The past is prologue part II: a study of PDS comparison dissertations

Diane Yendol-Hoppey
Department of Teaching Learning and Curriculum, University of North Florida, Jacksonville, Florida, USA, and
Eva Garin
Department of Teaching and Learning, Bowie State University, Bowie, Maryland, USA

Abstract
Purpose – The study aims to present a logic map linking the Professional Development School (PDS) Nine Essentials as a PDS theory of action and offer an analysis of dissertations that compare outcomes of learning in PDS and non-PDS contexts.

Design/methodology/approach – For this current study, the authors identified 25 of the 210 dissertations from a larger study that used a comparison methodology to provide a window into how learning in PDS and non-PDS settings may differ. In reviewing these comparison studies, the authors identified a set of clustered themes, as well as a variety of comparison constructs and measurements researchers used to determine the impact of PDS.

Findings – Five themes emerged including (1) the experience of learning to teach in a PDS setting vs. a non-PDS; (2) the experience of teaching in a PDS vs. non-PDS; (3) teacher candidate quality in a PDS vs. non-PDS; (4) teacher quality in a PDS vs. non-PDS; (5) school leader quality in a PDS vs. non-PDS; and (6) K-12 student learning in PDS vs. non-PDS.

Research limitations/implications – Limitations of this study include the complications related to comparison, logic-related fallacies and the complexity of capturing simultaneous renewal.

Originality/value – In the 30th year of PDS work, the study utilizes a theory of action comprised of linking the PDS Nine Essentials to situate the comparison dissertation analysis of outcomes in PDS and non-PDS contexts suggesting challenges and possibilities and perhaps a direction for new research questions.

Keywords Impact study, Research synthesis, Dissertations

Paper type Research paper

Introduction
This study builds on two previous studies (Yendol-Hoppey & Garin, 2022; Garin & Yendol-Hoppey, in press), the first of which provides a snapshot of the nature, context, timeline and content of 204 Professional Development School (PDS) doctoral dissertations written between 1990 and 2018 and the second, a qualitative study of the subset of dissertations that focuses on aspects of learning in PDS including (1) inquiry as a pedagogical learning tool; (2) PK-12 student learning; (3) intern/teacher candidate learning; (4) teacher learning; and (5) teacher educator learning. This third study focuses on a subset of dissertations (N = 25) that compare PDS with non-PDS contexts. In this study, five themes emerged as we clustered the comparison dissertations, including (1) the experience of learning to teach in a PDS setting vs. a non-PDS; (2) the experience of teaching in a PDS vs. non-PDS; (3) teacher candidate quality in a PDS vs. non-PDS; (4) teacher quality in a PDS vs. non-PDS; (5) school leader quality in a PDS vs. non-PDS; and (6) K-12 student learning in PDS vs. non-PDS. The analysis examines what can be learned from comparison studies, the methodologies used and how comparison studies inform the PDS literature.
**Theoretical framework or perspective**

Dissertation research represents a unique subset of research activity as it is conducted within doctoral-granting universities that are primarily responsible for the preparation of the next generation of PDS scholars and teacher educators. As the PDS movement enters its third decade of inquiry, continuing to analyze the corpus of PDS dissertation research conducted on PDSs at research universities sheds light on what newly minted doctoral students and their advisors view as important to the field. PDSs were designed to accomplish four learning-related agendas: preparing future educators, providing current educators with ongoing professional development, encouraging joint school-university shared inquiry opportunities and promoting the learning of PK-12 students (NAPDS, 2021).

*What it Means to Be a Professional Development School* (NAPDS, 2021) provides a set of nine essentials that guide the work of PDS partnerships. In combination, the Nine Essentials can provide a pathway for understanding how PDSs should demonstrate improved and potentially new outcomes for teaching quality, teacher preparation and student learning. By integrating these essentials within a logic map, we provide a *theory of change* which explains how a group of inputs and activities targeted at a shared goal can produce early, intermediate and long-term outcomes. Our framework offers the Nine Essentials within this logic map. The logic map integrates the essentials to provide a visual representation of the relationship between the goals, inputs/components, PDS-proposed activities or interventions and the intended effects or outcomes (See Figure 1). Essential One presents the call or goal for a collaborative mission that focuses on a partnership committed to collaboration, equity and learning. Essentials Six, Seven and Eight describe the inputs (e.g., articulated agreements, shared governance structures, boundary-spanning roles and resources/recognition) that often separate the support found in PDSs from other teacher preparation contexts. Given these resources, PDSs commit to enacting three *activities* represented by Essentials Two, Three and Five. Essential Two focuses on teacher-candidate learning through clinical practice. Essential Three focuses on reciprocal professional development and commitment to continuous learning within communities. Essential Five focuses on collaborative research and results. These three core activities are different within a PDS because of the inputs

<table>
<thead>
<tr>
<th>Goal</th>
<th>Inputs</th>
<th>Activities</th>
<th>Culture of Inquiry &amp; Innovation</th>
<th>Early Outcomes</th>
<th>Intermediary Outcomes</th>
<th>Outcomes/Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential 1: A professional development school (PDS) is a learning community guided by a comprehensive, articulated mission that is broader than the goals of any single partner, and that aim to advance equity, antiracism, and social justice within and among schools, colleges/universities, and their respective community and professional partners</td>
<td>Essential 6: Articulated Agreements</td>
<td>Essential 2: Clinical Preparation A PDS embraces the preparation of educators through clinical practice</td>
<td>Enhanced teacher candidate learning to teach experience</td>
<td>Enhanced teacher candidate quality</td>
<td>Enhanced teacher candidate quality</td>
<td>Enhanced K-12 Student learning experience</td>
</tr>
<tr>
<td>Essential 7: Shared Governance Structures</td>
<td>Essential 3: Professional Learning and Leading A PDS is a context for continuous professional learning and leading for all participants, guided by need and a spirit and practice of inquiry</td>
<td>Enhanced practicing teacher learning experience</td>
<td>Enhanced K-12 leader quality</td>
<td>Enhanced teacher educator quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essential 8: Boundary-Spanning Roles</td>
<td>Essential 4: Reflection and Innovation A PDS makes a shared commitment to:</td>
<td>Enhanced K-12 leader learning experience</td>
<td>Enhanced teacher educator quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Essential 9: Resources and Recognition</td>
<td>(1) reflective practice (pedagogy)</td>
<td>Enhanced teacher educator quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Figure 1. PDS logic map | Essential 5: Research and Results A PDS is a community that engages in collaborative research and participates in the public sharing of results in a variety of outlets | Enhanced teacher educator learning experience | Enhanced teacher educator quality |

