn was a indecisive this past year on her...
professional learning goal between obtaining a National Board Certification (National Board for Professional Teaching Standards, 2018) or getting an additional degree in special education, she did speak about the professional learning habits she cultivated over her years as a veteran teacher that align with the self-directed learning process. A few aspects stood out as an explanation for her growth in practice on these indicators. First, her growth in cognitive tasks might be explained by her choice of learning activities. She explained, “When I want to learn about something usually I look for current research. I go for current peer-reviewed research is where I like to look.” Her habit to seek out information from quality professional sources may explain how she continues to provide high cognitive tasks for her students. On the other hand, she also made this comment during her interview that highlights her passion for learning more about effective assessment practices:

We probably have 80 kids in our sixth grade class of 300 that came to us with an RTI folder. With my kids, sixty-plus percent—I just did their STAR Test the other day—67% I want to say or 68% of my kids are fully three grade levels behind in reading. Back when I first became a teacher that right there would have been an indication that this kid needed to be tested for special education. Now that, as I have understood, that the guidelines for testing have changed, so I would like to be involved in understanding that better. How are kids coming to sixth grade reading at a second grade level having earned a B in reading in fifth grade? How is that possible? I think some of those questions will be answered if I go that route for professional development in the future and that definitely does interest me.
As Madelyn continued to strive to understand assessment and how to better assess student understanding, this may explain why she had higher scores in her professional practice in assessment.

Table 15

Rachel’s Statistics by Theme Joint Display

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rachel</td>
<td>128 (Mid)</td>
<td></td>
</tr>
</tbody>
</table>

Self-Directed Professional Learning Goal

I want to increase student proficiency on the ACT test by 5%.

<table>
<thead>
<tr>
<th>Standard 1 Indicator 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning</td>
</tr>
<tr>
<td>1.71</td>
</tr>
</tbody>
</table>

Reflecting on the process facilitated learning

Background knowledge is vital to understanding some of the passages

I also realized that background knowledge includes the fact that our ELL [English language learner] students don't know inches, yards, feet, gallon, quart, ounces, etc.

Rachel’s self-directed readiness score was 128, which was in the upper-mid range of scores compared to the group. Rachel also wanted to focus on increasing student proficiency on high-stakes assessment. Much like the others in this section, Rachel also had a higher level of being able to connect prior experience and knowledge to new learning (i.e., Standard 1) according to the TPER (see Table 15). Rachel decided to pursue her master’s this year in literacy as her self-directed professional learning activity. As she reflected on her learning from her program, she recognized that, “background knowledge is vital to understanding some of the passages” and “I also realized that background knowledge includes the fact that our ELL [English language learner] students don't know inches, yards, feet, gallon, quart, ounces, etc.”

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Therefore, it is possible her learning activity to pursue a master’s may be a reason why she had higher scores in that aspect of her practice.

Table 16

*Natalie’s Statistics by Theme Joint Display*

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natalie</td>
<td>Self-Directed Professional Learning Goal</td>
<td>132 (High)</td>
</tr>
<tr>
<td></td>
<td>Based on the data that 62% of my students have mastered standard RL.9-10.1 “Cite textual evidence from literary text to support explicit meaning” as measured by Evaluate, my goal is that by the end of the year 75% of my students will have mastered this standard.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard 2, Indicator 1, and 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning: 3.20, End: 3.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setting goals based on some specific impetus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some of the professional learning sessions were Teach Like a Champion [Lemov, 2010] workshops, new teacher symposiums, and education speaker events. Each of these sessions focused on different aspects of teaching practices. A few of the workshops that I attended were aligned with my professional learning goal because they focused on promoting student interaction with text (question asking, annotating, analysis, etc.).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applying learning to practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I was able to incorporate some of the techniques I practiced in the workshops such as questioning, prediction, and text annotations. Students made predictions prior to engaging with a new text, they annotated the text while reading, and they asked &quot;how&quot; and &quot;why&quot; questions after reading a text.</td>
<td></td>
</tr>
</tbody>
</table>

Natalie, much like others, demonstrated higher scores in aspects of her practice specifically on Standard 2 which examines the level of cognitive task(s) teachers provide their students to support deeper learning as measured by the TPER (see Table 16). Natalie was in the higher range with her SDLRS compared to the group. Her professional learning focus was similar to Fiona where she sought to improve student achievement through a building-level
formative assessment measure. When asked to describe her professional learning throughout the course of this study, she commented:

Some of the professional learning sessions were Teach Like a Champion [Lemov, 2010] workshops, new teacher symposiums, and education speaker events. Each of these sessions focused on different aspects of teaching practices. A few of the workshops that I attended were aligned with my professional learning goal because they focused on promoting student interaction with text (question asking, annotating, analysis, etc.).

Her focus on increasing students’ ability to critically interact with the texts she provided in her classes may be an explanation for her higher scores on providing higher cognitive tasks.

Furthermore, she applied what she learned to her practice:

I was able to incorporate some of the techniques I practiced in the workshops such as questioning, prediction, and text annotations. Students made predictions prior to engaging with a new text, they annotated the text while reading, and they asked "how" and "why" questions after reading a text.

Her application of her learning regarding having students think about the text using “how” and “why” questions support analytical thinking, which may be an explanatory factor in why she had higher scores in this aspect of her practice at the end of the study.
Sadie’s Statistics by Theme Joint Display

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sadie</td>
<td>Self-Directed Professional Learning Goal</td>
<td>100 (Low)</td>
</tr>
</tbody>
</table>

Now, we are getting ready to become a magnet school so our focus is now going to be on cross-curricular projects—project-based learning. I need to come up to speed on that.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Indicator</th>
<th>Beginning</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>1.60</td>
<td>3.00</td>
</tr>
</tbody>
</table>

Sadie’s SDLRS was the lowest score in the range (100). Sadie also had higher scores in aspects of her practice according to the TPER in providing opportunities for student discourse (i.e., Standard 3), in providing higher cognitive tasks (i.e., Standard 2, Indicator 2), and in making clear the relevance for new learning (i.e., Standard 1, Indicator 3). The higher scores may be explained by what she did for their self-directed professional development (see Table 17). She focused on better understanding how to teach using a project-based learning model. This model makes learning relevant by engaging students in real-world problems (Arends, 2015). This model also engages student in higher order thinking while also providing an environment where students collaborate often about their projects. This learning focus may provide a rationale why Sadie had higher scores in those aspects of her practice and specifically on those indicators as this was her professional learning focus this year.
Table 18

_Evelyn’s Statistics by Theme Joint Display_

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evelyn</td>
<td>Self-Directed Professional Learning Goal</td>
<td>128 (Mid)</td>
</tr>
<tr>
<td></td>
<td>My goal now is project-based learning.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Standard 2</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Indicator 2</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td>2.25</td>
<td>3.00</td>
</tr>
<tr>
<td>Setting goals based on a specific impetus</td>
<td>At the beginning of the year, my goal was technology. To be able to use technology in the classroom at all of that. I have changed at goal. My goal now is project-based learning.</td>
<td></td>
</tr>
</tbody>
</table>

Evelyn had an upper-mid range score of 128 on the SDLRS (see Table 18). Evelyn had higher ending scores in providing higher cognitive tasks (i.e., Standard 2, Indicator 2) according to the TPER. The higher scores may be also explained by what she did for their self-directed professional development. She also focused on better understanding how to teach using a project-based learning model and as explained with Sadie, this model makes learning relevant by engaging students in real-world problems and engages student in higher order thinking (Arends, 2015). This learning focus may provide a rationale why she had higher scores in those aspects of her practice.
Table 19

**Madison’s Statistics by Theme Joint Display**

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madison</td>
<td>Self-Directed Professional Learning Goal</td>
<td>115 (Mid)</td>
</tr>
<tr>
<td></td>
<td>I want to increase student ability to write warrants by 3% per group this school year.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard 2 Indicator 1</td>
<td>Standard 2 Indicator 2</td>
</tr>
<tr>
<td></td>
<td>Beginning</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td>2.83</td>
<td>3.27</td>
</tr>
<tr>
<td>Reflecting on the process facilitated learning</td>
<td>My master's has been very helpful with working with lower level children and scaffolding.</td>
<td></td>
</tr>
</tbody>
</table>

Madison had a middle of the range SDLRS score of 115. Madison set her goal to focus on improving her students’ ability to write warrants in their arguments. Madison had higher scores in aspects of her at the end of the study in providing higher cognitive tasks according to the TPER (see Table 19). When asked about this, she stated, “My master's has been very helpful with working with lower level children and scaffolding.” Thus, much like Rachel, Madison’s graduate work may explain her higher scores.
Table 20  

