

# COMPARING PDS AND CAMPUS-BASED PRESERVICE TEACHER PREPARATION IS PDS-BASED PREPARATION REALLY BETTER?

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*To date, the professional development school (PDS) preservice teacher preparation literature base is long on attitudinal analysis and short on comparative analysis of outcome variables. This article reports on a 2-year study comparing the lesson planning, teaching effectiveness, postlesson reflectivity, and content retention of professional teaching knowledge for teachers prepared at a PDS or campus-based program. The teaching outcome variables were rubric scored by experienced raters blind to participants' preparation program. Although the scores of PDS-prepared student teachers consistently trended higher than the campus-prepared cohort, no statistically significant differences were found. However, during the 1st year of teaching, PDS-prepared teachers scored significantly higher than campus-prepared teachers on teaching effectiveness. Potential explanations for the findings are provided.*

**Keywords:** *professional development schools; teacher preparation; evaluation of new teacher effectiveness*

A professional development school (PDS) is defined as a collaboration between schools, colleges, or departments of education; P-12 schools; school districts; and union/professional associations. Within the PDS, the partnering institutions share responsibility for the following four goals or purposes: (a) maximizing student learning and achievement through the development and implementation of exemplary practice; (b) engaging in sustained inquiry on practice for the purpose of enhancing exemplary

practice and student achievement; (c) engaging in meaningful, ongoing professional development; and (d) preparing effective new teachers (Abdal-Haqq, 1998).

Proponents of the PDS teacher preparation model have hoped that professional development schools, with their enhanced clinical experience opportunities, would be particularly successful in educating future teachers. More specifically, Mantle-Bromley (2001), synthesizing the early work of the Carnegie Forum,

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Holmes Group, and John Goodlad, described the following five features of a PDS-based teacher preparation program that were thought to lead to more highly prepared new teachers: (a) Field experiences are spread throughout the teacher preparation program; (b) theory and practice are closely connected; (c) preservice teachers are supervised by school and university personnel throughout the program; (d) a strong support system for preservice teachers is created; and (e) the program is collaboratively designed and implemented. Although much has been reported qualitatively on the benefits of PDS preparation, to date little quantitative evidence has emerged supporting PDS programs as superior for teacher preparation.

The current literature base suggests that preservice teachers prepared at PDS sites experience longer, more structured clinical experiences (e.g., Fountain & Evans, 1994; Trachtman, 1996); more frequent and sustained supervision and feedback (e.g., Hayes & Wetherill, 1996); and more diverse, authentic learning experiences (e.g., Rasch & Finch, 1996). PDS graduate outcome research is less common and is largely attitudinal in nature. In general, it has been reported that PDS graduates feel well prepared and confident and are less likely to experience "culture shock" when they become practicing teachers (e.g., Blocker & Mantle-Bromley, 1997; Book, 1996; Patterson, 2000; Ross, 2001; Sandholtz & Dadlez, 2000; Thompson & Ross, 2000; Trachtman, 1996; Tusin, 1995; Walling & Lewis, 2000; Yerian & Grossman, 1997). In her 2001 study, Cobb found the majority of PDS graduates felt they were agents of change. In support of their perceptions, principals and colleagues also regarded them as agents of reform. PDS graduates are in high demand by school principals who view them as better clinically prepared (e.g., Houston et al., 1995), but there is still little research to date demonstrating quantitative evidence of PDS superiority in teacher preparation relative to traditional campus programs.

A review of the literature revealed only six PDS studies with observation-based analyses of teaching effectiveness variables. In 1991, Stallings reported that PDS participants (ele-

