Children's Literacy Growth, and Candidates' and Teachers' Professional Development Resulting from a PDS-Based Initial Certification Literacy Course

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ABSTRACT: This paper reports the effects on children, teacher candidates, and classroom teachers of a PDS-based initial certification course in the teaching of literacy. In this course, teacher candidates work with individual struggling readers on a range of literacy tasks, and the classroom teacher and university faculty member serve as course co-instructors. Results indicate that participating children grew more in literacy skills than non-participating children matched on beginning-of-year test scores. Candidates developed in their understanding of how assessment informs instruction, and moved from focusing on low-level skills to balancing their literacy instruction. Teachers found that serving as co-instructors resulted in significant, positive changes in their own practice, which likely contributed to children's learning. This collaborative project addresses NAPDS Essentials 2 and 8 in that university and school faculty cooperatively teach the course, preparing future educators within the context of the school community. It also tangentially addresses Essential 3, as participating teachers reported experiencing professional development as a result of their work.

NAPDS Essentials Addressed: #2/A school–university culture committed to the preparation of future educators that embraces their active engagement in the school community; #3/Ongoing and reciprocal professional development for all participants guided by need; #8/Work by college/university faculty and P–12 faculty in formal roles across institutional settings

There has been a great deal of attention in recent years on the relationship between teacher quality and student learning (Vernon-Dotson & Floyd, 2012). This increased focus has led to examinations of how teacher education programs support the development of effective teachers (Kollener & Jacobs, 2015), including examining the field experiences that pre-service teachers have (Moulding, Stewart, & Dunmayer, 2014; Linek, Fleezer, Fazio, Raine, & Klakamp, 2003). An important question concerns the settings of and types of field experiences that pre-service teachers engage in (Ronfeldt & Reininger, 2012). School-University partnerships, specifically Professional Development Schools, help teacher preparation programs ensure quality field placements for their education students, while providing professional development for inservice teachers, with the shared goals of improving student learning and developing competent teachers (Capraro, Capraro & Helfeldt, 2010). This paper describes a joint project between one Professional Development School and the University partner intended to enhance teacher-candidate learning, support teachers' leadership roles, and improve literacy learning for participating children. The study used mixed methods, with data drawn from observations, written responses to questionnaires, analysis of candidates' submitted assignments, interviews, and students' test scores.

Clinical experiences are intended to develop teacher candidates' knowledge, skills, and professional dispositions, and can include Professional Development Schools and partner networks (CAEP, 2013). Professional Development Schools (PDSs) are P-12 schools that have partnered with university-based professional education programs in order to improve student learning, enhance teacher preparation, and develop school and university faculty (NCATE, 2001). The PDS movement, which began in the mid-1980s, has grown rapidly over the past several decades. As early as 1999, half of the nation's teacher preparation programs partnered with PDSs (Teitel, 1999) and interest in PDSs continues to grow (NAPDS, 2008).

The National Association for Professional Development Schools (NAPDS) released a policy statement in 2008 in which it offered "Nine Essentials" to define the PDS mission and help to differentiate true PDSs from varied types of partnerships that might not be described as "PDSs" (NAPDS, 2008). These "Essentials" serve as guiding principles for extending school-university partnerships with the goal of furthering the education profession and ensuring that all children learn. The study reported here incorporates several of these essentials including the preparation of future educators by engaging them in the

school community; ongoing, reciprocal professional development, and a commitment to innovative, reflective practice by all participants; and work by university and school faculty in formal roles across institutions.

Proponents of PDSs attest to their value, although measuring the impact on teacher preparation and on student learning is difficult because of the complexity of factors influencing teacher development, student achievement, and PDS work. There is some evidence that students in PDSs experience a high level of learning. Castle, Arends, and Rockwood (2008) compared achievement outcomes for students in a PDS and a demographically, linguistically, academically similar non-PDS in the same district. Fourth and sixth grade standardized test scores were compared over four years; the two schools' results were also compared with district means. It was found that the PDS performed better on 75% of the 12 subtests than the non-PDS, and on 42% of the subtests than the district at large. Other studies have found additional benefits to children from participating in PDS initiatives, including increased confidence, academic motivation, and willingness to participate in group literacy activities (Rosenthal, Donnantuono, Feola, Lebron, Flynn & Wasserman, 2008).