_Hannah’s Statistics by Theme Joint Display_

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hannah</td>
<td><strong>Self-Directed Professional Learning Goal</strong></td>
<td>123 (Mid)</td>
</tr>
<tr>
<td></td>
<td>I want students to increase in their ability to answer written response questions using the RACE strategy by 40%.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Standard 3</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Indicator 1</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td>1.60</td>
<td>2.00</td>
</tr>
<tr>
<td></td>
<td>Setting goals based on a specific impetus</td>
<td>I finished up my TESOL endorsement.</td>
</tr>
</tbody>
</table>

Hannah’s SDLRS score was also in the middle of the range (123). She focused her professional learning this year on having her students improve their ability to answer written response questions through the use of a literacy strategy. She had higher scores in aspects of her practice on Standard 3 of the TPER, which focuses on how teachers provide opportunities to have extended discourse. Hannah (see Table 20) pursued a Teaching English to Speakers of Other Languages (TESOL) endorsement, which focuses on how teachers provide opportunities to have extended discourse. She may have learned in her program and may explain the higher scores in that aspect of her practice.
Kevin’s Statistics by Theme Joint Display

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kevin</td>
<td>107 (Low)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-Directed Professional Learning Goal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>My [professional learning goal] is in the direction of administration more or less.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indicator 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning</td>
<td>End</td>
</tr>
<tr>
<td>Standard 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicator 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginning</td>
<td></td>
<td>End</td>
</tr>
<tr>
<td>2.50</td>
<td>2.83</td>
<td>2.50</td>
</tr>
<tr>
<td>2.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflecting on the process facilitated learning</td>
<td>I just want to have more input in the direction of instruction.</td>
<td></td>
</tr>
</tbody>
</table>

Kevin, on the other hand, had a low-range self-directed readiness score (107). He also decided to pursue graduate work as a part of his self-directed professional development. Kevin (see Table 21) had higher practice mean scores in the area of providing higher cognitive tasks according to the TPER. While his professional learning goal was focused on pursing a graduate degree in administration, he did comment in his interview that his true purpose for achieving this degree was, “to have more input in the direction of instruction.” His comment highlights the desire to improve instruction within the school as a whole, which may have contributed to focus his learning not only on how to do so in his classroom, but as an administrator who will eventually lead the instruction of his school.
Table 22

*Luther’s Statistics by Theme Joint Display*

<table>
<thead>
<tr>
<th>Name</th>
<th>Theme</th>
<th>SDLRS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luther</td>
<td>Self-Directed Professional Learning Goal</td>
<td>109 (Low)</td>
</tr>
<tr>
<td></td>
<td>I want to improve student reading comprehension on both</td>
<td></td>
</tr>
<tr>
<td></td>
<td>fiction and non-fiction texts.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Standard 5/Indicator 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beginning</td>
<td>End</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td>2.83</td>
</tr>
</tbody>
</table>

Setting goals based on a specific impetus

I think the other thing I need to do is to try to focus more on final projects because I’m starting to recycle the same ones and I need to start finding something different because I understand the value of needing to write a five-paragraph essay but one of the things that I learned in the business world is that there are very few five-paragraph essays floating around out there as sales tactics. It is presentations, it is PowerPoints, it is mock drawings, it is samples and examples, and it really doesn’t matter what the business is.

Luther was the final participant to have higher mean scores in aspects of his practice specifically in the ability to generate opportunities to collect evidence during his instruction (i.e., Standard 5, Indicator 3) according to the TPER at the end of the study (see Table 22). His self-directed readiness was similar to Kevin’s and fell in the lower range of scores (109). He chose to focus his professional learning on improving his students’ comprehension abilities. Luther commented earlier in the year when I conducted his interview that:

I think the other thing I need to do is to try to focus more on final projects because I’m starting to recycle the same ones and I need to start finding something different because I understand the value of needing to write a five-paragraph essay but one of the
things that I learned in the business world is that there are very few five-paragraph essays floating around out there as sales tactics. It is presentations, it is PowerPoints, it is mock drawings, it is samples and examples, and it really doesn’t matter what the business is.

Luther’s basic learning goal was to improve literacy instruction for his students, but as he engaged in the process, he discovered that there were aspects to improving his literacy instruction including assessment that he could learn more about and that he wanted to improve in his practice. His reason for wanting to look more closely at how he assessed students was, “For me, I have always been a big believer of giving kids some different avenues for being able to show me that they mastered the material.” Standard 5, Indicator 3 looks specifically for how teachers use “multiple and varied opportunities to generate evidence” which is exactly what Luther was focusing his professional learning on. This may explain the reason why, in his lesson plan at the end of the study, which was collected after his interview, he had higher scores in this area.

To summarize, there are a few important commonalities in the findings among the group that are pertinent to consider at the close of this chapter. First, all of the teachers in this study described engaging in the self-directed learning process through the iterative process and emergent model outlined in the beginning of the chapter. While nine participants described this process in detail through the semi-structured interviews, the other eight teacher participants were given a survey that had questions generated as a result of the emergent model discovered through the semi-structured interviews (see Appendix F). There were subtle variations to the way these teachers engaged in the self-directed process. For example, some teachers chose a goal based on problems in their practice, while others may have chosen their goals based on their school context or intrinsic interest. Another variant example was seen in Evelyn’s case. While others
may have self-selected their learning activities, Evelyn was given a great book to enhance her practice unexpectedly by her principal; nevertheless, she still decided to use that activity to learn and try to achieve her goal. She could have easily dismissed her principal’s mentoring. Therefore, while there are slight variations to the self-directed learning process, nonetheless, all the teachers in this study described participating in the four main steps outlined in the iterative model of choosing a goal, deciding upon learning activities, applying their learning to their practice, and reflecting on the process to facilitate further learning.

A second important commonality is that years of experience and self-directedness was not a prerequisite for teachers to engage in the process of self-directing their own professional learning. The assumption might be that first year teachers are more prone to need PD through PD providers (e.g., district leaders, teacher leaders, building-level administrators, etc.) and cannot self-direct. However, the first year teachers in this study successfully engaged in the process just as the veteran teachers did. Likewise, it might also be assumed that veteran teachers might be more set in their ways and not motivated to self-direct their own PD. However, the findings suggest that this was not the case. Furthermore, there might be the assumption that only teachers with high self-direction can self-direct their own PD. Once again, the findings suggest that the degree of teacher self-directness had no bearing or prediction on how well teachers could engage in the process of self-directing their own learning.

Finally, these findings suggest that there might be an emerging pattern regarding the teachers’ engagement in the self-directed learning process discovered in this study and their scores that measured their practice. Most teachers in this study had some aspect of their practice where they had a higher mean score at the end of the study compared to the beginning. While there were a few teachers where this was not the case, even then there was a speculative, but
strong, explanation that could explain possible reasons for this result. While this study certainly has its share of limitations regarding the scores that measured the teachers’ practices (see Chapter 5 for a fuller discussion of the limitations), there seems to be some emergent evidence, if only in the patterns provided here, worth exploring to examine whether this model can serve to effect teacher change.
Chapter 5: Discussion

The purpose of this study was to explore the process whereby English and math teachers self direct their professional development (PD) as well as describe their teaching practices while engaging in this process. In order to achieve that purpose, this study utilized grounded theory methods coupled with descriptive statistics. This section will discuss the significance of the findings from this study in light of previously-reviewed literature, other literature related to the findings, and this study’s theoretical framework. The section will be organized in the following manner: (1) the limitations of the study will be presented, (2) a brief summary of the major findings of this study will be provided, (3) a discussion of the findings in relation to previously-reviewed literature as well as other relevant literature are presented next, (4) the contributions of this study to theory are delineated, and finally (5) the implications of this study for practice, policy, and research are described.

Limitations

There is no perfect study and this study had its share of limitations. First and foremost, the use of the Teacher Practice Evaluation Rubric (TPER) was borrowed from the Department of Education in the state where the study was conducted and has not yet been validated. Therefore, the scores in this study need to be interpreted with caution as this tool still needs to be validated to support its use. This limitation is linked further with the limitation of the quality of the lesson plans as a proxy for measuring teacher practice. There are many aspects of a teacher’s practice that cannot always be described fully in a lesson plan. Likewise, the lesson plans collected at the end of the study were relatively shorter than the lesson plans collected at the beginning of the study. For example, the average lesson plan length at the beginning of the study was roughly 2.80 pages; whereas, at the end of the study, the average length was 2.05. Since the lesson plans
were collected at the end of the year and teachers may have begun to feel burnt out with their various tasks, this may have contributed to the shorter lesson plans and on the scores reported in this study. Therefore, future research should attempt to measure teacher practice through the use of observation and through multiple measures during a study. Observation may allow for capturing the full detail of a teacher’s practice rather than being limited by what they were willing to write out in detail in their lesson plans—especially at the end of the year.

