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DO PROFESSIONAL DEVELOPMENT SCHOOLS (PDSs) MAKE A DIFFERENCE?

A COMPARATIVE STUDY OF PDS AND NON-PDS TEACHER CANDIDATES

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This study assesses the impact of professional development schools (PDSs) on preservice teachers, comparing PDS and non-PDS candidates at the point of licensure. Data sources include student teaching evaluations and portfolio presentations. Statistical analyses reveal PDS candidates scored significantly higher than non-PDS candidates on aspects of planning, instruction, management, and assessment. Qualitative analysis of portfolio presentations reveals PDS candidates showed greater ownership of their school and classroom and more sophistication in applying and integrating Interstate New Teacher Assessment and Support Consortium standards. Five differences are discussed: how and why versus what, standards connected versus standards isolated, assessment as driving instruction versus assessment as tools, reflection connected to practice versus reflection not connected to practice, and student focus versus self-focus. Contextual and programmatic differences are used to explain the differences. The case is made that PDS graduates may affect student learning sooner than traditionally trained beginning teachers.

Keywords: *professional development schools; preservice teacher education; assessment; reflection*

The purpose of this study is to assess the impact of professional development schools (PDSs) on preservice teachers by comparing PDS and non-PDS teacher candidates at the time of licensure on planning, instruction, management, assessment, professionalism, and reflection.

School-university partnerships have been forwarded as an avenue for improving teaching, learning, and teacher preparation for almost 20 years (Holmes Group, 1986; Levine, 1992). PDSs are clinical field sites in which the

school and university partners focus together on improving teacher education and the professional development of practicing teachers as well as increasing student achievement and conducting research. PDS programs are intensive for teacher candidates in terms of time and energy and are expensive for universities in terms of faculty load. Those involved in PDSs attest to their value; yet because of their complexity, connections between PDS activities and their impact on teaching have been hard to

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make (Abdal-Haqq, 1998; Book, 1996; Teitel, 1998). A report by the Education Commission of the States (2003) found no conclusive evidence supporting PDS programs but did suggest the importance of strong, well-supervised field experiences that are integrated with course work and lead to a solid grasp of subject matter and pedagogy. Given the current policy environment in which the No Child Left Behind Act of 2001 has defined teacher quality as subject area knowledge and in which teacher shortages have led to fast-track teacher licensure programs, and given the resource-intensive nature of PDS work, PDS programs must show value-added evidence of their impact on the teachers they prepare.

A *solid grasp* of content and pedagogy is defined in many teacher education programs by the Interstate New Teacher Assessment and Support Consortium (INTASC) standards: research-based descriptions of the knowledge, skills, and dispositions that need to be developed in preservice teachers. They define the criteria for teacher licensure. Thus, to be licensed, a teacher candidate must demonstrate knowledge of content and ability to use the methods established by the discipline; knowledge of how children differ and the ability to address the needs of each child; knowledge of development and the ability to provide developmentally appropriate experiences; the ability to use a variety of instructional strategies appropriately and effectively; the ability to create a positive learning environment and manage behavior; the ability to communicate effectively in a variety of ways, including technology; the ability to plan appropriate and effective lessons; the ability to assess student learning and use the results to design instruction; the ability to reflect on one's teaching to improve teaching practice; and the ability to communicate effectively with parents, school officials, and community personnel to meet students' needs. The current study does not seek to provide a literature review on each of these areas of teaching but instead, to use the standards as a framework for investigating preservice teachers' ability to teach.

PDS and non-PDS programs both produce licensable teachers according to these standards. However, when one of our partner school districts began to pay 1st-year PDS graduates as 2nd-year teachers because they had more experience (essentially a year's worth of mentored experience) and taught more like experienced teachers, we began to wonder if "more experience" really did differentiate PDS and non-PDS graduates and if so, how. Rivlin, Hanushek, and Kain (2002) found that experienced teachers produce greater student learning gains than inexperienced teachers. Therefore, it is possible that PDS graduates might affect student learning sooner (that is, perhaps in their 1st year of teaching) or to a greater extent than non-PDS graduates. If that were indeed the case, this would provide evidence of the value-added impact of PDS teacher preparation. The purpose of the current study is to investigate the "experienced teachers" part of the equation (student learning was beyond the scope of the current study, but positive results would certainly indicate the need for student learning follow-up studies). Therefore, we investigated the extent to which PDS and non-PDS graduates differed on the INTASC standards and what aspects of PDS preparation might have contributed to any salient differences.

To fulfill the purpose of the study, the following research question was asked:

Research Question 1: To what extent do PDS and non-PDS teacher candidates differ in planning, instruction, management, assessment, professionalism, and reflection as defined by the INTASC standards?

PROGRAM DESCRIPTION

PDS and Non-PDS Programs

George Mason University has two postbaccalaureate elementary licensure programs: a PDS program and a non-PDS program. These programs are implemented in partnership with seven PDS schools and five non-PDS schools located in four school districts. The PDS schools

were carefully selected for diverse student populations, number of trained clinical faculty, technology integration, faculty commitment, and coherence with the university's teacher education program. The non-PDS schools are long-term partner schools but were not selected according to the above criteria.

Admissions criteria are the same for PDS and non-PDS applicants. Candidates self-select the program to which they will apply. PDS candidates are full-time students with daytime courses and year-long internship responsibilities. Non-PDS candidates are part-time students with evening course work until the student teaching semester. Thus, non-PDS candidates tend to be those who must continue to work full-time until student teaching, whereas PDS candidates are able to give up their full-time work for a year or they have just completed their undergraduate degree and not yet entered the workforce.

