Development and Sustainability of School-University Partnerships in Special Education Teacher Preparation: A Critical Review of the Literature

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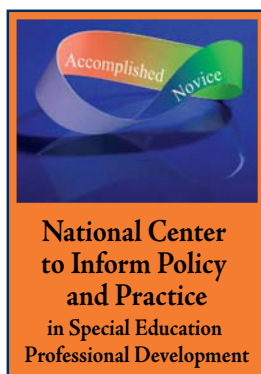University of Florida

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INTRODUCTION TO SCHOOL-UNIVERSITY PARTNERSHIPS

Local school systems, Local Education Agencies [LEAs], and universities, Institutions of Higher Education [IHEs], work together in a variety of ways in the initial preparation and ongoing professional development of teachers, although it is difficult to ascertain the number of LEA/IHE partnerships. These relationships typically allow for a leveraging of resources and expertise, achieving outcomes that would not be realized without the involvement of both parties (Barnett, Hall, Berg, & Camarena, 1999). Although it is likely that LEAs and IHEs have always had some degree of cooperative involvement in the development and sustainability of teachers, the view that partnerships can be a distinct method of teacher education reform is relatively recent. The attention given to partnerships is generally viewed as "one sustaining legacy of the critical reports of teaching and teacher education in the 1980's" (Allexsaht-Snider, Deegan, & White, 1995, p. 219).

Little has changed in terms of the need for teacher education reform and the role of LEA/IHE partnerships in such efforts. For example, with the extreme shortage of qualified teachers at crisis levels—particularly in the high-need areas of special education, math, and science—the creative and synergistic efforts of individuals in LEAs and IHEs are needed to address the myriad challenges associated with recruitment, development, and retention of highly qualified personnel. In this paper we review extant literature on how partnerships between LEAs and IHEs influence the development of high-quality teachers, particularly special education teachers. We also examine the characteristics that define successful LEA and IHE partnerships as well as the contextual factors that allow these efforts to develop and be sustained. Our goal in this effort is to inform policymakers and practitioners of best practices for developing and sustaining LEA/IHE partnerships as a means of enhancing special education teacher development. Following a brief introduction in which we provide a rationale for and define LEA/IHE partnerships, we describe the methodology used to engage the literature and review the research associated with specific partnership types.

In analyzing studies, we focus on determining (a) characteristics of successful partnerships; (b) effectiveness among partnerships of different types and intensities; and (c) contextual conditions that enhance the impact of the partnership. From these analyses we describe the features of partnerships, conditions favoring their implementation, and note resources needed to introduce and sustain partnerships. We also discuss partnership outcomes related to preservice teachers and their students. Finally, we discuss implications of the research and provide suggestions for future research and practice, with specific emphasis on next steps for the National Center to Inform Policy and Practice in Special Education Professional Development [NCIPP]. Both general and special education partnership efforts are reviewed to identify similarities in their teacher preparation methods. Such information is foundational for justifying and building partnerships to prepare all preservice teachers. This information is also essential for accounting for any unique considerations when developing partnerships for preparing only special education teachers.

Why Partnerships?

In response to concerns over the erosion of teacher education effectiveness—both at the preservice and inservice levels—there have been numerous calls to restructure how teachers are developed, inducted, and ultimately retained in the profession. In formal papers and commission reports (e.g., Carnegie Task Force on Teaching as a Profession, 1986; Holmes Group, 1995; Levine, 2006; National Commission on Teaching and America's Future, 1996), partnerships

between LEAs and IHEs are cited repeatedly as interventions that improve the quality of personnel in underachieving schools. The appeal of partnerships between schools and universities seems intuitive. Partnerships allow individual organizations to leverage their assets as well as to expand and enhance their own knowledge base. However, beyond dynamic combinations of resources, personnel, and expertise, LEA/IHE partnerships set the stage for a more expansive and developmental view of teacher preparation. Rather than being viewed as a fixed series of events within a limited time period, teacher preparation through partnerships is conceptualized as an ongoing process that bridges preservice development, induction, and professional development. Inherent in a partnership continuum view of teacher preparation is that IHE and K-12 faculty members will work together to mentor preservice teachers as they themselves collaborate in their own ongoing growth and professional development (Stephens & Boldt, 2004).

Partnerships also allow for a number of important secondary benefits (Price, 2005).

Preservice teachers benefit from: (a) coordinated and well-conceptualized programs of study, (b) experience-enhanced familiarity with school-based procedural practices, and (c) opportunities for securing preferred hiring opportunities.

Inservice teachers benefit from increased opportunities for (a) on-site staff development, (b) frequent opportunities to put research into practice, and (c) work in settings that reduce isolation and encourage collaboration, often with scholars in their subject area.

Students in the schools engaged in partnerships garner increased adult attention and benefit from innovative educational practices.

Institutions benefit from partnerships. In essence, partnerships promote practices within cooperating institutions that contribute both directly and indirectly to elements frequently cited as essential to school and teacher education reform (Lauer, Dean, Martin-Glen, & Asensio, 2005; U. S. Department of Education, 2003). These elements include (a) K-12 educators having a strong voice in the design and implementation of teacher preparation programs; (b) increased collaboration among IHE faculty in schools of arts and science and education; (c) the production of teachers with strong applied classroom experiences; (d) increased opportunities to work with diverse students; and (e) enhanced opportunities for feedback and evaluation of reform efforts (Price, 2005).

Partnership Defined

With many different LEA/IHE partnerships devoted to enhancing teacher quality, it should come as no surprise that there is a need for frameworks to organize these arrangements. Among the more prominent frameworks in the teacher education literature are goal-focused and structure-oriented definitions.

Goal-focused definitions view partnerships as the cornerstone of collaborative educational reform efforts designed to improve the process of preparing teachers, enhance the professional development of practicing teachers, and increase student learning (Badiali, Flora, Johnson, & Shiveley, 2000; Birrell, Ostlund, Egan, Young, Cook, Dewitt, et al., 1998; Goodlad, 1994). The ultimate goal is the simultaneous renewal of schools and teacher education programs. However,

elements of partnership renewal efforts are not homogeneous and the literature reflects a wide range of formative goals and contexts (Clark, 1999; Price, 2005), including:

- preparing preservice interns employing activities that link IHE instruction with practical school experiences
- delivering relevant professional development activities to inservice teachers
- optimizing learning outcomes for all students
- providing leadership and organization needed to nurture and sustain new teachers
- integrating theory, research, practice, and evaluation in the school setting
- providing real school experiences for university faculty.

Structure-oriented definitions focus on organizational structures, and partnerships range from simple limited working relationships to complex, involved collaborative partnerships (Callahan & Martin, 2007).

Limited partnerships usually focus on one entity providing a specific service to another. For example, historically partnerships between LEAs and IHEs were developed to deliver realistic and rigorous field experiences to preservice teachers (King-Sears, Rosenberg, Ray, & Fagen, 1992). These types of partnerships are best characterized as *coordination* (Lauer et. al., 2005) in that the relationship involves specific projects and tasks, but there is limited interaction among the entities.

Coalition partnerships have greater levels of cooperation as the parties agree to work together on a project and divide workloads. However, in these arrangements one partner typically takes on a disproportionate share of the decision making. An example is when LEAs and IHEs cooperate to sponsor, plan, and deliver professional development workshops; the IHE makes most of the decisions on content and delivery format.

Collaborative partnerships differ considerably from limited and coalition relationships in that both partners share the labor and decision making throughout their efforts (Callahan & Martin). Moreover, partners are on equal footing, dividing the labor and decision making equally. In addition, the partners provide support and assistance to each other and view their workmates as having strengths and resources that complement their own (Barnett et al., 1999; Lauer et al., 2005). At their very best, these collaborative relationships are symbiotic: different types of institutions are cojoined for meeting mutually beneficial goals (Allexsaht et al., 1995; Goodlad, 1988).

Characteristics of Effective Partnerships

Independent of framework, several authors (e.g., Allexshat-Snider et al., 1995; Essex, 2002; Lauer et al., 2005; Peel, Peel, & Baker, 2002) have defined LEA/IHE partnerships by focusing on the characteristics that make them successful. One general characteristic contributing to positive impact and sustainability is participants' understanding of the evolutionary stages of partnership development as well as the purposes, directions, and outcomes of the relationship. From an interpersonal perspective, effective partnerships are characterized by trust among participants, open communication, mutual respect, and a collective positive predisposition toward change. Effective partnerships are also characterized by the visible and tangible commitment of leaders in participant organizations. This commitment is often reflected by visionary leaders who strive for a thorough understanding of all constituent needs and maintain

flexibility in addressing the needs of individual constituents and the partnership. Finally, effective partnerships deliver on promises and ensure that goals are met. Specifically, those investing their time and effort should be able to see firsthand that their work is contributing to teacher education reform and renewal.

Types of Partnerships

Professional Development Schools [PDSs] are innovative partnerships between school districts and IHEs that focus on four primary goals: (a) the preparation of new teachers; (b) faculty development; (c) inquiry directed at the improvement of practice; and (d) enhanced student achievement (National Council for Accreditation of Teacher Education, 2009).

Alternative Route to Certification Programs [ARCs] provide access to a teaching credential by circumventing traditional preservice preparation. These programs are often streamlined and tend to attract nontraditional candidates into the teaching profession, typically in subjects with a shortage of teachers (Rosenberg & Sindelar, 2005).

Our decision to focus on these partnerships centered on several factors. PDSs and ARCs:

- are among the most widely employed general teacher preparation partnerships employed by IHEs and LEAs
- are very prominent in the teacher preparation literature
- exemplify the wide range of partnerships—from the idealized, multifaceted, and high-maintenance PDSs to the goal-focused and pragmatic ARCs—which are designed to increase the supply of special education teachers
- reflect a vexing dichotomy in teacher preparation: extensive professional development versus streamlined preparation.

Specifically, PDS partnerships embody the ideals of collaborative, career-long teacher professional development. ARC partnerships tend to be more pragmatic, typically centering on filling specific personnel needs, most often in subject areas of extreme shortage and in difficult-to-staff schools.

Literature Search

To secure the available literature, we conducted an electronic search using Google Scholar, ERIC, Wilson Web, and Academic Search Premiere databases. During the search for PDS literature, the following terms were used: *professional development schools, professional practice school partnership research, professional development school research, university-school partnerships research, professional development schools and special education,* and *university-school partnerships and special education*. During the search for ARC articles we used the search terms alternative routes to certification, alternative routes to teacher preparation, and nontraditional teacher preparation.

We conducted an ancestral search of references included in identified papers and referred to original articles from literature reviews when more elaborate descriptions of studies were needed. To capture fully the current status of the LEA/IHE literature, including its strengths and

weaknesses as well as its potential impact on students and teachers,[1] all articles with research components were reviewed. Published literature from 1998-2009 was reviewed, as literature reviews addressed earlier research. Since we focused on published literature, dissertation research was not reviewed. To cite our findings, we used either primary citations or referenced the original reviews containing relevant information.

Guiding Questions

The overall goal of our comprehensive review of the literature is to inform policymakers of best practices for developing and sustaining LEA/IHE partnerships as a means of enhancing special education teacher development. Three guiding questions were generated to organize our analyses:

- Do partnerships improve the preparation of special education teachers as measured by changes in teacher practice and increases in levels of student achievement?
- What are the characteristics of these partnerships?
- What resources, contextual supports, and special considerations facilitate the initiation, maintenance, and institutionalization of partnerships?

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[1] We refer to participants in PDS efforts as *preservice teachers*. ARC participants are often teachers of record in their respective schools, as well as simultaneously being students in preparation programs, so we refer to them as *preservice interns*.

PDS PARTNERSHIPS

In this section, we synthesize findings from comprehensive literature reviews on PDSs as well as original studies.

First, we consider literature on PDS efforts in general education teacher preparation, organizing literature according to the questions posed in our purpose statement (effectiveness, characteristics, and contextual factors). The general education PDS research base is more comprehensive than in special education, providing us with more substantial information for responding to our research questions.

Second, we consider research on special education PDSs and compare these finding to syntheses of the general education literature. Collective findings from the two literature bases may help policymakers and practitioners make decisions about the viability of partnerships and understand the parameters under which they can be successful.

PDS PARTNERSHIPS: GENERAL EDUCATION

The literature on professional development schools in general education is expansive in terms of quantity, yet uneven in quality. From 1996-2002, 6 reviews of the literature on PDSs were conducted, synthesizing the results of close to 200 articles before 1998 (Abdal-Haqq, 1998; Book, 1996; Pritchard & Ancess, 1999; Rice, 2002; Teitel, 1998; Valli, Cooper, & Frankes, 1997). Authors conducting these reviews indicated that the vast majority of papers described how PDSs evolved, sustained partnerships, and addressed barriers to growth. Since 1998, of the plethora of papers on PDSs, only 39 papers reported empirical research or evaluation data. In some cases, the reports are thorough; in others, descriptions are brief, most notably concerning methodologies employed and outcomes obtained.

Effectiveness of General Education PDSs

The six PDS literature reviews revealed few studies evaluating the impact of PDSs on preservice teachers or school-aged children. However, the review of research since 1998 identified 25 papers that included some type of outcome data. Over half of these papers (14) involved descriptions of how preservice teachers and students involved in PDSs changed over time, including 5 that compared student data collected by the researchers to similar data collected state-wide. The remaining 11 papers included designs that involved a comparison of teachers and schools in PDS versus non-PDS arrangements. Outcomes assessed in both descriptive and comparative studies varied. These studies suggested that PDSs can be helpful in fostering positive changes in preservice teachers, who seem to benefit in multiple ways. Benefits included (a) growth in knowledge and skills; (b) development of attitudes, skills, and dispositions that support more successful socialization into the school environment; (c) a tendency to remain longer in teaching and become employed in hard-to-staff schools; and (d) successful socialization into schools. Many studies that assessed benefits accrued to preservice teachers relied on self-report data, perceptions of mentor teachers, and perceptions of administrators familiar with PDS graduates. Some studies, however, assessed changes in preservice teachers by quantitatively analyzing observational data and other data (e.g., lesson plans) collected as evidence of growth in knowledge and skills. Thirteen studies that also reported information about student achievement suggested that students make achievement gains related to PDSs. These studies are detailed in the following sections.

Knowledge and classroom practice. In the literature before 1998, few studies documented how preservice teachers benefit in knowledge and classroom practice from participation in a PDS. Yerian and Grossman (1993), as cited in Book (1996), used surveys and interviews to demonstrate how participating in a PDS helped preservice teachers feel more knowledgeable about adolescents and students with disabilities; specifically, participating preservice teachers felt more capable of integrating theory and practice. Two studies described by Abdal-Haqq (1998) and Pritchard and Ancess (1999) used surveys of administrators and state department officials to determine that preservice teachers graduating from programs involving PDSs were viewed as more effective than those who did not graduate from such programs. In the only comparative study, Stallings (1991), as cited in Teitel (1998), used a validated classroom observation instrument to compare preservice teachers in PDS settings to those in non-PDS settings. Quantitative analyses of their instrument found that PDS preservice teachers engaged in more effective teaching practices.