mentary level) were better at the use of academic statements and questioning, organization procedures, interaction with students, and management skills than were traditionally prepared preservice teachers ( $N = 44$ ). Neubert and Binko (1998) evaluated the effectiveness of Maryland PDS programs (secondary level) and found PDS interns scored higher than campus-based preservice teachers on classroom management, use of technology in instruction, and reflection on teaching ( $N = 21$ ). In a 5-year comparative study including 14 PDS and campus-based physical education teachers (K-12), Sharpe, Lounsbery, Golden, and Deibler (1999) found that PDS preservice teachers and graduates spent a greater percentage of their instructional time with students on productive instruction (as opposed to classroom management) than did their campus-based peers. This finding held true during practice teaching, student teaching, and in-service teaching. Houston, Hollis, Clay, Ligons, and Roff (1999) reported that PDS student teachers were superior to the traditionally prepared student teachers ( $N = 72$ ) in their use of instructional strategies. Specifically, they interacted more with students, spent more time responding to students by checking students' work, encouraging self-management, praising, and correcting than did student teachers in a traditional program. Moreover, students in the care of PDS student teachers spent more time on task, had more small group work, and passed a test of basic skills in higher numbers. Finally, Wait and Warren (2001) and Wait (2000) found that PDS graduates scored higher on classroom management, instructional presentation, facilitation, and feedback in a 3-year follow-up of PDS and campus-based elementary teacher education graduates ( $N = 79$ ).

Although these early indications suggest that PDS-prepared students are more effective than their campus-based counterparts, the findings of these six outcomes-based studies alone do not provide sufficient evidence to establish the superiority of PDS-prepared teachers. In his review of the literature for the National Council for Accreditation of Teacher Education, Teitel (2001) wrote, "Most studies of impacts on preservice teachers struggle to make meaningful

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comparisons or to go beyond using self-report data, usually from survey instruments, as the sole or primary source of data" (p. 4). Additional studies representing more PDS programs and a much larger population of teachers are needed to determine the relative effectiveness of PDS and campus-based teacher preparation programs.

### **Research Questions and Hypotheses**

The primary question of this investigation was whether an intensive, PDS-based teacher education program would prepare teachers of greater effectiveness than would a traditional, campus-based program. The variables for the comparative analysis were four basic teaching competency outcomes, including retention of professional teaching knowledge, lesson planning, teaching effectiveness, and postlesson reflective evaluation. This study reports the findings of a comparative analysis on these outcomes conducted over 2 years, representing two phases of the respective teachers' development: student teaching (Phase I) and 1st-year teaching (Phase II).

*Hypothesis 1:* During student teaching, PDS-based students will be superior to campus-based students in lesson planning, teaching effectiveness, and postlesson reflections and will be equal in content retention of professional teaching knowledge.

It was hypothesized that PDS-based student teachers would score higher than campus-based student teachers on lesson planning, teaching effectiveness, and postlesson reflective evaluation. The rationale for the hypothesized superiority was related to the greater quantity of clinical experiences in the PDS program relative to the campus-based program (Neubert & Binko, 1998; Sharpe et al., 1999; Stallings, 1991; Wait, 2000; Wait & Warren, 2001). In addition, superiority of PDS-based student teachers was predicted to result from their exposure to clinical supervision and feedback by both school- and university-based teacher educators throughout the entire program (Mantle-Bromley, 2001).

Several factors guided the hypothesized equal professional teaching knowledge content

retention across the programs. Although the PDS environment provided significant opportunities to connect theory and practice, which according to constructivist theory should enhance learning (Meece, 2002), the extent to which preservice teachers would attend to theoretical content as opposed to "practical" classroom experiences was unknown. Furthermore, the intensity of the immersion-oriented PDS program (i.e., Monday through Friday, 7:30 to 5:30) was expected to serve as a barrier to PDS students' academic retention. On the other hand, the campus-based environment provided much less opportunity to apply content knowledge to authentic contexts. In balance, we predicted that the PDS and campus-based students would score equally well on this variable.

*Hypothesis 2:* During their 1st year of teaching, PDS graduates will be superior to campus-based graduates in lesson planning, teaching effectiveness, and postlesson reflection.

Following the rationale for Hypothesis 1, it was hypothesized that PDS-prepared 1st-year teachers would score higher than campus-prepared 1st-year teachers on lesson planning, teaching effectiveness, and postlesson reflective evaluation.