Teacher candidates proceed through their respective programs in cohorts. Teacher candidates in both programs take the same courses (in a different sequence), complete the same assignments, and are exposed to the same philosophy and conceptual framework. However, PDS candidates take methods courses during a year-long internship and non-PDS candidates complete their methods courses prior to a semester of student teaching. Most courses are taught by George Mason University faculty, although the non-PDS program uses somewhat more adjunct professors. All field placements and student teaching experiences take place within partner schools (either PDS or non-PDS schools, respectively) with clinical faculty who are trained by university faculty. University faculty supervise the PDS teacher candidates and one university faculty member and several adjuncts who are familiar with the program supervise the non-PDS teacher candidates. All teacher candidates complete a portfolio and give a portfolio presentation at the end of the program.

The PDS program involves four semesters: spring and summer semesters of course work with field experiences followed by a full-year

internship (from the beginning to the end of the public school year) with concurrent course work. PDS teacher candidates complete two placements of one semester each, one in a lower grade and the other in an upper grade, both within the same PDS site. During the internship, PDS teacher candidates continue their course work, participate in "sheltered" substituting (that is, subbing assignments that are scaffolded according to familiarity: first in their clinical faculty's classroom, then their team, then anywhere in the school) and undertake 1 week of supported, independent teaching in the fall and 4 weeks of independent teaching in the spring. Each PDS has a university faculty member assigned to it for 1 day a week to work with interns and clinical faculty and to facilitate the professional development and research aspects of the PDS program.

In contrast, the non-PDS graduate program spans five semesters: four semesters of course work with field experiences followed by a traditional student teaching experience of 15 weeks divided into 1 week of orientation to the school and two placements of 7 weeks each (one upper and one lower elementary). Teacher candidates are supervised in a fairly traditional manner, with the supervisor conducting observations, conferences, and seminars. See Table 1 for a comparison of the two programs.

METHOD

Participants

Participants in the study included all elementary teacher candidates, PDS and non-PDS, from two cohorts. Cohort 1 included 24 PDS teacher candidates and 14 non-PDS teacher candidates. Cohort 2 included 36 PDS teacher candidates and 17 non-PDS teacher candidates. The total number of PDS teacher candidates in the study was 60 and the total number of non-PDS teacher candidates was 31.

All participants showed acceptable levels of basic skills. They were required to have completed a bachelor's degree, with a minimum

TABLE 1 Differences and Similarities Between Non-PDS and PDS Programs

<i>Non-PDS</i>	<i>PDS</i>	<i>Both</i>
Partnership focus on teacher preparation	Partnership focus on teacher preparation, professional development, research, and student learning	Students in cohorts
15-week student teaching	Year-long internship	Trained clinical faculty
Course work prior to student teaching	Course work during internship	
Faculty or adjuncts in school four to six times per semester to observe and conduct seminars	Faculty in school 1 day a week to observe and conduct seminars, as well as facilitate and participate in professional development, research, and student learning initiatives	
Supervision primarily observations	Supervision embedded in life of school	
Student teachers involved in classroom teaching	Interns involved in classroom and schoolwide teaching, professional development, inquiry, committees	
Do not serve as substitutes	Serve as substitutes and receive a stipend	

NOTE: PDS = professional development school.

grade point average of 3.0, and to have passed PRAXIS I prior to admission.

Data Sources

Multiple sources of data were collected for each teacher candidate. The two primary data sources included (a) student teaching evaluation forms and (b) tapes of student teaching portfolio presentations. Secondary data sources for triangulation purposes included student teaching portfolios and notes from portfolio interviews. The data sources were the same for PDS and non-PDS teacher candidates.

The student teaching evaluation form is completed at the end of the internship/student teaching by the university supervisor in consultation with the clinical faculty and the teacher candidate. The form includes 46 INTASC-based items clustered in four sections: planning and preparation, instruction and management, assessment, and personal and professional development. Each item is rated on a 5-point scale with 5 as the highest. The form was developed by program faculty 6 years ago and has been refined twice in collaboration with clinical faculty.

Several sources of data were obtained for the portfolio. The portfolio is organized by INTASC standards grouped according to planning, instruction, and assessment. The purpose of the portfolio is to have teacher candidates provide concrete evidence of their knowledge, skills,

and dispositions; to connect their classroom practice to the INTASC standards; and to show growth. Each candidate must present his or her portfolio at the end of student teaching. The presentations took place in the candidates' schools. Each teacher candidate was asked to share a section of his or her portfolio and talk about how it showed the candidate's competence and growth. The portfolio presentations were audiotaped. After the presentations, field notes were taken on the portfolios themselves. Finally, interviews with individual teacher candidates were conducted to obtain additional information about the portfolios for triangulation purposes; field notes were taken.

Data Analysis

Quantitative analysis. Scores for the student teacher evaluations were entered into an SPSS data file (Norusis, 1998). Each teacher candidate was assigned a random identification number and coded as PDS or non-PDS and as Cohort 1 or 2. One-way analysis of variance was conducted to determine any differences between groups with program (PDS or non-PDS) as the independent variable and student teacher evaluation form scores as the dependent variable. The number of analyses totaled 46 (1 for each item). Various analyses were conducted to test the extent to which the data met the assumptions for ANOVA. The independence assumption was met by the characteristics of the sample.

The assumption of normality was also met. The Levene Test for homogeneity of variance was used because there was a difference in sample sizes between the PDS and non-PDS groups. These tests indicate that the assumption of homogeneity of variance was met for most of the items on the student teaching evaluation. Analyses that did not meet the equality of variance test were not reported in the results. The relatively small *N* may have had some impact on the results.