Since 1998, five studies involving comparisons between PDS and non-PDS preservice teachers and two descriptive studies documenting the classroom practice and knowledge of preservice teachers have been published. Comparative studies used both quantitative and qualitative techniques to distinguish the knowledge and classroom practices of PDS and non-PDS preservice teachers. For instance, Ridley, Hurwitz, Hackett, and Miller (2005) quantitatively analyzed lesson plans and postlesson reflections using a rubric to determine levels of knowledge for preservice teachers trained in campus-based programs versus those trained in PDS programs. Participants from the two programs were not significantly different in their knowledge and ability to reflect during internship experiences. Significant differences did emerge during their 1st year of teaching that favored those trained in PDS programs, and these differences were confirmed in quantitative comparisons of their classroom observations. Castle, Fox, and Souder (2006) quantitatively analyzed teaching evaluations and qualitatively analyzed portfolio presentations of elementary preservice teachers in PDS and non-PDS settings. PDS preservice teachers scored significantly higher than their non-PDS peers on quantitative indicators of planning, instruction, management, and assessment. Qualitative analyses established that PDS preservice students demonstrated a stronger ability to integrate Interstate New Teacher Assessment and Support Consortium Standards into their practice. Three of the comparative observational studies demonstrated that PDS preservice teachers employed more effective teaching practices and were also better able to engage students in instruction than their peers from more traditional student teaching placements (Neubert & Binko, 1998; Ridley et al., 2005; Sharpe, Lounsbery, Golden, & Deibler, 1999). Fisher and his colleagues (2004) used interviews to provide insights into why elementary students in classrooms with PDS preservice teachers outperformed students in classrooms without the assistance of PDS preservice teachers on posttest measures of reading achievement. Interviews with cooperating teachers suggested that preservice teachers' coursework and field experiences enabled them to use student assessment data and tailor instruction to their students.

In the one study involving comparisons of PDS and non-PDS preservice teachers on surveys and interviews, Conaway and Mitchell (2004) found that PDS preservice teachers reported using more positive, problem-solving approaches to solving behavior management problems than their non-PDS peers. Classroom observation data, however, were not available to determine the validity of their perceptions.

In the remaining two studies, qualitative or survey data were collected to document improvements in classroom practices and knowledge for teaching. Rock and Levin (2002) studied preservice teachers engaged in action research in a PDS, analyzing interviews, audiotapes of planning sessions, action plans, and research reports. They found that preservice teachers clarified their personal teaching theories, gained an awareness of themselves as teachers and their students' perspectives and needs, acquired knowledge about curriculum and teaching, and gained an appreciation of the role of reflection and inquiry in becoming a professional educator. Shroyer and her colleagues (Shroyer, Yahnke, Bennett, & Dunn, 2007) documented how graduates of PDSs increased knowledge for teaching on the Principles of Learning and Teaching Exam; pass rates improved from 90% to 97% over a 5-year period.

These studies establish stronger evidence for the efficacy of PDS work than has been established in prior literature reviews but are lacking in several important ways. Not all studies provided sufficient evidence of the validity and reliability of their instrumentation, and some studies provided little information about how quantitative comparisons were conducted (e.g., Neubert & Binko, 1998). Additionally, the studies did not always capture precisely what was learned in the

PDS and how that aligned with their dependent measures. To better understand the influence of PDS work on preservice education, we need to understand how opportunities to learn in a PDS are aligned with the classroom practice and knowledge assessed in the dependent measures.

Attitudes, dispositions, and socialization. The bulk of research on PDS efficacy before 1998 used surveys and interviews to tap changes in preservice teachers' attitudes, dispositions, and views of themselves as teachers. These studies yielded findings that mostly favor PDS preparation (Abdal-Haqq, 1998; Book, 1996; Pritchard & Ancess, 1999). Since 1998, three studies documented similar outcomes using both surveys and interviews. Preservice teachers reported more confidence in their knowledge, skills, and ability to teach as a result of their participation in a PDS school compared to their peers in typical field placements (Conaway & Mitchell, 2004; Sandholtz & Dadlez, 2000). Findings from a study that interviewed four novice preservice teachers suggested that increased opportunities to be mentored by classroom teachers in PDSs helped them immerse themselves in the work of teaching and allowed them to focus on important issues of curriculum and student needs (Fischetti, Garrett, Gilbert, Johnson, Johnston, Larson, et al., 1999). Additionally, when preservice teachers participated in a PDS that provided coursework and field experiences designed to address issues of culture in inclusive urban schools, they felt such experiences enabled them to gain valuable knowledge and skills for working with diverse students (Taylor & Sobel, 2003). Little research, however, has established that preservice teachers working in PDSs that serve urban students are more likely to seek positions in those schools. Only a couple of studies reported in the earlier literature reviews mentioned that preservice teachers with experiences in urban schools were likely to be employed in those schools (Abdal-Haqq; Book).

Sometimes participating in a PDS influenced preservice teachers' beliefs negatively. In a comparison study of preservice teachers in PDSs versus non-PDSs, Paese (2003) found that PDS preservice teachers had a higher sense of efficacy than non-PDS participants, at least prior to graduation. However, after their 1st year of teaching, former PDS preservice teachers had a lower sense of efficacy. Some research reported in the literature reviews also indicated that preservice teachers did not change in positive ways; specifically, preservice teachers became more rigid, authoritarian, bureaucratic, and custodial as a result of their work in PDS schools (Pritchard & Ancess, 1999).

Researchers have also documented how preservice teachers participating in PDSs are integrated effectively into school environments, becoming an integral part of the school culture. Abdal-Haqq (1998) described several studies documenting how preservice teachers involved in PDSs were found to interact positively with other professionals in the school and participate in school reform efforts. Preservice teachers in PDSs acquired a better understanding of their responsibilities and context of the school and experienced less culture shock in their 1st year of teaching (Abdal-Haqq; Book, 1996; Crocco, Faithfull, & Schwartz, 2003). Since 1998, two studies have generated similar findings. Crocco et al. used information generated during action research projects to assess the value of preservice and inservice teachers working together in a New York City PDS. PDS preservice teachers had multiple opportunities to collaborate with colleagues and to become involved in daily activities of the school (e.g., coaching basketball or serving on school committees). Sandholtz and Dadlez (2000) in their comparative study of PDS versus non-PDS preservice teachers found that participating in a PDS helped preservice teachers feel better prepared for the realities of teaching, easing their entry into the profession.

Although some literature suggests that participating in a PDS can have a positive impact on a preservice teacher's attitudes and efficacy for teaching, and can improve socialization into the school, researchers have little information to suggest that such positive changes are associated with retention in the classroom. Only one study using evaluation data from the Model Clinical Teaching Program (Abdal-Haqq, 1998) indicated that a greater percentage of teachers participating in that PDS program (98%) remained as classroom teachers after their 1st year. This compared to an average 60% retention rate for graduates of teacher education programs nationally that year.

Effects on children and adolescents. Positive changes in outcomes for children and adolescents served in PDSs were reported for only a limited number of studies in early literature reviews. For example, one study found that students' writing achievement increased as a result of PDS efforts, although reasons for these increases were not made clear (Teitel, 1998). In two studies conducted in Texas (Abdal-Haqq, 1998), mathematics achievement scores of children and youth served in PDSs increased. Since 1998, 10 studies have provided data that demonstrate a positive impact of PDS reform efforts on student achievement in reading, writing, and mathematics and other student outcomes (e.g., school attendance and conduct referrals). Of these studies, eight assessed changes in achievement scores and other outcomes within PDS schools (Cowart & Rademacher, 2003; Klingner, Leftwich, van Garderen, & Hernandez, 2004; Knight, Wiseman, & Cooner, 2000; Mariage & Garmon, 2003; Moyer, Jamieson, Dockery, & Ross, 2006; Pine, 2003; Shroyer et al., 2007; Trathen, Schram, Shoemaker, Maldonado, & McKinney, 2003). With one exception (Pine), all were high-poverty urban and rural schools, and three schools were engaged in the PDS in part to improve their inclusive practices for students with disabilities. Each study reported that typical students made gains on achievement tests, and some studies reported improved attendance and conduct. Of the 10 studies, 6 also compared school-wide achievement means in PDSs to state achievement means. PDS students either met or exceeded state means and often made strong achievement gains compared to students in the same schools prior to PDS implementation. In most studies, researchers documented the types of school reform efforts and reconfiguration of instructional personnel that were implemented to secure school-wide achievement gains, providing insight into how such changes might be replicated in other PDSs.

The remaining three studies incorporated some type of comparative design to investigate the effects of PDSs on student outcomes. Brown, Murphy, Natale, and Coates (2003) compared student outcomes for a PDS to a matched comparison school. Students in the PDS made more reading achievement gains than those in the matched school, and these gains were significant. In the one study analyzing the direct impact that preservice teachers had on student achievement, Fisher and his colleagues (2004) found that kindergarten and first-grade students taught by PDS teachers made significant gains on various reading achievement measures compared to students in the same school who were not taught by PDS preservice teachers. Cooperating teachers working with the PDS preservice teachers attributed these changes to coursework assignments that required preservice teachers to assess students' current level of performance, to interview parents, to plan instruction accordingly, and to delegate small group instruction to preservice teachers who were more knowledgeable and skilled than other adults in the classroom (e.g., paraprofessionals, parent volunteers).

One large-scale study of PDSs, however, found no impact of PDS work on student achievement. Cooper and Corbin (2003) compared achievement scores on the Maryland School Performance Assessment Program content area tests for grades 3, 5, and 8 for PDSs and non-PDSs matched

on student demographics. Multivariate analyses of differences in achievement trends across the two school types indicated that differences over 7 years between achievement scores for PDSs versus non-PDSs were not significant. Cooper and Corbin acknowledge that they were unable to analyze what was occurring inside the school and how it may have inhibited or facilitated changes in student achievement at the school level. For instance, these researchers could not determine if schools were implementing PDS practices with fidelity or if preservice teachers and school faculty were prepared adequately for PDS work.

Cooper and Corbin's insights into their study's limitations point to what is perhaps the biggest problem with PDS research. For the most part, these studies fail to make connections between what is occurring in the PDS and student achievement. That is, we know little about linkages between opportunities for teacher learning, teacher outcomes (both preservice and inservice), and student achievement. Even in studies with rich descriptions of professional development efforts in PDSs that also provide impressive student achievement data (e.g., Klingner et al., 2004; Mariage & Garmon, 2003), we do not understand how the professional development opportunities influenced preservice and inservice teachers' knowledge, beliefs, and classroom practice, and then in turn influenced student outcomes. Understanding these linkages is essential if we are to determine the potential of partnerships as a vehicle for both initial teacher preparation and ongoing professional development.

Characteristics of Successful General Education PDS Efforts

Although general linkages between two characteristics of PDSs, teacher outcomes and student outcomes, have not been established, the outcome studies provide descriptions of PDS partnerships and allow for tentative conclusions about successful partnership characteristics. Further, other qualitative studies and two survey studies examined characteristics of PDS efforts that improve connections between university coursework and school practice and strengthen their partnerships. PDSs were originally conceived as mechanisms to reform both schools and IHEs in order to close the theory-to-practice gap pervasive in education and bring more rigor to the initial preparation and ongoing professional development of teachers. Such goals require that teacher educators, classroom teachers, and preservice teachers participate in the teacher education process in ways that change traditional relationships among these groups. Historically, these respective stakeholder groups have been loosely arranged and their relationships hierarchical. Teacher educators are seen as primarily responsible for disseminating knowledge to inservice and preservice teachers who then apply that knowledge. With PDSs, traditional relationships are restructured to improve collaboration. Moreover, in order to reform practice in IHEs and schools, structures and processes are instituted to create more cohesive, unified, and intensive opportunities for improving teaching.

Blurring boundaries among participants. In order to foster role reciprocity, proponents of the PDS partnerships have argued that inservice teachers and university faculty must collaborate more in designing and implementing preservice teachers' education and school-wide reform efforts (Abdal-Haqq, 1998; Teitel, 1998). Research on PDS schools suggests that such role reciprocity has been accomplished through three approaches.

First, in PDS schools inservice teachers seem to play a strong role in mentoring preservice teachers for more extended periods of time than seems typical in traditional teacher education programs (Beck & Kosnik, 2002; Castle et al., 2006; Conaway & Mitchell, 2004; Fischetti et al., 1999; Fisher et al., 2004; Gadja & Cravedi, 2006; Pine, 2003). In multiple studies, both

descriptive and comparative, preservice and inservice teachers are described as working side by side to improve classroom practice. For preservice teachers, such collaborative relationships helped them ease into the task of teaching and feel better prepared for the realities of the job (Sandholtz & Dadlez, 2000), and inservice teachers felt that they learned from working with preservice teachers' students. Interactions with preservice teachers gave cooperating teachers access to new ideas from the university and chances to articulate their philosophies and approaches to teaching—opportunities to reflect on their practice and subsequently to improve it.

Second, role reciprocity is encouraged through collaborative efforts among IHE faculty, school personnel, preservice teachers, and, to a lesser extent, other key stakeholders (e.g., parents, community members, students) to improve teaching and learning in PDS schools (Abdal-Haqq, 1998; Book, 1996; Crocco et al., 2003; Fisher et al., 2004; Teitel, 1998). In some studies, school-based personnel and IHE faculty worked together to implement various innovations in response to school-level student data (Knight et al., 2000; Mariage & Garmon, 2003; Trathen et al., 2003). For instance, Mariage and Garmon described their collaborative efforts with inservice teachers, building administrators, reading coaches, and a district administrator to implement a professional development plan. Their plan addressed low student scores on Michigan's reading and mathematics assessments and improving the greater inclusion of students with disabilities in general education. Other collaborative efforts were broadened to include preservice students, school-aged students, community members, and/or parents (Cowart & Rademacher, 2003; Fisher et al.; Pine, 2003).

Finally, IHE and school faculty work more collaboratively in PDS partnerships to design and implement teacher education programs (Book, 1996; Teitel, 1998). For instance, several studies cited how teacher educators became more involved in the direct supervision of student interns (Beck & Kosnik, 2002; Book; Ginsberg & Rhodes, 2003), frequently working with cohorts of preservice and classroom teachers (Castle et al., 2006; Conaway & Mitchell, 2004; Cowart & Rademacher, 2003; Mariage & Garmon, 2003). Additionally, IHE faculty were involved in teaching university courses at school sites (Bullough, Birrell, Young, Clark, Erickson, Earle, et al., 1999; Cowart & Rademacher; Ginsberg & Rhodes), and inservice teachers were involved in designing and teaching university courses and seminars (Gadja & Cravedi, 2006; Mule, 2006; Sandholtz, 2002).