*Figure 1. PDS logic map*
(Essentials 6, 7 and 8), but also because these three activities are intended to focus on inquiry and innovation (Essential 4). We believe that Essential Four is the difference maker for PDS. Essential Four states:

A PDS values and respects professional knowledge that is practical as well as theoretical and that recognizes the influence of context and culture. In a PDS, reflection is a shared expectation. PDSs are living laboratories for creating, implementing, refining, and sharing innovative approaches to teaching and learning. Any PDS participant may initiate innovations, and everyone should have the opportunity to serve in the role of leader and learner. Through innovation and reflection, PDSs generate new knowledge about teaching and learning.

The culture of inquiry and innovation is a change lever for PDS work and the space where simultaneous renewal (Goodlad, 1994) thrives.

In a PDS, the activities of clinical preparation, teacher learning and leading and research are intended to be different because of the systematic and intentional focus on reflective practice/inquiry and innovation. As Essential Four strengthens, the PDS work deepens, moving from early stages of partnership and collaboration (e.g., version 1.0) focused on implementing activities to a strengthened version with a more pervasive shared culture of inquiry and collaboration (e.g., version 2.0). Continuing with the software version metaphor, incremental variation for PDS would be noted by a fine-grained level of revisions (e.g., version 1.0, 1.2, 1.3,...) creating a great deal of variation among the enactment of the logic map activities. PDSs need to understand and track their incrementally different versions of themselves as they mature. The logic map suggests that when we have these Nine Essentials in place, we would be positioned to capture outcome differences between PDS and non-PDS. As a result, this study uses the logic map to offer a summary of dissertation research that compares learning in PDS and non-PDS contexts as well as discusses what might be missing. The first four columns of Figure 1 depict the alignment of the PDS Nine Essentials and set the stage for the examination of the five outcome themes reported in this study.

To more fully understand what the PDS context affords related to learning, this study examines learning through the lens of dissertations that compare PDS and non-PDS learning experiences. Three research questions guided this analysis:

RQ1. What can we learn from dissertations that compare PDS and non-PDS approaches about the impact of PDS?
RQ2. What do these studies tell us about the methodologies used in comparison studies?
RQ3. How can the analysis of comparison studies inform future PDS research?

Methods and descriptive analysis of dissertations
We began the study by conducting a keyword search of the Dissertations Abstracts International database for the years 1990–2018 and identified 204 dissertations (Yendol-Hoppey & Garin, 2022). We later updated the search to include 2019–2022 and found an additional six dissertations creating a database of 210 dissertations. The authors restricted the search to studies with “Professional Development School,” “Professional Development Schools” or “PDS” in the title, as the studies that placed “PDS” in the title more likely positioned PDS at the forefront rather than just noting PDS as the context for the research. The authors used a Microsoft Access database which facilitated organization and analysis; assisted in maintaining data integrity; and allowed for Microsoft Excel software analysis.

For part two of this study (Garin & Yendol-Hoppey, in press), we categorized the dissertations by methodology (qualitative, quantitative and mixed methods) and by focus (e.g., inquiry, teacher educator learning, teacher learning, intern learning and PK-12 learning). The dissertations were reviewed at the first level by the dissertation abstract and at the
second level by the dissertation findings to make these designations. Data were used to analyze the contributions of the PDS dissertation research to understanding learning in the PDS community.

After the dissertations were identified, the authors used the inductive processes of memoing and content analysis. Memoing (Birks et al., 2018) is a flexible strategy in qualitative research wherein the process of construction and nature of the content is determined by the preferences and abilities of the researcher and the aims and focus of the specific research study. The content analysis serves as a valuable tool for studying educational documents, as the process allows researchers to gather data and use a systematic approach to identify themes to enumerate data within selected categories. Adams and Schvaneveldt (1985) referred to this feature as sensitivity to context and symbolic forms. These processes made the data easier to manage given the number of dissertations studied. We conducted an analysis into the nature of the findings and identified themes in each of the dissertation subsets of learning.

For this current study, we identified 25 of the 210 dissertations that used a comparison methodology to provide a window into how learning in PDS and non-PDS settings may differ. Of these dissertations, 12 were quantitative (Anderson, 1995; Coffelt, 2013; Gissy, 2010; Grissom, 2003; Hahn, 2000; Hamar, 2013; Lancaster, 2010; Newsome, 2003; Ogletree, 2007; Poe, 2003; Ray, 2013; Van Holten, 2016); 11 used a mixed methods approach (Brummer, 2018; Curtain, 2006; Dadlez, 1998; Grieb, 2000; Hildreth, 1997; Komorek, 2013; Kuchinski, 2005; Malin, 2002; Patterson, 2004; Starling, 1999; Wright, 2009); and only two were qualitative in nature (Hopper, 2016; Miller, 2014). A few of the dissertations had findings that informed more than one category. Table 1 provides a presentation of the dissertations by theme. In reviewing these comparison studies, we identified a variety of measurements researchers used to determine the impact of PDS on learning outcomes including Praxis scores, student achievement data, teacher efficacy measures, teacher disposition measures, perceptions of teacher or teacher candidate performance, teacher self-perception of performance, surveys of program characteristics, observations of management, developmentally appropriate practice (DAP), support for diverse learners, instructional practices and assessment, scores on initial licensure examinations, GPA and parent perceptions of student learning and school climate. We also note that a variety of comparison constructs were investigated including teacher perceptions of their own teaching efficacy; principals’ perceptions; teachers’ performance on selected teaching behaviors over time; and math, science and reading scores of PK-12 students.