Furthermore, collecting only two lesson plans or doing only two observations may limit a broader scope of teachers’ practices and may have influenced the scores reported in the findings. Many of the teachers in this study showed lower scores in other aspects of their practice at the end of the study compared to the beginning as indicated both by the limitations of the lesson plan and the TPER. Surely, this should not give cause to assume the teachers’ practices in this study were poorer at the end of the study compared to the beginning. Based on the context of the classroom for which the lesson was designed and delivered (the period number, the time of day, the demographics of students, etc.) and the context of the school coupled with the timing of the year (i.e., testing, the parameters of the unit plan, etc.), it becomes difficult to capture moments in the teachers’ practices that may indicate patterns of improvement or even provide a lesson plan that will show consistent practice from lesson to lesson. Because the contextual variables have changed in the moment these lesson plans were collected at the end of the study compared to the beginning, it should be noted that those contextual factors and changes may have been the reason the lesson plans and their respective scores were lower. For example, some of the teachers may have had a need in their lesson collected at the beginning of the study to provide more opportunities for student discourse in that lesson than the lesson collected at the end of the study. These challenges to capturing teachers’ practices lead to the recommendation that future research
should collect observational data and measure teachers’ practices more frequently to gain a clearer and more consistent view of teachers’ practices.

Moreover, the rubric used to measure teacher practice in this study was limited in capturing aspects of the teachers’ practices that were the focus of their professional learning. For example, Blake spent most of his professional learning this year focusing on teacher leadership development. The instructional rubric used in this study was limited in capturing how his professional learning developed him as a teacher leader. Future researchers studying self-directed PD may include differentiated rubrics for studies of self-directed professional development.

Additionally, the emergent self-directed professional development model came from the experiences of a small sample of secondary English and math teachers in a large urban district. Therefore, the findings are unique to the context in which they were generated. As a result, the transferability of this model of self-directed PD needs to be considered and examined within the context of future studies.

**Summary of Major Findings**

The first research question sought to understand the process whereby teachers, in the context where the study was conducted, self direct their own PD. Teachers were found self directing their learning in four interrelated stages. First, teachers would self-select a professional learning goal based on a specific impetus, which typically stemmed from a problem in their practice, the context of the schools where these teachers worked, and/or an intrinsic interest in developing certain aspects of their practice. After selecting a professional learning goal, teachers would seek out and decide upon various learning activities that would allow them to learn how to reach the professional goals they set. Teachers in this study usually sought assistance from their peers, read various literature (i.e., books or professional articles), observed other teachers, and/or
attended professional conferences of their choice as the learning activities to help them achieve their professional learning goals. While seeking out these learning activities, teachers encountered barriers to their learning such as lack of access to the resources they needed or disapproval from their building administration. While these barriers were present, it did not seem to deter the teachers from continuing in the process to self direct their learning. Consequently, the teachers in this study would then apply their learning to their practice as a way to self assess their learning or to determine whether what they learned was meeting their goal. This step naturally led teachers in this study into the final step in self directing their learning where they would reflect on the entire process. These reflections would serve as catalysts for either determining whether or not teachers met their professional learning goal or whether they needed to reengage in the process to continue to try and reach that goal or a refined version of the original goal.

The second research question, What do teachers’ practices look like at the beginning and end of a self-directed PD process?, sought to describe the teachers’ practices individually both at the beginning of the study and at the end of the study. The teachers’ practices were described based on their overall practice score using the TPER and by aspects of their practice based on individual standards and indicators of interest within the TPER. A majority of the teachers had lower or similar overall practice scores at the end of the study compared to the beginning of the study. However, those same teachers had higher scores in certain areas of their practice at the end of the study. There was also a small portion of the sample whose overall practice and aspects of their practice scores were higher at the end of the study than they were at the beginning. When the practice data of all these teachers were combined with their narrative qualitative data and survey data that described their self-directed PD process, the qualitative data added nuance to the
process teachers underwent to self direct their professional learning and what their practice looked like at the beginning and end of that process. There were also emerging patterns discovered when the qualitative and quantitative data were merged. For example, Kristen devoted much of her self-directed learning process to developing a growth mindset or developing metacognition with her students and this was also the area of her practice where she had higher scores at the end of the study than at the beginning. While examining causal relationships were outside the scope of this study, future research should explore whether there is a statistically significant relationship between the self-directed process and a measure of teachers’ practices.

In the next sections, these findings will be discussed in relation to: (a) the prior literature on teacher professional development and other relevant literature, (b) their contribution to self-directed learning theory and andragogy, and (d) their implications for teacher education practice, research, and policy.

Relationship to Reviewed Studies

The literature reviewed in this study concentrated on what specific design features or aspects of a PD model affected teacher practice. This body of literature was criticized in recent years for its lack of “causal explanations” (Opfer & Pedder, 2011, p. 35) in that these models did little to explain, “more nuanced understandings of what teachers do, what motivates them, and how they learn and grow” (Kennedy, 2016, p. 30). In order to begin this exploration, this study sought to understand what Kennedy (2016) asked for through explorations of the self-directed PD process, a PD model that prior literature has discovered teachers to be more motivated by (e.g., Colbert et al., 2008), and by exploring what teachers do to self direct their own PD and by describing their practice. This section will discuss how the findings from this study contribute to this body of literature.
**Effective design features of professional development.** This strand of literature focused on six unique design features that were found to enhance teacher learning. Those design features were broken into two categories: structural features, which described how the PD was designed, and core features, which described how the PD was implemented (Desimone et al., 2002; Garet et al., 2001). Structural features consisted of the type of PD which may have been a workshop setting or instructional coaching or a hybrid of both, duration of the PD which included how long a PD lasted and how often teachers engaged in it, and collective participation which described how much opportunity teachers would have to collaborate and participate in the PD. The core features of the PD comprised content, the topic of the PD; active participation, strategies that engaged the teachers in the content; and coherence, how the PD aligned to the work and context of the teachers participating in the PD.

However, there were some researchers who criticized Garet and his colleagues’ (2001) work that conceptualized these design features as factors that affected teacher learning. Opfer and Pedder (2011) argued that, “we [professional development researchers] are still unable to predict teacher learning based on these characteristics [the design features]” (p. 377) and Kennedy (2016) concurred that the research on design features were “unreliable predictors of program success” (p. 27). I also argued earlier in the literature review in chapter two that the research on PD design features were too ambiguously understood and this misunderstanding contributed to what Opfer and Pedder (2011) called an “epistemological fallacy” (p. 377) referencing the body of research conducted on the PD design features. Consequently, my review of the literature highlighted a need to explore Kennedy’s (2016) call to generate better ideas about teacher learning and in what ways PD can motivate, engage, and be meaningful for teachers.
Therefore, the contribution of this study is an initial exploration of the elements of self-directed PD specifically. The findings from this study not only highlight features of a model, but also extend the design features research by providing more of a conceptual model. The findings from this study, at least, begin to conceptualize how features of a PD model are interrelated and further research may be able to begin to assess how this model affects teacher change. This study also contributes to the literature by answering Kennedy’s call. Prior literature has already indicated that teachers prefer self-directed PD (Colbert et al., 2008). The findings from this study indicate how the emerging model of self-directed PD discovered in this study motivates teachers because they are given the autonomy to choose professional learning activities that are meaningful to them. For example, most of the teachers in this study chose professional learning goals based on concerns and aspects of their practice that were meaningful to them. Thus, self-directed PD can be a potential model to motivate teachers to engage in their professional learning.

The nature of self-directed professional development. The literature to date on self-directed PD has provided various examples of what teachers have done to self-direct their professional learning. For example, Visser and colleagues (2014) found that teachers used Twitter as a form of self-directed PD and Carpenter (2016) examined Edcamps as another form of self-directed PD. While these studies confirmed that teachers preferred these forms of PD, they did little to explain the process of what teachers did within these types of self-directed PD programs that would provide insight to how these programs contributed to teacher learning. The model that emerged from this study contributes to the body of literature on self-directed PD by filling that gap. This model may now provide classifications of these other forms of self-directed PD (i.e., Twitter and Edcamps) that they are namely learning activities selected by teachers in
their process of achieving a self-directed learning goal. Additionally, Lom and Sullenger (2011) admonished, “While becoming recognized as a legitimate form of professional development, we know little about the nature of self-directed professional development that takes place in informal contexts” (p. 67). Again, the findings of this study fill that gap as this emerging model provides insight into what teachers actually do to self-direct their learning.

The findings from this study also confirm what Mushayikwa and Lubben (2009) found which is that teachers engage in self-directed PD ultimately to improve their efficacy both in the classroom and outside of it. Many of the teachers’ rationales for choosing to engage in self-directed PD were to better serve their students and school community. For example, after originally deciding upon a professional learning plan that would help her achieve a raise in pay, Madelyn ultimately changed her goal and professional learning plan to focus on a degree in special education which would help her serve her school and community better because they struggled with helping their students who are currently underachieving in literacy, according to Madelyn. Her example especially highlights that even in the socio-political context of education where budget deficits and lower pay (Strauss, 2018) are pervasive, teachers still seem to engage in their own professional learning not just to mitigate that context, but to help their students.