Structures and processes to improve inservice and preservice teacher learning.
Professionals in PDS environments work to develop structures and processes that facilitate the learning of preservice and inservice teachers. Common structures used to promote preservice and inservice teacher learning in the PDS literature were (a) ongoing seminars designed to bridge coursework and fieldwork as well as extended intensive field experiences, (b) cohort structures, and (c) collaborative professional development efforts. Ongoing seminars were incorporated in PDS work to improve connections between theory, research, and practice (Bullough et al., 1999; Mariage & Garmon, 2003; Mule, 2006; Sandholtz, 2002). These frequent seminars were intended to foster collaborative discussions about practice that promote teacher reflection. For example, in a study cited in Pritchard and Ancess (1999), inservice teachers assigned to mentor preservice interns participated in a weekly reflective teaching seminar focused on observation, supervision, and giving effective feedback. There was also an optional seminar for the inservice teachers on using qualitative research methods in teaching practices. In general, these types of seminars have been found effective. Self-report data from a series of studies indicate that such supportive structures result in positive benefits for preservice and inservice teachers as well as students in PDSs. Specifically, researchers found that participation in these field-based seminars

helped (a) preservice teachers to increase their sense of preparedness for teaching and ability to reflect on teaching; (b) inservice teachers to access valuable collaborative opportunities and develop leadership abilities; and (c) preservice and inservice teachers to access and participate in research (Gadja & Cravedi, 2006; Hudson-Ross, 2001; Mebane & Galassi, 2000). Field-based seminars, however, were not always perceived positively when led by trained school personnel or trained faculty. Sometimes preservice teachers perceived school personnel as not being current in best practices in schools, and clinical faculty were viewed as taking over the more traditional roles of IHE faculty (Bullough, Draper, Smith, & Birrell, 2004; Gadja & Cravedi).

Intensive field-based experiences ensure that preservice teachers have multiple opportunities to apply and reflect on what they are learning in university coursework (Abdal-Haqq, 1998). Compared to traditional teacher education programs, PDS programs often contain (a) longer, more structured clinical experiences; (b) more frequent and sustained supervision and feedback for preservice teachers; (c) field experiences that involve preservice interns in special projects; and (d) mechanisms that involve preservice teachers in school-wide reform efforts or curriculum redesign efforts (Beck & Kosnik, 2002; Brown et al., 2003; Conaway & Mitchell, 2004; Cowart & Rademacher, 2003; Smith & Trexler, 2006). Extended and intensive field experiences allowed preservice teachers to become more involved in curriculum and school reform efforts (Crocco et al., 2003) and feel more prepared to teach (Fischetti et al., 1999).

Cohort structures are one of the most common structures for fostering preservice teacher learning in PDS schools (Bullough et al., 1999; Castle et al., 2006; Hudson-Ross, 2001; Ridley et al., 2005). Cohorts of preservice teachers, mentor teachers, and university faculty are formed in teacher education programs to facilitate collegial interactions around coursework and fieldwork. Such interactions, which are perceived essential to teacher learning, break down norms of professional isolation in schools and make partnership work more manageable. Pine (2003) described how cohorts of preservice teachers in one PDS were used to align teacher education coursework with school reform efforts occurring in the PDS. It was hoped that such alignment would enhance the teacher education program. In another instance, Beck and Kosnik (2002) described how preservice teachers were assigned to schools in cohorts of five or more so that closer relationships could be developed with inservice teachers, common visions of teaching and learning could be forged, and the work of supervising preservice teachers could be made more manageable.

Collaborative professional development efforts characterized many PDSs, particularly those that achieved successful student achievement outcomes (Brown et al., 2003; Fisher et al., 2004; Klingner et al., 2004; Mariage & Garmon, 2003; Moyer et al., 2006; Pine, 2003). Professional development efforts in PDSs represent a departure from the type of professional learning opportunities teachers typically experience in schools. Instead of attending workshops and seminars where university faculty or researchers disseminate effective practices that inservice teachers are expected to implement, IHE faculty, inservice teachers, and preservice teachers work together over time to reform school practice (Gadja & Cravedi, 2006; Klingner et al.; Mariage & Garmon; Smith & Trexler, 2006; Teitel, 1998). Collaborative professional development efforts are designed to accomplish several goals in PDS schools. First, these efforts are intended to increase teachers' status as professionals, put them in charge of their learning, and set standards for classroom practice (Abdal-Haqq, 1998; Gadja & Cravedi). Second, collaborative professional development efforts are considered foundational in efforts to reform school practice. Third, these collaborative efforts are intended to provide opportunities for faculty, preservice teachers, and inservice teachers to improve their pedagogy by better aligning

theory and practice. Structures instituted in PDS schools that enable more collaborative, extended, and active opportunities for learning include, but are not limited to, summer institutes, ongoing professional development workshops focused on a particular topic, retreats, teacher study groups, collaborative action research projects, curriculum-writing projects, and peer observations (Abdal-Haqq; Teitel; Knight et al., 2000; Mebane & Galassi, 2000; Smith & Trexler).

Although collaborative structures seem essential to partnership work, we do not understand, at least from these studies, the intricacies of collaboration that make the partnership work effectively. First, we do not understand how collaborative opportunities to learn interact with the content of these opportunities to promote teacher learning. Often, PDSs that secured student achievement gains were characterized by collaborative professional development efforts that focused on learning powerful innovations within a particular content area. For instance, in Klingner et al. (2004) teachers learned to implement research-based strategies, such as Collaborative Strategic Reading and Making Words. Second, we do not fully understand the internal processes that make these various structures effective. For instance, what types of learning opportunities do these collaborative structures present teachers and IHE faculty? Do these learning opportunities vary depending on the knowledge of involved individuals?

Contextual Supports in General Education PDSs

Partnership work is complex and labor intensive, and multiple collaborative supports are necessary for overcoming barriers encountered in such work. We articulate barriers to partnership work and discuss the supports that have been put in place to overcome these challenges.

Understanding barriers. One of the biggest barriers to establishing successful PDS partnerships is time (Beck & Kosnik, 2002; Borthwick, Stirling, Nauman, & Cook, 2003; Galassi, White, Vesilaind, & Bryan, 2001; Kochan & Kunkel 1998; Lauer et al., 2005; Mebane & Galassi, 2000; Sandholtz & Merseth, 1992; Smedley, 2001). Both teacher education faculty and inservice teachers can become so involved in forging partnerships, mentoring preservice teachers, and working on school reform efforts that other aspects of their job are affected. In the literature, time issues were of concern to both inservice teachers and IHE faculty. The IHE faculty seemed particularly concerned about partnership work interfering with their time for other activities such as research and publishing that are valued highly in academia and essential for tenure and promotion (Beck & Kosnik; Gadja & Cravedi, 2006).

Adequate time to collaborate is not the only necessary ingredient for establishing partnerships. Strong collaborative relationships must be built for partnerships to succeed. Multiple cultural and organizational barriers to forging partnerships exist in universities and schools. IHE faculty and school-based personnel often hold dissimilar beliefs about the nature and value of work in PDS partnerships as well as the roles they should play in teacher education. These differences can lead to conflict (Beck & Kosnik, 2002; Borthwick et al., 2003; Bullough et al., 2004; Burstein, Kretschmer, Smith, & Gudoski, 1999; Crocco et al., 2003; Galassi et al., 2001; Lauer et al., 2005; Miller, McDiarmid, & Luttrell-Montes, 2006; Rice, 2002; Teitel, 1998). Inservice teachers are not accustomed to or always prepared to play major roles in the teacher education process. Some inservice teachers see teaching students as their sole responsibility, not supervising preservice teachers; and others are not current on best practices or trained to mentor preservice teachers (Crocco et al.). Additionally, staff turnover in schools and the need to hire underqualified teachers reduce the number of available qualified mentors (Miller et al.).

Inadequate leadership and funding can also derail partnership efforts. At some level, creating time and supports for collaboration requires the implementation of collaborative structures and resources. Without these two ingredients, PDS partnerships are unlikely to be sustained.

Building time for collaboration. In successful PDS efforts, IHE and school faculties must find creative ways to increase time for collaboration. For teacher education faculty, time spent in partnerships can detract from their other scholarly activities; and such a situation might ultimately punish faculty engaged in partnership work (Beck & Kosnik, 2002; Bullough et al., 2004). The literature on PDS efforts provides limited insights into what IHEs do to support faculty in their efforts (Ginsberg & Rhodes, 2003; Valli et al., 1997). In the most in-depth case study of contextual supports available, Snyder (1999) found that four sites with strong PDS efforts found ways to support faculty in their efforts by counting partnership work as part of faculty workload in research or service. Additionally, IHE administrators worked to ensure that such faculty could be successfully promoted in the university system by either rewriting tenure and promotion guidelines or helping faculty to integrate their PDS and research work. Moreover, some IHEs were committed to reducing student enrollment in teacher education programs, demonstrating a commitment to supporting faculty, as reducing workloads made their jobs more manageable. Responses from a survey of universities engaged in partnership work (Ginsberg & Rhodes, 2003) reinforced findings from the Snyder case study. To support partnership work, some universities had moved to providing load credit or course release for IHE faculty involved in partnership work. One partnership described how providing load credit for partnership work was in the union contract. In other cases, course release or load credit involved negotiations with individual faculty and their department chair.

PDS partnerships also developed creative ways of increasing time for collaboration by (a) restructuring the school day; (b) using preservice teachers and other school staff to enable inservice teachers to participate in professional development and planning activities; (c) making better use of existing time, such as faculty meetings; (d) ensuring common time for planning; and (e) employing substitutes to enable inservice teachers to participate in PDS work (Abdal-Haqq, 1998; Teitel, 1998). Since 1998, only four studies provided information about how partnerships built time for collaboration or found ways to protect IHE faculty time. In a partnership between Oakland University and an urban elementary school, teachers and school staff worked with the district administration to restructure the school day to provide time for collaborative planning and decision making. Specifically, they added 30 minutes of instructional time to 4 school days, leaving time 1 day a week for planning and professional development. Sandholtz (2002) also described how school administrators adjusted the master schedule to allow inservice and preservice teachers to work with IHE faculty during the school day. Two other studies described how universities used school faculty or trained school personnel to mentor beginning teachers to reduce partnership responsibilities for IHE faculty (Bullough et al., 2004; Gadja & Cravedi, 2006). Specifically, these clinical faculty and trained inservice teachers coordinated partnership work, planned and delivered instruction, and supervised preservice teachers.

Developing supports for collaboration. Simply building in time to collaborate, however, is probably insufficient. Successful PDS efforts must also determine how to help partners develop effective ways of working together. Formal governance and collaborative structures can provide the necessary foundation for successful collaboration where partners can seek assistance, share ideas and concerns, plan school and teacher education reform efforts, and evaluate their progress (Galassi et al., 2001; Kochan & Kunkel, 1998; Rice, 2002). University-school liaisons, school or site steering committees, and multisite coordinating councils have been three typical governance

structures employed to support the evolution of genuine partnerships (Teitel, 1998). Mariage and Garmon (2003) described how one partnership employed an elaborate configuration of collaborative structures to carry out rather extensive reform efforts to improve the education of struggling learners and students with disabilities in an elementary school. Specifically, eight collaborative structures were instituted, including the North Central Outcomes Accreditation/ School Improvement Process, Grade-Level Intervention Assistance Teams, teacher study groups, model summer school program, home/school partnerships, mentor/intern program, mentor/mentee program, and school-based professional development centers. The first structure, which was district mandated, provided a place for stakeholders in the partnership to conduct a needs analysis, develop an implementation plan, and meet monthly or bimonthly. The second structure, also district mandated, included a 50-minute planning period for each grade level when special and general education teachers met to problem-solve interventions for students with learning and behavioral problems. The remaining structures that emerged as a result of the partnership work were designed to (a) support the implementation of collaborative action research projects, (b) extend instructional time for students who needed it, (c) improve collaboration with parents, (d) improve the mentoring of both preservice and novice teachers in the first 4 years of their careers, and (e) create a school site designed to increase technology infrastructure in the district and provide resources for professional learning. Although many other studies described governance and collaborative structures implemented to support PDS work, none detailed the type of complex collaboration structures articulated by Mariage and Garmon.

PDS partners must learn to approach their work in ways that will (a) establish parity between partners, (b) draw on each others' strengths, (c) enable the negotiation of conflicts, and (d) develop a culture of trust. Earlier we described how teacher educators and inservice teachers can establish parity by blurring the boundaries between traditionally held roles (Book, 1996). Yet, by converging roles, inservice teachers and IHE faculty have to take on responsibilities for which they may be unprepared. For the most part, those involved in PDS work assume that if IHE faculty and inservice teachers participate in co-teaching seminars or work on collaborative inquiry projects that they will learn to share roles and responsibilities. Most studies described structures for promoting collaboration, but rarely described how participants were prepared for roles in the partnership. Less frequently, studies described or briefly mentioned preparing inservice teachers in the skills necessary for instructing and mentoring preservice teachers (Castle et al., 2006; Gadja & Cravedi, 2006; Moyer et al., 2006; Teitel, 1998). Even rarer was any description of preparation for IHE faculty participating in PDS work. Only one study provided a brief description of the professional development IHE faculty received in a PDS (Kochan & Kunkel, 1998). Specifically, K-12 teachers worked with IHE faculty to plan lessons for school-based seminars. The authors claimed that such experiences enabled IHE faculty to integrate research into their practices but did not provide evidence that this was the case.

Working together also requires partners to negotiate their knowledge and roles they will play, and inevitably conflicts will arise; however, mechanisms for negotiating knowledge and roles as well as resolving conflicts in partnerships were not addressed specifically in the literature. Only one PDS effort mentioned in the literature provided an in-depth description of how tensions were addressed by forging a common goal. Miller and his colleagues (2006) documented the various tensions as teacher education faculty, liberal arts and science faculty, and inservice teachers attempted to collaborate to improve the mathematics and science education of their preservice teachers. Participants' different views of the knowledge needed to be an effective science teacher caused multiple tensions in the collaboration about what and how much preservice teachers

should learn. While many tensions were never resolved, the partnership was able to make some worthy progress; and partners felt the collaboration was worthwhile. The researchers reported that collaboration around a common goal, in this case improving quality teaching for beginning teachers, overcame unpleasantness experienced in the partnership. The researchers concluded that partnerships should be set up to manage rather than resolve tensions, as conflict is an inevitable component of working together.