Findings
Our analysis of the comparison studies identified six learning-related themes. The next section of this paper will examine the outcomes of the comparison research within each of these themes: (1) the experience of learning to teach in a PDS (n = 6); (2) practicing teacher experiences in a PDS (n = 2); (3) teacher candidate quality (n = 16); (4) teacher quality (n = 1); (5) school leader quality (n = 1); and (6) K-12 student learning (n = 5).

Theme One: PDS vs. non-PDS studies related to teacher candidate experience of Learning to Teach
There were six comparison dissertations that presented findings that fell within this theme of teacher candidate experience learning to teach (Dadlez, 1998; Hopper, 2016; Komorick, 2013; Kuchinski, 2005; Miller, 2014; Patterson, 2004), of which three were identified as mixed methods, two qualitative and one quantitative. Each of these dissertations offered insights into the differences in the experience of learning to teach in a PDS and non-PDS. Dadlez (1998) conducted a survey study to compare the concerns of PDS and non-PDS teacher candidates.
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme 1: Studies comparing the experience of learning to teach in a PDS vs. a non-PDS (N = 6)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Komorek (2013)</td>
<td>The impact of a field experience in a newly developed Professional Development School on preservice teachers as measured by their perceptions of competency, reflective journals and focus group interview</td>
<td>Mixed Method</td>
</tr>
<tr>
<td>5. Miller (2014)</td>
<td>First-year teaching experiences: A comparison of Professional Development School (PDS) and non-PDS Graduates</td>
<td>Qualitative</td>
</tr>
<tr>
<td><strong>Theme 2: Studies comparing the practicing teacher learning in a PDS vs non-PDS (N = 2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Theme 3: Studies comparing teacher candidate quality after learning to teach in a PDS vs. a non-PDS (N = 17)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Coffelt (2013)</td>
<td>An empirical study of the promise and effectiveness of teachers from professional development vs. traditional models of education</td>
<td>Quantitative</td>
</tr>
</tbody>
</table>

Table 1. Presentation of the dissertations by theme (continued)
Results indicated that a vast majority of PDS graduates were strongly satisfied with their teacher preparation program while traditional graduates were not. Interestingly, when traditional graduates were asked for recommendations for improvement to their traditional program, they identified aspects they would have liked to see in their program that directly correspond to the components named as assets by those in the PDS model such as more collaboration, a cohort model, expanded student teaching experience and learning more about the realities of teaching.

The next three mixed methods dissertations (Komorek, 2013; Kuchinski, 2005; Patterson, 2004) that informed this theme, focused solely on teacher candidates’ perceptions of their learning experience. Komorek (2013) used a preparedness survey, perceptions of competency, journal analysis and focus group discussions and found that the teacher candidates who learned to teach in a PDS identified their experience as more structured and reflective as they
learned about the needs of English Language Learners, students of color and economically disadvantaged students. These teacher candidates also noted greater access to instructional and educational technology, and their PDS-linked courses required a greater amount of authentic teaching opportunities. The PDS site exhibited stronger connections between the university and the school which benefited teacher candidates.

Similarly, Kuchinski’s (2005) study focused on the perceptions of four groups of educators to evaluate the impact of the two preparation programs for post-baccalaureate teacher candidates. Results indicated that the PDS model provided a more meaningful field experience for PDS teacher candidates due to cohorts and developing a strong sense of support in a learning community. Patterson’s (2004) mixed methods study revealed that the PDS interns experienced a greater depth of support in their clinical experience from their mentor teachers over the non-PDS interns, as revealed through a review of documents and analysis of interviews. Teacher candidates describe higher collegiality and support offered in PDS settings.

The two qualitative studies also contributed to our understanding of differences. Hopper’s (2016) study investigated differences in the clinical experiences of teacher candidates placed in PDS settings and non-PDS settings. The findings provided a clear distinction between the two settings as illustrated by three themes: teacher candidate acceptance in the clinical setting, flexibility and growth. PDS candidates felt accepted in the PDS setting and felt integrated into both the overall school and their mentor teacher’s classroom. Non-PDS candidates shared mixed feelings about their acceptance such as being a burden to the mentor teacher and not having clinical needs met in the placement. The PDS candidates, who felt the greatest amount of acceptance, also felt the greatest amount of flexibility in their setting and their learning opportunities. In sum, the PDS candidates reported a higher level of quality in their clinical experience, whereas the non-PDS candidates felt a lack of support and feedback from their mentor teachers.

Finally, Miller (2014) conducted a qualitative study to better understand the connections PDS and non-PDS participants made between their yearlong internship and their first-year teaching experiences. Results suggest that PDS and non-PDS participants made connections between their preparation and their first-year teaching experiences. However, non-PDS participants were more likely to share regrets related to their student teaching and coursework than PDS graduates. PDS participants reported that they felt prepared for their first year of teaching and shared stories that exemplified their learning growth in their first year of teaching. PDS graduates reported that university faculty played a large role in their success and in their first year of teaching.

So what can we learn from this collection of studies focused on the experience of learning to teach in a PDS versus a non-PDS? Evidence suggests that teacher candidates in the PDS identified an enhanced learning experience as a result of university faculty involvement in their clinical experience (Miller, 2014). Additionally, several studies indicate the promise PDS holds for the teacher candidate learning to teach including heightened mentor support of authentic learning and theory-to-practice connections (Dadlez, 1998; Komorek, 2013; Miller, 2014; Patterson, 2004), enhanced experience due to being a part of the learning community (Dadlez, 1998; Hopper, 2016; Kuchinski, 2005; Patterson, 2004), increased flexibility and alignment of learning (Hopper, 2016), enhanced growth (Hopper, 2016; Miller, 2014) and ability to better meet the needs of a diverse group of students (Komorek, 2013). In sum, there is strong evidence that the experience of learning to teach in a PDS is different from learning to teach in a non-PDS context.