Considering the sociopolitical context, some of the findings of this study highlight that the context where teachers’ learning is enacted should also be considered. Evelyn and Sadie chose their professional learning goal of project-based learning mostly because their building principal chose to make that instructional shift. As mentioned above, Madelyn originally chose her goal based on the change in the district’s requirements for advancement of teachers’ salaries. Luther also was required by his administrators to observe other teachers’ classroom as a school-wide PD initiative. However, all of these teachers were successful at mitigating the self-directed
learning process within this context. Research has found that teachers have mixed responses to policy changes and sometimes teachers, “tend to adapt policies according to their students’ needs and their particular classroom context” (Battey et al., 2013, p. 6). Additionally, when policy aligns to teacher beliefs, research also found that it maximizes a teacher’s work (Battey et al., 2013). This seemed to resemble Evelyn’s, Sadie’s, and Luther’s experiences in this study. They used the policies coming from their building administration to benefit their self-directed learning process. Battey and his colleagues (2013) also discussed when policy change does not align with teachers’ beliefs it can create teacher resistance. The recruitment efforts of this study highlighted that resistance. The district where this study was conducted allowed for teachers to self-direct their own PD based on a change in their PD policy, but they attempted to motivate teachers to do so because there was also a fiscal attachment to the PD plan. Based on what teachers did or did not do would affect their salary. Unfortunately, the district created changes in this policy after it was implemented such as not accepting prior PD efforts of teachers that they said they would honor (citation withheld to preserve confidentiality). This created mistrust among the teachers and many teachers decided not to pursue PD efforts as a result. Consequently, this explains partially why recruitment efforts only produced 17 willing participants even though all secondary schools were solicited for teachers to participate in a district with a total of roughly 30,000 K-12 teachers. Thus, when studying PD, the sociopolitical context cannot be ignored as this study highlights some of the ways that context can shape and affect teacher learning.

Many teachers in this study also commented that their preferred method of learning or preferred learning activity was to observe other teachers and learning by doing. This mirrors much of Bandura’s (1997) work on enactive and vicarious learning where enactive learning is learning by doing and vicarious learning is learning by observing. Bruning, Shraw, and Norby
(2011) argued that both of these methods of learning enable a learner to learn a skill. Enactive learning allows the learner to learn procedural knowledge and receive feedback. It is unclear in what ways feedback was given to most of the teachers in this study whether it was from students’ response to the implementation of new learning or if there was an external observer (i.e., a colleague, administrator, or instructional coach). It may be important in future research to consider how teachers self-assess or receive feedback on the effectiveness of their self-directed learning. Furthermore, Bruning and colleagues (2011) explained that vicarious learning allows the learner to “observe subtle nuances of expert performance” (p. 109). What was also not clear in this study was how teachers replicated that expert performance or for how long they observed other teachers before enacting the skill into their practice. Future research may want to explore these constructs further.

The findings of this study also revealed that teachers encountered barriers to the self-directed learning process such as a lack of learning resources and administration setbacks. This also confirms and contributes to what other studies have found about contextual factors that can negatively shape a teacher’s learning (Allen & Penuel, 2015; Rinke & Valli, 2010). However, most of the participants in the study seemed to overcome these barriers and continued successfully through the self-directed learning process. Even then, teachers did mention that time was also a barrier to achieving their self-directed learning goals. For example, Courtney expressed that she was not able to put as much time this year into her professional learning and her practice scores were lower in the end of the study compared to the beginning. While these data were not included in the findings section, a closer analysis of the Self-Directed Learner Readiness Scale (SDLRS) (Fisher & King 2010; Fisher, King, & Tague, 2001) revealed that managing time was a lower score for most participants in respect to their self-directedness,
including Courtney. For instance, under the self-management subscale of the SDLRS there were two items: “I set strict time frames” and “I set specific time frames for my study” that participants on average scored the lowest on compared to other indicators in that subscale. Therefore, future research should explore what barriers could specifically hinder a teacher in the self-directed learning process. Since Knowles (1980, 1984) dichotomized self-direction on a spectrum, knowing what barriers teachers encounter that might hinder the self-direction process and ultimately their learning may provide insight in how to help them become more self-directed in the future.

Finally, teachers’ beliefs played a role in the self-directed learning process. For example, Evelyn struggled to reconcile her prior learning experiences as a student with the ways she and even others felt students should learn today. Fives and Buehl (2012) explained in their literature review that a teacher’s beliefs could affect or relate to a teacher’s practice by serving as a filter for processing new information. They argued that beliefs could influence practice, “by the manner in which they influence human perception and the interpretation of information and experience” (Fives & Buehl, 2012, p. 478). Even though Evelyn engaged in the self-directed learning process, her beliefs played a role in processing the content she was learning.

Furthermore, beliefs may have played a role in overcoming the barriers the teachers faced in the self-directed learning process. Again, Fives and Buehl (2012) noted how teacher beliefs can be “viewed as motivational constructs that influence (or guide) the goals teachers set, their effort toward meeting those goals [and] their perseverance in the face of challenges” (p. 479). According to the SDLRS, teachers in this study had, on average, high scores for the item “I have a high belief in my abilities” under the self-control subscale and also high scores under the subscale a desire for learning. Therefore, their higher self-efficacy beliefs may have influenced
the self-directed learning process. Future research exploring the self-directed learning process should consider how and in what ways teacher beliefs influence the self-directed learning process. It may not be enough to just allow teachers to self-direct their PD without considering how their beliefs will shape the process (i.e., setting goals, choosing activities, application of their knowledge, reflection).

**Contribution to Theory**

The findings from this study both confirm and contribute to the prior theories about adult learning or more-self-directed learners. Knowles (1980, 1984) postulated six different characteristics of self-directed learners that focused on the role of the learner and learner’s experiences, their readiness and motivation for learning, and their preference for learning. This study confirms the behaviors of self-directed learners that Knowles described. For example, Knowles (1980, 1984) theorized that self-directed learners become ready to learn when their life situation requires them to learn new concepts in order to cope with their new situations. The teachers in this study also described that their impetus for wanting to engage in the learning process was a result of problems they were facing in their practice and/or instructional changes at their school site. Additionally, Knowles (1980, 1984) found that self-directed learners were more eager to be performance-oriented in their learning where they wanted to learn concepts that only had immediate application to their various life situations. It is interesting to note in this study that teachers also felt the need to apply their learning in order to self-assess their learning. In this way, the findings for this study seem to extend an understanding of why self-directed learners desire to learn concepts that they believe are applicable to their individual contexts and settings. Since they are driven to learn by circumstance, the opportunity to apply their newly acquired
learning allows them to self-assess whether their learning will allow them to more successfully navigate those particular life situations that they face.

Knowles (1980, 1984) also assumed that self-directed learners’ motivation and need for relevance would play a role in their learning. He described that motivation for these learners would be more intrinsic and there would be a greater need for them to have a reason to engage in their learning. The way teachers self-directed their learning in this study confirms this as well. All of the teachers expressed an intrinsic desire to improve their practice by engaging in self-directed professional development. Furthermore, Luther shared in his interview, “One thing I refuse to do is to go to a training during instructional time. So if it's during the school year it better be on a weekend/after school or I won't do it unless mandated by the administration.” This confirms Knowles’ (1980, 1984) notion that teachers would need a strong rationale to engage in learning where they do not see the relevance for it. Luther saw no need to be pulled out of his class for his professional learning, but seemed to be willing to do so if his job required him to. Based on his desire to help his students, he may have been willing to attend those PD sessions if it would have benefited him. Therefore, the need to demonstrate relevance for future learning seems necessary.

One of Knowles’ (1980, 1984) assumptions seemed to be contradicted, though, by the findings of this study. Knowles discussed the characteristic of a self-directed learner was to be more independent and that their independence coupled with prior experience would enhance their learning. Most of the teachers’ abilities to self-direct varied in range in this study as determined by the SDLRS (Fisher & King, 2010). However, these data were not predictors of a teacher’s engagement with the self-directed learning process. For example, in applying Knowles’ assumption about the characteristics of a self-directed learner being more independent and
possessing more prior knowledge for learning, one may have assumed that first year teachers would lack sufficient teacher experience to be able to self direct their learning because of their young age and/or years of teacher experience. However, Evelyn was a late-career starter and was an older first year teacher during this study and had high levels of self-directed readiness according to the scale. Her narrative also exemplifies her ability to navigate the self-directed learning process. Similarly, Courtney was also a first year teacher who had low SDLRS scores, but was likewise engaged in the self-directed learning process by doing her master’s and trying to improve her ability to teach literacy. Madison was also a first year teacher with low SDLRS scores, but she had engaged the self-directed learning process as well by seeking to obtain her master’s degree. Madison also felt she was able to apply her learning to improve literacy levels among her students. Therefore, the notion that a teacher could self-direct their own learning only if he or she is more independent and has a richer reservoir of experiences in his or her teaching career seems counter to the findings of this study. This study seemed to suggest that most teachers, novice and veteran alike, can self direct their learning.