A second strategy addressed conflicts more directly by providing staff development in communication and conflict resolution skills. This strategy was mentioned in two studies that provided only skeletal information about how communication and conflict were addressed in PDSs. Kochan and Kunkel (1998) described how partnerships provided training in interpersonal and communication skills as well as how to overcome resistance and build collaborative teams. Further, Pine (2003) described how graduate students in counseling, who were part of the partnership, provided training in conflict resolution skills to facilitate partnership efforts.

In a few studies, a climate of trust and communication was also considered essential for supporting an effective partnership. Book (1996) described several studies in which such an environment enabled inservice teachers and IHE faculty to engage in the difficult work necessary to change their practice collaboratively. Walters and Pritchard (1999), in a case-study description of PDS work, reported how team meetings provided opportunities for norms of collaboration to emerge, enabling an exchange of ideas that fostered professional learning. Perceptions of trust and openness in the environment may vary according to the perspectives of individual teachers. Fisler and Firestone (2006) described how inservice teachers were more likely to implement ideas acquired through PDS efforts if they experienced a greater level of trust for their peers and administrators than other teachers in the same schools.

Structures for collaboration, ways of managing conflict, and techniques for developing a climate of trust and open communication seem foundational for establishing and sustaining collaboration; however, we do not know specifically how these strategies are helpful for supporting professional development and teacher education. For instance:

- How do collaborative and governance structures mandated and implemented at the district and university levels operate compared to collaborative arrangements that emerge from the partnership work?
- Do the various collaborative structures function differently to meet their intended goals?
- Are some collaborative structures more effective than others?
- What are the characteristics of effective collaborative structures?
- How do collaborative structures, techniques for managing conflict or preparing participants for their roles, and an environment where trust and open communication is fostered help partners collectively and individually develop ways of doing business that reflect the knowledge and skill of individual group members and their ability to communicate that knowledge to others?

Leadership. The degree to which PDS partnerships can be established and maintained depends on leadership in districts, schools, IHEs, and even state departments of education. In a few descriptive studies, researchers indicated the ways leaders supported PDS efforts. Principals who welcomed the PDS and supported the participation of their teachers paved the way for a successful partnership (Brown et al., 2003; Valli et al., 1997). For example, Valli and her colleagues described how principals make or break a PDS effort. Principals who believed their

teachers could lead and make decisions as well as initiate professional development efforts were more likely to further PDS work in their schools. In contrast, principals who did not allow teachers to make decisions about their own professional development or abdicated all responsibility for the reform effort by putting a teacher in charge doomed to failure (Valli et al., 1997). Other researchers found principals provided leadership by working to make PDS efforts a more integral part of other efforts in the school (Galassi, Brader-Araje, Brooks, & Dennison, 1999; Miller et al., 2006).

Leaders in PDS initiatives also need to understand the importance of selecting the right participants and creating a school-wide effort. Some researchers noted how optimizing personnel selection was more important than allowing time for collaboration. In a multicase analysis of four PDS sites, leaders at each site spoke of the importance of hiring teacher education faculty with the will and skill to work productively with inservice teachers (Snyder, 1999). In addition, attention was paid in the literature to selecting the best inservice teachers. Schools had a number of mechanisms for teacher selection, including allowing teachers to volunteer, allowing schools to vote to participate, encouraging teachers to transfer into or out of a PDS school, closing a school and reopening it as a PDS (Valli et al., 1997), or instituting a process for selecting the right inservice teachers to work with preservice teachers (Beck & Kosnik, 2002; Bullough et al., 1999).

Leadership that emerges in the higher echelons of districts, universities, and state departments of education can also be helpful in facilitating effective partnerships. Teitel (1998) argued that strong central figures, such as the superintendent or chair of teacher education, were important to jump-starting partnerships. In a university-school partnership described by Baker, Rieg, and Clendaniel (2006), the superintendent was instrumental in advocating for and supporting the program. He sanctioned the PDS effort by expanding it to four schools and used a grant to purchase teacher time and materials. Additionally, the superintendent appointed an instructional support coordinator to supervise the program. Deans and department chairs in successful partnerships also understood how to support faculty efforts (Kochan & Kunkel, 1998; Snyder, 1999). In Snyder's cross-case analysis, IHE administrators' support for faculty included helping them to integrate their PDS and research or service work, rewriting tenure and promotion guidelines, and reducing student enrollment in teacher education programs. Finally, although the literature provided few examples of how state department-supported partnership works, Teitel described how key members of the Hawaii State Department of Education and the legislative education committee were essential to developing and supporting the PDS initiative in that state.

Clearly leadership plays an important role in any reform effort, including PDS efforts. Yet the literature describing how leaders effected change is small in scope and does not always articulate how leaders' actions matter. For instance, what processes for selecting participants do leaders or IHE faculty use? How do these processes result in the selection of inservice participants who are effective mentors? The literature provides little guidance on how schools and IHEs should go about selecting partners who can work well together or mentor others. Moreover, how do leaders integrate PDS initiatives with other school reform measures to change classroom practice effectively and assist inservice teachers and faculty in focusing their efforts? We need a more precise picture of what different leaders do in these partnerships and how their actions affect the effectiveness and involvement of individual participants.

Finding funds to support PDS partnership work. PDS partnership work is labor intensive and, as a consequence, costly to support and entice people to participate. In one of the

few papers addressing this issue, Clark and Plecki (1997) asserted that a variety of costs must be considered when establishing partnerships. These costs include one-time expenditures, such as computers and professional training, needed for starting the partnership. PDS sites demand more services and time to support professional development, collaboration, mentoring, and school restructuring efforts. Further, to involve IHE faculty in genuine ways with the partnership, their time needs to be supported. Partnership work cannot be an "add-on" to an already full slate of responsibilities. Teitel (1998), referencing earlier work conducted by Theobald (1991), indicated that PDSs needed to increase staffing in both universities and schools from 5% to 10% in order to support the work.

Unfortunately, many partnerships do not receive the financial support they need (Abdal-Haqq, 1998). At the time the literature reviews were written, PDS partnerships were funded mainly through external funds; however, when this funding disappeared, support for the partnership often did as well. If LEAs and IHEs did not find ways to reallocate funds or secure additional state funds from the legislature, then partnerships tended to fade away (Teitel, 1998). Since the earlier literature reviews, the majority of research papers published has not attended to how funds were acquired and used to support PDS work. Descriptions of several partnerships indicated that support was either fully or partially through grant and foundation funding (Borthwick et al., 2003; Brown et al., 2003; Cooper & Corbin, 2003; Hudson-Ross, 2001; Shroyer et al., 2007). The PDS described by Pine (2003) was initially funded through a grant, and then other sources of funding (unspecified) supported the partnership in later years. Several other researchers indicated that funds were provided through a variety of sources, such as funding from the Michigan State Department of Education (Mariage & Garmon, 2003); involved schools (Brown et al., 2003); universities (Gadja & Cravedi, 2006); or some combination of resources (Ayalon, 2004; Mebane & Galassi, 2000).

How funds are used to support PDS work, particularly during tight budget periods, is more of a mystery. Few researchers have studied the costs affiliated with PDS work or described how funds can be reallocated in order to support the work. Clark and Plecki (1997) indicated that start-up costs for PDS work were approximately $50,000 but provided little detail about the costs of sustaining PDS work. Others claimed that by using economies of scale (e.g., clustering interns and faculty supervisors at a small set of schools, using personnel more efficiently, reallocating funds) administrators in IHEs and schools could support PDS efforts. For example, some district administrators used funds available for professional development to support teachers; and interns as well as paraprofessionals are used to free teachers' time to participate in PDS activities (Abdal-Haqq, 1998; Brown et al., 2003).

If PDS partnerships are to be viable and sustainable mechanisms for preparing preservice teachers and improving schools, more descriptions of how support funds can be used are needed. In an era of increasing accountability, funds from university and school budgets used to support these efforts need to be assured that benefits associated with PDS work outweigh the costs.

Conclusions from General Education PDSs

Our goals in reviewing the general education PDS literature were (a) to assess outcomes of PDSs, (b) to document the characteristics of successful PDS efforts, and (c) to consider the contextual factors that contribute to the development and sustainability of PDSs. Reviewing this literature deepened our knowledge of the complexities associated with PDS work and provided a

foundation on which to build our understanding of the unique considerations for PDS work in special education.

Our review indicated that practitioners and policymakers have several reasons to be optimistic about the promise of PDS efforts for improving teacher education and schools. PDS efforts show some potential for improving outcomes for preservice teachers, inservice teachers, and students. Specifically, compared to non-PDS preservice teachers, PDS preservice teachers:

- reported feeling more knowledgeable and prepared to enter the teaching workforce, particularly when working with diverse students
- scored higher on measures of lesson planning, instruction, management, and assessment
- engaged in more effective teaching practices
- were more likely to remain in the classroom after their 1st year.

Inservice teachers gained access to what appeared to be effective professional development, and PDS efforts had positive impacts on students' reading, writing, and math achievement as well as attendance rates and behavior referrals.

Additionally, much of the literature on general education PDSs described characteristics of successful partnerships. Important characteristics were (a) role reciprocity in which LEA/IHE personnel participate equally in collaborations to design and implement partnerships and (b) collaborative discussions and extended learning opportunities through ongoing seminars, intensive field experiences, cohorts, and professional development efforts and structures. In essence, successful partnerships appeared to provide contexts for preservice teachers to learn and for a variety of stakeholders to collaborate, share responsibility, and learn from each other.

Our review sheds light on the contextual supports necessary to initiate and sustain PDS partnerships. We learned that engaging in PDS work, although beneficial for a number of outcomes, requires considerable time and resources. A key support necessary for this partnership work was time for collaboration; some creative ways used to increase time for collaboration included adjusting school schedules, redistributing personnel responsibilities, and maximizing joint planning time. Faculty in IHEs worked to change institutional norms to reward participation in PDSs. Successful PDS partnerships also instituted other mechanisms to support collaboration. Establishing effective means of communication, conflict resolution procedures, and a culture of trust all bolstered collaboration. Leadership at many levels (i.e., state, district, school) was critical to the success of PDS work. We found that leaders need to advocate for partnership work and to take an active role in its implementation. Finally, funding was a key contextual support. Unfortunately, few studies examined how PDSs secured funding to initiate and sustain partnerships.

Although the general education PDS literature provided some important insights into the outcomes, characteristics, and contextual supports of partnership work, we noted many limitations of the research. Most importantly, tight linkages have not been established between the supports needed for PDS work, how these supports foster key opportunities for participant learning, and how learning opportunities lead to critical outcomes. To determine the real benefit of PDS partnership work, greater insight into these linkages is needed.

Our findings from the general PDS literature undoubtedly are relevant for similar work being conducted in special education; however, special education is also likely to present some unique

issues and challenges. While some of the characteristics and contextual supports discussed in the general education literature apply to special education, there are additional characteristics and supports to consider in a special education context. Understanding these differences is critical to crafting partnerships that are responsive to the needs of preservice teachers working with students with disabilities. In the following section, we discuss the literature pertaining to PDS efforts that have a special education concentration and the distinguishing issues and characteristics found in these programs.

PDS PARTNERSHIPS: SPECIAL EDUCATION

Reforming schools and colleges of education to ensure equitable outcomes for all learners is a primary goal of PDS partnership work (Holmes Partnership, 2007). Consequently, a strong focus on how teachers are prepared to address the needs of students with disabilities should be a top priority in any PDS effort. Early literature reviews of PDS work (Abdal-Haqq, 1998; Book, 1996; Pritchard & Ancess, 1999; Teitel, 1998; Valli et al., 1997) highlighted how the important goal of equity for all students had been neglected, leaving questions about how the needs of students with disabilities were incorporated within PDSs. Sapon-Shevin (1990) asserted that the omission of special education from discussions of PDS efforts is highly problematic and indicative of how special education is often left out of broader conversations about school reform. She argued that in order for PDSs to focus on special education, renewal of both general education and special education in IHEs and LEAs should be "inextricably linked" (p. 33). Accordingly, she recommended the development of seamless programs for students with disabilities and their typically performing peers, unified teacher education programs, and professional development schools that serve as models of unified collaborative systems in partnership. Prater and Sileo (2002) in their national survey of special education programs involved in PDS work found that although many special education programs were housed in IHEs that had partnerships with schools, special education was rarely included as part of the larger partnership focused on general education teachers.

The literature base examining PDS partnerships that actively focus on special education is much smaller than that for general education. We identified 22 papers that either provided descriptions of PDS work in special education or research examining its features and effectiveness. In a few cases, multiple papers were generated to describe the work of one PDS effort. This compares to several hundred descriptions and research papers focused on general education PDS work. We investigated how these IHE and LEA partnership efforts addressed special education needs. Are these efforts, as Sapon-Shevin suggested, focused on creating unified collaborative systems, or is special education treated as a separate project in both colleges of education and schools? Further, to what degree do variables that influence PDS partnerships in general education influence those in special education? Moreover, are elements of PDS efforts involving special education instructive for replicating such efforts?

Nature of PDS Partnerships Involving Special Education

Although Sapon-Shevin (1990) voiced concerns about the degree to which PDS work was not focused on the inclusion of students with disabilities, a number of special education professional development programs make inclusion and cultural diversity a priority. Almost three fourths of the papers we reviewed (15) focused on educating students with disabilities in general education classrooms; however, the ways in which PDS partnerships emphasized inclusion varied. In some cases, PDS work resulted from attempts to connect more inclusive teacher education opportunities at the preservice level with those occurring in schools (Epanchin & Colucci, 2002; Heimbecker, Medina, Peterson, Redsteer, & Prater, 2002; Jenkins, Pateman, & Black, 2002; Zetlin, Harris, McLeod, & Watkins, 1992). In these partnerships different types of inclusive teacher education arrangements were developed, including dual certification programs in elementary and special education, elementary education programs that integrated some special education coursework, and unified general and special education programs. For example, in the PDS described by Epanchin and Colucci, the elementary and special education departments

began to work more closely to blur their roles and responsibilities in order to create a more seamless, integrated teacher preparation program.

In other cases, partnering schools were interested in improving the inclusive education of their students with disabilities; but it was not always evident how university programs were structured and had changed their teacher education practices to be inclusive or unified (Peters, 2002; Walters & Pritchard, 1999). In their description of two partnership schools affiliated with the University of Southern Maine, Walters and Pritchard indicated the local schools were working toward including students in Chapter 1 programs, reducing the use of special education pull-out programs. The IHE incorporated extensive and intensive field experiences for preservice teachers into their preparation program. In the elementary school, preservice teachers participated in several options: two 6-week internships in the fall, a 2-week visitation that included observations in a variety of educational settings, and a comprehensive 15-week, full-time semester internship. Coursework was developed to closely align with the field experiences. The authors gave a listing of course titles but few content details. Based on the information provided, we were able to determine that a few courses and parts of courses focused on students with disabilities. However, we are unsure of how the teacher education program integrated content about educating students with disabilities into the PDS experience.