### **METHOD**

#### ***Description of the Comparative Teacher Education Programs***

The teacher preparation programs being compared in these analyses were both initial certification, elementary education programs within the same teacher preparation institution. Participants were not randomly assigned to preparation programs. Entrance into the PDS program was voluntary and was preceded by an orientation interview by the university program coordinator and a team of master teachers from the elementary school. A test of initial differences offered support that the two groups were initially similar in their content knowledge. The campus-based program was a four-semester, 2-year program with a blocked cohort design. During the first three semesters,

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campus-based students spent approximately 5 hours per week in elementary schools. A fourth semester was devoted to a full-time student teaching experience. Most teacher education courses were taught on campus, with the exception of three methods courses that took place at an elementary school site during the third semester. Instructors for the PDS-based courses included but were not limited to the faculty members who taught campus-based courses.

The K-6 school described in this comparative analysis was termed a *full-service PDS*. This indicates that the school was not simply a host for an on-site preservice teacher preparation program but was indeed a PDS where all four of the goals described by Abdal-Haqq (1998) were being pursued (i.e., increasing K-12 student achievement, conducting ongoing inquiry on practice, conducting meaningful professional development, and preparing effective new teachers).

The PDS site described in this study was an urban, inner-city school. A majority of the students were second language learners, and 88% of the population received free or reduced lunch. The student population was 55% Hispanic, 23% Caucasian, 10% African American, 8% Native American, and 4% Asian. The school had a significant number of outreach and education programs for its mobile and high-need community. Student achievement on standardized tests has been historically low at the school.

The preservice teacher preparation program within the PDS was an intensive, 1-year (three-semester), apprenticeship-type cohort program. Preservice teachers were housed at the school from 7:30 a.m. to 5:30 p.m., Monday through Friday. During Semester 1 (spring), preservice teachers worked full days in the classroom with teachers on Monday, Wednesday, and Friday. Teacher education courses were taught on site on Tuesday and Thursday. During Semester 2 (summer), pairs of preservice teachers taught elementary school children during a 7-week, half-day summer school program. Preservice teachers received continuous supervision, feedback, and support from university faculty and master teachers to develop their teaching skills during this experi-

ence. Afternoons were devoted to methods coursework (e.g., math, science, reading, social studies) that was designed to prepare preservice teachers for the summer school teaching responsibilities. Student teaching occurred in the third semester (fall). During student teaching, preservice teachers cotaught with their mentor teachers from the 1st day of school. After 6 weeks of coteaching, preservice teachers assumed full teaching responsibilities. During this time, student teachers continued to receive supervision from classroom teachers, university faculty, and a field supervisor.

In comparison to the traditional, campus-based program, the PDS program required a greater time commitment (i.e., full days Monday through Friday). Clinical experience hours were three times greater than that of the campus program. The content of the PDS teacher education coursework was equivalent to that of the campus-based program but was delivered in a compressed format. The extensive classroom internship time reduced PDS students' discretionary time for completion of course assignments and reading, although course requirements were similar. With summer designated as a regular semester, PDS students were able to complete the teacher preparation program in half the time of campus-based students (1 vs. 2 years). Table 1 provides a program comparison.

### **Participants**

*Phase I (student teaching).* During Phase I, 10 PDS student teachers and 15 campus-based student teachers participated in all components of the investigation.

*Phase II (1st-year teaching).* Participants included 14 graduates of the PDS-based program and 12 graduates of the campus-based program. Of the graduates of the PDS-based program, 7 had also participated in the first phase of the investigation, whereas the campus-based graduates were new participants. All Phase II participants ( $N = 26$ ) graduated in either 2000 or 2001 and were completing the third quarter of their 1st year of teaching.