Qualitative analysis. The portfolio tapes were assigned a letter for identification and coded as PDS or non-PDS and as Cohort 1 or 2. The number of taped presentations totaled 36 PDS candidates and 25 non-PDS candidates (this number varies from the number in the quantitative analysis because of technical problems with taping or candidates who chose not to be taped). The tapes of the portfolio presentations were transcribed and then divided into passages. A *passage* was defined as an idea segment. When a candidate discussed a specific strategy, incident, example, or reflective insight, it was considered a passage. Some passages were only one or two lines in length, whereas others were considerably longer. In the first phase of analysis, the passages were analyzed qualitatively for emergent themes and patterns (Maxwell, 1996). The second phase of analysis consisted of clustering the passages on salient and recurring themes (Bogdan & Biklen, 1992). Patterns, color coding, and cross-case charts suggested additional ways to organize the passages that led to deeper cross-case analyses (Patton, 1990). Field notes from the portfolios and interviews were coded according to the themes and used for triangulation. Then the identified themes were organized according to the INTASC standards. Finally, PDS and non-PDS passages were counted and compared within each theme to identify and describe any differences between the two groups. Of the 10 INTASC standards, 9 could be analyzed (Standard 1, Content Knowledge, did not include sufficient discussion in the portfolio presentations to enable analysis).

TABLE 2 Significant Differences in Means Between PDS and Non-PDS Teacher Candidates on Individual Items of the Student Teaching Evaluation Form

Item	n	Mean	Significance
Preparation/planning			
Materials			
PDS	47	4.73	
Non-PDS	20	4.30	.002**
Instruction/management			
Clear content/instructions			
PDS	47	4.61	
Non-PDS	19	4.21	.008**
Questioning			
PDS	47	4.62	
Non-PDS	20	4.25	.022*
Routines			
PDS	47	4.63	
Non-PDS	20	4.30	.043*
Multitasking			
PDS	47	4.51	
Non-PDS	19	4.11	.026*
Firm and fair			
PDS	47	4.62	
Non-PDS	20	4.33	.049*
Assessment			
Through observation			
PDS	47	4.69	
Non-PDS	20	4.40	.045*
Record keeping			
PDS	47	4.55	
Non-PDS	20	4.20	.017*
Student communication			
PDS	25	4.72	
Non-PDS	20	4.28	.009**
Variety of assessments			
PDS	25	4.62	
Non-PDS	17	4.18	.014*

NOTE: PDS = professional development school.
* $p < .05$. ** $p < .01$.

RESULTS

Student Teaching Evaluations

Out of 46 individual items on the student teaching evaluation form, 10 showed significant differences, all in favor of PDS teacher candidates (see Table 2). In the planning and preparation section, PDS teacher candidates showed significantly higher scores ($F = 10.33, p < .01$) on only 1 item (out of 10): "Gathers, creates, and organizes materials and equipment in advance." Thus, PDS and non-PDS candidates were similar in their ability to plan for instruction.

In the instruction and management section, 5 items (out of 17) showed significant differences for PDS teacher candidates: (a) "Presents content accurately and instructions clearly" ($F = 7.49, p < .01$), (b) "Encourages critical thinking and problem solving through prompts, questioning, and application" ($F = 5.50, p < .05$), (c) "Creates an orderly and supportive environment by establishing and using routines" ($F = 4.29, p < .05$), (d) "Demonstrates ability to manage two or more classroom activities simultaneously with evidence of attention to each" ($F = 5.17, p < .05$), and (e) "Handles disruptive or destructive behavior firmly and fairly" ($F = 4.04, p < .05$). Thus, PDS candidates showed differences in 2 aspects of instruction and 3 aspects of management.

In the assessment section, 4 items (out of 8) showed significant differences for the PDS teacher candidates: (a) "Assesses for understanding and mastery through observation of students' performance" ($F = 4.17, p < .05$), (b) "Keeps records of students' progress and problems" ($F = 6.05, p < .05$), (c) "Communicates with students to inform them of their progress" ($F = 7.41, p < .01$), and (d) "Uses different methods of assessment to monitor student progress" ($F = 6.58, p < .05$). Thus, PDS teacher candidates were evaluated as significantly more competent on half of the assessment items.

Portfolios

Two primary differences between PDS and non-PDS teacher candidates emerged from the qualitative analysis: (a) PDS and non-PDS teacher candidates' ownership of and identification with their classroom and school setting and (b) PDS and non-PDS teacher candidates' level of sophistication in applying and integrating the INTASC standards.

Difference 1: PDS and non-PDS teacher candidates' ownership of and identification with their classroom and school setting. Two differences were found in PDS and non-PDS teacher candidates' use of language: use of present and future tense and use of possessives.

TABLE 3 Differences in PDS ($n = 36$) and Non-PDS ($n = 25$) Teacher Candidates' Identification With the Teaching Setting

Identification (Verb Tenses)	PDS Passages	Non-PDS Passages
Number of passages that indicate definitive identification with one's own teaching—spoke in terms of ongoing instruction (use of present tense or "what I did was . . ." or "I would always . . .")	38	5
Number of passages that indicate a sense of "not yet" teaching (use of future tense, idea conveyed of "when I have my own students," or a "real job")	3	15

NOTE: PDS = professional development school.

PDS teacher candidates used the present tense to talk about their teaching, whereas the non-PDS interns used the future tense to talk about how they would be teaching next year (see Table 3). PDS teacher candidates indicated a greater sense of ownership about their classroom and the learning occurring there (PDS = 38, non-PDS = 5). The following representative quote provides an example:

Differentiation, well at the beginning [of the year] I could define it, but now I can feel it in working with my students. . . . There's just such a great range of learning in 1st grade. I have been able to watch the students' development and their learning, assess it, and decide where I need to go with them next. . . . You know, I have students who can speak English, I have students who can't. I teach using the multiple intelligences . . . and connecting things to their lives is so important in order for them to learn . . . and now with this Rain Forest unit we're doing—the rain forest writing is just awesome! . . . The assessment, the anecdotal notes . . . the running records, all the pre- and post-testing, I can look at that and really understand what my students need, where they are now, and where I need to help them go.