Many PDS programs that focus on inclusion emphasized cultural and linguistic diversity [CLD]. Several partnerships were located in high-poverty neighborhoods (Epanchin & Colucci, 2002; Peters, 2002; Taylor & Sobel, 2003). The partnership between Northern Arizona University and the Kayenta Unified School District (Heimbecker et al., 2002) represented one of the most intensive experiences involving students with disabilities who were also culturally diverse. The site-based program, which occurred over three semesters, was designed to prepare preservice teachers to address the specific needs of Navajo students with and without disabilities. Preservice teachers of Navajo and non-Native American descent were provided with multiple opportunities to work together. The non-Native American preservice teachers were housed in community apartments provided by the school system to assist them in becoming immersed in the Navajo culture and community. However, the degree to which this PDS reflects partnership work more broadly is questionable.

Unique Issues Related to Special Education PDS Work

Although many teacher education institutions are engaged in PDS work, special education with its unique issues does not seem to be an integral part of PDS efforts in general education. Data generated from two surveys of partnerships questioned the degree to which teacher education programs in special education were genuinely involved in PDS work. Prater and Sileo (2002) found that the partnerships in which special education faculty indicated involvement were not part of the larger general education partnership program at their institutions. These findings were reinforced in Yssel, Koch, and Merbler's (2002) survey of PDS programs in special education. Half of the survey respondents indicated that special education faculty were not involved in PDS work occurring at their institution.

Perhaps special education faculty are not involved in PDS work because such partnerships cannot adequately support special education teachers' preservice preparation. When IHEs partner with a limited number of schools, there are not sufficient classroom opportunities for preservice teachers to interact with special education teachers and students with disabilities, making it difficult for them to acquire the skills they need (Epanchin & Colucci, 2002). Yet partnering with

multiple schools presents enormous logistical and resource challenges. Jenkins et al. (2002) attempted to involve 10 PDS schools that included students with disabilities. The great demands on faculty supervising students at multiple sites while collaborating with teachers led the university to reduce the number of partnership sites and to require sites to have adequate resources and be committed to include students with disabilities. A similar decision to cluster resources at fewer schools was made by the University of South Florida when they realized initial attempts to partner across multiple districts were too demanding for faculty (Epanchin & Colucci). Other researchers paid careful attention to how preinternship and internship experiences were structured to ensure that interns had sufficient exposure and opportunities to work with students with different disabilities placed in general as well as special education settings (Cowart & Rademacher, 2003).

Special education PDSs seem more likely to address chronic shortages of special education teachers (along with other important goals such as fostering inclusion and sensitivity to cultural diversity) than do general education PDSs. Prater and Sileo (2002) found that 41.4% of survey respondents participated in PDS work that allowed preservice teachers to complete their student teaching requirement while being employed as teachers. Christensen and her colleagues (Christiansen, Epanchin, Harris, Rosselli, Smith, & Stoddard, 1996) and Epanchin and Colucci (2002) described how the University of South Florida's partnership with two surrounding districts addressed dramatic teacher shortages in special education by training paraprofessionals as special educators. Similarly, a PDS program created by the University of Hawaii and surrounding schools aimed at improving the inclusion of students with disabilities and teachers' ability to address CLD (Jenkins et al., 2002). The Hawaii Department of Education supported PDS efforts to increase the number of special education teachers by providing stipends to preservice teachers willing to seek the demanding dual certification program in general and special education (Jenkins et al.). In the most dramatic example, Heimbecker et al. (2002) at Northern Arizona University redesigned their special education program to increase the number of Navajo teachers in the Kayenta Unified School District and to prepare non-Native American teachers to meet the unique needs of the Navajo children and families in rural areas and on reservations. By situating the program off-campus within the community, there was greater retention of Navajo preservice teachers in the program.

PDS work in special education consciously attends to issues associated with educating students with disabilities, including how best to prepare preservice and inservice teachers for including and teaching culturally diverse students, designing structures that would support general and special education collaboration, and using evidence-based practice in reform efforts. To support teacher learning and the development of collaborative efforts in inclusion and cultural diversity, partners within many PDSs took care to develop coursework, field experiences, and school reform projects that specifically addressed the needs of CLD students with disabilities. For example, Sobel, French and Filbin (1998) described a partnership between the University of Colorado at Denver and Denver Public Schools that redesigned the university teacher education program to ensure that new teachers were skilled in working with diverse populations of students. Part of this redesign included infusing multicultural content into the curriculum and immersing preservice teachers in diverse school contexts throughout the program. Careful attention was paid to aligning coursework and field experiences so that preservice teachers could situate their knowledge.

In addition to designing collaborative structures to promote partnership work, several PDSs employed structures to promote the interface between special and general education

professionals as well as the interface between professionals and parents. In two cases, faculty members from university Departments of Curriculum and Instruction and Special Education were assigned to schools to work together to provide resources for teachers, students, and administrators and to supervise student teachers (Jenkins et al., 2002; Zetlin et al., 1992). In other cases, partnerships involved general and special education teachers as well as parents and community members (Christensen et al., 1996; Little, 2000; McHatton & Daniel, 2008).

Finally, other papers described PDS work that valued the importance of helping inservice and preservice teachers implement evidence-based practices in special education (McHatton & Daniel, 2008; Wesson, Voltz, & Ridley, 1994). University faculty and school personnel working together in these projects implemented a variety of evidence-based strategies at elementary and middle schools to improve literacy, mathematics, content area instruction, and discipline. Other partnerships offered coursework that likely addressed evidence-based practice, but it was difficult to determine from program descriptions provided. For instance, Jenkins et al. (2002) described coursework that addressed (a) assessments and interventions for students with disabilities in inclusive classrooms; (b) classroom organization and behavior management skills, including applied behavior management techniques; (c) techniques in assessment, planning, and instruction that are appropriate for students with mild and moderate disabilities; and (d) basic principles of assessment and curriculum development for students with severe disabilities, including formal and informal assessments to develop goals and instructional plans. The description of this coursework perhaps suggests that valued special education practices were being taught in the program, but it is difficult to discern much from such broad descriptions. This may be a result of the continuing discussion in special education on what constitutes evidence-based practice.

Characteristics of Special Education Partnerships

As with general education PDSs, features that characterize PDS special education partnerships include mechanisms for blurring boundaries between university and school personnel in the preparation of preservice teachers and structures for improving preservice and inservice teachers' learning. Those involved in PDS work relied on various processes and structures for integrating their roles in preservice preparation as well as creating intensive learning experiences for preservice teachers.

 Examples included:

- involving school and university faculty (and sometimes administrators) in managing, planning, and/or delivering the preparation program (Frazee & Frazee, 2005; Heimbecker et al., 2002)
- developing collaborative research projects aimed at improving specific aspects of school and classroom practice (Zetlin et al., 1992)
- using university liaisons to provide feedback and professional development activities for both preservice and inservice teachers (Voltz, 2001)
- preparing inservice teachers to work more closely with preservice teachers as mentors (Epanchin & Colucci, 2002; Jenkins et al., 2002; Smolkin & Suina, 1999; Walters & Pritchard, 1999)
- providing intensive field opportunities that were carefully integrated with coursework (Smolkin & Suina) through the use of different strategies, such as weekly seminars and research-to-practice projects (Abma, Fischetti, & Larson, 1999).

Contextual Conditions that Support PDS Work

Contextual barriers and supports for special education PDS work are similar to those identified in the general education literature. Governance structures were put in place to promote collaboration between IHEs and LEAs, and the partners joined larger reform efforts to support their work (Abma et al., 1999; Peters, 2002; Walters & Pritchard, 1999). For instance, Abma and her colleagues described how the partnering school joined the Coalition of Essential Schools to work on specific reform goals, such as including students with disabilities and improving content area instruction. The department chair of the teacher education program formed an oversight council with the school to revamp the program that included teachers, school administrators, and faculty members. Other programs (Peters; Walters & Pritchard) developed similar joint planning committees and a variety of mechanisms to support collaboration. Collaborative projects included research groups, research-to practice projects, school-wide change projects, and collaborative structures (e.g., school-based improvement teams, university liaisons assigned to sites to promote collaboration, student cohorts or co-teaching pairs, grade-level intervention assistance teams). Peters noted that school-wide projects and a collaborative infrastructure seemed essential to the success of inclusion throughout one middle school. Administrators involved also implemented strategies to deal with time constraints described in the general education PDS literature. For instance, Walters and Pritchard presented a case study of a 10-year partnership involving the University of Southern Maine and two local schools that incorporated more professional development efforts into the school day and extended the school year as the schools were working to become more inclusive. Other ways of overcoming time constraints identified in the literature included reallocating time to the partnership, creating opportunities for faculty to work in schools in their area of expertise, hiring adjunct faculty to work in partnership schools, and clustering resources by reducing partnership schools to sites genuinely engaged in inclusive practices (Epanchin & Colucci, 2002). Selection criteria included whether the schools were in close proximity and had capable mentors already viewed as leaders in their schools could take on greater responsibilities as site coordinators and professional practice partners. Additionally, schools had to have clearly defined goals for improving outcomes of students with disabilities as well as those from diverse backgrounds.

The literature in special education provided little to no guidance about how funding and incentives were being provided to support partnerships and encourage participation, although discussions of these issues were also less substantive in the general education literature. In the case of teacher education faculty, a couple of studies described clustering resources by reducing the number of partnership schools (Epanchin & Colucci, 2002; Jenkins et al., 2002). A few projects received grant support as seed money (Burstein et al., 1999; Wesson et al., 1994). If IHEs worked closely with fewer schools over time, resources could be leveraged and used more efficiently. Incentives for participating in the partnership work were rarely mentioned. In one study, the authors described how opportunities were created for teacher education faculty to work in their area of expertise as a way of encouraging them to participate (Abma et al., 1999). Additionally, school-based faculty were enticed by extra assistance provided by preservice teachers and opportunities to improve their practice by working with preservice teachers and on research or reform projects. The only study that provided a broader perspective on how teacher education faculty were compensated was a small survey study of faculty involved in PDSs (Yssel et al., 2002). Results indicated that 68% of faculty received credit load for participating in PDS work, 9% were paid stipends, and 22% earned credit toward promotion and tenure. However, 68% were less than satisfied with how they were compensated for their involvement. The lack of attention to funding and incentives for participation, especially at the university level, is

worrisome given concerns that many teacher educators voiced in the general education PDS literature about the responsibilities and challenges of participating in PDS work.

Outcomes of Special Education PDS Work

Eight studies provided varying forms of data that focused on either teacher or student outcomes. Similar to the general education literature, teacher outcomes focused on preservice teachers' perceptions of how they benefited from PDS work in five studies and administrative and cooperating teachers' perceptions of their abilities in three studies. Preservice teachers felt better prepared to deal with issues of cultural diversity in the classroom and community (Heimbecker et al., 2002; Smolkin & Suina, 1999; Taylor & Sobel, 2003), particularly when they had (a) capable mentor teachers, (b) concrete field experiences and coursework on working with diverse learners, (c) in-depth discussions of controversies involving culturally diverse students, and (d) opportunities to be immersed in the culture of the community (Smolkin & Suina; Taylor & Sobel). Taylor and Sobel described preservice teachers' intensive work in the Denver public schools teaching diverse students and understanding their backgrounds. Through open-ended survey responses, these preservice teachers described how they gained insights into the importance of providing engaging instruction, valuing cultural diversity, and working with families.[1]

Both preservice teachers and cooperating teachers were impressed by the professionalism that developed as a result of their work. Jenkins and her colleagues (2002) provided anecdotal support for how preservice teachers saw themselves as able to accept responsibility and be more confident in their work as a result of their PDS experience. Cooperating teachers indicated in interviews that preservice teachers in PDSs were professional and helpful (Frazee & Frazee, 2005). Based on ethnographic and follow-up interview data, perceptions that preservice teachers were better prepared to handle the demands of teaching were supported by the fact that partnership schools and districts tended to hire these teachers on graduation (Abma et al., 1999; Zetlin et al., 1992).

Students attending PDS schools also seemed to improve on several important outcomes, including achievement, school attendance, and motivation; however, the data were not always disaggregated by special and general education. In four descriptions or case studies of PDS efforts, scores of students with and without disabilities on state assessments and curriculum-based measures improved steadily over several years. However, there were mixed results for students with disabilities in at least one study. Peters' (2002) case study of PDS work in inner-city Detroit found that pass rates on the Michigan Educational Assessment Program [MEAP] increased from 20% in the 1st year of the project to 67.5% in the 3rd year. However, it was not entirely clear how special education students fared in this reform effort. Students with high-incidence disabilities increased their active participation and leadership in general education classes, yet their self-esteem, standardized test scores, and grades remained at pre-PDS levels. (These students were also participating in class-wide, literature-based instructional reform to increase opportunities for extended writing, social justice, and active learning). In contrast, students with low-incidence disabilities improved throughout the course of the study, making

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[1] As one preservice teacher put it, "One mother of a little boy truly amazed me. I was taken aback by how young she looked, I knew she was younger than I was and had a 6 year old . . . . As we spoke I learned how difficult her life is, working two jobs, yet her devotion to her child was inspiring" (Taylor & Sobel, 2003, p. 9).

gains on expressive vocabulary, initiating conversations, and skills with communication boards. These students participated in a school reform effort that paired students with disabilities and typical students, who used communication boards to bring students with low-incidence disabilities into the social and academic mainstream of the school.

Finally, several general education PDS studies are worth mentioning again because of their efforts to improve inclusion (Cowart & Rademacher, 2003; Klingner et al., 2004; Mariage & Garmon, 2003). Mariage and Garmon's evaluation study found significant student achievement gains. The authors attributed these impressive gains to the implementation of several instructional programs and strategies that included school-wide progress monitoring and practices that have been found to be effective with students with special needs. Similarly, Klingner et al. as well as Cowart and Rademacher show evidence that students who had low achievement in a PDS made marked improvements in content mastery as well as in school connectedness indicators, although data from these two studies were not disaggregated by general and special education students.

SUMMARY: GENERAL AND SPECIAL EDUCATION PDS PARTNERSHIPS

The PDS literature base, although varied in focus and uneven in quality, provides some perspective on how to develop teachers for increasingly diverse schools. The main goal of a PDS is generally to renew the ways schools and teacher education programs go about their business. This goal is laudable, particularly because partnerships of IHEs and LEAs seem to result in important teacher and student outcomes. Unfortunately, partnerships are difficult to implement and sustain without several key components working in concert. Across both literature bases, common features characterized partnerships and contextual supports needed to sustain them. The most critical were:

- a collaborative context with blurred boundaries where new roles and leadership responsibilities are assumed
- full integration of coursework and field experiences
- involvement of preservice, inservice, and teacher educators in school-wide reform efforts
- the capacity to maintain funding and incentives for such resource-intensive efforts.