Participants' ethnicity and gender demographics were similar and consistent across pro-

**TABLE 1 Comparison of Professional Development School (PDS) and Campus-Based Preparation Programs**

<i>PDS Teacher Education Program</i>	<i>Campus Teacher Education Program</i>
Same teacher education coursework delivered in 1 calendar year (three semesters including summer)	Same teacher education coursework delivered in 2 calendar years (four semesters, no summers)
Preservice teachers (PSTs) completely immersed on site every semester of their teacher preparation (i.e., all coursework and clinical preparation is site based)	PSTs' coursework is completed on campus with the exception of their method courses semester where they participate on site
PSTs are supervised and receive clinical feedback over the entire program	PSTs are supervised and receive clinical feedback during student teaching
PSTs are involved in extensive, ongoing classroom teaching (in teams and individually) throughout the program, including the teaching of summer school	PSTs individually teach from 3 days to 2 weeks per semester during their site-based semester
Most or all teachers at the school are involved and committed to the program	A select, usually small number of site teachers are involved and committed to the program
Cohort size is 18 to 20, and PSTs form very close bonds with one another as well as school and university faculty members (strong support system)	Cohort size is 35 to 38, and PSTs may or may not bond with one another
Inquiry through action research is a fundamental component of the teacher preparation program and school improvement efforts	Inquiry through action research is not necessarily an important component of the program
University faculty member housed at the PDS sites (Monday through Thursday) and actively contributes to the achievement of all four PDS goals	University faculty are campus based and not necessarily active in school improvement effort (unless paid as consultants)
Site teachers have an active role in program design and delivery	Site teachers are not necessarily active contributors to program direction

grams and the phases of the study. Participants were predominantly women (13 of 14 PDS-based participants and all campus-based participants), and the majority were White/Caucasian (61.5% PDS and 46.2% campus), followed by Hispanic (7.7% and 23.1%). The balance of participant ethnicity for PDS and campus-based participants (with PDS-based participants percentages listed first) consisted of Native American (15.4% and 23.1%), Pacific Island (7.7%), and other (both groups 7.7%). Participants represented each grade level (K-7). Participants from the professional development school group on average taught in schools with a higher percentage of students on free/reduced lunch (94% vs. 83.5%).

### **Measures**

*Examination of professional teaching knowledge.* Phase I participants completed a 38-item multiple-choice examination designed to assess knowledge and understanding of child development, learning, motivation, instructional theory, and other components of professional teaching knowledge articulated in the respec-

tive programs. The examination of professional teaching knowledge was created as a program audit tool within the college. The items were adapted from certification practice tests used in a number of states and reflected the content taught within the college.

*Written lesson plan.* Participants in both phases of the investigation submitted a written lesson plan that allowed analysis of their reasoning-based application of instructional theory. The written lesson plans were scored using an 18-point rubric judging the clarity and quality of the objective, motivational set, instructional input, evaluation, and closure components of the submitted lesson. The scoring rubric was created by the researchers and was checklist-oriented; scoring was a function of the presence/absence of clearly written, well-described lesson components. The rating categories of the scoring rubric were broadly defined, allowing for both direct- and constructivist (e.g., discovery) type lessons.

*Video recording of teaching performance.* Skill-based application of instructional theory was demonstrated in the delivery of the written les-

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son plan, noted earlier, during a regular 30- to 40-minute classroom teaching experience. Videotaped lessons were scored using a 22-point rubric. Specific rating categories included motivational set, instruction, classroom management, interest/engagement, feedback, assessment, and closure. The researchers created the scoring rubric for teaching performance. Ratings were based on the degree to which teachers were observed to enact instructional strategies that effectively engaged student interest and engagement over the course of lesson delivery (e.g., scoring the extent to which the lesson hook aroused student attention; that the instructional input fostered student participation).

*Postlesson reflective evaluation.* All participants responded to two open-ended questions following the videotaped teaching experience. In this written postlesson self-evaluation, participants were asked to compare elements of the written lesson to actual outcomes and to discuss potential areas for improvement. Reflections were scored using a 9-point rubric created by the researchers. Participants' postlesson reflections were compared to those of the expert rater's evaluation. Scoring was based on the participant's degree of objective and specific self-critique as well as the specificity and appropriateness of proposed actions for lesson improvement.

### **Procedure**

*Recruitment and data collection.* During the first semester of their respective programs, a sample of students from PDS and campus-based programs was given the professional teaching knowledge examination as a test for initial group differences. No mean differences were found.