In contrast, non-PDS teacher candidates used the future tense more often to talk about their teaching (non-PDS = 15, PDS = 3). For example,

I loved M's organization, and I'm going to use a lot of what she does next year when I'm in my own classroom. I love how she is building community in her classroom—that's a real important focus in the classroom, building a community, and I want to do that, too. . . . I learned so much . . . and when I have my

TABLE 4 Differences in PDS ($n = 36$) and Non-PDS ($n = 25$) Teacher Candidates' Sense of Ownership/Identification With Classroom and Teaching Setting

	PDS Passages	Non-PDS Passages
<i>Possessive Language</i>		
Number of passages that indicate a sense of ownership with classroom teaching setting ("my," "we do . . .," "what I do with my students . . .")	84	16
Number of passages that indicate a sense of "otherness" or "apartness" with the classroom teaching setting ("her" class, "I'm interning in M's class . . .," "like H does . . .")	12	49

NOTE: PDS = professional development school.

own classroom next year, I'm going to use a lot of what she taught me. . . . Just watching her work with them [the ESOL students] . . . and peer advisory, getting them to understand, differentiating for them and not at the expense of the other students. These are things I've learned and I'll use all of them next year in my teaching.

Differences were also evident in PDS and non-PDS teacher candidates' use of possessives (see Table 4). PDS interns talked more about "my" or "our" students or classroom (PDS = 84, non-PDS = 16), whereas non-PDS teacher candidates talked about "her or his" students or classroom (non-PDS = 49, PDS = 12). For example, a PDS intern observed,

In my classroom, I like to use flexible grouping, differentiated instruction, various learning centers to meet my students' needs. The first thing in my balanced literacy program is morning message because it starts the day off with a routine. . . . Routines are important to me and to my students. I always focus my morning message and reinforce that during the day. The activities during the day follow up on my message, and the students can write in their journals.

In contrast, non-PDS teacher candidates used the third person possessive or talked about their clinical faculty's classroom. For example,

This is a lengthy analysis we had to do for our literacy methods course—a word study. I did that here at L in M's class. I took a spelling inventory, created word study groups, created a profile of the students in her class and helped her define what developmental level they were in for their spelling.

TABLE 5 Difference in PDS ($n = 36$) and Non-PDS ($n = 25$) Teacher Candidates' Incorporation of the INTASC Standards in the Portfolio Presentations

INTASC Standard	PDS Passages	Non-PDS Passages
Content knowledge	0	0
Diversity	24	5
Student development & learning	24	10
Instructional strategies	36	10
Management	29	6
Classroom communication	21	3
Planning for instruction	38	15
Assessment of learning	44	16
Reflection	28	12
School & community	13	2

NOTE: PDS = professional development school; INTASC = Interstate New Teacher Assessment and Support Consortium.

Thus, non-PDS teacher candidates tended to talk more about their clinical faculties' classrooms by using third person and third person possessive adjectives, showing less ownership of the classrooms in which they were teaching.

Difference 2: PDS and non-PDS teacher candidates' depth of understanding and level of sophistication in integrating the INTASC standards in their teaching practice. Differences concerning which standards PDS and non-PDS teacher candidates discussed were found for the nine standards that could be analyzed (see Table 5). The evidence was of two different kinds. First, three standards (management, classroom communication, and school-community) included considerable discussion in the portfolio presentations of the PDS teacher candidates but almost no discussion from the non-PDS teacher candidates. This may indicate a difference in the extent to which the groups included these aspects of teaching in their thinking or the degree to which these standards were integrated into their thinking about their teaching practice.

Second, the remaining six standards showed considerable discussion from both groups, but PDS and non-PDS candidates differed in the level of sophistication with which they discussed and integrated these standards. These six standards included development, diversity, instructional strategies, planning, assessment,

TABLE 6 PDS and Non-PDS Differences in the Portfolio Presentations

<i>Integration of Standards/Depth Passages</i>	<i>Isolation of Standards/Lack of Depth Passages</i>
How and why. Candidates described how and why a particular strategy, lesson plan, assessment, and so forth pertained to planning and instruction. PDS = 48 Non-PDS = 10	What. Candidates described what a particular strategy, lesson plan, assessment, and so forth was like. Non-PDS = 28 PDS = 9
Standards integrated. Candidates described multiple standards in connected ways. PDS = 32 Non-PDS = 6	Standards isolated. Candidates described one standard without connection to other standards. Non-PDS = 30 PDS = 5
Assessments integrated. Candidates discussed assessment as a continuous, looping process that drives instruction. PDS = 29 Non-PDS = 6	Assessments as tools. Candidates described assessment as strategies and tools not connected to instruction. Non-PDS = 13 PDS = 12
Reflection connected to practice. Candidates described reflection as integral to their practice with specific examples of how it affected their teaching. PDS = 23 Non-PDS = 3	Reflection not connected to practice. Candidates described reflection as an exercise without specific examples of how it affected their teaching. Non-PDS = 9 PDS = 5
Student focus. Candidates focused their teaching in relation to students and student learning. PDS = 22 Non-PDS = 7	Self-focus. Candidates focused on their teaching in relation to themselves and their own learning. Non-PDS = 18 PDS = 6

NOTE: PDS = professional development school.

and reflection. Five differences emerged: (a) how and why versus what, (b) standards connected versus standards isolated, (c) assessment as driving instruction versus assessment as tools, (d) reflection connected to practice versus reflection not connected to practice, and (e) student focus versus self-focus (see Table 6). PDS candidates were more likely to describe their teaching in deeper, more integrated ways as indicated by their discussions of how and why they make their instruction decisions (PDS = 48 passages, non-PDS = 10), connections among standards (PDS = 32, non-PDS = 6), assessment-driven instruction (PDS = 29, non-PDS = 6), reflection connected to practice (PDS = 23, non-PDS = 3), and student focus (PDS = 22, non-PDS = 7). In contrast, non-PDS candidates were more likely to describe their teaching as what they did (non-PDS = 28, PDS = 9), related to one standard (non-PDS = 30, PDS = 5), assessment as a repertoire of tools (non-PDS = 13, PDS = 12), reflection not directly connected to practice, (non-PDS = 9, PDS = 5), and self-focus (non-PDS = 18, PDS = 6).