In their review of research, the Education Commission of the States (2003) reported that evidence supporting PDS programs as teacher-training grounds was inconclusive, but that well- supervised field experiences integrated with coursework led to a solid grasp of content and pedagogy. Castle, Fox, and Souder (2006) found that teacher candidates in a PDS program performed significantly better than non-PDS teacher candidates on aspects of planning, instruction, management, and assessment. Specifically, compared to traditionally trained teacher candidates, those who did internships in PDSs more effectively and more frequently used informal assessment; linked instructional planning to assessment results; integrated teaching and learning standards; expressed ownership for their teaching; and were more reflective about their practice. There is additional evidence for the benefits to pre-service teachers of engaging in clinical experiences in PDSs, especially when these experiences are focused and linked to specific content areas (Rosenthal et al., 2008; Swars & McMunn Dooley, 2010). Rosenthal et al. found that teacher candidates who had a literacy-focused, PDS-based field experience exhibited increased understanding of the links between theory on best practices and classroom based instruction.

Teachers in schools that partner with universities frequently show increased leadership skills, particularly if they have an active role in innovations and decision making in the partnership (Vernon-Dotson & Floyd, 2012). When teachers influence their own professional development, or when they are charged with supporting the learning of other professionals, they tend to exhibit increased knowledge, skills, and dispositions to enable a high-level learning for their students. Along those lines, teachers in PDSs who are charged with helping to prepare educators think deeply about what they want future teachers to know and be able to do.

MacPhee and Kaufman (2014) found that when classroom teachers were asked to critically examine social studies instructional materials, those who worked with pre-service teachers voiced concerns about the possibly narrow models of social studies instruction candidates were exposed to. Participating teachers contemplated the importance of guiding candidates to examine social studies materials for bias, while also helping them to consider what constitutes developmentally appropriate instruction. In the current study, classroom teachers were course co-instructors of a literacy course in the university's initial certification program. They shared responsibility with university faculty members for leading class discussions, and for guiding candidates' interpretation of assessment results and weekly planning for work with children.

Teitel (2004) described a growing body of research focusing on the impact of PDSs on student learning, but found the existing knowledge base lacking, with few comparative studies, and questions remaining on which of various PDS activities contributes to student achievement.

Since then, better-designed studies have emerged including a comparison of student achievement in a PDS school and a matched control school over a six-year period (Castle et al., 2008). Comparing results of standardized tests in fourth grade reading, writing, and mathematics, results showed that students in the PDS school increased performance more than students in the control school in every area. These findings indicate that students in the PDS achieved higher levels of learning, an outcome which the authors attributed to the level of collaboration between the university and school personnel, as well as to the school-specific PDS initiatives that the partnership embarked on. These included flexible grouping for instruction with tutors assisting teachers during group work; on-site, needs-driven professional development; and data-driven, whole faculty decision making. Even given these positive findings, the authors call for ongoing research on how specific PDS initiatives impact teaching practice and student learning. The current study is an examination of the effect of a PDS embedded undergraduate literacy course on candidates' pedagogical knowledge development and children's literacy growth.

Method

PDS Essentials

The current study focuses on two of the "Nine Essentials of a PDS" (NAPDS, 2008). These include Essential 2, "A school–university culture committed to the preparation of future educators that embraces their active engagement in the school community": The initial certification course from which data are drawn engages candidates with students and P-12 faculty in the school community. It also addresses Essential 8, "Work by college/university faculty and P–12 faculty in formal roles across institutional settings" since the college course is entirely co-taught by the university and PDS faculty within the partner school building. The study incidentally addresses Essential 3,

"Ongoing and reciprocal professional development for all participants guided by need" as results indicated that participating teachers developed professionally in significant ways as a consequence of participating in the course.