Participants in Phase I ( $N = 25$ ) completed the professional teaching knowledge examination and submitted the written lesson plans, videotapes of the related teaching episode, and the postlesson reflection as part of regular student teaching seminar activities. In January of their 2nd year of the study, potential Phase II participants, now in their 1st year of teaching, were

contacted. Participants were offered a stipend for completion of the written lesson plan, videotaped teaching episode, and postlesson reflective evaluation. Participants were not asked to take the professional teaching knowledge examination in Phase II.

Only classroom teachers with full-time contracts in urban, high-need schools (i.e., at least 50% free and reduced lunch) were eligible for participation in this study. To reduce time or logistical demands of participation, a video camera and/or videotaping assistance was offered to participants at their school site. A total of 26 qualified graduates consented to participate (14 graduates from PDS, 12 from the campus-based program) in Phase II.

### **Scoring and Analysis**

Experienced teacher evaluators were trained to use rubrics to score the written lesson plan, video performance, and postlesson reflections. There were six raters for each phase of the study. All of the raters worked for the college as student teacher supervisors. Each rater had more than 10 years of experience in the college and school districts evaluating and coaching effective teaching. The raters were not involved in any other aspect of the study or program delivery and were blind to participants' teacher preparation program. Two raters independently scored all materials. Initial interrater reliability for the lesson plan, video, and postlesson reflection averaged .82 for the student teacher and 1st-year teacher data. The raters, for the purpose of achieving a final consensus rating, jointly reviewed materials with a total score discrepancy of greater than 3 points.

## **RESULTS**

### **Phase I (Student Teaching)**

A general linear model (GLM) multivariate analysis of variance (MANOVA) procedure was conducted to examine the hypothesized difference noted in the group means on lesson plans, teaching effectiveness, and postlesson reflection. The omnibus test comparing PDS-based

**TABLE 2 Comparison of Mean Scores on Variables for Each Phase**

	Phase I: Student Teaching		Phase II: First Year of Teaching	
	Professional Development School	Campus	Professional Development School	Campus
Content retention				
Mean	28.10	25.58	Not measured	Not measured
Standard deviation	3.54	3.75		
N	10	12		
Lesson plan				
Mean	12	10.21	11.61	9.56
Standard deviation	3.33	4.25	3.7	3.59
N	10	14	14	12
Teaching effectiveness				
Mean	15.2	14.0	16.82	13.5
Standard deviation	2.35	3.96	2.90	4.58
N	10	14	14	12
Postlesson reflection				
Mean	3.78	3.57	4.29	5.04
Standard deviation	2.17	1.34	1.76	2.26
N	9	14	14	12

preservice teachers and campus-based preservice teachers was not significant,  $F(3,17) = .117, p = .949$ . A univariate analysis of variance (ANOVA) was used to test for group differences on content retention of professional teaching knowledge. No differences were found between the PDS-based preservice teachers and campus-based preservice teachers,  $F(1,20) = 2.58, p = .124$ . Group means and standard deviations for the four dependent variables (i.e., content retention of professional teaching knowledge, lesson plans, teaching effectiveness video, and postlesson reflection) can be found in Table 2. Scores for the preservice teachers from the PDS program trended higher on all of the variables.

### **Phase II (1st-Year Teaching)**

A GLM MANOVA procedure was conducted to examine the degree of difference noted in the group means on lesson plans, teaching effectiveness, and postlesson reflection. The omnibus test comparing PDS-based preservice teachers and campus-based preservice teachers was significant,  $F(3,22) = 3.43, p = .035$ . Group means and standard deviations for the three dependent variables (i.e., lesson plan, teaching effectiveness, postlesson reflection) are dis-

played in Table 2. Follow-up univariate analysis of variance test indicted PDS-prepared teachers ( $M = 16.82$ ) were superior to campus-trained teachers ( $M = 13.5$ ) in their teaching effectiveness as displayed in the video,  $F(1,24) = 5.023, p = .034$ .

A series of univariate ANOVAs were conducted as post hoc analysis on the subscale scores of the teaching effectiveness scoring rubric. Significant differences were found between the group means on motivational set,  $F(1,20) = 11.99, p = .002$ , partial  $\eta^2 = .375$ ; instruction,  $F(1,20) = 5.99, p = .024$ , partial  $\eta^2 = .230$ ; and interest/engagement,  $F(1,20) = 7.40, p = .013$ , partial  $\eta^2 = .270$ .