The most unique element of the special education PDS was the emphasis on preparing general and special educators to teach students with disabilities and CLD backgrounds. Survey studies representing a broad array of special education teacher preparation programs showed that the involvement of special education faculty in general education efforts was limited. Other aspects of PDS work also reflect unique aspects of special education. Deliberate efforts were made to reduce special education teacher shortages, especially in geographic areas where the need for teachers was greatest. Special education faculty were aware that school partnerships focused on general education would necessarily limit opportunities special education preservice teachers had to work with students with disabilities. Special education faculty also appeared to favor approaches to improving teaching that valued evidence-based practice, whereas general education PDS work appeared to focus more heavily on improving teaching for student-centered learning. Given what we know about improving student learning for students with disabilities, this distinction is an important one that deserves further study.

Although older reviews of PDS literature criticized the research base for providing little information about the effectiveness of PDS work, we found that more recent literature provided stronger evidence of changes in teachers and students. A healthy portion of research focused on positive changes in the perceptions of preservice teachers and their improved socialization in hard-to-staff schools. More research emerged demonstrating that teachers prepared in PDS efforts were more capable in their classroom practice. Additionally, reforms instituted in PDSs resulted in stronger student outcomes, both affective and academic. Less is known, however, about the exact ways special education preservice teachers and students with disabilities changed. Much PDS work involving special education did not focus exclusively on changes in preservice teachers or disaggregate the gains made by students with disabilities compared to their nondisabled peers. We still have much to learn about how specific activities and strategies embraced in PDS work influence the development of preservice teachers and student growth in these environments (particularly for special education teachers and their students). At least initially, it appears that the combined efforts of university faculty, preservice teachers, and school personnel do enrich the school context through shared resources, collaboration, problem solving, and innovations that benefit students over time.

ARC PARTNERSHIPS

ARC programs provide access to a teaching credential by circumventing traditional preservice preparation. These preservice teacher training programs may or may not involve partnerships between IHEs and LEAs. ARC programs as a group are considered to include any alternative to traditional undergraduate and graduate degree programs. ARCs range widely from standards-reduced Spartan emergency training to sophisticated high-tech offerings that provide extensive supervision and feedback. These programs, which have proliferated in recent years, provide an avenue to a teaching career for applicants from liberal arts backgrounds, the military, and other careers (Feistritzer, Haar, Hobar, & Scullion, 2005; Rosenberg, Boyer, Sindelar, & Misra, 2007). In general, ARC programs differ from traditional programs in three ways: (1) length and structure of the program, (2) delivery mode, and (3) candidate population (Mayer, Decker, Glazerman, & Silva, 2003; Rosenberg & Sindelar, 2005).

Length and structure refers to the number of credits or clock hours required to attain a credential, the instructional activities employed, and the administrative structure of the training program. In general, ARC programs are shorter than traditional programs, more heavily field based, and staffed by a greater proportion of school-based personnel.

Delivery mode refers to how instruction is presented. Most traditional teacher development programs are university based, but ARC courses are often offered where candidates work or online through distance education technologies (Ludlow, 1998; Mann, Henderson, & Guffy, 2002). ARC programs aim to expand the pool of prospective teachers, changing the traditional teacher candidate profile.

Participants in ARC programs differ from those in traditional programs (e.g., older, more ethnically diverse). A higher proportion of males are enrolled, and many candidates have business or military experience (Zeichner & Schulte, 2001). Although it has been speculated that ARC programs attract well-educated, highly verbal participants, the available evidence suggests that career changers tend to come from jobs in the low salary ranges rather than from professional or management positions (Dai, Sindelar, Denslow, Dewey, & Rosenberg, 2007).

ARC PARTNERSHIPS: GENERAL EDUCATION

Although descriptions of ARC programs are frequent in the general education literature, research in the area tends to be limited in both quantity and quality. Historic and more recent literature reviews (Birkeland & Peske, 2004; Hawley, 1992; Humphrey & Wechsler, 2007; Wilson, Floden, & Ferrini-Mundy, 2001; Zeichner & Shulte, 2001) have not been able to determine whether ARC programs attract to teaching those who would not otherwise become teachers or whether those who do participate in such programs stay in teaching and promote student achievement.

Reviews included these findings:

- Avoiding traditional educational coursework is a powerful recruitment incentive for potential general education teachers.
- ARC programs entice higher percentages of men, older students, and persons from CLD groups than traditional programs.
- Urban ARC program participants are more likely both to have grown up in urban areas and to prefer working in such environments.
- There are no major differences in academic qualifications—measured in GPAs and content examination scores—between ARC and traditionally prepared teachers.
- Many ARC teachers are as prepared for teaching as the traditionally prepared teachers in general and may have similar limited early ratings of teacher competence.
- Data on ARC teacher retention is mixed and often mediated by the subject specialties of the teachers.

Several empirically sound studies have been conducted since these reviews. Using data from the 1999-2000 Schools and Staffing Survey [SASS], Cohen-Vogel and Smith (2007) tested several core assumptions underlying arguments for ARC programs that, for the most part, were not confirmed. First, ARC programs did not principally develop people from outside education. In fact, 36% came directly from college and at least 50% already had one degree in education. Second, ARC recruits did not have better academic qualifications than traditionally developed teachers and were not more likely to have attended selective undergraduate institutions. In sharp contrast to previous findings, ARC programs did not attract disproportionate numbers of candidates who taught in urban, poor, CLD, or difficult-to-staff schools. Good, McCaslin, Tsang, Zhang, Wiley, Bozack and others (2006) investigated a series of research questions on the quality of beginning teachers, including the impact of preparation type on direct observation measures of teacher performance. Teachers who completed traditional programs were more skilled in classroom management than their nontraditional ARC peers.

Humphrey, Wechsler, and Hough (2008) collected data at program and participant levels to determine the effects of personal, program, and contextual factors on teacher outcomes in seven ARC programs. Six required full-time teaching while completing requirements, and the other program, a full year of student teaching. The researchers interviewed key personnel and reviewed program documents. Participants in the programs were surveyed at the beginning and end of their 1st year of teaching regarding their background, perceptions of preparedness, reason for teaching, reasons for selecting an ARC, knowledge of teaching reading and math, program supports received, career plans, and perceptions of growth. Humphrey et al. found that school context (i.e., where the ARC participants were working) had the strongest effect on all measured

outcomes. Specifically, those who were in schools with strong leadership, adequate resources, and a collegial work environment were more likely to plan to stay in teaching, have confidence in their teaching skills, and have a stronger sense of professional growth than those who worked in challenging schools. Unfortunately, far too many ARC candidates were overwhelmed by their placements. Dysfunctional schools with unruly students, weak leadership, and fearful isolated teachers led to several preservice interns quitting their programs and many more reporting that they planned to leave at the end of the school year. Teacher preparation coursework and a strong education background were associated with increased teacher knowledge and self-efficacy. Interestingly, mentoring contributed little to the outcome measures; the authors hypothesized that low-quality mentoring was a major factor in this surprising finding.

Impact of General Education ARC Partnerships

Much in the literature regarding ARC partnerships between IHEs and LEAs is descriptive rather than empirical (Burstein et al., 1999; Cole & Ryan, 2001; Zetlin et al., 1992). For example, Burstein et al. describe a comprehensive partnership, the DELTA Collaborative. This ARC partnership between the Los Angeles Unified School District and California State University-Northridge was designed to prepare nontraditional, on-the-job teachers, among other functions. Development of the partnership took 2 years and focused on (a) structuring for shared responsibility, (b) examining program needs thoroughly, (c) establishing guiding principles for the teacher preparation program, and (d) establishing the redesigned alternative preparation program. Although there were a number of concerns (most notably involving course content and faculty workload), the program, known as the Accelerated Collaborative Teacher Preparation Program, was implemented. Although participants were not teaching as they participated, the program was alternative in that it streamlined requirements, allowing participants to complete their modular coursework in 12 months. Burstein et al. attribute the success of their effort to participants recognizing and addressing several specific challenges. First, it was essential to develop a collaborative culture. Interacting on specific partnership tasks, teachers and teacher educators "learned to work well together and respect each other's expertise" (p. 115). Some teacher participants who took on leadership roles were considered Practitioner Team Leaders. Second, it was important to recognize that organizational structures drive institutions and attempts to change structures can be time consuming. Consequently, patience and persistence are necessary, and administrative support is essential.

Although limited, emerging, and somewhat tangential to the notion of LEA/IHE partnerships, the empirical literature associated with ARC indicates that school placement context and its interaction with participant characteristics impact teacher quantity and quality outcomes. According to Humphrey et al. (2008), effective ARC programs carefully place well-educated candidates in supportive school settings with strong leadership and adequate supplies. This is complemented with carefully constructed coursework, and activities are tailored to candidates' backgrounds and current teaching situations. Finally, a well-developed mentor who is provided with adequate time, training, and resources plans lessons with the preservice intern, shares ideas, and provides feedback after frequent direct observations of teaching performance.

Recognizing that these contextual elements are critical, it is striking that little information is provided on how IHEs and LEAs can work together to develop the infrastructure necessary for ARC improvement. Unlike PDS arrangements, we found little definitive information on the resources and contextual supports that facilitate the initiation, maintenance, and institutionalization of successful ARC partnerships or the unique issues related to the

development of such efforts. We found only one paper that highlighted how an LEA/IHE partnership can be successful in recruiting, preparing, and retaining alternatively prepared general education teachers. Cavello, Ferreira, and Roberts (2005) described a partnership between the Detroit Public Schools and Wayne State University designed to increase the number of qualified CLD teachers of science and mathematics. Of the 52 candidates who participated in the program, 87% were African-American. With a yearly retention rate of 96%, the project achieved its objective of increasing the number of qualified minority personnel teaching math and science in the urban environment.

Cavello et al. (2005) attribute much of the program's success to the partnership between the university and the school district. The partnership facilitated the recruitment of future teachers who were graduates of or already working in the Detroit schools. Consequently, individuals entering the program were not surprised by school context factors. In fact, they had a deep understanding of the culture of the students and the school district. The partnership also satisfied a number of logistical and "bread and butter" issues. Specifically, the school district provided trainees with a full-time salaried teaching position with full benefits and tuition assistance. Courses were scheduled evenings and weekends, with special programmatic features that helped the candidates balance family, work, and school responsibilities. Mentors and the use of cohorts helped develop a necessary sense of community. Unfortunately, other than referencing the need for budgetary support, Cavello et al. did not address resources or contextual supports that fueled their successful partnership. Moreover, little detail about how specific situations in their cooperating institutions promoted effective partnerships was provided. Clearly, much more needs to be known about how principles of LEA/IHE partnerships can be applied to the unique elements of ARC teacher preparation.

ARC PARTNERSHIPS: SPECIAL EDUCATION

Although the numbers of individuals seeking special education certification through alternative routes is increasing nation-wide (see, e.g., Rosenberg et al., 2007), few empirical studies address the variables associated with special education ARCs. Rosenberg and Sindelar (2005) reviewed the research on ARCs, concluding that this rapid rise of ARCs in special education is viewed by many as a response to market conditions. To address the fact that there are not enough certified special education teachers to address school districts' shortages of special educators, a number of alternative routes programs in special education have been developed. For example, the University of Utah developed an ARC partnership with school districts across the state to address special education teacher shortages, particularly in rural areas. According to Menlove and Lignugaris-Kraft (2001), over 6 years about half of the 74 teachers who began the training actually completed it and became certified special educators, with a few leaving to teach general education.

Many believe that special education ARC partnerships streamline the process of certification by moving teacher candidates on to a fast track (U.S. Department of Education, 2003) and increasing recruitment of nontraditional participants and CLD special educators (Tyler, Yzquierdo, Lopez-Reyna, & Flippin, 2004). The requirements for highly qualified status within content areas add to the increased need for recruitment. Many school districts advertise ARC programs in their areas to help recruit career changers or content specialists (e.g., math majors) to the field of special education. Predictably, the major factors that have contributed to the growth in ARC programs in special education include (a) the continuing shortage of qualified special education teachers, (b) the belief that ARC programs will increase the number of CLD teachers, and (c) the criticism of traditional preparation programs (Hardman, Rosenberg, & Sindelar, 2005).

Efficacy of Special Education ARCs

Similar to previous elements of our review, the research on the efficacy of ARC programs in special education is limited in quantity and often uneven in quality. Since the need for high-quality special education teachers has been a major impetus for the emergence and growth of ARC programs, little attention has been given to efficacy beyond short-term studies of retention (Rosenberg & Sindelar, 2005; Rosenberg et al., 2007). Comparisons have been made between ARC programs for secondary teachers and special educators; but it has been argued that training secondary teachers requires emphasis on content mastery, while training special education teachers requires greater emphasis on pedagogical skills (Galambos, Cornett, & Spitler, 1985; Sindelar & Marks, 1993). Special education as a field is based on pedagogical expertise (Hardman et al., 2005). Special educators must demonstrate mastery of their specialized knowledge and skills in actual school settings. What researchers know about ARC in general education (i.e., content areas) may have limited application to special education preparation (Rosenberg & Sindelar, 2001).

Reviews of special education ARC programs typically yield data on the existence of programs; design and implementation (including the length and intensity of programs); program characteristics (e.g., admission requirements, completion rates); and demographic composition of the candidates (see Buck, Polloway, & Montorff-Robb, 1995; Feistritzer, Haar, Hobar, & Losselyong, 2004; Rosenberg & Sindelar, 2001; Rosenberg et al., 2007). Some findings from the reviews include:

- Large numbers of ARC programs exist, especially in states that have critical shortages of special education teachers.
- Many ARC programs feature rapid entry into classroom teaching; yet a significant number do not provide adequate support for candidates (i.e., mentors or supervisors).
- Candidates are recruited widely and tend to be older, with equal numbers of males and females with bachelor's degrees. The majority of the candidates tend to be midcareer changers.
- Collaboration among the stakeholders is an essential element.
- ARC programs appear to be similar to traditional teacher preparation programs in terms of coursework, field placement, mentoring, and admission selection requirements.

Rosenberg and Sindelar's (2001) review indicated that for ARC programs in special education to be successful there must be "meaningful school/university cooperation with time allocated for partnerships; instructional content that is substantive, rigorous, and programmatic; and substantial use of on-site supervision and mentoring incorporating both university supervisors and building-based coaches" (p. 12). Although cooperation with and collaboration among the stakeholders is essential, we often do not know how this was achieved in the ARC programs reviewed. Rosenberg and Sindelar (2005) found in their review of the literature that extensive degree-linked ARC programs tend to be superior to programs that make use of unanchored courses or "add-on" activities. Although many programs mention the need for mentors and supervisors, there are few criteria for guiding the selection of mentors, little specific training outlined for the mentors, and the amount of mentor support time provided to candidates is often not reported.