Context

The PDS is a large urban elementary school that serves over 1,200 children in grades 1-6, with approximately 95% of students eligible for free or reduced lunch at the time of the study. Approximately 90% of children at the school speak a language other than English at home. The school is situated about 10 miles from the suburban campus of the nationally accredited state university partner. The PDS relationship is longstanding and has evolved over time. A university faculty member serves as a "Professor in Residence" providing on-going, needs-based professional development to teachers. Many student teachers are placed at the school each year, and several teachers at the school are graduates of the university's educator preparation program. The literacy course that is the basis for the current study was a relatively recent innovation, and allowed for further development of the PDS relationship by including classroom teachers as course co-instructors; providing candidates with guided, directed interactions with children; supporting children's literacy learning; and giving the participating faculty members much needed time away from campus and in partner schools.

Participants

Forty-eight children participated in this study, including 24 tutored and 24 non-tutored control students; all were second graders, most were Hispanic (92%), and none spoke English at home. The 24 tutored children were drawn from two classrooms, one of which was transitional ESL and one which was monolingual inclusion. Participating children were identified by their teachers as in need of reading support, and received parental permission to participate in the program. Twenty-four additional children, drawn from two other classrooms matched on classroom instructional status, were matched with participating children on beginning-of-year Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency scores.

The 48 participating teacher candidates are predominantly European American (approximately 92%) and female (approximately 92%). This study spanned two academic semesters, and 24 teacher candidates participated in each the spring and fall terms. The two classroom teachers who participated had taught at the school for at least four years at the time of the study. The two participating university faculty are former classroom teachers with advanced degrees in the teaching of reading.

The PDS-Based Course

The literacy methods course from which data for this study were drawn is required for teacher candidates seeking initial certification in elementary education; it is the only course in the program in which candidates study the teaching of reading, and it is one semester long. In this course, teacher candidates meet each week with the course co-instructors (a university faculty member and a mentor teacher from the school) on-site in the PDS. Candidates take turns teaching a weekly whole-group lesson during the school day; after school, candidates work one-on-one with the same individual at-risk reader for the entire semester. Following whole-group lessons and tutoring sessions, candidates and course co-instructors come together for a reflective conversation about instruction, children's progress, and how their experiences relate to theory and research.

In this course, co-instructors collaborate in a number of meaningful ways. They each contribute to teaching the course using methods related to their professional roles and together make clear for candidates the importance of theory and how it looks in practice. During whole group class discussions, the university faculty member reviews assigned readings on research and models of best-practices literacy instruction and the classroom teacher shares examples of how several of these ideas are implemented in her work.

During the year that data were collected, in their first session with children, candidates engaged in "get to know you" activities and administered a battery of literacy assessments which the university faculty member had instructed them on during a campus based session. Following assessment of children, candidates met one-on-one with the classroom teacher to "compare notes", and so she could help candidates consider children's individual needs based on assessment results. The classroom teacher shared her monthly unit plans so that candidates could link their lessons to what she was doing in the classroom while also integrating their growing knowledge about their student's needs. Thereafter, weekly tutoring plans were submitted to the university faculty member for review, and both the faculty member and classroom teacher circulated during tutoring sessions to ensure that candidates were delivering instruction in effective and developmentally appropriate ways.

Prior to conducting their whole group lesson, each candidate met with the course co-instructors to go over their plans. The faculty member helped candidates select appropriate books to read aloud, to consider what strategies and skills could best be modeled and practiced through the reading of a particular text, and ensured that their learning goals aligned to standards. The classroom teacher facilitated their sequencing of instructional activities by helping them see links between anticipated outcomes and children's current background and skill level. Following each candidate's whole group lesson, course co-instructors provided feedback, allowing for multiple perspectives to enhance professional growth.

It was assumed that the bridging of theory and practice provided by this PDS-based teacher preparation course would provide future teachers with meaningful training. Participating children were also expected to benefit from involvement as they

were engaged each week with instruction that was targeted to their needs. Though not anticipated, course instructors appeared to have benefitted as well from close examination of their own practice triggered by co-teaching the course.

Data Sources

Data sources for this study included: (1) beginning, middle, and end of year DIBELS (Dynamic Indicators of Basic Early Literacy Skills) and running record scores for tutored as well as non-tutored children matched on beginning-of-year oral reading fluency scores; (2) samples of children's work products from the tutoring sessions; (3) teacher candidates' weekly reflections and instructional plans; (4) candidates written responses on a pre- and post-course inventory administered on the first and last day of class for two iterations of the course, fall and spring; (5) course co-instructors' written observations of tutoring sessions; and (6) classroom teachers' responses to an unstructured interview regarding the impact of participation in the course on their practice, conducted in late spring.