Thus, the data indicate that PDS and non-PDS interns differed in several ways regarding their depth of understanding and level of integration of the various aspects of teaching as defined by the standards. First, PDS interns showed sophistication in their integration of the standards in contrast to the more isolated use of standards on the part of the non-PDS teacher candidates. PDS candidates described how and why a particular strategy, lesson plan, assessment, and so forth was integral to planning and instruction. They provided examples of how and why they connected their planning and instructional decisions with student development, diverse student needs, assessment, and other instructional decisions:

This section [of my portfolio] is going to prove to you that I do understand how children learn and develop and how that's changed from an outsider's perspective to really knowing the kids from an insider teacher perspective now, and what they do, and what they know, and how they do it, and why they do it the way they do. . . . When I plan, I have to keep all their needs in mind. Like in 1st grade, the levels of the kids just completely challenged me—

we have students who don't speak any English, we have other kids who are SO [emphasis from tape] ready for 2nd grade, ready in December, just to go on to the 2nd grade. And I do different forms of grouping—whole group, or small group, or ability groups, heterogeneous groups, pairing up students to really support each other. All that has to go into the planning so you're ready and you think about *why* you do each thing a certain way. You know, so the needs of the individual students are met.

In regard to making instructional decisions, a PDS candidate shared,

When I plan my day, I have to connect to the SOLs [State Standards of Learning], yes, but also everything I do is connected . . . in my understanding of a positive learning environment, there is a need for a balanced literacy program. When I decide what I'm doing in my morning message, I like to introduce some new word or concept and reinforce that throughout the day. . . . So, I have to use what I know about each student and the standards and what I've learned about how each student learns to help me make decisions about what to do when, and how . . . it's all connected, so I use flexible grouping, differentiated instruction, various learning centers, and . . . so you have to pull everything together and use it all.

Another PDS teacher candidate said in regard to planning,

In here's the INTASC for planning . . . well it can't just be all by itself, but when I plan . . . I accommodate for the needs of my students, because I had first graders and kindergarteners in the same class. I know the expectations weren't necessarily going to be the same, and I had to make sure that the activities were open-ended enough so they would provide them the opportunity to work at their level and still learn and be successful. It had to be appropriate, too, and meet their needs. I had an LD [learning disabled] student and one who was an ESL [English as a second language] student who hadn't been here very long. This unit allowed me to do that and to really see how constructivism works in real life. . . . I think it shows how I pull everything together.

Non-PDS interns were also able to provide evidence of their understanding of the standards and their competence in planning, but they focused more on providing examples of isolated standards and what they planned rather than on integrated examples of how and why they planned. For example,

[In the] Ancient China unit, which I taught in third grade this year, I have included the lesson plan. . . . It

covered some of the POS [district Program of Study] standards across content areas in history, English, math, and the visual arts and I think it went very well when I taught it and the kids seemed to enjoy it and they were really excited about it . . . and well, it's not ended yet, but my particular part in it ended with making the dragon in the hallway with the art teacher. . . . I was really proud of them. It was a good unit to include in this [portfolio] because it's so colorful.

This non-PDS intern provided evidence of her ability to plan for instruction but did not connect planning with assessment or differentiation or discuss why she made particular planning decisions. Another non-PDS intern talked about the standards in her portfolio:

Well, here is my portfolio, and I've tabbed out the sections to show the standards. . . . I have lots of examples in here, like my philosophy of education and some examples that show I can reflect and do assessment . . . and here are some ideas about what the kids are going to do [in my class] when they first come in. . . . I think centers are cool, so I'll do those . . . so, planning is a standard and I show here I can plan . . . when I first started, I was finding activities and trying to match an objective with it and now I can start with an objective and go on to activities and my professor helped me with that . . . oh, and in this section, here are lots of different kinds of assessments. Assessment is really important.

Another non-PDS intern selected a unit plan for inclusion in her portfolio that she had not had the chance to teach but that she felt provided a good example of her ability to plan:

The next section is the science module. I have never taught this, but I wrote it in a class and I think it is good. It is a whole unit with reflections and rationales. It could be taught in third or fourth grade. I was looking at standards but I know it is taught in third grade. . . . I included a rubric here for assessment, which was good practice for me. Just a rubric for the whole final project, the culminating activity.

Assessment is another area in which the differences between PDS and non-PDS interns were evident. First, PDS candidates talked more about assessment than non-PDS candidates (PDS = 41 passages, non-PDS = 19 passages). PDS teacher candidates discussed assessment as a continuous, looping process that should be ongoing and drive instruction, as seen in the following example:

I always plan by taking my assessment into consideration. I just feel like it's so big that if you don't have it, well. That's the reason why we are here is to teach kids and to get them to learn, and if you don't know where they are or what they know, then you can't take them to where they need to go. So, I plan by using assessment to talk to me about what they've learned and let it tell me what I should do next or what I need to re-do.

Another PDS candidate shared,

Assessment is ongoing and drives instruction. Lessons should be made to matter to children and they should learn something relevant. That means they should answer the question "why do I need to know this?" And that's a question I am always kind of asking on their behalf, and I try to figure out an answer. If I can't, then I kind of wonder why I am teaching it. . . . Children learn in different ways, and I need to assess their learning in different ways. That is so I will really know what they have learned. That helps me plan.

The non-PDS students provided several examples of their assessments, but about two thirds of them focused on assessment strategies and tools without connections to planning. For example,

. . . in elementary math and I did it with a small group of children because they were ability grouped . . . it was informal observations because they weren't writing or anything. I wrote the assessment up of each child from taking anecdotal notes. It was interesting because they were all similar abilities, but they were at all different grade levels—kindergarten, first grade, etc. . . . I also made a rubric to grade an assignment, and I included it as evidence of my ability to make rubrics as an assessment tool.