## **DISCUSSION**

### **Limitations**

Before interpreting the findings, it is important to point out five important limitations of this study. First, the sample size was quite small, potentially restricting the reliability and generalization of the findings. Unfortunately to date, small sample sizes are common in PDS research investigating observed outcome variables such as teaching effectiveness. Of the six published reports noted earlier (i.e., Houston et al., 1999;

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Neubert & Binko, 1998; Sharpe et al., 1999; Stallings, 1991; Wait, 2000; Wait & Warren, 2001), sample sizes ranged from 14 to 79.

The small sample size in the present research reflects ongoing challenges encountered in the recruitment process. Irrespective of the \$150 payment for participation in the study (offered to 1st-year teachers), just under 30% of the pool of potential teachers chose to participate. The most common reasons given for teachers' unwillingness to participate were time limitations and the intimidation of videotaping one's teaching effectiveness. Our recruitment efforts suggest that the rigors of the study most likely eliminated less confident candidates.

Second, in regard to experimental design, there was a lack of randomization in the subject pool. The PDS-prepared teachers chose the intensive, 1-year apprenticeship-type program and the campus-prepared teachers did not. Although a pretest of professional teaching knowledge indicated no differences between PDS and campus preservice teachers on this variable, participants' choice between the PDS and campus programs likely reflects differences in their personal motivation and values.

Third, the fact that some of the participants from the campus program were not the same as those from the previous round of data collection prevents a more rigorous longitudinal comparison of the PDS and campus-based programs. Fourth, using only one lesson plan and observation videotape of teaching to determine teaching effectiveness may lead to problems of measurement error. Several lesson plans and teaching video samples taken over time would likely contribute to more reliable ratings of teaching effectiveness. On the other hand, this more rigorous requirement would have further limited teachers' willingness to participate in the study.

Finally, the numerous programmatic differences (e.g., mentoring skills of cooperating teachers, instructor effectiveness at the PDS and campus-based programs, length of time preservice teachers spent in classrooms, type of evaluation and feedback provided to preservice teachers) make it almost impossible to draw conclusions about the differential impact of spe-

cific program attributes. With the current research design, we are only able to make broad statements about comparative effectiveness of the PDS and campus-based teacher education programs.

### **Initial Conclusions**

*Hypothesis 1:* During student teaching, PDS-based students will be superior to campus-based students in lesson planning, teaching effectiveness, and postlesson reflections and will be equal in content retention of professional teaching knowledge.

This hypothesis was partially supported. Although the mean scores for all four of the outcome variables trended higher for the PDS student teachers, the result of the omnibus test for the lesson planning, teaching effectiveness, and postlesson reflection variables indicated no statistically significant difference by program. As hypothesized, the univariate test for content retention of professional teaching knowledge indicated no significant differences across programs.

The lack of significant differences during the student teaching phase of the study was a bit surprising. Small sample size and the subject-to-variable ratio in the multivariate analysis of variance could be one possible explanation. Another possible explanation for the Phase I findings is that it was too soon to see the potential impacts of the PDS program. Research by Wait (2000) examining differences in teaching effectiveness for PDS and campus-based teacher education program graduates in North Carolina showed that it was not until the 2nd and 3rd years after graduation that differences in teaching effectiveness became statistically significant (with PDS graduates scoring higher). Wait's findings suggest that academic and clinical preparation experiences (of any type) may not be fully internalized (or actualized) by novice teachers until later in their careers.

*Hypothesis 2:* During their 1st year of teaching, PDS graduates will be superior to campus-prepared graduates in lesson planning, teaching effectiveness, and postlesson reflection.

This hypothesis was supported. PDS-prepared 1st-year teachers scored higher on les-



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son planning and teaching effectiveness while scoring similar to campus-prepared teachers on postlesson reflection. The area of greatest difference was teaching effectiveness. First-year teachers prepared in the PDS program scored significantly higher than their campus-prepared colleagues on the rubric-scored teaching effectiveness video.