What seems to be missing from reviews of special education ARC programs is the efficacy of parts of the programs and types of partnerships that are developed to support programs. We need to gather information on measures of attrition, costs, supervision, impact on student achievement, and teacher competence. We also know little about how ARC programs in special education compare to traditional preparation (Hardman et al., 2005).

Characteristics of Effective Special Education ARC Partnerships

Although large numbers of special education trainees are currently being prepared in ARC programs, little is written about the nature of these partnerships. Past reviews have addressed critical features but not specifically the factors that keep partnerships functioning (see Rosenberg & Sindelar, 2005). A major characteristic of many ARC programs is the need for collaboration and planning among the partners (Burstein & Sears, 1998; Epanchin & Wooley-Brown, 1993; Rosenberg & Rock, 1994). For example, Burstein and Sears examined the effectiveness of an ARC developed for urban special education teachers hired without certification to serve students with disabilities in an urban area in Southern California. Although Burstein and Sears' program did not discuss the nature of their partnership with the school district, their outcomes point to the need for effective collaboration among the partners. Their survey of teachers completing the program indicated that the conditions in the schools impacted their stress on the job. Challenges related to working conditions and student behaviors were intense and did not decrease over time. Epanchin and Wooley-Brown described a collaborative project between a university and a school district in Florida to prepare paraeducators to be special educators and remain in their communities. Although limited empirical data are provided, the authors suggest that success of the partnership required overcoming mistrust, addressing mutual needs, and developing mechanisms for accomplishing shared goals.

Yet collaboration does not come easily. For example, in an ARC in Florida, Epanchin and Wooley-Brown (1993) noted how their partners struggled with "issues of trust, respect, rights, and responsibilities" (p. 113). In some cases, the IHE and LEAs had collaborated before the formality of the partnership, so the relationships were developed easily (Burstein & Sears, 1998; Epanchin & Colucci, 2002; Rosenberg & Rock, 1994). In some cases the collaborative efforts began with the support of federal dollars (Burstein & Sears; deBettencourt & Howard, 2004; Simpson, Yocum, & Blum, 2005). Often when federal dollars are paying the costs, the financial support encourages the partners to work together.

Yet more frequently, collaborative ARC efforts tend to revolve around the need for well-qualified and diverse candidates to fill vacancies in special education settings. Some partners began to collaborate because of their shared belief that school systems should grow their own (Humphrey & Wechsler, 2007). In Epanchin and Wooley-Brown's (1993) partnership between a Florida school district and a university, individuals with roots in the community were trained. Edelen-Smith and Sileo (1996) also emphasized the need to hire from the same community. Simpson, Yocum, and Blum (2005) formed a partnership that provided an ARC for teachers who were currently teaching out of field in special education settings across the sparsely populated state of Wyoming. It is the belief of many ARC partners that if they collaborate to grow their own teachers, the special education teachers will more likely be committed to remain in their communities.

A second characteristic across many ARC partnerships deals with curriculum, which is often delivered innovatively in a program typically shorter than traditional programs. The ARC curriculum is frequently based on the current state-approved teacher education program that leads to certification in one or more areas of special education (Epanchin & Wooley-Brown, 1993). The delivery of the ARC curriculum requires creativity because the preservice interns are working in schools and balancing family responsibilities. The use of seminars, online learning, and after-school and night class meetings allows for meaningful learning with a focus on problem solving and ongoing peer support. Rosenberg and Sindelar (2001) observed that ARC curriculum content must be substantive, rigorous, and programmatic. The curriculum of most ARC partnerships is delivered across 1-2 years, and course credits vary in number (Rosenberg et al., 2007). It is believed that, in contrast to general education teacher preparation, special education programs typically require more credit hours (Galambos et al., 1985). Still, special education ARC programs tend to be shorter than traditional special education programs, because the partnerships need to provide the school districts with certified special educators quickly.

A third characteristic concerns mentoring and supervision of candidates. Many partnerships relied on mentors from within the school district as well as mentors/supervisors from the IHE. Mentors may have been chosen by a selection committee composed of IHE and LEA members. Several partnerships provided a course or seminar to familiarize mentors with adult learning, classroom processes, and clinical supervision (Epanchin & Wooley-Brown, 1993). Both Burstein and Sears (1998) and Rosenberg and Rock (1994) gave criteria to guide the selection of mentors, and the mentors were provided support throughout the program. The trained mentors visited classrooms, gave feedback on teaching, and helped teachers with procedures. The need for collaborating teachers to act as effective mentors was seen across all ARC partnerships. There was little doubt that, given the needs of newly trained special education teachers and the complexity of their jobs, any efforts to design mentoring and support programs must consider (a) strategies for including new special education teachers in the broader school context and (b) each

special educator's specific needs based on his or her prior experience, level of expertise, role in the school, and the specific special education population served (Brownell, Hirsch, & Seo, 2004).

A final characteristic of several ARCs is the use of distance technology to reach candidates in more rural areas. Menlove and Lignugaris-Kraft (2001) used distance technology, specifically two-way audio/video teleconferencing, as they were training teachers across Utah. Simpson et al. (2005) used distance technology to reach teachers across Wyoming. In both programs, incorporating distance education technology increased the interaction between students, cooperating teachers, and university supervisors.

Nature of Special Education ARC Partnerships

A partnership needs to be built on trust and an agenda that addresses mutual needs. For many LEAs, the greatest motivation to be involved in a partnership comes from critical shortages in the number and quality of their special education teachers. IHEs often form partnerships to increase the university program's enrollment.

As with any partnership, the stakeholders must spend time making the partnership work (Rosenberg & Sindelar, 2001). For example, in some ARC partnerships there were frequent discussions (e.g., monthly meetings, advisory board meetings) needed to overcome past or current areas of mistrust and conflict (Epanchin & Wooley-Brown, 1993). It takes time to "hammer out" specifics of trust, responsibility, and expectations. Each partner may need to change the way they did things traditionally. For example, the IHE may have admitted students with lower GPAs, and the LEA may have previously hired special education teachers through a different process. Both stakeholders may need to be involved in selecting key personnel. In some cases, there was a memorandum of understanding between the partners. In other cases, the formality was unnecessary because they had worked together on previous projects (Esposito & Lal, 2005).

In many ARC partnerships, instruction was delivered through a mix of university coursework, district-sponsored professional development, and, in some cases, by using distance education technology (Simpson et al., 2005). The partners needed to determine which one would take the lead in developing the curriculum for each course, workshop, or seminar. Instructional teams were often composed of both IHE and LEA members (Esposito & Lal, 2005; Menlove & Lignugaris-Kraft, 2001). Programs were designed by both IHEs and LEAs (Rosenberg et al., 2007). The roles of university faculty members, school-level mentor teachers, and school administrators were redefined (Jenkins et al., 2002). Such program design takes time and effort. In many cases, partnerships begun with outside funding often provided support to candidates (e.g., tuition, scholarships for books) (Esposito & Lal, 2005). In several programs, funding was provided by the U.S. Department of Education (deBettencourt & Howard, 2004; Simpson et al.) or state funds (Rowlinson, 2006). Rosenberg et al. found that most ARCs surveyed (57.1%) reported funding from their state education agencies [SEAs], and approximately 40% were funded by their LEAs. When the funding ended, it was not clear if these programs continued.

To foster collaborative learning and experience sharing, many preservice interns progressed through ARC programs in cohorts (Esposito & Lal, 2005; Heimbecker et al., 2002; Jenkins et al., 2002). Cohort members typically received the university instruction together and taught within the same district as they proceeded through the ARC training program (deBettencourt & Howard, 2004).

Effectiveness of ARC Partnerships

We were interested to know if ARC partnerships improved the preparation of special education teachers as measured by changes in teacher practice and improvements in levels of student achievement. Sindelar, Daunic, and Rennells (2004) compared graduates of traditional and ARC partnerships across classroom performance (using Praxis™ III test data[1]), principals' ratings, and their own feelings of preparedness and sense of efficacy. The Praxis scores differentiated among the groups. The differences favored traditionally trained teachers related to their relative mastery of formal knowledge of instruction. The differences favoring graduates of ARC partnership programs were attributed to the experience of many ARC graduates who had previously worked as paraprofessionals in the schools where they now taught. Principals rated the ARC candidates slightly higher in their preparedness than the traditionally trained teachers.

In some ARC partnerships self-report surveys were conducted and compared to those completed by the traditionally trained students (Esposito-Lal, 2005; Sindelar et al., 2004). Sindelar and his colleagues found that teachers in both ARC and traditional programs rated themselves as having a healthy sense of self-efficacy. A study by deBettencourt & Howard (2004) surveyed ARC teachers each year to understand their reflections on the training program, feelings toward their mentors, and current teaching experiences. Preservice interns rated their own ability highly their 1st year but lower in subsequent years. The authors believe that during their first year the teachers were very idealistic and later may have realized the full nature of the job and rated themselves more realistically. Preservice interns also felt they needed more mentoring than they received. In other ARC partnerships, the school district's administration was surveyed. Simpson et al. (2005) found that the LEA administration indicated increased satisfaction with teachers enrolled in the ARC program. Unfortunately, no outcome data on students of preservice interns in ARC partnerships were found.

Resources and Contextual Support

In most partnerships there are resources and contextual supports (e.g., leadership vision, reward structures) identified as necessary to initiate, maintain, and institutionalize effective partnerships. In our review of ARC in special education several such resources and supports became evident. For example, Burstein and Sears (1998) found that the conditions and supports in the school are critical to the success of the ARC candidates. Also, many partnerships mentioned that the participation of the candidates needed to be voluntary (Simpson et al., 2005). Another important resource identified was that a group of often unrecognized but talented and motivated mentor teachers needed to be involved in the training (Epanchin & Colucci, 2002; Epanchin & Wooley-Brown, 1993). Few would argue that learning to teach is not contextual (i.e., relating to the community within the school and within the community in which the school exists). Preservice interns need opportunities to explore various schools and their communities in order to integrate and connect the coursework taken with the students, teachers, and classrooms with which they work (Epanchin & Collucci). In special education teacher training, this need to understand the context is more pronounced. Given that the context is so critical, we wonder what contextual factors are critical for success in special education ARC programs. Mentor teachers (or cooperating teachers) are recognized as critical resources within the school environment

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[1] Praxis™ III: Classroom Performance Assessments of the Praxis Series: Professional Assessments for Beginning Teachers. Praxis is a trademark of Educational Testing Service (ETS). This publication is not endorsed or approved by ETS.

(Epanchin & Colucci; McIntyre, Byrd, & Foxx, 1996). The climate within the school is also critical (Burstein & Sears, 1998). The preservice intern needs to feel supported and, if problems arise, that the school's administration will be there to help. In addition, there needs to be a firm foundation of successful collaboration that engenders trust and respect; the needs and self-interests of partners must be understood and addressed (Epanchin & Colucci). Two perspectives need to be integrated (Jenkins et al., 2002). University faculty members bring a theoretical and research-based perspective to the partnership that may not always be present in school-based decision making. School district partners bring the context and knowledge of the community, the school, and the students.

If technology is used to deliver the instructional components, there may be glitches; and it may take time to work effectively (Burstein & Sears, 1998; Menlove & Lignugaris-Kraft, 2001). Simpson et al. (2005) used distance technology to reach teachers across Wyoming and did not mention problems. With some ARC partnerships, the use of technology may need to continue beyond the initial partnership. Given the tightening of school district budgets, the use of distance technology may require a funding source that may not be available once the initial funding source has ended.

SUMMARY: GENERAL AND SPECIAL EDUCATION ARC PARTNERSHIPS

The impetus for forming ARC program partnerships in special education is typically the shortage of certified and highly qualified special education teachers. Partnerships between IHEs and LEAs to address special education teacher shortages are considered an alternative to traditional university training programs. ARC programs typically require both IHEs and LEAs to change the way teacher training is done (e.g., selection of interns, selection of mentors) (Epanchin & Wooley-Brown, 1993). There needs to be frequent formative monitoring of how contextual elements of the relationships among the partners are working. The ARC programs that flourish tend to provide frequent monitoring and problem solving (Epanchin & Wooley-Brown; Rosenberg & Rock, 1994). Most recognize that placing a preservice intern with limited training in a classroom of students with disabilities is a high-risk endeavor (e.g., Rosenberg et al., 2007) and that contextual supports (e.g., mentors, collaboration, supportive environments) are necessary for success. Like the PDS partnerships knowledge base, the ARC partnership literature has many limitations. Research-based linkages have not been established between the supports needed for ARC partnerships, how these efforts lead to opportunities for intern learning, and how such learning influences critical student outcomes.

CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Our purpose in this comprehensive review of the literature is to inform practitioners and policymakers of best practices for developing and sustaining LEA/IHE partnerships as a means of enhancing special education teacher development and retention. We focused on two types of LEA/IHE partnerships: Professional Development Schools [PDSs] and Alternative Route to Certification Programs [ARCs]. We decided to focus on these partnerships for several reasons. PDSs and ARCs:

- are among the most widely employed general teacher preparation partnerships employed by IHEs and LEAs
- are very prominent in the teacher preparation literature
- exemplify the wide range of partnerships—from the idealized, multifaceted, and high-maintenance PDSs to the goal-focused and pragmatic ARCs—which are designed to increase the supply of special education teachers
- reflect a vexing dichotomy in teacher preparation: extensive professional development versus streamlined preparation.

As the special education partnership literature is limited in quantity and lacking in cohesion, we reviewed both general education and special education PDS and ARC partnerships. Our intended outcome was to articulate partnership strategies that led to improved special education teacher quality and retention, describe conditions that favor their implementation, and note resources that are needed to introduce and sustain these strategies.

In this section we present our conclusions by revisiting our guiding questions and reporting our results, discuss the implications of these conclusions, and offer a series of recommendations for policy, practice, and future research efforts. The guiding questions were:

- Do partnerships improve the preparation of special education teachers as measured by changes in teacher practice and increases in levels of student achievement?
- What are the characteristics of these partnerships?
- What resources, contextual supports, and special considerations facilitate the initiation, maintenance, and institutionalization of partnerships?

Partnership Outcomes: Enthusiasm and Challenges in the Face of Limited Outcome Data

The questions generated to organize our review focused on assessing the impact of partnerships in the preparation of special education teachers. We reviewed the literature to determine whether there were changes in teacher practice; improvements in levels of student achievement; the characteristics of these partnerships; and the resources, contextual supports, and special considerations needed to facilitate the initiation, maintenance, and institutionalization of such partnerships. Although the available literature indicates that PDS and ARC partnerships have some benefit for preservice teacher preparation, the quantity and quality of the research base does not justify the enthusiasm and rhetoric associated with these efforts. The results of our analyses follow.