Tough’s (1967, 1971) research on self-directed learning theory describes self-directed learning as a linear process in which self-directed learners engage frequently in roughly 12-13 steps from the beginning to the end of a learning project (Merriam, Caffarella, & Baumgartner, 2007). The model that emerged from this study extends this linear process to more of a cyclical model in teacher education. The findings from this study also demonstrate that there are some steps of self-directed learning Tough (1967, 1971) described that do not seem to appear in the process among teachers. For example, the teachers in this study never mentioned or discussed determining where they should learn or when to start. They also did not discuss setting self-
appointed deadlines. Thus, some of the process described by self-directed learning theory does not seem to apply to teacher education.

Implications

In the first two chapters, I highlighted the gaps in understanding how to improve teacher practice in order to improve student achievement. While PD is an often-used strategy to improve student achievement by improving teacher practice (Feiman-Nemser, 2001; Koellner & Jacobs, 2015), there were still knowledge gaps in how to best do so (Kennedy, 2016). Moreover, there were fiscal challenges with PD in that the U.S. spent large sums of money for teacher professional learning with few positive outcomes to show for it (Boston Consulting Group, 2014). The results of this study have implications for practice in how principals and professional developers provide PD programs, for policy in how funds may be appropriated for PD, and finally for research on how future PD is conducted.

To date, research has indicated that PD has either not met teachers’ needs (Boston Consulting Group, 2014; Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Hill, 2009, 2011; Wei, Darling-Hammond, Adamson, 2010) or has been ineffective at changing teachers’ practices (Kennedy, 2016; Opfer & Pedder, 2011). As a result of this study, there are a few important implications for how principals, instructional leaders, professional developers, and districts could train teachers. Since much of the literature indicates that teachers feel dissatisfied with their PD offerings, using a self-directed PD model as highlighted in this study may motivate teachers to reengage in their professional learning (Boston Consulting Group, 2014; Colbert et al., 2008). Those responsible for overseeing the professional learning of practicing teachers may want to consider allowing a space for a model where teachers can set their own goals, decide upon their own learning activities, and have frequent opportunities to apply and reflect upon their
learning. In this way, they may motivate the teachers by allowing them autonomy and enable them to pursue their own interests. Furthermore, Brown and his colleagues (2001) argued that not all teachers will choose to engage in self-directed PD. Future research should consider exploring which teachers benefit more from self-directed PD and which teachers prefer others forms and models of PD that are not self directed.

Second, this study has implications for policy. Much of the funding for PD seems to be used for programs that are dissatisfying for teachers and not aligned to their professional needs (Boston Consulting Group, 2014; Darling-Hammond et al., 2009; Hill, 2009, 2011; Wei et al., 2010) Colbert and his colleagues (2008) advocated for this implication in their study on self-directed PD:

Permitting teachers to construct their own professional development programs and empowering them to make choices about the content of that program is a very different approach to professional development and has implications about the way resources are used for professional development and for decision-making at the district and school level (p. 149)

The teachers in this study were able to self direct their own learning with few resources. It may be prudent to consider how PD programs are funded in the future and if there are more effective ways to allocate funds for teacher professional learning using a more self-directed approach.

Finally, the use of mixed methods enhanced an understanding of the self-directed PD process in this study and has implications for research. Had the research design only focused on the quantitative aspect of the study, the results may have only provided outcomes about the descriptions of teachers’ practices without any further data to explore those outcomes and discover potential patterns. On the other hand, only understanding the process of self-directed
PD prohibits the field from understanding those potential patterns that occurred within their practice. This has implications for future research on PD. The literature reviewed in this study consistently highlights the fallacies researchers may fall into when using only an experimental trial to measure PD effects (e.g., Garet et al., 2011). Without both quantitative and qualitative data strands, it becomes difficult to ascertain “causal explanations” (Opfer & Pedder, 2011, p. 35). Therefore, it is recommended in future PD studies that a mixed-methods approach be utilized to better understand both outcomes and the contributing variables of those outcomes in order to have a more nuanced understanding of teacher learning as a result of PD (Creswell & Plano-Clark, 2011).

Future research should also explore whether self-directed PD may lead to improvements in teachers’ practices. Specifically, further research should explore how the emergent model discovered in this study affects teacher change. However, as future research may seek to explore this model and its effects on teacher practice, quantitative studies focused on the effects of PD on teacher practice have to worry about threats to internal validity. Using a switching replications design has been known to control for some of those threats. The reason for this is that both groups serve as the experimental group and the control group (Bottge, Rueda, LaRoque, Serlin, & Kwon, 2007). Some have argued that this design works well in secondary schools on a semester system where one group serves as the experimental group during the first semester and the other during the second. Therefore, future research may want to consider studying the effects of self-directed PD using this design. Additionally, while measuring student outcomes was outside of the scope of this study, future research may want to consider applying this model to an examination of how it effects student learning since policy makers and education leaders will likely be interested in such findings.
Conclusion

The purpose of this study was to explore the process whereby teachers self-directed their own PD and describe the practice of secondary English and math teachers. Since the prior literature on self-directed PD discussed in this study (see chapter 2) lacked clarity on the explicit process teachers undergo to self-direct their learning, using qualitative data and quantitative data allowed for a better understanding of that process and what occurs within an individual teacher’s practice during that process.

This study uncovered an understanding of how teachers may self-direct their own professional learning contributing to the field of PD literature by providing an emergent theoretical model for how self-directed learning theory (Tough, 1967, 1971) is utilized in teacher education. Not only has this study provided that model, but, by utilizing a mixed-methods approach, it has described the practice of the teachers while having engaged in the self-directed learning process and discovered patterns that may be worth exploring further. These findings may have important implications for how the field trains and develops future in-service teachers through PD and also have implications for policy in how funds are allocated to train those teachers. Furthermore, this study may begin a new chapter of PD research that utilizes mixed methods in future endeavors to examine the effects of PD on both teachers and students. As policies and practices continue to change in order to serve students, so to must teacher education research evolve and adapt in service to the teachers who serve those students across the nation. If student achievement is the primary outcome of educational effectiveness, then it behooves teacher educators to focus on the professional learning and development of the nation’s teachers.
### Appendix A

Teacher Practice Evaluation Rubric (TPER)

#### Standard 1:
New Learning is Connected to Prior Learning and Experience

<table>
<thead>
<tr>
<th>Indicator 1: Teacher activates all students’ initial understandings of new concepts and skills</th>
<th>Indicator 2: Teacher makes connections explicit between previous learning and new concepts and skills for all students</th>
<th>Indicator 3: Teacher makes clear the purpose and relevance of new learning for all students</th>
<th>Indicator 4: Teacher provides all students opportunities to build on or challenge initial understandings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 4:</strong> Teacher fully activates all students’ initial understandings (including misconceptions and incomplete understandings) through the use of multiple methods and/or modes</td>
<td><strong>Level 4:</strong> Teacher makes connections for all students between previously learned and/or new concepts and skills</td>
<td><strong>Level 4:</strong> Teacher fully clarifies the purpose and relevance of new learning for all students, including clearly connecting new learning to longer-term learning goals</td>
<td><strong>Level 4:</strong> Teacher employs effective and varied strategies, assisting all students in the process of bridging understanding from initial conceptions to targeted learning</td>
</tr>
<tr>
<td><strong>Level 3:</strong> Teacher adequately activates most students’ initial understandings (including misconceptions and incomplete understandings) by using at least two methods and/or two modes</td>
<td><strong>Level 3:</strong> Teacher makes adequate connections for most students between previously learned and/or new concepts and skills</td>
<td><strong>Level 3:</strong> Teacher adequately clarifies the purpose and relevance of new learning for most students, including sufficiently connecting new learning to longer-term learning goals</td>
<td><strong>Level 3:</strong> Teacher employs adequate strategies (using at least two), assisting most students in the process of bridging understanding from initial conceptions to targeted learning</td>
</tr>
<tr>
<td><strong>Level 2:</strong> Teacher inadequately activates most students’ initial understandings (including misconceptions and incomplete understandings) using limited methods and/or modes</td>
<td><strong>Level 2:</strong> Teacher makes inadequate connections for most students between previously learned and/or new concepts and skills</td>
<td><strong>Level 2:</strong> Teacher inadequately clarifies the purpose and relevance of new learning for most students and/or minimally connects new learning to longer-term learning goals</td>
<td><strong>Level 2:</strong> Teacher employs inadequate and unvaried strategies, only minimally assisting most students in the process of bridging understanding from initial conceptions to targeted learning</td>
</tr>
<tr>
<td><strong>Level 1:</strong> Teacher activates no, or almost no students’ initial understandings</td>
<td><strong>Level 1:</strong> Teacher makes no, or almost no connections between previously learned and/or new concepts and skills for any student</td>
<td><strong>Level 1:</strong> Teacher clarifies the purpose and relevance of learning for no, or almost no students and makes no, or almost no connections between new learning and longer-term learning goals</td>
<td><strong>Level 1:</strong> Teacher employs no, or almost no strategies to assist any student in the process of bridging understanding from initial conceptions to targeted learning</td>
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#### Standard 2:
### Learning Tasks have High Cognitive Demand for Diverse Learners