**Theme Two: Studies related to practicing teacher learning experiences in a PDS vs. non-PDS**

Recognizing the important role professional learning plays for all members in the PDS (Essential 3), understanding the practicing teacher’s learning experience as well as that of other PDS community members (e.g., university teacher educators, school administrators) is
equally essential yet relatively understudied. Only two dissertations were identified that compared stakeholder learning and leading between PDS and non-PDS. Both of these studies focused on practicing teacher learning. Gissy (2010) investigated PDS and non-PDS teacher attitudes toward professional development. The expectation was that in a PDS where ongoing learning of the PDS community of educators is a priority, teachers would be more inclined to value professional learning. Gissy used the Teachers’ Attitudes about Professional Development (TAP) Scale (Torff, Session, & Byrmes, 2005) to measure teacher attitudes. The survey study revealed that participation in a PDS resulted in more positive attitudes toward professional development activities. Gissy noted that this increased interest in learning present in a PDS was due to the perceived relevance of professional learning, the access to faculty with research expertise in aligned areas and a culture focused on continuous learning for teachers and students.

Bruemmer (2018) investigated the practicing teachers’ experiences of working with teacher candidates in the PDS and non-PDS contexts. However, little evidence was found to support differences. Using a mixed-methods sequential study, Bruemmer compared the experiences of cooperating teachers in a PDS program and a traditional student teaching program. Although PDSs are intended to develop strong norms of collaboration and shared responsibility for teacher-candidate learning between the CTs and the university, results revealed no significant differences between the experiences of the CTs in the different programs.

While Gissy emphasized the relevance, aligned expertise and a culture focused on continuous learning for all, Bruemmer’s study focused on the teacher’s experience as a mentor and found little difference between PDS and non-PDS contexts. Given that Essential Three focuses on professional learning and leading for all, the limited number of studies and uneven findings reported across these two studies suggest that we need more research to inform this theme. We need research that captures how PDS practicing teacher learning experiences may or may not differ from non-PDS contexts. We would also benefit by an understanding of the nature of that learning and the outcomes of that learning. Additionally, research needs to expand to provide insight into how the learning of teacher educators and school administrators is similar or different in PDS contexts.

**Theme three: PDS vs. non-PDS studies comparing teacher candidate quality**

Teacher and teacher candidate quality is often measured by capturing teacher instructional expertise. In this study, we included additional measures believed to be related to teacher quality such as teacher efficacy and teacher beliefs regarding preparation. The 17 comparison studies that comprised the theme of teacher candidate quality used different methodologies. Eight of these studies were quantitative (Coffelt, 2013; Hahn, 2000; Hamar, 2013; Newsome, 2003; Parrott, 2018; Poe, 2003; Ray, 2013; Van Holten, 2016) and nine were mixed methods (Curtain, 2006; Dadlez, 1998; Grieb, 2000; Hildreth, 1997; Kuchinski, 2005; Malin, 2002; Patterson, 2004; Starling, 1999; Wright, 2009). In presenting the teacher candidate quality studies, we utilized the categories of teaching candidate exam scores, teacher candidate efficacy, teacher candidate assessment frameworks, teacher candidate perceived expertise and teacher candidate instructional practice.

**Teacher candidate exam scores.** We begin by exploring the studies that focus on teacher learning as measured by exams or knowledge of teaching practices. Four of the studies explored exam scores with none of them identifying a difference between PDS and non-PDS contexts. Hamar (2013) used the Praxis II exam scores designed to measure the knowledge and skills needed to prepare for classroom teaching. The Praxis II assessments included content knowledge and pedagogy to investigate the effectiveness of teacher candidates prepared in PDS versus non-PDS contexts. After controlling for gender, race and GPA score,
the mean Praxis II score for the PDS group was only marginally significantly different to the non-PDS group with a small effect size. Hamar’s conclusion was that learning to teach in a PDS has a limited effect on success in standardized licensure examinations and that more data are needed to determine if there is a value-added difference of PDS preparation that standardized measures cannot determine.

Coffelt’s (2013) quantitative study also used Praxis to investigate whether there was a difference in the promise and effectiveness of teacher candidates prepared in a PDS and a non-PDS model. A promise was assessed using t-tests for independent means focusing on the Praxis II scores. Similar to Hamar (2013), no statistically significant differences were found in the areas of promise as measured by the Praxis. The results from Wright’s (2009) mixed method study also did not support differences. The purpose of this study was to determine if there were any differences in performance measures of student teachers with varying levels of participation in PDS. The data collected included three subtests of the Praxis II series examinations, the student-teacher evaluation instruments and the senior exit interviews. Based on the analysis of the data and findings of the study, PDS field-based experiences appeared to have no significant relationship with student teachers’ Praxis II examination subtests scores, student-teacher evaluation instrument scores or their senior exit interview scores.

Finally, Kuchinski (2005) used mixed methods to study teacher candidate performance on selected teaching behaviors using five different instruments. These measures included: GPA, Praxis II, Massachusetts Consortium for Initial Professional Development of Teachers, Student-teacher Competency Evaluation and Beginning Educator Summative Assessment. In line with the other three studies, Kuchinski’s findings indicated no significant difference in selected teaching behaviors between Professional Development School participants and teacher candidates prepared in a traditional teacher education program. In many ways, the absence of a linkage between learning to teach in a PDS and measures like the Praxis are not surprising given that the exams are not designed to measure performance-based knowledge.

Teacher efficacy. In addition to using Praxis to measure teacher candidate knowledge, efficacy measures were explored in four studies. Newsome (2003) found that the setting of teacher candidate clinical experiences has a high correlation with candidates’ personal science teaching efficacy beliefs. The findings of this study indicated that pre-service teachers placed in PDS sites have higher personal science teaching efficacy beliefs than those placed in traditional settings.