Data Analyses

This was a mixed methods study in which DIBELS scores and running records from the beginning of the year, January, and May, from tutored and matched control students, were compared using repeated measures ANOVAs. Pre- and post-course inventories administered to candidates were compared to determine how candidates' knowledge, attitudes, and comfort level changed as a result of participation in the course. Candidates' weekly reflections and instructional plans were examined for evidence of growth of teacher candidates' content and procedural knowledge and ability to use results of assessment to inform planning. Teachers' responses to open-ended interview questions on how teaching the course impacted their practice were summarized.

Results

Children's Literacy Skills

Second graders varied widely in their literacy abilities as measured by the DIBELS. While several of the students were identified as in need of intervention based on DIBELS benchmarks, approximately half of the students were performing at grade level on most or all of the assessments. Characteristics of the participating students and mean performance on the beginning of year DIBELS tests and running record levels are reported in Table 1. As shown in the table, students in the treatment and control groups were well matched on beginning of year scores. Paired samples t-tests revealed that the groups did not differ significantly on October oral reading fluency scores, which were used to form matched pairs. The groups also did not differ significantly on their scores on nonword reading, which is a decoding measure; passage retelling, which is a reading

comprehension measure; or word use fluency, which is an oral vocabulary measure. They did not differ either on their running record levels, which takes into account their oral reading accuracy and retelling ability on leveled texts.

At the end of each of the two semesters during which two iterations of the course took place (January and May test scores), tutored and non-tutored students differed in their performance on several tasks. In order to examine change in performance on these tasks, repeated measures ANOVAs were applied to each of the skills measured. Nonword decoding was not included after beginning of year assessments for second graders, so performance on this subtest was not analyzed. The independent variables were group status (tutored vs. non tutored) and test time (October, January, and May). Mean performance on the subtests, test statistics, and effect sizes are reported in Table 2.

On the measure of oral reading fluency, a significant main effect of test time was detected, as was a significant interaction between group status and test time. Means in Table 2 reveal that while all students improved their reading rate from October to May, students who participated in the tutoring program increased their oral reading speed more than did students who were not tutored. Based on Cohen's (1988) rule of thumb regarding the evaluation of effect sizes, (i.e., $0.20 = $ small, $0.50 = $ moderate. $0.80 = $ large effect), effect sizes on the January and May test dates indicate that the tutored children performed better than the non-tutored children. Thus, tutoring appears to have positively impacted students' reading rate.

There were small differences between groups in passage retelling fluency, considered a measure of reading comprehension. Although students in both groups improved in their reading comprehension over time, effects of group status fell short of significance, as shown in Table 2. There was an interaction between group status and test time, indicating that tutored children improved their retelling ability over time more than did their non-tutored peers. Mean scores reveal that tutored students grew in their retelling fluency more than the non-tutored group, and the medium effect size indicates that this difference is notable. These findings reveal that tutored students' reading comprehension improved moderately more than the comparison group.

Group differences in word use fluency were apparent, with ANOVA results showing significant main effects of both group status and test time. There was also a significant interaction between these variables. Tutored students' oral vocabularies grew significantly more over the semester than did non tutored students' oral vocabularies. This is especially notable considering that both groups included students in transitional ESL classes; vocabulary improvement is a major instructional goal for English language learners.

In the comparisons of running record level, there was a significant main effect of test time, as well as a significant interaction between time and group status. All students improved in their reading levels over time, and involvement in the tutoring program clearly impacted students' growth. However, there was no main effect of group status on this

Table 1. Student Characteristics and Mean Performance on Literacy Tasks by Tutoring Status

Characteristics and measures	Tutored	Non-Tutored	*t*-stat
Gender (females; males)	11F; 13M	12F; 12M	
Ethnicity			
Latin American	24	23	
Asian American	0	1	
Beginning of Year DIBELS Scores			
Oral Reading Fluency	39.83 (17.7)	39.96 (17.1)	-0.17*n.s.*
Nonsense Word Reading	58.46 (22.3)	58.29 (25.6)	0.03*n.s.*
Retell Fluency	20.08(10.0)	20.71(10.9)	-0.25*n.s.*
Word Use Fluency	32.34 (9.7)	29.66(9.7)	1.042*n.s.*
Beginning of Year Running Record Level (letters converted to numbers)	6.79(3.2)	6.75(3.0)	0.23*n.s*

n.s. not significant

measure. The lack of an effect might be due to the comparably narrow range in reading levels.