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<tr>
<th>Indicator 1:</th>
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<th>Indicator 3:</th>
<th>Indicator 4:</th>
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<tbody>
<tr>
<td><strong>Tasks purposefully employ all students’ cognitive abilities and skills</strong></td>
<td><strong>Tasks place appropriate demands on each student</strong></td>
<td><strong>Tasks progressively develop all students’ cognitive abilities and skills</strong></td>
<td><strong>Teacher operates with a deep belief that all children can achieve regardless of race, perceived ability and socioeconomic status.</strong></td>
</tr>
<tr>
<td>Level 4: Teacher engages all students with relevant and substantive tasks that effectively support deep learning of subject-matter content and processes</td>
<td>Level 4: Teacher provides tasks at the appropriate level of challenge for every student, effectively enabling each student to advance his/her learning of subject-matter content and processes</td>
<td>Level 4: Teacher effectively structures multileveled tasks that advance all students’ thinking and/or skills in connected steps during the course of a lesson and across multiple lessons</td>
<td>Level 4: Teacher models and demonstrates the highest expectation that all children can learn at high levels regardless of family background, socioeconomic status, or ability. The teacher takes an active role in ensuring that students have equitable opportunities to achieve</td>
</tr>
<tr>
<td>Level 3: Teacher engages most students with generally relevant and worthwhile tasks that adequately support deep learning of subject-matter content and processes</td>
<td>Level 3: Teacher provides tasks at a generally appropriate level of challenge for most students, largely enabling most students to advance their learning of subject-matter content and processes</td>
<td>Level 3: Teacher adequately structures tasks with more than one level that advance most students’ thinking and/or skills in connected steps during the course of a lesson and/or across multiple lessons</td>
<td>Level 3: Teacher models and demonstrates high expectations that all children can learn at high levels regardless of family background, socioeconomic status, or ability</td>
</tr>
<tr>
<td>Level 2: Teacher engages most students with tasks that inadequately support deep learning of subject-matter content and processes</td>
<td>Level 2: Teacher provides tasks at an appropriate level of challenge for few students, minimally enabling most students to advance their learning of subject-matter content and processes</td>
<td>Level 2: Teacher structures a single task at one level that minimally advance all students’ thinking and/or skills during the course of a lesson and/or across multiple lessons</td>
<td>Level 2: Teacher demonstrates minimal expectations that children can learn at high levels regardless of family background, socioeconomic status, or ability</td>
</tr>
<tr>
<td>Level 1: Teacher does not engage students with any tasks that support deep learning of subject-matter content and processes</td>
<td>Level 1: Teacher provides no, or almost no tasks at an appropriate level of challenge for any students, enabling no, or almost no students to advance their learning of subject-matter content and processes</td>
<td>Level 1: Teacher does not structure leveled tasks that advance any student’s thinking and/or skills in connected steps during the course of a lesson and/or across multiple lessons</td>
<td>Level 1: Teacher demonstrates little expectation that children can learn at high levels regardless of family background, socioeconomic status, or ability</td>
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### Standard 3: Students Engage in Meaning-Making Through Discourse and Other Strategies

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<thead>
<tr>
<th>Indicator 1:</th>
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<th>Indicator 4:</th>
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<tbody>
<tr>
<td><strong>Teacher provides opportunities for extended</strong></td>
<td><strong>Teacher provides opportunities for all students</strong></td>
<td><strong>Teacher assists all students to use existing knowledge and</strong></td>
<td><strong>Teacher structures the classroom environment to</strong></td>
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139
### Standard 4:
**Students Engage in Metacognitive Activity to Increase Understanding of and Responsibility for Their own Learning**

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<thead>
<tr>
<th>Indicator 1</th>
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<th>Indicator 3</th>
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<tbody>
<tr>
<td><strong>Teacher and all students understand what students are learning, why they are learning it, and how they will know if they have learned it</strong></td>
<td><strong>Teacher structures opportunities for self-monitored learning for all students</strong></td>
<td><strong>Teacher supports all students to take actions based on the students’ own self-monitoring processes</strong></td>
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Levels of Instructional Design:

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<tr>
<th>Level 4</th>
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<tbody>
<tr>
<td>Teacher provides effective guidance for all students to actively participate in reciprocal and sustained interactions that enable them to articulate their developing understanding in order to deepen and/or consolidate that understanding or to acquire skills</td>
<td>Teacher provides adequate guidance for most students to actively participate in reciprocal and sustained interactions that generally enable them to articulate their developing understanding in order to deepen and/or consolidate that understanding or to acquire skills</td>
<td>Teacher provides some guidance for some or most students to participate, to varying degrees, in limited interactions that somewhat enable them to articulate their developing understanding, only minimally deepening and/or consolidating that understanding or acquiring skills</td>
<td>Teacher provides no, or almost no guidance for students to participate in any interactions that enable them to articulate their developing understanding; students are not deepening or consolidating their understanding or acquiring skills</td>
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<tr>
<th>Level 4</th>
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<tbody>
<tr>
<td>Teacher uses various and effective strategies to help all students see connections and relationships between previous and present learning, furthering their understanding of emerging/developing concepts and/or their acquisition of skills</td>
<td>Teacher uses sufficient strategies to help most students see connections and relationships between previous and present learning, generally furthering their understanding of emerging/developing concepts and/or their acquisition of skills</td>
<td>Teacher uses limited strategies to help some or most students see connections and relationships between previous and present learning, only somewhat furthering their understanding of emerging/developing concepts and/or their acquisition of skills</td>
<td>Teacher structures no, or almost no strategies to help any student see connections and relationships between previous and present learning to further their understanding of emerging/developing concepts and/or their acquisition of skills</td>
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<th>Level 4</th>
<th>Level 3</th>
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<th>Level 1</th>
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<tbody>
<tr>
<td>Teacher effectively structures opportunities for all students to use varied representations that successfully engage student thinking, and successfully support their understanding of emerging/developing concepts and/or their acquisition of skills</td>
<td>Teacher adequately structures opportunities for most students to use more than one type of representation that generally engages student thinking, and generally supports their understanding of emerging/developing concepts and/or their acquisition of skills</td>
<td>Teacher inadequately structures opportunities for some or most students to use representations; these opportunities only somewhat engage student thinking, and only somewhat support their understanding of emerging/developing concepts and/or their acquisition of skills</td>
<td>Teacher structures no, or almost no opportunities for any students to use representations that engage student’s thinking, and support their understanding of emerging/developing concepts and/or their acquisition of skills</td>
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<th>Level 4</th>
<th>Level 3</th>
<th>Level 2</th>
<th>Level 1</th>
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<tbody>
<tr>
<td>Teacher effectively enacts classroom routines and expectations so that all students value each other’s contributions and fully support each other’s learning</td>
<td>Teacher adequately enacts classroom routines and expectations so that most students value each other’s contributions and generally support each other’s learning</td>
<td>Teacher inadequately enacts classroom routines and expectations so that few students value each other’s contributions and/or minimally support each other’s learning</td>
<td>Teacher enacts no, or almost no classroom routines and expectations so that no, or almost no students value each other’s contributions or support each other’s learning</td>
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<td>All students in the class can fully explain: (1) what the intended learning goal of the lesson is, (2) why they are learning it, and (3) what successful performance looks like</td>
<td>All students actively engage in reflection on their learning status, which is directly related to learning goals and performance criteria, during well structured opportunities for reflection in the lesson</td>
<td>All students routinely take actions based on their own assessment of their learning status, with the purpose of advancing their learning either independently or with teacher support</td>
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<td>Level 3:</td>
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<tr>
<td>Most students in the class can generally explain: (1) what the intended learning goal of the lesson is, (2) why they are learning it, and (3) what successful performance looks like OR Most students in the class can fully explain two of the following: (1) what the intended learning goal of the lesson is, (2) why they are learning it, and (3) what successful performance looks like</td>
<td>Most students adequately engage in reflection on their learning status, which is generally related to learning goals and performance criteria, during moderately well-structured opportunities for reflection in the lesson</td>
<td>Most students frequently take actions based largely on their own assessment of their learning status, with the purpose of advancing their learning either independently or with teacher support</td>
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<tr>
<td>Most students in the class can only vaguely explain one or more of the following: (1) what the intended learning goal of the lesson is, (2) why they are learning it, and (3) what successful performance looks like</td>
<td>Most students do not engage in adequate reflection on their learning status; this reflection is generally unrelated to learning goals and performance criteria, and there are only limited, and/or poorly structured opportunities for reflection in the lesson</td>
<td>Most student actions are infrequently based on their own assessment of their learning status and/or students have few self-assessment opportunities on which to base actions</td>
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<td>Level 1:</td>
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<td>Level 1:</td>
<td></td>
</tr>
<tr>
<td>No, or almost no students can explain: (1) what the intended learning goal of the lesson is, (2) why they are learning it, and (3) what successful performance looks like</td>
<td>No, or almost no students engage in reflection on their learning status and there are no, or almost no opportunities for reflection in the lesson</td>
<td>No, or almost no students take actions based on their own assessment of their learning status and/or students have no self assessments on which to base actions</td>
<td></td>
</tr>
</tbody>
</table>