Similarly, Ray (2013) investigated teacher efficacy between PDS and non-PDS-trained teachers. The findings suggest that teachers who trained in the PDS had an overall greater sense of efficacy toward the major components of teaching during their first year of teaching. They specifically tended to have a greater sense of success in the areas of classroom management and student engagement. Those who participated in the yearlong professional development school experience felt that they were better equipped to provide quality instruction in terms of effective strategies, student engagement and behavioral management. Although the mean score was higher for PDS in the area of instructional strategies, no significant difference was determined in the self-reported data on efficacy between the two groups.

In a mixed-method study by Patterson (2004), efficacy was utilized to explore the differences between PDS and non-PDS preparation. The self-efficacy scale captured foundational perceptions of efficacy for the voluntary yearlong PDS intern and the one-semester non-PDS student teachers. Analysis of survey items revealed statistically significant outcomes, favoring the PDS intern in all three factors: student engagement, classroom management and instructional strategies. Similarly, Hahn’s (2000) study indicated that PDS-trained teacher candidates demonstrated higher levels of teacher efficacy than non-PDS-trained teachers.
Finally, Parrott (2018) targeted self-efficacy by surveying teacher candidates twice during student teaching to determine: (a) if self-efficacy changed during student teaching, (b) if a relationship between the type of student teaching (traditional vs. PDS) and self-efficacy existed and (c) if a relationship between program majors (early childhood, elementary and middle level) and self-efficacy existed. Unlike the prior studies, no significant difference was found between the two groups. However, important to note is that the researchers reported low response rates that may have played a role in these findings. This review identified four of the five studies as supporting the claim that PDS teacher candidates are typically more self-efficacious than non-PDS graduates. The measure of self-efficacy not only reflects learning but also influences the effort that teachers exert in their teaching. This is particularly important because teachers with self-efficacy typically work hard to learn how to perform new tasks because they are confident that their efforts will be successful.

**Teacher candidate assessment frameworks.** Two studies used teaching frameworks to compare PDS and non-PDS teacher candidates. Poe (2003) used interviews with principals about their observations of teacher candidates to determine if a yearlong internship in a PDS setting had a positive and lasting effect on practicing teachers. Using the 30 elements of domains II and III from Danielson’s Framework for Teaching (1996), two groups of teachers were studied, first-year teachers trained in PDS sites and second/third-year teachers who had not gone through a PDS yearlong internship. The scores for each of the 30 categories for each group were compared. The mean scores for the first-year elementary teachers who had completed a PDS yearlong internship were higher in all 30 categories than the second/third-year teachers who did not have the PDS experience. The first-year teachers trained in a PDS model outperformed the second-/third-year teachers who did not participate in a PDS yearlong internship. These results suggest that PDS teacher candidates who have completed a year-long internship will perform better than the mean of second/third-year elementary teachers who have not completed a year-long internship.

Van Holten (2016) also investigated teacher preparation effectiveness using domains similar to Danielson’s Framework for Teaching (1996). A survey of Maryland’s Eastern Shore teacher candidates’ understanding and perceptions showed that teachers who had PDS or non-PDS training were more similar than different in each of the domains: design curriculum and instruction, support diverse learners, use assessment to guide learning and teaching, create a positive classroom environment and develop professionally. Van Holten found little difference but noted that teachers in both groups acknowledged needing ongoing professional development to strengthen areas of diverse learning, to provide high-quality instruction and curriculum to meet the needs of all students and provide additional resources for teachers to teach English language learners. Although these two studies focused on shared areas, they differed in both results and the data used. In Poe (2003), observations and interviews were used to identify positive differences between PDS and non-PDS. Van Holten relied on self-reported surveys and found no differences. More research is needed to better understand the differences related to these framework areas and measures.

**Teacher candidate perceived expertise.** A few studies surveyed teacher candidates to better understand teacher candidate perceived expertise. Starling (1999) conducted a mixed-method study of practicum students’ attitudes in PDS and non-PDS urban teacher education programs to understand the degree to which a mature PDS could be differentiated from a less mature PDS and non-PDS teacher preparation contexts. The comparison focused on five professional attributes: diversity, collaboration, reflection, theory-to-practice and motivation/efficacy. The study examined the five attributes across three contexts: (1) a mature PDS environment, (2) a traditional school environment and (3) a newly established PDS. With regard to the five professional attributes, the mature PDS environment was most successful in encouraging these positive professional attitudes. Qualitative findings showed that the clinical faculty in the mature PDS environment was focused equally on the needs of the school and the needs of
teacher candidates. This study provides some important evidence that the maturity of a PDS context (e.g., degree and depth of implementation) influences outcome measurement and the importance for researchers to not measure an innovation before its time.

Curtain (2006) also used mixed methods to compare the perceptions of traditional teacher education and PDS graduates regarding their preparation for urban teaching experiences and examined learning in the areas of collaboration, management, motivation and evaluation. In all of these areas, except collaboration, the PDS participants felt more prepared than non-PDS graduates. Interestingly, the survey revealed that non-PDS participants were more positive about their leadership preparation than the PDS participants, yet interviews revealed that PDS graduates were more likely to assume leadership roles than their non-PDS colleagues. In the area of urban preparation, the PDS participants felt that they were more prepared than their non-PDS colleagues. As noted, in both of these studies PDS teacher candidates identified heightened expertise that they attributed to their PDS experience.

Teacher candidate instructional practice. A few studies examined differences in instructional practice. For example, Daldez (1998) compared PDS and non-PDS teachers using Fuller’s (1969) Developmental Teachers’ Concerns Theory and Veenman’s (1984) perceived problems of beginning teachers to see whether the differences in the effects of teacher education programs “wash out” over time by comparing first- and second-year teachers within each program. Results indicated that PDS graduates had an easier transition to teaching and that their concerns were more advanced in their second year of teaching.

Also identifying differences, Malin’s (2002) mixed-method research investigated the degree to which teacher candidates’ perceptions related to DAP were evidenced in their instructional practices as well as how the perceptions of DAP of teachers trained through traditional teacher preparation programs and a PDS differed. This study found evidence of heightened teacher quality in PDSs. Using questionnaires, observations and interviews, Malin found that the observations did show the professional development school teachers appeared to be the most developmentally appropriate in their applications of instructional practices. However, no significant differences were found in teachers’ perceptions.