Another non-PDS intern said,

I have shown different ways to assess different things in here [the portfolio]. This is a writing sample of a section that we had read and I assessed it according to the criteria that [the university] has. I did a reading assessment on her, and we used the QRI [Qualitative Reading Inventory]. I wanted to be sure to use the QRI. . . . It's very time consuming but it's a very worthwhile way to teach spelling. . . . These are different ways that I have assessed. And of course my time machine, which was an assessment when the kids were drawing pictures, writing things in hieroglyphics. My rubric, and I do have a rubric in here to show I can do that.

These representative examples show differences in assessment between PDS and non-PDS

teacher candidates. In particular, the PDS teacher candidates showed integration of planning, instructing, and assessing and the circular, or looping, nature of these processes. PDS candidates used assessment to make instructional decisions based on student data. The non-PDS teacher candidates provided assessment tools but did not integrate the assessment process as thoroughly into their planning.

Differences between PDS and non-PDS teacher candidates were also evident in the area of reflection. The INTASC reflection standard states that teachers are reflective practitioners who continually evaluate the effects of their choices and actions on their teaching. PDS teacher candidates talked more about reflection than non-PDS candidates (PDS = 28 passages, non-PDS = 12 passages). In addition, differences were evident in the extent to which each group connected reflection to actually improving teaching practice. PDS candidates described reflection as being integral to informing decisions, with specific examples of how it affected their teaching. An intern said that she uses student evaluations regularly and then reflects on what the students tell her to make decisions:

And this is the survey I did with my students. I looked at it and reflected on what it was telling me. . . . I used it to see what the students really think because I am so concerned if they are going to learn what they need to. . . . Like with these math questions, 92% said they strongly agree that they want math class to be longer than 55 minutes a day. . . . So, I asked them how they thought we could do that, and I feel that if I integrate even more we can. . . . So, I feel like evaluation and reflection applies so much in teaching . . . you teach a lesson, and then you assess, and then you go back and you learn a lesson from it and what went well and what they learned and that tells you what you can do better next time. . . . Reflection is just connected to everything I do in my classroom, so you could look in here [the portfolio] in all my sections to see examples of how I use reflection.

Non-PDS teacher candidates also presented examples of reflective practice, but their reflections showed less connection to their practice. A non-PDS teacher candidate said that in

part of my final reflection, I thought about all the things that I've learned while I've been here. I learned a lot about teaching, I learned a lot about

how schools work, and I learned a lot about myself. I mean, I think all the time now.

Finally, PDS and non-PDS candidates showed differences in their focus on students versus themselves. The PDS candidates focused more of their discussions on student learning (PDS = 22, non-PDS = 7), whereas non-PDS candidates focused more on their teaching and their own learning (non-PDS = 18, PDS = 6). A PDS intern shared,

I guess I've grown in my thinking . . . in my beginning reflecting on myself it was basically just talking to my peers or my supervisor about, well, how well did I do, and how was I feeling . . . what's now most important to me was what my students think and if they are learning, if they feel that my teaching had made their lives better, and if they have really, really learned the material. What I do and how I do it is really about them. I've tried to show it in here [portfolio], which was hard because I came into this program so focused on what grade I received or what my evaluations said or what I was doing. It's about the students though.

Another said,

Basically, this is going to show that I do understand how children learn and develop and how that's changed from an outsider's perspective to really knowing the kids and what they do, and what they know, and how they do it, and why they do it. . . . They're the reason I'm in this.

The non-PDS candidates were more self-focused in their thinking:

I've been thinking about all the things that I've learned while I've been here. I learned a lot about teaching, I learned a lot about how schools work, and I learned a lot about myself. . . . I've worked a lot on different kinds of instruction while I've been here. I've learned that direct instruction is not the horror show that they make it out to be . . . you interact with the children, you walk around the classroom and that can be a real positive way to interact with the children.

In another excerpt, a non-PDS intern shared a lesson plan where she focused more on her own learning than on what the students gained:

This is the Iroquois unit that I did. I taught one lesson from it, and the biggest thing I learned from that was having extensions and stuff like that in case you run out of stuff to do with them. I taught it, and I went through it really quickly with the kids. They caught

on and I actually went to my extension activity with the whole group . . . and I found out that the extension was more exciting than the lesson.

CONTEXT: THE PDS CONTRIBUTION

The results of the study show some clear differences between PDS and non-PDS teacher candidates. To what might these differences be attributed? Two aspects of the PDS context may help to explain: a focus on "PDSness" and the experiences resulting from structural differences.

PDSness

What distinguishes a PDS from a non-PDS or other programs with similar structural arrangements is a commitment to developing a partnership that goes beyond teacher preparation to include joint responsibility for research, professional development, and improved student learning with the PDS standards (National Council for Accreditation of Teacher Education, 2001a) as the guiding framework. The result is a common definition of what it means to be a PDS and a standards-based focus on improving learning for everyone in the school.

Reviews of the PDS research literature (e.g., Abdal-Haqq, 1998; Book, 1996; Teitel, 1998; Valli, Cooper, & Franks, 1997) indicate considerable diversity among partnerships that call themselves PDSs. Therefore, our PDS network used the National Council for Accreditation of Teacher Education (2001a) *Standards for Professional Development Schools* and accompanying self-study handbook (National Council for Accreditation of Teacher Education, 2001b) to create a modified self-assessment process that would enable the schools to assess their developmental level, use the results in planning, and provide a context for research. The self-assessment took place during the 3rd year of the PDS program. All PDS and non-PDS partner schools were offered the opportunity to participate in the self-assessment. It is interesting that all of the PDSs and none of the non-PDSs chose to do so. This may indicate different frames of reference for assessing and implementing school improvement. At any rate, the results

described below give only the PDS side of the picture. Therefore, although we cannot state that PDSness was more or less influential on teacher candidates, we can state that the environments in which the PDS teacher candidates were placed were characterized by joint responsibility for everyone's learning in a context that focused on learning community, collaboration, accountability, diversity/equity, and structures/roles/responsibilities to support this work.