**Standard 5:**
**Assessment is Integrated into Instruction**

<table>
<thead>
<tr>
<th>Indicator 1: Teacher plans on-going learning opportunities based on evidence of all students’ current learning status</th>
<th>Indicator 2: Teacher aligns assessment opportunities with learning goals and performance criteria</th>
<th>Indicator 3: Teacher structures opportunities to generate evidence of learning during the lesson of all students</th>
<th>Indicator 4: Teacher adapts actions based on evidence generated in the lesson for all students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 4: Teacher consistently plans on-going learning opportunities based on substantial, current evidence of all students’ learning status</td>
<td>Level 4: Teacher fully aligns assessment opportunities with clearly specified learning goals and performance criteria to provide quality evidence of all students’ learning</td>
<td>Level 4: Teacher structures multiple and varied opportunities to generate evidence of all students’ learning during the lesson</td>
<td>Level 4: Teacher effectively adapts her/his actions for all students in response to evidence presented and/or generated in the lesson</td>
</tr>
<tr>
<td>Level 3:</td>
<td>Level 3:</td>
<td>Level 3:</td>
<td>Level 3:</td>
</tr>
<tr>
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</tr>
<tr>
<td>Teacher frequently plans on-going learning opportunities based on adequate evidence of most students’ learning status</td>
<td>Teacher adequately aligns assessment opportunities with specified learning goals and performance criteria to provide adequate evidence of most students’ learning status</td>
<td>Teacher adequately structures adequate (e.g., several or varied) opportunities to generate evidence of most students’ learning during the lesson</td>
<td>Teacher adequately adapts her/his actions for most students in response to evidence presented and/or generated in the lesson</td>
</tr>
<tr>
<td>Level 2:</td>
<td>Level 2:</td>
<td>Level 2:</td>
<td>Level 2:</td>
</tr>
<tr>
<td>Teacher sometimes plans on-going learning opportunities based on evidence of some students’ learning status; the evidence used is frequently outdated and/or limited</td>
<td>Teacher inadequately aligns assessment opportunities with learning goals and performance criteria; the learning goals and performance criteria are insufficiently specified to provide adequate evidence of most students’ learning status</td>
<td>Teacher structures limited opportunities to generate evidence of most students’ learning during the lesson</td>
<td>Teacher inadequately adapts her/his actions for most students in response to evidence presented and/or generated in the lesson</td>
</tr>
<tr>
<td>Level 1:</td>
<td>Level 1:</td>
<td>Level 1:</td>
<td>Level 1:</td>
</tr>
<tr>
<td>Teacher plans no, or almost no ongoing learning opportunities based on any evidence of students’ learning status</td>
<td>Teacher aligns no, or almost no assessment opportunities with any learning goals and performance criteria</td>
<td>Teacher structures no, or almost no opportunities to generate evidence of any student’s learning during the lesson</td>
<td>Teacher continues with planned lesson regardless of any evidence presented and/or generated in the lesson</td>
</tr>
</tbody>
</table>
Appendix B

Open Ended Survey

Planning the lesson

1. Describe the students you have in the class for which you used this lesson.
2. What are the objectives for this lesson?
3. Why have you chosen these objectives (e.g. aligned to standards, prior student data, etc.)?
4. What activities did you chose to help students achieve the objective?
5. How did you structure the lesson?
6. What guided your thinking for the design of this lesson plan?
7. How did you assess whether students met the objective of this lesson?
8. How, if at all, has your professional development influenced the design of instruction (post-survey question)?

Implementation

1. How was the implementation of the lesson plan?
2. Describe any changes that occurred in delivering the lesson plan compared to the written plan.
3. What were the reasons for the changes in the delivery of the lesson plan?
Appendix C

Interview Protocol

Planning Phase

1. Describe what goal(s) you have for your professional learning.

2. How did you determine these goal(s)?

3. Describe how you plan to achieve your goal(s).

Implementation Phase

1. Describe your progress towards achieving your professional learning goal(s).

2. What activities/action steps have you engaged with in order to meet your goal(s)?

3. What challenges have you experienced in planning for or implementing your professional learning?
Appendix D

Self-Directed Learning Readiness Scale

<table>
<thead>
<tr>
<th>Items</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am self-disciplined</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I am disorganized</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I set strict time frames</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I have good management skills</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I am methodical</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I am systematic in my learning</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I set specific times for my study</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I prioritize my work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. I can be trusted to pursue my own learning</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I am confident in my ability to search out information</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. I want to</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>12. I enjoy learning new information</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I have a need to learn</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I enjoy a challenge</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I do not enjoy studying</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. I critically evaluate new ideas</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. I learn from my mistakes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. I need to know why</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. When presented with a problem I cannot resolve, I will ask for assistance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. I am responsible for my own decisions/actions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. I am in control of my life</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. I have high personal</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>standards</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>-----------------------------------------------</td>
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</tr>
<tr>
<td>23. I prefer to set my own learning goals</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. I evaluate my own performance</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. I am responsible</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. I am able to focus on a problem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. I am aware of my own limitations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. I can find out information for myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29. I have high beliefs in my abilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
## Appendix E

Comparison of PD Interventions by Design Features

<table>
<thead>
<tr>
<th>Study</th>
<th>Type</th>
<th>Duration</th>
<th>Collective Participation</th>
<th>Content</th>
<th>Active Participation</th>
<th>Coherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouza (2009)</td>
<td>Collaborative group meetings, workshops, and classroom follow-up</td>
<td>Spanned over a year with weekly 2-hour workshops and meetings</td>
<td>Same grade level and school</td>
<td>Technology Integration</td>
<td>Hands-on practice with technology, modeling strategies, curriculum development</td>
<td>Assessed and aligned to teacher-reported needs</td>
</tr>
<tr>
<td>Greenleaf et al. (2011)</td>
<td>Summer institutes and day-long workshop session throughout the school year</td>
<td>Spanned two years</td>
<td>Worked with grade level teams to have metacognitive conversations about student learning in regards to challenges with science literacy</td>
<td>Science literacy and learning processes</td>
<td>Teachers engage through rich science readings and investigations; inquiry-based</td>
<td>Use case studies to align content with teachers’ context and existing beliefs and practices</td>
</tr>
<tr>
<td>Penuel, Gallagher, &amp; Morthy (2011)</td>
<td>Workshop</td>
<td>Two weeks in the summer and four days on follow-up during the year</td>
<td>Discussions on curriculum materials and planning with grade level teams</td>
<td>Earth systems</td>
<td>Practiced selecting materials, participated in group discussions, designed a 9-week unit</td>
<td>Designing units that align with district goals</td>
</tr>
<tr>
<td>Lee &amp; Workshop</td>
<td>14 full</td>
<td>Same grade</td>
<td>Implementati</td>
<td>Hands-on</td>
<td>Aligned to</td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Approach</td>
<td>Duration</td>
<td>Focus</td>
<td></td>
<td></td>
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<td>----------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Maerten-Rivera (2012)</td>
<td>Day workshops during the school year and the summer spanning three years</td>
<td>Level team with a focus at the end of cross-grade level collaboration</td>
<td>On of curriculum materials by focusing on teachers’ science content knowledge and ELL strategies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inquiry-based learning for science instruction</td>
<td>State standards and district goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandholtz &amp; Ringstaff (2013)</td>
<td>Summer institute and workshops</td>
<td>Grade-level meetings during the year and a website for across-school collaboration</td>
<td>Science content and instructional strategies</td>
<td>Aligned with district goals to reach ELLs and interdisciplinary literacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Van den Bergh et al. (2014)</td>
<td>Workshop sessions</td>
<td>Same grade level and school</td>
<td>Levels of teacher feedback</td>
<td>Video analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Videos were of teachers’ own teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barr et al. (2015)</td>
<td>Seminars and workshops, ongoing coaching and mentoring, and digital resources with content strategies</td>
<td>35-40 hours plus ongoing coaching</td>
<td>Foster students’ social studies thinking skills, student-centered pedagogy, and in-depth case study approach</td>
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<td></td>
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</tr>
<tr>
<td>Powell, Cantrell, Malo-Juvera, Correll (2016)</td>
<td>Three training sessions before school and during the fall semester plus</td>
<td>50 + hours of coaching plus 6 hours of summer training and two days of Collaborative planning with coaches and teacher teams of action plans</td>
<td>Culturally responsive instruction</td>
<td>Inquiry-based learning projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Intervention Type</td>
<td>Duration</td>
<td>Content Focus</td>
<td>Alignment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Garet et al. (2008)</td>
<td>Workshops and coaching</td>
<td>Eight full days spanning over a year</td>
<td>Small group application activities and discussions</td>
<td>Apply content to their own classroom and analyze student data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garet et al. (2011)</td>
<td>Workshops and coaching</td>
<td>Spanning two years</td>
<td>Delivered to the district math teachers</td>
<td>Engaged in problem-solving, discussions, and lesson planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Santagata et al. (2011)</td>
<td>Online modules combined with group discussions led by a facilitator</td>
<td>Spanned two years</td>
<td>Problem-solving discussions among teachers</td>
<td>Solving math problems and discussing their thinking and lesson analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arens et al. (2012)</td>
<td>Workshops</td>
<td>Eight two-hour workshops over the course of a year</td>
<td>Discuss teaching practices with their peers</td>
<td>View and analyze videotaped lessons, discussion with peers, case study project, and reading materials</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bos et al. (2012)</td>
<td>Summer institutes, coaching, and lesson design meetings</td>
<td>A week of summer institutes, 4-6 cycles of</td>
<td>School staff strategies for ELLs</td>
<td>Critical analysis of academic tasks and lesson planning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unsuccessful at Fostering Teacher Change
| coaching  |
| including |
| lesson    |
| design    |
| meetings  |