Hildreth’s (1997) mixed-method study investigated the effects of learning to teach science in a PDS program on university elementary education preservice teachers’ attitudes toward science, science process skills achievement and sense of science teaching efficacy. Unlike the other comparison studies, this study’s comparison group was another PDS that was not focused on learning to teach science. Evidence suggests that students improved attitudes toward science and science teaching. Science teacher efficacy was significantly higher. In combination, the findings show that students in the science-focused PDS program possessed stronger attitudes toward science, science process skills achievement and sense of science teaching efficacy. More research that specifically focuses on performance and instructional practice would benefit teacher educators in understanding the coupling of theory, research and practice.

In sum, the dissertations related to teacher candidate instructional practice (Daldez, 1998; Hildreth, 1997; Malin, 2002), teacher candidate perception of their expertise (Curtain, 2006; Starling, 1999), teacher candidate development related to frameworks (Poe, 2003; Van Holten, 2016) and teacher candidate efficacy (Newsome, 2003; Parrot, 2018; Patterson, 2004; Ray, 2013) show promise in differentiating between PDS and non-PDS teacher candidate quality. However, the studies that used Praxis as a measure of teacher quality showed little differences between PDS and non-PDS (Hamar, 2013; Coffelt, 2013; Kuchinski, 2005; Wright, 2009).

In reviewing these studies focused on various measures or proxies of teacher quality, some evidence suggests that a disposition toward professional learning and perceptions of teacher efficacy and perception of preparedness may be more likely for PDS graduates. However, no evidence exists that teacher quality as traditionally measured by Praxis is better in PDS versus non-PDS.
Theme four: studies comparing PDS vs. a non-PDS practicing teacher quality

Only one dissertation study focused on teacher knowledge by comparing teacher quality in a PDS and a non-PDS. Griebe (2000) examined differences in teacher learning regarding reading comprehension beliefs and practices. The mixed method study investigated the similarities and differences of teachers’ reading comprehension and reading comprehension-monitoring practices in fifth-grade PDSs and traditional school classrooms. No statistically significant differences existed in the beliefs or practices of reading comprehension and reading comprehension monitoring strategies between the school types. Griebe suggests that one reason no differences were found is that there must be a strong relationship between the PDS and a university as defined by a PDS (Abdal-Haqq, 1996; Teitel, 1997) to make the theory to practice changes that provide solid preparation for teacher candidates. Griebe explains:

Barksdale-Ladd et al. (1994) suggest, there may be a lower-level collaboration between these PDSs and the university involved that does not filter down to the teachers themselves getting involved. In the two PDSs that I visited, not one teacher spoke of any type of reform or change evolving because of being in a PDS environment. Is this because of the principals’ or curriculum’s tight hold on the practices at these schools? I do not think that is the case here. It appears more that these schools have not reached the organic collaboration stage as suggested by Barksdale-Ladd et al. (1994). (p. 150-151)

Griebe suggests that the lack of difference may be accounted to the PDSs not moving to the deeper forms of collaboration that are needed for the deep curricular or instructional change or innovation (Essential 4). Griebe noted the stages include: (a) cooperative collaborations in which the university and the public school have a short-term contract and a service provided; (b) symbiotic collaboration is characterized by reciprocity of some sort between the two types of schools, and (c) organic collaboration is one in which both institutions work at mutual issues and concerns and foster joint solutions (Barksdale-Ladd et al., 1994). Griebe suggests that:

The first two types of collaborations do not foster much significant change in either institution because of control, anxiety, and power issues (Nadler, 1987). I believe the relationships between the university and the PDSs in this study were somewhere between the second and third type of collaboration; they have not thoroughly reached the organic stage yet.

Griebe’s statement is a reminder about the importance of recognizing a PDS that would have measurable outcomes different from non-PDS contexts will need to be a PDS characterized by organic and mature (Starling, 1999) collaboration.

Given that there are few studies that capture differences in teacher learning within PDS and non-PDS, this is an area ripe for future research. If PDS are intended to be places ripe for reflective practice, responsive innovation and generative knowledge (Essential 4), understanding the different roles, responsibilities, activities and outcomes related to this teacher engagement seems essential.

Theme five: studies comparing school leader experiences in a PDS versus a non-PDS

School leadership is essential in enacting a PDS mission, garnering appropriate resources, establishing key activities and nurturing an innovative, inquiry-focused culture. Only one study was identified that explored the differences in the quality of the school leader in PDS and non-PDS settings. Lancaster’s (2010) survey study compared the perceptions of two groups of West Virginia school principals using the Interstate School Leaders Licensure Consortium (ISLLC) standards which measured six domains using 31 items. Of the 31 items, only collaboration in Domain 2-Advocating was statistically significant. Although the PDS principals identified with greater collaboration, that was the only significant difference across the domains and items. More research needs to be done to understand the quality of the PDS school leader and how that impacts the PDS actualizing its shared mission.
Theme Six: Studies comparing K-12 student learning in a PDS vs. a non-PDS

Student learning is at the core of the PDS mission and NAPDS (2021) embeds PK-12 learning into each of the Nine Essentials with specific language used in Essentials 1, 3, 4 and 5, including improvement of PK-12 learning, ongoing activities that promote learning, enhanced educational opportunities for PK-12 students and planned study of the PDS work and its effects on learning. Five comparison dissertations focused solely on student learning, and with mixed results (Anderson, 1995; Coffelt, 2013; Grissom, 2003; Hahn, 2000; Ogletree, 2007).

Anderson (1995) used a comparison analysis of quantitative data including student achievement. This study compared six classrooms (K-2) in a PDS and six classrooms in the same school that were not involved in the PDS. The PDS students scored higher in the CAT reading areas, but there was not a significant difference in the math scores. Grissom (2003) also compared student achievement in PDS and non-PDS elementary schools and found that PDS was associated with higher achievement only in grade 4 science. Similarly, Hahn (2000) compared PDS-trained and non-PDS-trained initially licensed teachers to determine the effects of the variables of teacher training, years of experience and grade level assignments. Evidence was lacking to support increased student achievement as a result of PDS training.