Process. At each PDS, a self-assessment committee was convened consisting of members of the PDS leadership team (principal, clinical faculty, research coordinator, PDS intern, university facilitator, site facilitator) and other constituents (e.g., nonclinical faculty, business partner, former PDS intern, parent; Reynolds, 2003). The self-assessment committee met on four occasions to (a) discuss what it means to be a PDS and how current PDS activities contribute to student learning, professional development, teacher education, and inquiry; (b) rate their PDS along the National Council for Accreditation of Teacher Education continuum of development and list the evidence; (c) discuss discrepancies in the ratings and arrive at consensus; and (d) develop recommendations and create an action plan. An external researcher facilitated the process in each site and wrote a cross-site report.

What it means to be a PDS. The seven PDSs shared common beliefs regarding what being a PDS meant for the participants (Castle, Fox, & Reynolds, 2005). First, they regarded their PDS as a collaboration between the school and the university for the purpose of creating a collegial environment where teachers, teacher candidates, and students learn from each other. As a participant noted, there are "many different models, but the kernel is a two way relationship, not just benefiting the university and not just benefiting the school." Another participant remarked, "We're all learning from each other and then using that in our own practice."

A second belief about being a PDS was the benefit for students. The additional professional support provided by the teacher candi-

dates resulted in lower student-teacher ratios, more opportunities for teachers to conduct observations and assessments, more opportunities for individual and small group learning, and opportunities for teacher candidates to plan activities that supplemented the classroom teacher's instruction.

A third belief was that being a PDS meant enhanced professional development of clinical faculty through interactions with teacher candidates. For instance, clinical faculty learned new ideas and strategies, cotaught, and reflected on their own practice to share it with their teacher candidates. The professional development of clinical faculty was also advanced by opportunities provided by the university such as clinical faculty training, publishing with university faculty, serving on the teacher candidate admissions committee, and being encouraged to seek advanced degrees. At five sites, committee members mentioned that being part of a PDS was professionally "rejuvenating."

Finally, being a PDS meant having an advantage when hiring new teachers. Every site that had hired PDS graduates remarked on the graduates' high-quality preparation and the impact of the graduates on the school. PDS graduates participated in the life of the school more quickly than non-PDS graduates. PDS graduates served in leadership positions (such as in after-school clubs and on school committees), made presentations at conferences, and were knowledgeable about the school and students. Most important, the schools had first-hand knowledge of the candidates' teaching ability. At two sites, committee members spoke of the immediate support parents gave PDS graduates because they already knew them.

All seven sites shared common beliefs about the work of a PDS and felt that the schools, students, and teacher candidates benefited from the collaboration with the university. These common understandings and beliefs about PDSness translated into relatively similar ratings on the PDS developmental continuum.

Results on the developmental continuum. Table 7 shows the number of PDSs at each level for each standard (Castle et al., 2005; Reynolds, 2003). Most of the sites were at the developing or at-

TABLE 7 PDS Program Results on the Developmental Continuum

	At			
	<i>Beginning</i>	<i>Developing</i>	<i>Standard</i>	<i>Leading</i>
Learning community		7		
Accountability		5	2	
Collaboration		3	4	
Diversity/Equity	1	3	3	
Structures/ Resources		5	2	

NOTE: PDS = professional development school.

standard level, with all of the sites at the developing level for Standard 1 and only one site at a beginning level. No sites were at the leading level. These results show that the PDSs were not only similar in their beliefs but also in their practices as PDSs. This provides an indication of the level of PDS implementation in which the study took place and the environment in which the teacher candidates interned. The candidates in the current study were in PDSs during the time in which the sites were moving along the developmental continuum from beginning to developing and at standard.

Structures and Experiences

Table 1 shows the differences in the structures of the PDS and non-PDS programs. These differences resulted in different experiences for the PDS and non-PDS candidates. These different experiences affected their learning to teach.

One difference is the length of time in the internship. PDS teacher candidates are in their schools for a full school year as compared to 15 weeks for the non-PDS candidates. This enables teacher candidates to observe students' growth, which results in a deeper understanding of the role of development and assessment. The longer time spent in the classrooms provides PDS candidates with considerably more time to develop a larger repertoire of instructional, differentiation, assessment, and management strategies. As 1 PDS candidate said, "I believed it [continuous assessment] before—I used it, but not consistently. And this semester I feel that I've grown up to use it all the time." In contrast, the non-PDS candidates do two 7-week placements. They have time to focus primarily on

planning and instruction with less time to go into depth on assessment and refine their management skills. In addition, they have considerably less time for discussion, reflection, and feedback from clinical faculty and the university supervisor.

Another distinction is that the PDS teacher candidates' experience base is more broad and varied than the non-PDS teacher candidates' experience base. For example, the PDS teacher candidates see the beginning and ending of the school year. They substitute throughout the school, exposing them to a variety of grade levels and teaching styles. They serve on grade-level teams and schoolwide committees. This is where the structures and PDSness merge most clearly. Because the PDS interns are viewed as the responsibility of the whole school, they become part of the culture and participate in all of its aspects as a junior faculty member. A PDS teacher candidate said, "I've felt a part of the whole staff since day one. That's something a lot of [student teachers] haven't experienced." This breadth and depth of experiences allows PDS teacher candidates to see how experienced teachers think about teaching and contributes to their feeling of ownership. A PDS teacher candidate said, "There are a tremendous number of people invested in my success." In contrast, the non-PDS teacher candidates do not see the beginning or ending of the school year. They do not substitute so they have less exposure to other teachers' planning and teaching styles. They do not serve on committees, although they participate in team meetings. Therefore, they have fewer opportunities to become involved in the culture of the whole school and they have fewer people directly affecting their success.