In addition to DIBELS scores, children's work products from the tutoring sessions and candidates' weekly journals were examined for evidence of tutored children's growth in literacy abilities as reported by tutors. In this qualitative analysis, several areas of literacy were found to have improved for many of the children, including writing ability, phonics knowledge, use of comprehension strategies, and oral reading fluency.

In one section of the course, each child was given a writing journal at the start of the semester. The goal was to have children write during each tutoring session, while also introducing candidates to the Writer's Workshop model of writing instruction (Calkins, 1994). Hence, children were given some time to write; they then conferred with their candidate-tutor. Tutors were instructed to determine, based on their perception of children's needs and on the weekly Grade 2 Language Arts plans, what elements of children's writing to focus on.

Candidates initially tended to focus on mechanics more than on content, ideas, style, or flow. As the semester progressed, several candidates were observed to emphasize the writing process, with clear plans for brainstorming, drafting, elaborating, and revising. From the beginning to the end of the semester, children's task persistence improved, with many moving from writing one or two sentences in a session to writing a paragraph or more. Also improved was children's tendency to spell high frequency and sight words correctly on the first draft. Some children, with encouragement from their tutor, used rich and varied vocabulary, often drawn from stories the two had read together. One child wrote, following the reading of a "little book" on cheese, "I like cheese becas is gooey and oozey, and stehy (stretchy) and good. But stinky and icky." This child, at the beginning of the program, was observed to write three or four word, single sentences with little or no detail.

For candidates whose students needed it, time was spent on phonics instruction each week. They engaged in "word sorts" (Ganske, 2006), and focused either on phonic elements

Table 2. Mean Performance and Test Statistics on Four Literacy Skills Tasks as a Function of Tutoring

Literacy skill assessed	Tutored M (SD)	Non-Tutored M (SD)	Effect Size d	ANOVA F(1,23)
DIBELS: Oral Reading Fluency				
October	39.83 (17.7)	39.96 (17.1)	0.0	1.76 *ns* (C)
January	62.92(18.7)	54.13(20.3)	0.45	146.50[b] (T)
May	68.50(20.7)	64.50(20.3)	0.20	5.04[b] (CxT)
DIBELS: Retell Fluency				
October	20.08(10.0)	20.71(10.9)	0.06	2.69*ns* (C)
January	30.63(15.7)	24.25(11.5)	0.46	34.30[b] (T)
May	38.75(15.3)	30.17(7.5)	0.71	4.01[a] (CxT)
DIBELS: Word Use Fluency				
October	32.38 (9.7)	29.67(9.8)	0.27	16.66[b] (C)
January	47.96(12.3)	35.96(10.9)	1.13	31.81[b](T)
May	52.50(13.3)	40.83(10.5)	0.98	3.66[a](CxT)
Running Record (letters converted to numbers)				
September	6.79(3.2)	6.75(3.0)	0.01	0.512*ns* (C)
January	9.13(3.3)	8.75(2.5)	0.13	128.65[b] (T)
May	11.92(3.8)	10.54(2.6)	0.42	3.12[a] (CxT)

ns not significant, [a]*p*<.05, [b]*p*<.01

candidates perceived children needed, word families from texts being read, or spelling patterns included in the weekly Grade 2 Language Arts plans. Candidates reported that this activity greatly benefitted students, as students moved from decoding each word letter by letter, to acquiring automaticity with specific words, families, and patterns. Several candidates reported that they observed transfer of learning from word sort activities to reading of similar patterns in connected text. One candidate wrote, "I think doing the word sorts really helps (child) recognize when vowels are long and when they are short. When I first tested her, this was like her worst problem but now she stops and looks at words and then reads them, usually right."