Ogletree (2007) used a quasi-experimental design to examine the effect of PDS partnerships on student achievement in science and mathematics in 12 high-need, urban elementary, middle and high schools. Three of the six ANOVAs showed significant change in achievement means for the PDS schools when using PDS school data only. However, when data from both PDS and matched comparison schools were analyzed, the overall results indicated no statistically significant gains in mathematics and science for the PDS schools in relation to the comparison schools.

The last dissertation, Coffelt (2013), in this subset of comparison studies focusing on student achievement had some interesting results. While there were no differences found in the areas of promise and effectiveness of teacher candidates, there were positive findings in the area of student achievement. When measuring the effect sizes, a medium-to-large difference was found, showing the mean percent of proficient students in the PDS group being larger than the mean percent proficient in the traditional group in mathematics.

The dissertations focusing on outcomes of student learning in PDS and non-PDS settings did not show a direct and consistent link between PDS and student learning. In returning to the PDS logic map which serves as the theoretical framework for this study, what inputs, activities and conditions would we expect to capture outcomes of K-12 student learning and to what extent did each of the studies reviewed have PDSs that reflected those conditions?

Discussion

By placing the Nine Essentials in the logic map offered in the theoretical framework, we provided a roadmap that illustrates the links needed to understand the impact of PDSs as compared to the impact of non-PDSs. The logic map provided a tool for illustrating PDS goals as well as inputs and activities which need to be undertaken to achieve those goals. The logic map proposes a pathway to realizing PDS outcomes. To provide a bird’s eye view of this collection of dissertation studies, Figure 2 presents the study outcomes on the logic map moving from left to right. Early outcomes expected are differences in the experiences of teacher candidates, practicing teachers, school leader and teacher educator learning. Intermediate outcomes are considered differences in the quality of teacher candidates, practicing teachers, school leader and teacher educator learning. Final outcomes are considered differences in student learning. In reviewing outcomes, the green text illustrates study findings where evidence indicated PDSs were more effective than non-PDS. Red indicates areas where little or no results were found in favor of PDS.
As illustrated, PDSs show promising differences in the teacher candidate’s experience of learning to teach, and one of the two studies of practicing teachers suggests that practicing teachers also identified a heightened experience of teaching in a PDS. In moving to more intermediary outcomes, the research indicates no differences in teacher candidate quality as measured by the licensure exams, but differences do exist related to teacher candidate efficacy and perceived expertise or readiness favoring PDS teacher candidates. This is not surprising given the focus of most PDSs is enhancing the teacher-candidate learning to teach experience. However, no difference was found in practicing teacher or school administrator quality. In terms of final outcomes, no differences in student learning were evidenced either. What we see is that the further we get away from the experiences associated with preparing teacher candidates to teach, the less noteworthy the results are. The research can make no claims related to student learning or knowledge of teaching as measured by exams. In many ways, the absence of a linkage between learning to teach in a PDS and measures like the Praxis are not surprising nor is the absence of difference in K-12 student learning as measured by standardized tests. Praxis exams are not designed to measure performance-based knowledge, and the linkages to standardized tests are likely not tightly coupled enough to capture student learning. In sum, the logic map summary illustrates that the further we move away from reporting initial outcomes related to differences in experiences, the less evidence we have to support PDSs are more effective than non-PDS contexts.

So what claims can we make based on our analysis of this collection of studies focused on PDS outcomes? Evidence from this study suggests a few claims can be made to differentiate PDSs and non-PDSs. First, teacher candidates in the PDS identified multiple sources of enhanced learning, suggesting there is strong evidence that the experience of learning to teach in a PDS is different from and better than learning to teach in a non-PDS traditional teacher preparation context. Second, and not surprisingly, the research is also convincing that PDS teacher candidates are more self-efficacious and perceive themselves as possessing heightened expertise when compared with their non-PDS peers. However, today teacher

---

**Figure 2.** Dissertation Studies related to the PDS logic map

<table>
<thead>
<tr>
<th>Goal</th>
<th>Inputs</th>
<th>Activities</th>
<th>Culture of Inquiry &amp; Innovation</th>
<th>Initial Outcomes</th>
<th>Intermediary Outcomes</th>
<th>Final Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential 1: A professional development school (PDS) is a learning community guided by a comprehensive, articulated mission that is broader than the goals of any single partner, and that aims to advance equity, antiracism, and social justice within and among schools, colleges/universities, and their respective community and professional partners</td>
<td>Essential 6: Articulated Agreements</td>
<td>Essential 2: Clinical Preparation A PDS embraces the preparation of educators through clinical practice</td>
<td>Essential 3: Professional Learning and Leading A PDS is a context for continuous professional learning and leading for all participants, guided by need and a spirit and practice of inquiry</td>
<td>Essential 4: Reflection and Innovation A PDS makes a shared commitment to: (1) reflective practice (pedagogy) (2) responsive innovation (3) generative knowledge related to enhanced teaching</td>
<td>Essential Outcomes: Enhanced teacher candidate quality (Certification Exams-Human, Coffelt, Wright, Kuchinski); Efficacy- Newsome, Ray, Patterson, Hahn, Parrott; Frameworks- Poe, Van Holsen; Expertise- Starling, Curtain; Practice- Dilderz, Malin, Hildreth)</td>
<td>Enhanced Student learning (Anderson, Grisom, Hahn, Ogletree, Coffelt)</td>
</tr>
<tr>
<td>Essential 5: Research and Results A PDS is a community that engages in collaborative research and participates in the public sharing of results in a variety of outlets</td>
<td>Essential 7: Shared Governance Structures</td>
<td>Essential 8: Boundary-Spanning Roles</td>
<td>Essential 9: Resources and Recognition</td>
<td></td>
<td>Enhanced K-12 leader quality (Lancaster)</td>
<td>Enhanced teacher educator quality</td>
</tr>
</tbody>
</table>

---

**SUP**
residencies also focus on high-quality clinical preparation within MAT and undergraduate programs. The residency model has also shown promise of enhanced candidate development (Guha, Hyler, & Darling-Hammond, 2016) without the expanded goals and complex collaboration expected within the PDS model. This raises the question for PDS researchers as to whether there is a difference between learning in a non-PDS teacher residency and learning in a PDS? This points to the importance of identifying and researching the value-added activities of PDS beyond teacher-candidate development.