-- Stated that it was included but not described.
Appendix F

Follow-up Survey Regarding the Self-Directed Learning Process

1. Describe how much you have been able to focus on your professional learning this year?

2. What professional learning activities have you participated in this year? Were they aligned with your professional learning goal?

3. Have you been able to apply your professional learning to your practice this year? Briefly explain.

4. Any insights/ reflections to offer about your professional learning and growth in your practice this year?
References


policy and mathematics professional development colliding: Placing teacher experimentation within a sociopolitical context. *Teachers College Record, 115*(6), 1-44.

Retrieved from

https://s3.amazonaws.com/academia.edu.documents/44407934/Battey_TCR_2013.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1527976338&Signature=7YV57Vq9UW2X2XbFxz0WmxX0X90%3D&response-content-disposition=inline%3B%20filename%3DELL_policy_and_mathematics_professional.pdf


doi: 10.1080/13674580000200102


doi:10.1177/0022487116669573


http://dx.doi.org/10.1016/j.tate.2014.12.011


161

*Professional Development in Education, 37*(2), 177-179, 
doi: 10.1080/19415257.2010.523955


Lee, O., & Maerten-Rivera, J. (2012). Teacher change in elementary science instruction with English Language learners: Results of a Multiyear Professional Development Intervention Across Multiple Grades. *Teachers College Record, 114*(8), 1-44.


Mitchell, R. (2013) What is professional development, how does it occur in individuals, and how may it be used by educational leaders and managers for the purpose of school

doi:10.1080/19415257.2012.762721


Statistics. Retrieved from


doi:10.1016/j.tate.2007.03.002

continuing professional learning and development? Changing terminology, policy
doi:10.1080/19415257.2014.960688


professional development. *Teacher Education Quarterly*. Retrieved from

sequences of instruction in earth systems science: A comparison of three professional
doi: 10.3102/0002831211410864

professional development effective? Strategies that foster curriculum


doi:10.1080/19345747.2010.498562


Strauss, V. (2018, June 1). New polls find most Americans say teachers are underpaid—and


doi:10.1080/00131910802684748


YouTube (n.d.)
Curriculum Vitae

Derek R. Riddle
Email: teachdriddle@gmail.com

EDUCATION

2018 (Anticipated)  
Doctorate in Teacher Education  
University of Nevada, Las Vegas  
Las Vegas, Nevada

2013  
Master of Education, Literacy Emphasis  
Idaho State University  
Pocatello, Idaho

2010  
Bachelor of Arts in Secondary Education  
University of Nevada, Las Vegas  
Las Vegas, Nevada

LICENSURE

Nevada Standard Secondary English License 7-12
Idaho Secondary English Certificate 7-12

PROFESSIONAL EXPERIENCE

University Research & Teaching

2015-2016  
Graduate Research Assistant – University of Nevada, Las Vegas  
Lab school created to research mentoring practices and beliefs while simultaneously fulfilling a need to license candidates through a fast-track program to assist with the Nevada teacher shortage, especially in Clark County School District. Collected and analyzed data and assisted in publishing the related manuscript.

2016  
Co-Instructor - University of Nevada, Las Vegas  
Literacy assessment course for K-12 teacher candidates  
Lecture on the Smarter Balanced Assessment and its implications for instruction.

2015  
Instructor – University of Nevada, Las Vegas  
Classroom management course for secondary teacher candidates  
Co-taught literacy assessment course for K-12 teacher candidates
PUBLICATIONS


Manuscripts under Revision


Manuscripts in Preparation for Submission


REFERRED CONFERENCE PRESENTATIONS

National


Riddle, D., Zhang, S., Murphy, D., Allard, M. (August, 2015). *Autonomous professional development on formative assessment practices*. Roundtable session presented at the annual summer meeting of the Association of Teacher Educators, Minneapolis, MN.


Riddle, D & Pollins, H. (2017, January). “*Can we manage our classrooms?*: A case study exploring sources of self-efficacy in classroom management of pre-service teachers.” Poster to be presented at the 29th annual Ethnographic and Qualitative Research Conference, Las Vegas, NV.

**INVITED PRESENTATIONS**

Riddle, D. (2017, February). *Principles of andragogy in higher education*. Presentation for Touro University at their in-house faculty development series, Henderson, NV.

Riddle, D. (2016). *Veteran Teacher Interview Panel*. An interview panel as a veteran teacher speaking and answering questions of teacher candidates, University of Nevada, Las Vegas

**MEDIA INTERACTIONS**


**SERVICE**

*Department of Teaching and Learning at the University of Nevada, Las Vegas*

- Reviewer of a pilot teacher video assessment for the Department of Teaching and Learning – *took the assessment and provided feedback to the faculty piloting the assessment*.
- Doctoral Colloquium Committee Member (2016) – *assisted in planning and organizing departmental colloquia*.
- Teacher Candidate Mock Interviews (2015) – *prepared teacher candidates for interviews in Clark County School District by providing mock interviews and feedback*.
TEACHING EXPERIENCE

K-12 Teaching Experiences

2015-2018  English 10, English 11, English 12, English AP Language and Composition, English 101 & 102 Dual Credit, & Leadership
Cheyenne High School
North Las Vegas, Nevada

2014-2015  7th Grade English
K.O. Knudson Middle School
Las Vegas, Nevada

2013-2014  English 10 & English 9 Honors
Canyon Ridge High School
Twin Falls, ID

2012 – 2014  Choreographer of Synergy (Show Choir)
Canyon Ridge High School
Twin Falls, ID

2012-2014  Mens’ Varsity Soccer Coach
Canyon Ridge High School
Twin Falls, ID

2012-2013  Middle School Instructional Coach
Robert Stuart Middle School/Bridge Academy
Twin Falls, Idaho

2010-2012  Boys’ Soccer Coach
Robert Stuart Middle School
Twin Falls, Idaho

2010-2012  8th Grade English
Robert Stuart Middle School
Twin Falls, Idaho

2009-2010  7th Grade Reading
K.O. Knudson Middle School
Las Vegas, Nevada

HONORS AND AWARDS

University Scholarships
• University of Nevada, Las Vegas College of Education Catherine Vaglio Scholarship
2016-2017
• University of Nevada, Las Vegas Graduate School Patricia Sastaunik Scholarship 2017-2018

**K-12 Teaching Awards**
• 2014 Canyon Ridge High School, Teacher of the Year as chosen by the students
• 2018 Finalist for the Clark County School District Heart of Education Award
• 2018 Nominee for the Nevada Teacher of the Year Award