A third distinction is that PDS teacher candidates continue their course work during the internship, enabling them to integrate theory and practice on a deeper, more "real-world" level than having course work prior to student teaching. A report by the Education Commission of the States (2003) suggests the importance of the integration of fieldwork and course work in relation to subject area knowledge and pedagogy. Course work that is concurrent with the internship enables PDS candidates to make

more connections between theory and practice and integrate those connections into their thinking and practice. It enables them to learn to negotiate the give and take between the ideal and the implementation. In addition, PDS clinical faculty participate in curriculum alignment, in which school faculty review and revise syllabi and school-based assignments so that the school and university curricula are in alignment. In contrast, the non-PDS teacher candidates have their course work prior to student teaching, so the give and take between theory and real-world connections is less likely to occur. No curriculum alignment occurs with the non-PDS schools.

Another structural difference that results in experiential differences is that PDS teacher candidates receive more supervision and feedback, because they are not only in the school longer but also have weekly interactions with the university facilitator at the school, course instructors on campus, and sustained interactions with their clinical faculty. Furthermore, because of the PDS focus on collaboration and a learning community for everyone, teacher candidates receive informal guidance from teachers and administrators across their school. What this means is that PDS candidates do significantly more interactive reflecting on their own teaching and the teaching they observe. They are able to reflect on and discuss their teaching on a daily basis with their clinical and other school faculty and weekly with their university supervisor. In contrast, although they have consistent daily interactions with their clinical faculty and perhaps other team members, the non-PDS teacher candidates generally have two individual interactions with the university supervisor and seven group interactions during seminars, resulting in considerably less time to reflect with others.

The Education Commission of the States report (2003) suggests the importance of "strong" supervision by well-trained teachers and university faculty but does not specifically address the amount, frequency, consistency, or particular qualities of that supervision. Our research suggests that the amount of supervision and amount of opportunity to discuss and

reflect with a variety of professionals on a sustained basis may result in a higher degree of teacher quality in beginning teachers. These interactions result in more and deeper connections and more sophisticated integration.

DISCUSSION AND CONCLUSIONS

The PDS and non-PDS programs both produced competent, professional, licensable teachers who met the INTASC standards. However, the results provide support for PDS-based teacher preparation in producing beginning teachers who are more competent in some aspects of instruction, management, and assessment and are more integrated and student-centered in their thinking about planning, assessment, instruction, management, and reflection. The results help build a case for teacher preparation that is deliberate and systematic in building connectivity between schools and universities so that teacher candidates can build connectivity between theory and practice.

Important differences were found between PDS and non-PDS teacher candidates. PDS teacher candidates scored significantly higher than non-PDS teacher candidates on the student teaching evaluations on items related to instruction, management, and assessment. For instruction and management, five individual items showed differences. The findings indicate that PDS-trained teacher candidates scored higher on presenting content accurately and instructions clearly and on encouraging critical thinking through questioning. These are essential aspects of effective instruction. In addition, PDS teacher candidates scored higher on classroom management in terms of establishing and using routines effectively, managing multiple activities simultaneously, and handling disruptions firmly and fairly. These findings are particularly important given that classroom management is one of the most difficult aspects of teaching for beginning teachers to master. This suggests that PDS teacher candidates might be able to spend more time on instruction and less time on classroom management than is typical of traditionally or fast-track-trained beginning teachers. The year-long internship may have

provided more opportunities to hone these particular instruction and management skills.

PDS teacher candidates evidenced higher levels of ability to assess students through observation, keeping records of student progress, communicating with students about their progress, and using a variety of methods of assessment. Sophisticated assessment skills are critical to addressing the learning needs of every student in very diverse classrooms. This suggests that PDS teacher candidates might be able to have a greater impact on student learning as beginning teachers through their use of assessment-driven instruction.

The qualitative analyses of the portfolios show considerable differences between PDS and non-PDS teacher candidates in terms of the language they used and their integration of the INTASC standards. By talking in the present tense and using personal possessive adjectives, PDS teacher candidates showed ownership of their students, their classroom, and their teaching—almost as if the non-PDS teacher candidates were practicing for the real thing, whereas the PDS teacher candidates were doing the real thing. This ownership may have contributed to their higher levels of sophistication in discussing the standards or vice versa. The PDS candidates talked about nine of the standards in highly integrated ways, whereas the non-PDS students talked about six of the standards in more isolated ways. The PDS teacher candidates' integration of the standards indicates a sophisticated understanding of teaching and the ability to address its complexities in real situations.

The quantitative and qualitative results support each other. The quantitative results show that PDS teacher candidates performed at higher levels on aspects of instruction, management, and assessment. The qualitative results suggest that these higher levels of performance may be intertwined with their ownership of their teaching and their sophisticated understanding of the connections between the various aspects of teaching.

Finally, it was clear throughout the analyses that the PDS teacher candidates were more focused on their students and their students'

performance than the non-PDS teacher candidates, who were more focused on their plans, teaching tools, and their own performance. Focusing first on one's own performance, then shifting to student performance is a typical developmental pattern for beginning teachers; the current study suggests that PDS teacher candidates are further along this developmental continuum at the time they are licensed or are likely to make the shift from "I" to "we" more quickly than non-PDS teacher candidates. They are, therefore, more likely to be student-focused as 1st-year teachers and might be more successful at affecting student learning.

Does this matter? As previously stated, Rivlin et al. (2002) found that inexperienced teachers (those with less than 3 years experience) produced smaller student learning gains than experienced teachers. In addition, these effects were most pronounced for students from low-income families. As early career teachers, might PDS graduates produce larger student learning gains sooner than non-PDS graduates? This is a question worth investigating and suggests the need to follow PDS graduates and their students through the early years of teaching.

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