Candidates were instructed to emphasize the use of comprehension strategies during the text reading component of their tutoring sessions. Some candidates focused specifically on the comprehension strategy of previewing and predicting. As one candidate wrote,

> I want to keep it simple because then she will know what to expect. I think by practicing predicting by doing a picture walk before reading, she will really get good at it, so we are doing this again instead of confusing her with all different strategies.

Several noticed that children moved from needing to be prompted to retell stories, discuss characters, or identify main ideas in information texts, to spontaneously talking about important points during reading. This was an area that classroom teachers focused on, and growth noted is likely primarily a result of teachers' emphasis on meaning-making. However, the additional support for children's comprehension strategy use offered by tutors appears to have impacted students' comprehension of literature and information text, at minimum providing children with opportunities for practice and individual attention. Hence, there were clear benefits to children of participating in this PDS-based initiative.

Candidates' Growth in Pedagogical Knowledge and Ability to Use Informal Assessment

In order to examine candidates' learning resulting from the field experience, pre- and post-course inventories were comparatively analyzed; weekly reflective journals were perused for evidence of knowledge growth; and candidates were observed by course instructors during tutoring sessions. Based on these data, candidates appear to have developed recognition of the importance of basing instruction on children's needs. They also demonstrated growing knowledge about varied components of balanced literacy instruction, and importantly had opportunities to attempt strategies and then reflect on their efficacy with feedback from the course co-instructors.

The following question on the pre- and post-course inventory was asked to ascertain candidates' orientation to literacy instruction, and to gain insight about their literacy perspectives: How will you begin to teach reading?

Many candidates appeared initially confident in their knowledge about and ability to teach reading, displaying strong convictions about how reading *should* be taught. Several answers on the initial inventory suggested a skills-based perspective. For example, in answer to the first question, half of the candidates wrote something similar to the following quotes drawn from pre-course responses, "They need to be taught the fundamentals first, that is key" or "Reading has to begin with learning the letters and different sounds of the alphabet." Three candidates wrote that they needed to start by motivating children, for instance by "first show[ing] the children that reading can be fun."

In contrast, responses on the post-course inventory revealed a growing awareness of how students' individual needs inform instructional decision making. Almost all of the candidates wrote a variation of "I will first need to assess my students; only after that can I say how I will teach reading." Some also reported recognizing the importance of student *interests* in the learning process; suggestions of the teacher motivating her students were replaced by suggestions that incorporating students' interests would be motivating. "I need to find out what they are interested in, because then I can find materials that they will want to read. This will make their comprehension better." Although this realization can in part be attributed to candidates' direct interaction with children and discovering their individual interests, the classroom teacher emphasized this point and helped candidates gain this insight. The combination of first-hand experience and expert guidance fostered an important competence in candidates; it is not likely that this same level of awareness would have developed if the course was held on campus rather than imbedded in a PDS.

Weekly reflective journals and instructional plans revealed that candidates experienced substantial growth in their ability to informally assess children, and to use this information to plan for instruction. For example, one candidate was initially confused by her student's spellings, and felt that his selection of certain letters was random and not thought out. Following several weeks working with him, and of discussing possible explanations with course co- instructors and classmates, she wrote in her journal "When I look at his spellings, I can see the influence of his speaking Spanish. He always spells long "e" with an "i" and sometimes he uses "d" for the "th" sound." This important realization allowed the candidate to recognize that the child was using letter sound knowledge consistently in his spellings. She went on to teach the child several regularly spelled English nouns and showed him how to use these words as "anchors" for his subsequent spelling.

A second candidate was observed to engage her struggling student regularly in *echo reading* in which a more proficient reader reads a passage and the learner reads the same passage in echo. Wishing to push for greater independence for her student, she began *partner reading*, in which readers take turns reading alternate passages or pages. She was able to assess his growing comfort and ability, and by doing so helped him achieve a higher level of independence in his reading. Another candidate noted

that her student was a proficient oral reader, but that his comprehension was weak. "He…is really struggling with comprehension, so we are working on making predictions and summarizing as we read. Asking him to stop and summarize what he read seems to help him remember what is going on in the story."