Although in some of the dissertation studies we see that PDS sites and universities work more collaboratively and offer more successful experiences for teacher candidates, we need a more intense and organized approach to research using the NAPDS Nine Essentials. If the research community believes the Nine Essentials are the standard for PDS operation and that comparison studies are needed to make important shifts in teacher education, gaps in the research exist. By focusing on the PDS Nine Essentials (NAPDS, 2021) and the logic map to provide insight into the linkages that need to be in place to enact the coveted goal of enhanced learning for all, we propose the following future areas for research and questions to frame those agendas. More research is needed to examine the:

1. Experience of practicing teachers within the PDS compared with those who are not involved with PDS work including issues of teacher retention;
2. Quality of practicing teachers within the PDS as compared to those who are not involved with PDS work;
3. Experiences of teacher educators and school administrators who work in a PDS compared to those who are not involved with PDS work;
4. Quality of teacher educators and school administrators who work in a PDS compared to those who are not involved with PDS work;
5. Performance of teacher candidates using a shared framework for those who work in a PDS and those who are not involved with PDS;
6. Degree of theory, research and practice connections related to teacher candidate instruction in PDS and non-PDS contexts; and
7. Activities of reflective practice, responsive innovation and generative knowledge shared by stakeholders in PDS and non-PDS

Limitations of PDS dissertation research
We are left with questions about PDS dissertation research and the limitations that we identified during our analysis of these comparison studies. What follows are the limitations and some thoughts on next steps.

Complications of comparison
PDSs like traditional teacher preparation vary tremendously in focus and context (e.g., high/low performing, rural/urban), quality of support (e.g., mentor support, financial support), as well as depth of collaboration (e.g., coherence of curricula, educator turnover), making comparison among PDSs as well as between PDS and non-PDS problematic. We believe that as a community, more attention needs to be given to these research complications as we develop our research agendas.

Logic-related fallacies. In our review of PDS comparison studies, we are concerned that perhaps scholars have made some logic-related fallacies in designing their studies. Logical fallacies occur when errors are made in reasoning that undermines an argument’s logic. For
example, should we really expect the outcomes of PDS work to be increased performance on the Praxis exam? Should we expect that if the PDS has spent the last few years focused on building collaboration or deepening high-leverage practices for students with disabilities that there would be an increase in reading performance as captured on a state exam? In some ways, researchers may have been enticed to use existing measurement tools that actually do not align with the work being conducted in the PDSs. These logic fallacies may have relied on using irrelevant or less relevant measurements or illegitimate arguments that are not a best fit for understanding PDS value.

Complexity of capturing simultaneous renewal. Enacting simultaneous renewal appears to be a key lynchpin to realizing the outcomes illustrated in the logic map is complex. Simultaneous renewal requires enacting essentials two through five as core activities within a culture of collaborative inquiry and innovation. This culture is different because of the school-university collaboration. We offer as an example:

PDSs bring university faculty and practicing educators intentionally together to innovate and generate new knowledge and practice. This collaboration moves beyond sharing teacher candidate supervision activities to include designing and implementing clinical experiences that coherently link theory, research, and practice within a teacher preparation program. While working together, the partners engage in collaborative inquiry focuses on their most important shared problems of practice with the goal of improving student learning. The collaboration results in innovation and the generation of new knowledge and practice for that local context and offers insights for others outside of that context. This complex work has the potential to shift the nature, content, and experience of teacher candidate learning as well as practicing teacher, building leader, and teacher educator professional learning.

Perhaps one of the outcomes the PDS community might focus on is illustrating the nature of the innovation that is made possible in PDS as well as sharing the new knowledge and practice generated through simultaneous renewal.

Although the current exploration of PDS comparison dissertations does present clear evidence that PDS has a more favorable impact when compared with non-PDS experiences, our review provides insight into where we may need to pay more attention as a research community. The enactment and study of Essential Five cannot be missing if we are to strengthen the linkages needed to potentially capture student learning. To strengthen the linkages, research will need to focus more deeply on changes in practicing teacher, school leader and teacher educators that influence student learning. Design-based research (DBR, 2003) is a collaborative inquiry tool that could benefit the PDS community as it seeks to strengthen Essential 5. Without a deep and collaborative enactment of Essential Five, the PDS logic linkages that comprise the pathway are broken and the expectation of measurable difference is likely unwarranted.

Some might say that we are too ambitious in trying to capture these PDS outcomes. Others may say we have not been ambitious enough in creating partnerships that have ensured that each component of the pathway in the logic model is collaborative and deep enough conceptually to enact movement from doing the activities (version 1.0) to a collective implementation of innovating and inquiring into the PDS activities (version 2.0). Just like ambitious teaching (Lampert, Boerst, & Graziani, 2011), perhaps we need to think more about ambitious PDS. An ambitious PDS would be a PDS that embraces, links, enacts and sustains each of the components of the logic map. Maybe an ambitious PDS does result in a culture of inquiry and innovation that can be captured in student learning or maybe that goal is too complex and too ambitious? PDS researchers will need to wrestle with that question.
References


**Corresponding author**
Diane Yendol-Hoppey can be contacted at: diane.yendol-hoppey@unf.edu

For instructions on how to order reprints of this article, please visit our website: [www.emergalgrouppublishing.com/licensing/reprints.htm](http://www.emergalgrouppublishing.com/licensing/reprints.htm)

Or contact us for further details: permissions@emergalinsight.com