Throughout the general and special education teacher preparation literature, partnerships among IHEs and LEAs are repeatedly characterized as desirable, high-priority foundational activities. Beyond the obvious intuitive appeal of having multiple stakeholders involved in the teacher education process, partnerships enable multiple organizations to leverage precious resources and provide opportunities for personnel with specialized areas of expertise to work together addressing shared challenges. More than any other type of arrangement, PDS partnerships embody the ideals of collaborative, career-long teacher professional development. Partnerships are a tangible manifestation of teacher preparation as an ongoing continuum that links preservice preparation, induction, and continuing professional development. Because of these characteristics, there is usually enthusiasm for partnerships; however, the enthusiasm is more a function of anecdote and faith than empirical data.

In our comprehensive review of the general and special education PDS literature, we encountered an expansive literature with limited empirical outcome data. Early PDS literature, pre-1998, includes mostly program descriptions that center on the development, evolution, and sustainability of programs. The recent literature contains more evaluation efforts, but the outcomes emphasized vary quite a bit, as does the rigor with which data were collected and reported. For example, much research on general and special education PDS efficacy has used surveys and interviews to assess changes in preservice teacher performance. Measures of student performance, when provided, are globally linked to the PDS work and only tangentially linked to the preservice interns. Moreover, the literature describing intern or student outcomes does not provide enough details of program features and contextual conditions to make strong linkages to specific program elements. Nonetheless, these shortcomings do little to quell the enthusiasm and idealized notions of how PDS efforts can facilitate systemic school reform, simultaneous renewal, and bridging gaps between theory and practice (e.g., Boyle-Baise & McIntyre, 2006; Kochan & Kunkel, 1998).

ARC partnerships tend to be more pragmatic and goal-focused than PDS efforts, typically centering on filling specific personnel needs, most often in subject areas of extreme shortage and in difficult-to-staff schools. Not surprisingly, the characteristics of ARC programs—stand-alone programs and LEA/IHE partnerships—range widely from minimal emergency credential programs to well-conceptualized, labor-intensive, reflective efforts that integrate extensive coursework and field-based experiences (Rosenberg & Sindelar, 2005). In some cases, ARC programs are developed to fill shortages across areas of a rural state with few university teacher training opportunities. In such cases, much of the coursework is delivered by distance technology. Similar to PDS efforts, the research on the efficacy of both general and special education ARC programs tends to be more limited than research on general and special education PDS efforts. Among the general education efforts, researchers have not determined if these programs attract high-achieving candidates to difficult-to-staff schools, or if those who do participate stay in teaching and promote student achievement (e.g., Cohen-Vogel & Smith, 2007; Zeichner & Schulte, 2001).

A few special education programs report limited positive outcomes (e.g., retention, measures of participant quality), but little attention has been given to these beyond short-term efficacy (e.g., Rosenberg & Rock, 1994; Rosenberg et al., 2007). However, in both the general and special education literatures there are clear indications that partnerships enhance the efficacy of ARC programs. For example, Humphrey and Wechsler (2007) indicate that the school context where ARC participants' work has the strongest impact on all outcome measures. Although not a direct indicator of an effective partnership, this outcome supports the need for greater collaboration

between IHE and LEA program providers. In special education the finding was more discrete. In their review of ARC programs, Rosenberg and Sindelar (2005) found that successful ARC programs had meaningful school-university partnerships with time allocated for collaborative activities. Some emerging data are adding support to this finding. In a comparison of varying ARC program types, Sindelar, Corbett, Rosenberg, Denslow, and Dewey (2009) have found that candidates who participate in ARC internship programs—typically partnerships between IHEs and LEAs—tend to remain in special education positions with greater relative frequency than those who participate in stand-alone LEA-sponsored programs.

Although limited in scope and methodological rigor, the available literature indicates that PDS and ARC partnerships have some benefit for preservice teacher preparation. However, we remain unsure if the outcomes justify the enthusiasm, particularly when considering the preparation of special education teachers. Taken together, gaps in the knowledge base still remain. For instance,

- There is no articulation of the ways in which teachers in general education partnership programs are prepared to address the needs of students with disabilities. Student outcomes, even when noted, are not disaggregated, and linkages are not made between the types of learning opportunities afforded to preservice and inservice teachers and student gains.

- It is difficult to make linkages between the practices being adopted inside partnerships and gains made by preservice interns or gains made in student achievement. Although some studies demonstrated positive outcomes, it remains unknown how these outcomes were tied to changes in the practices of preservice interns or changes in students. For instance, changes in student achievement could be related to other reform efforts occurring in the school, such as adopting new curriculum to improve students' mathematics curriculum (Teitel, 1998).

- Little is known about the learning activities provided in partnerships. Descriptions in the literature focus on making experiences more cohesive and thoughtful. In only a few are we made aware of strategies and content used in partnerships and how these are linked to student gains (e.g., Mariage & Garmon, 2003; Peters, 2002).

- Throughout the PDS and ARC literature, a series of contextual conditions were identified as important (e.g., sufficient time, joint vision, shared leadership). However, the extent to which such features and conditions really are important remains unknown. Beyond limited anecdotal accounts, we have insufficient studies linking partnership characteristics or contextual supports to partnership outcomes. For example, with findings indicating that context is critical in the success of ARC participants (Burstein & Sears, 1998; Humphrey & Wechsler, 2007), greater attention needs to be provided on how to promote such activities.

- We do not know if some partnership supports (e.g., funding, leadership) are more important than others or whether all supports mentioned must be in place to foster an effective partnership (e.g., Abdal-Haqq, 1998; Cavello et al., 2005). We are not unaware of the difficulties inherent in trying to establish such linkages. Methodological issues abound, and those involved in partnerships may not be willing to submit themselves to large, unwieldy (and perhaps unrealistic) randomized group studies where contextual supports are provided to one group and not others. Although many of the described PDS features, conditions, and supports make intuitive sense, without some level of empirical evidence, many questions remain.

PDS Idealism and ARC Pragmatism

Throughout our review we repeatedly noted the wide range of goals and program elements in PDS and ARC partnerships. For the most part, PDS programs tended to be more expansive and conceptual than the mostly goal-focused ARC programs. This is not surprising because PDS efforts are frequently based on the need for comprehensive and systemic school reform (Teitel, 2003); and traditional relationships among stakeholders in teacher preparation are restructured to improve collaboration. Although some ARC initiatives have a political or policy change agenda (e.g., Hess, Rotherham, & Walsh, 2004), the majority of ARC partnerships we reviewed were designed to fill personnel needs in either licensure or geographic areas of shortage. In general education, when not part of a larger PDS effort, this typically involved delivering fast-track certification programs to personnel who lacked the qualifications for their positions. In special education, partnerships were designed to address the critical shortage of teachers of students with disabilities.

How can these seemingly incongruous approaches to teacher preparation coexist in partnerships? It appears that partnerships are functions of time and circumstance. At times of shortage and crisis, the goals of the partnership are focused, and there is a need for expediency. Rather than focus on expansive reform efforts, the partnership seeks to address immediate needs of schools and their communities. However, in the absence of crisis, there are opportunities to focus on more idealistic goals and address structural issues associated with the integrated processes of teacher preparation and ongoing professional teacher development. Rather than differentiating among elements necessary for success in ARC and PDS partnerships, it appears that both types of partnerships require similar and extensive start-up and maintenance efforts. For example, descriptions of both general and special education PDS and ARC partnerships indicate that considerable time and effort is required to develop trusting relationships among stakeholders, develop a common vision, define and restructure roles and responsibilities, develop novel curricula, and establish relevant governance structures (e.g., Burstein et al., 1999; Epanchin & Wooley-Brown, 1993; Teitel, 1998; Valli et al., 1997). Interestingly, partnerships require the same amount of intensive, time-consuming work whether the goal is a singular goal-focused ARC or a multicomponent, systemic, reform-oriented PDS. Unfortunately, the similarity in demands across PDS and ARC partnerships results in few instructive exemplars for developing a solid partnership infrastructure that can allow stakeholders to address simultaneously immediate concerns as well as longer term reform efforts. Only two efforts reported on this infrastructure building: Epanchin and Colucci (2002) with their PDS-without-walls concept and Heimbecker et al. (2002) with the Reading America Indian Special/Elementary Educators [RAISE] program. Both exemplify that the hard work associated with forming LEA/IHE partnerships can and should be continuous and serve multiple teacher preparation and professional purposes. Equally important, these efforts show how both general and special education preparation issues can be integrated into the organizational structure of partnerships.

Context, Economic Realities, and the Disconnect between Special and General Education

Most educators have strong positive feelings about LEA/IHE partnerships. We noted repeatedly in the literature that such collaborations allow individual organizations to leverage their own

resources as well as expand and enhance their own capabilities. In their most idealized formats, such as PDS structures, partnerships are mechanisms for conceptualizing teacher development as an ongoing process that bridges the major milestones in a teaching career: preservice development, induction, and ongoing professional development. We also noted that the development of these partnerships takes considerable time, effort, flexibility, consensus building, and political acumen. In efforts that detail experiences in developing partnerships between IHEs and LEAs (e.g., Burstein et al., 1999; Epanchin & Colucci, 2002; Epanchin & Wooley-Brown, 1993), it is made abundantly clear that there are numerous conceptual and logistical challenges that require trust and good-faith negotiations. What remains unclear is where this additional time comes from, and, in light of diminishing school budgets, how to pay for these processes. University budgets for additional faculty are frozen, and personnel in local schools are overwhelmed with meeting the adequate yearly progress demand of NCLB and the intensive procedural requirements associated with IDEA (Rosenberg, Westling, & McLeskey, 2008). Moreover, when viewed in the context of our current standards-based accountability era (e.g., Hardman & Mulder, 2004), there may be little governmental support for the labor- and time-intensive processes associated with partnerships unless immediate student achievement gains can be produced. In fact, by streamlining and expediting training requirements, policymakers hope to attract people who are often put off by extensive teacher preparation requirements (Cohen-Vogel & Hunt, 2007).

For education policies that frequently value content acquisition over the teacher education process activities (e.g., critical pedagogy, reflection, and mentoring) valued in partnerships, there are the issues of cost. Time and effort translates into significant expenditures for both LEAs and IHEs. It was particularly noteworthy that many partnerships described were initiated with significant amounts of grant money, a source of funding that is not available on a large-scale basis. Arguably, unless new methods of income generation can be gleaned from partnerships, the associated costs may make these processes victim to our budget-challenged educational system. Also, when economic shortfalls are prevalent, every teacher and administrator seems pressed for time. There may be no volunteers willing to spend time on PDS or ARC partnerships.

The development of partnerships may also be challenged by the new market-driven economy of teacher education. It has been suggested that well-conceptualized, traditional teacher preparation programs, which value exploration, reflection, and supervised apprenticeships, are being replaced by programs that focus on pragmatism and *credentialism* (Rosenberg & Sindelar, 1998; Sindelar & Rosenberg, 2000; Zemsky, 1993). Many of these programs cater to the demands of *consumer* students who are fixated on earning certificates and acquiring the most basic technical knowledge. Moreover, with the backing of their tuition dollars, these students demand practical, user-friendly, job-related knowledge in convenient, time-efficient, digestible packages. Not surprisingly, programs developed in response to this new type of consumer demand run counter to the many calls for reform in teacher education, such as simultaneous renewal through partnerships. Specifically, the substantial time required for participation in a PDS would not be viewed as convenient or practical to many credential-minded students. Furthermore, because many students attend preparation programs part-time, these types of experiences would be untenable.

A positive finding is the prominence of descriptions of integrated teacher preparation programs (Kamens, 2007; Van Laarhoven, Munk, Lynch, Wyland, Sharon, et al., 2006), a clear indication that consolidating general and special education into a unified system of instruction is valued. Nonetheless, we were surprised at how little there was on the integration of general and special

education teacher preparation in partnership efforts. The majority of the empirical data focused exclusively on either preservice interns in the area of special education or the training of general education teachers for inclusion. Less frequently were outcome data focused on the fruits of combining training efforts of both special and general education teachers (e.g., Heimbecker et al., 2002; McHatton & Daniel, 2008). It is possible that special education faculty are not as involved in PDS work because such partnerships do not adequately support special education teachers' preservice preparation. When IHEs partner with a limited number of schools, there may not be sufficient opportunities for preservice interns to interact with special education teachers and students with disabilities, making it difficult to acquire the skills they need (Epanchin & Colucci, 2002). Moreover, in many PDS efforts, it was difficult to discern what exactly was done to assure that special education practices were taught in the general education programs. It is also possible that the goal-focused nature of ARC efforts contributed to the separation between general and special education ARC partnerships. For the most part, these partnerships addressed the need for specific types of teachers, addressing shortages in specific content and geographic areas. Most distressing was the fact that several of the reviews of the general education ARC literature fail to include special education empirical efforts.

Recommendations

With these conclusions in mind, we offer the National Center to Inform Policy and Practice in Special Education Professional Development [NCIPP] the following recommendations:

- The current political and economic realities of special education teacher preparation should temper the often idealized rhetoric associated with LEA/IHE partnerships. NCIPP can provide interested parties considering partnerships with a comprehensive, realistic, and user-friendly start-up guide to the requirements and challenges associated with these activities.

- Throughout our review, certain contextual conditions and program practices were identified as important. However, beyond limited anecdotal accounts, we have insufficient studies linking partnership characteristics or contextual supports to partnership outcomes. Moreover, we do not know if some partnership supports have greater effects than others. NCIPP can be a forum in which specific practices within partnerships are evaluated regarding their efficacy and logistical capability.

- The disconnect and lack of coordination among special education and general education partnerships is counterproductive to inclusive education and the standards-based requirements of NCLB and IDEA. NCIPP can offer technical assistance by providing guidance in developing field-based internships that promote stronger collaboration among both general educators and special educators at both LEA and IHE levels.

- Organizational structures that discourage IHE and LEA faculty members from participating in partnerships need to be identified and alternatives that promote participation explored. NCIPP can provide a forum for considering these alternatives and a platform for highlighting case studies where collaborative partnerships thrive.

- The limited database on partnerships indicates that stakeholders need practical strategies for formative and summative data collection. The Center can assist IHE and LEA partnerships by developing templates that encourage and support the collection and analysis of program evaluation data.

- A major factor associated with the limited quantity and quality of research on partnerships centers on methodology. It is very difficult to conduct thorough, well-controlled research on complex, multifactor teacher preparation reform efforts. NCIPP can take the lead in facilitating a discussion among teacher educators to determine how such research can be designed and implemented. Specific guidance is needed on the types of possible designs and types of outcome measures that can best reflect the impact of the partnerships.

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