As a result of whole class discussions, in which the importance of vocabulary development was emphasized, several candidates spent time reading texts that were above children's reading levels in order to stretch their language and comprehension skills. As one candidate wrote, "I chose to read to him…from a text above his own (reading) level. I was impressed by his ability to retell the information and new words he had learned from me reading to him." A second candidate noted that "It is so important for us to remember that for our students to learn academic vocabulary, it is our responsibility…I try to read to him every week from books that might be above his level so we can find the harder words." Candidates were also observed modeling for students how to use context and picture clues to figure out unknown words in text. Others emphasized using varied vocabulary in children's writing. It is clear that many focused on children's understanding and use of new words during tutoring sessions.

Importantly, following work with their individual reader each week, candidates came together for a class discussion, so that their assorted observations were shared, enhancing awareness of the individual differences that exist among children. Course co-instructors were able to provide immediate feedback and guidance to support candidates' plans to target children's needs. In this way, the course differed from more common field experiences and internships where candidates work with children in schools while learning pedagogy and content on campus. That the experience was PDS-based, so that candidates were exposed to the perspectives of both the university and school faculty members while simultaneously applying suggestions directly to their work with children appears to have significantly positively affected their understanding of the teaching-learning continuum.

Teachers' Professional Growth as a Result of Participation in Teaching the Course

Examination of children's DIBELS scores reveals that participating children grew more in their oral reading and word use fluency from October to May than did children who did not participate in the literacy program. Tutored children also performed better on passage retelling compared to their non-tutored peers. While some of this difference may be attributable to the weekly, one-on-one, needs-based instruction participating children received from teacher candidates, it is not apparent that novice tutors could have made this much of an impact in just one hour per week. Clearly the teachers' ongoing instruction must be largely credited for the differences detected between groups. Although the variations in classroom practice between participating and non-participating teachers was not surveyed,

course co-teachers indicated that they felt they had developed professionally as a result of teaching the course. Participating teachers were therefore asked to describe the ways in which they felt that involvement in the program had impacted their practice.

Both teachers reported that their involvement in the School-University partnership, and in particular their roles as co-teachers of the course, had made them better teachers. One stated that co-teaching the literacy course made her think more deeply about what she did and why she did it. As she put it "When I describe a teaching strategy to the candidates, I need to break it down and think about the steps, and that makes me think about it more when I am working with the children." This same teacher reported that "…candidates tend at first to work only on low level skills; I feel I need to lead them to focus on meaning making. This makes me think about what is important in my teaching."

In addition to encouraging teachers to re-examine their own practice, these teachers reported that participating in the course served as a source of professional development for them. As one teacher said, "When I am co-planning the whole group sessions I go back and reread the theory that I learned about in my teacher certification program. It makes more sense to me now because I see why I do what I do.…explaining best practices to the candidates makes me stop and think about which practices really are best, and why."

Discussion

This study examined the impact of a PDS based undergraduate literacy course which included afterschool tutoring of individual struggling readers by teacher candidates. Tutored children's literacy growth was measured by comparing middle and end of year DIBELS scores and Running Records of participating children and non-participating children matched on beginning of year oral reading fluency scores.

Results revealed that tutored children grew significantly more than non-tutored children in their vocabulary use as measured by the DIBELS. Over time, tutored children developed several literacy skills to a greater extent than did non-tutored children. Castle et al. (2008) found that children in a PDS performed better on standardized tests than did children at a non-PDS. Although all of the participating children in the current study were enrolled in a PDS, the benefits of engaging directly in a PDS initiative are clear: Tutored children grew more over time on each area of literacy measured. Although tutored children did not statistically outperform control students on oral reading speed, they did increase their reading levels, comprehension skills, and word knowledge over the year more than non-tutored students. In looking for an explanation for these differences, the authors discussed the potential contributions made by the weekly tutoring, as well as the possibility that co-teaching the course impacted classroom teachers' practice resulting in improved outcomes for participating children.

Candidates engaged children in oral reading, but following instruction from their course co-teachers, did not emphasize

speed as much as accuracy, prosody, and expression – areas which are not measured by the DIBELS. Teacher candidates tended to work with children on oral language activities, including having students verbally respond to texts read together, and discussing events in children's lives as a method to brainstorm ideas for writing. They also encouraged the use of varied vocabulary in children's writing; read aloud to children from quality literature above children's independent reading level; and helped children to use context and other clues to understand new words encountered. These components may have impacted children's vocabulary levels resulting in the word knowledge performance differences detected between tutored and non-tutored children.