Comparison of the rubric's subscale mean score differences revealed that PDS-prepared 1st-year teachers were more effective in establishing a motivational set for the lesson as well as instructing students in an engaging manner. Specifically, PDS-prepared teachers were observed to be more effective at (a) getting and holding students' attention at the beginning of the lesson, (b) communicating the objective and purpose for the lesson, (c) connecting the current lesson to students' prior knowledge, and (d) providing instruction in a way that was novel, vivid, and engaging to their students. These findings are consistent with those of other studies. Specifically, six other observation-based studies focusing on teaching outcomes (i.e., Houston et al., 1999; Neubert & Binko, 1998; Sharpe et al., 1999; Stallings, 1991; Wait, 2000; Wait & Warren, 2001) found that PDS-prepared teachers scored higher on instructional variables such as managing student behavior, maintaining students' interest during instruction, and giving specific and immediate feedback.

### **Overall Conclusions**

The results of this study along with those of Houston et al. (1999), Neubert and Binko (1998), Sharpe et al., (1999), Stallings (1991), Wait (2000), and Wait and Warren (2001) are beginning to suggest that teachers prepared at PDS-based preservice teacher education programs are indeed more instructionally effective than teachers prepared at a traditional campus-based program. There are many potential explanations for these differences, but as previously stated, it is not possible to isolate specific causal variables. That being said, there are several features in the PDS teacher preparation program studied in this research that may have shaped differences in teaching effectiveness. Possibly

the greater number of programmatic hours spent in classroom teaching (hours spread across the teacher preparation program) as well as the more structured and frequent clinical feedback helped these PDS-prepared new teachers to be more practiced and attuned to the essential components of effective instruction (Fountain & Evans, 1994; Hayes & Wetherill, 1996; Mantle-Bromley, 2001; Rasch & Finch, 1996; Trachtman, 1996).

PDS-based preparation may foster more than technical expertise. In a number of studies, principals and colleagues report that many novice PDS-prepared teachers are more like 2nd-year teachers than 1st (e.g., Blocker & Mantle-Bromley, 1997; Book, 1996; Patterson, 2000; Ross, 2001; Sandholtz & Dadlez, 2000; Thompson & Ross, 2000; Trachtman, 1996; Tusin, 1995; Walling & Lewis, 2000; Yerian & Grossman, 1997). We speculate that the extensive clinical training and school immersion may actually accelerate PDS-prepared teachers' developmental progression.

Traditionally prepared novice teachers, because of their comparatively limited clinical and school experience, may still be in Fuller's (1969; Fuller & Brown, 1975) survival stage—concerned about their occupational fit and general effectiveness. On the other hand, many PDS-prepared new teachers appear to have progressed to the stage where they are concerned with issues of instructional impact (i.e., evidence of student learning results) and student needs. In short, the greater clinical preparation and school immersion may impact PDS-prepared teachers' technical expertise and stage of professional development, including the complexity of their schema for interpreting teaching and school events. This notion is supported by Cobb (2001) who found that many PDS graduates quickly take on the role and are regarded by principals and colleagues as agents of reform.

Of course, much more comparative research using larger sample sizes is needed to definitively answer whether PDS-prepared teachers are indeed superior to those prepared at traditional campus-based programs. Given that PDS-based teacher preparation is typically

demanding of faculty members and potentially more costly to colleges of education, the data on PDS graduate superiority will have to be convincing to ensure the viability of the PDS model of teacher education. The longer term question (to be answered in future follow-up studies) is the extent to which PDS and campus-prepared teachers retain and/or develop their skills in lesson planning, teaching effectiveness, and postlesson reflection. Will the differences noted in the teaching effectiveness of new PDS versus campus-prepared teachers continue to widen over the years, or will experience erase early differences? Early research (Wait, 2000; Wait & Warren, 2001) tentatively suggests that differences in teaching effectiveness between PDS and campus-prepared teachers grow over the years, but only additional studies will ultimately establish whether PDS preparation is really better.

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