It is clear from these results that participating candidates grew in their understanding of what constitutes "best practices" literacy instruction. Many moved from a skills-based instructional stance to an individual-needs based stance. They came to recognize that children's interests and needs matter as much or more than a scope and sequence of skills. Content area specific experiences, such as the one examined in the current study, have been shown to enhance teacher candidates' knowledge and understanding of content area instruction, as well as their efficacy for teaching that content (Rosenthal et al., 2008; Swars & McMunn Dooley, 2010). Previous research indicates that teacher candidates who have internships in PDSs do a better job at using informal assessment to inform instruction (Castle et al., 2006) and the current study provides some support for this.

Candidates' growing ability to link assessment to instruction and their developing knowledge of best practices may have contributed to children's oral reading and comprehension growth, although it is unlikely that a once weekly session could have led to such dramatic results. An alternative explanation is that teachers' practices changed as a result of serving as an instructor of this PDS-based course, and the increased focus on their own teaching resulted in improved outcomes for children.

Participating teachers commented that they emphasize meaning, understanding, and language development in their literacy instruction. They observed that candidates initially focused on lower-level skills, such as having children fill in letters to complete words on worksheets and having them answer closed ended questions in response to text reading. The teachers reported that they felt the need to model for candidates how to help children use strategies with greater utility for word identification, such as chunking and reading words by analogy. They encouraged candidates to help children make meaning, find personal connections, make inferences, and cite evidence during reading and writing. By doing so, teachers were apt to re-examine their own instruction to be sure higher order skills were highlighted, while lower level skills took a supporting role. Indeed, teachers who co-taught the course reported paying more attention to their own practice as a result of sharing their insights with candidates, and felt that through mentoring these future teachers, they teased apart for themselves what was most critical in their teaching of literacy. By serving as teacher-educators as well as classroom teachers, their own feeling of efficacy as teacher-leaders was enhanced as was their

teaching practice. Similarly, teachers in Vernon-Dotson and Floyd (2012) who took on leadership roles as part of their involvement with a school-university project aimed at providing professional development and mentoring for less experienced teachers felt that they contributed to improving their schools and consequently experienced increased self-efficacy. In the current study as well as in Vernon-Dotson and Floyd, teachers were called upon to use their professional knowledge to support the learning of less seasoned colleagues. By taking leadership roles in this way, teachers felt the need to reexamine their own practice, likely resulting in increased competence and enhanced instruction. However, possible resulting changes to their teaching were not examined directly, and hence it cannot be concluded that they experienced professional development as a result of participating in this course. Further examination of how teachers develop professionally due to their work in a PDS initiative such as this is needed.

Limitations and Recommendations

Participating children in this study gained more than non-participating children in several areas of literacy as measured by the DIBELS. According to the DIBELS website, the assessments are valid and reliable. However, as a standardized assessment, it is not likely that it is sensitive to the particular skills that were taught during tutoring sessions. Future research should attempt to measure children's learning of the specific skills, strategies and content presented by tutors in a course such as that in the current study. In this study observations revealed that children did grow in the areas focused on by tutors, but a more systematic examination of the benefits to children of engaging in PDS initiatives such as this could provide additional support for the value of PDS.

It is not clear if the advantages children experienced were the result of the individualized instruction they received each week from their candidate-tutor, or if, as the authors inferred, the teachers' professional growth as a result of co-teaching the course had a bigger impact. Teachers were not asked to document the ways in which their practice changed over the time period during which they co-taught the course. Instead, their recognition of having improved their practice grew out of conversations with the course co-instructors and was further revealed through an informal interview of teachers by a university faculty member. Future research should examine the specific ways that teachers develop as a result of participating in various PDS programs.

Teacher evaluation systems and increased pressures on teachers to raise students' test scores have resulted in fewer teachers nationally expressing the desire to work with teacher candidates. More information about how mentoring future educators increases teachers' efficacy and results in professional development might help to counteract this trend. SUP

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