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Enhancing Teacher Education through Field-Based Literacy Laboratories
Nicole Maxwell, Danielle Hilaski, and Kellie Whelan-Kim

Abstract
Teacher preparation programs are responsible, at least in part, for the level of readiness of their graduating teacher candidates, many of whom report feeling unprepared to begin their teaching career (Holmes Group, 1995; Levine, 2005, 2006; Maclver, Vaughn, Katz, 2005; Lewis et al., 1999; Rust, 2010; Walsh, 2001). In response, universities and teacher education programs must develop innovative ways to fully prepare teacher candidates for the classroom. School-university partnerships have the capacity to cultivate environments that foster instruction and experiences that more effectively prepare teacher candidates for their first teaching position. Through these partnerships and the Professional Development School (PDS) model, teacher candidates can apply instruction from university courses to working with P-12 students in the field within practice-based teacher education (Ball & Cohen, 1999). Laboratories connected to university literacy courses and held in PDS elementary schools are one creative method the authors have found to better prepare teacher candidates for the classroom. Through a literacy assessment laboratory, teacher candidates can acquire a meaningful understanding of how to implement literacy assessments and analyze the assessment data to determine appropriate individualized instruction for their student. Furthermore, increased confidence in their abilities to conduct these literacy assessments, analyze the results, and plan responsive instruction based on the students’ needs may also occur.

Keywords: literacy, laboratories, teacher education, Professional Development School, teacher candidate

Introduction
Teaching is complex and multidimensional. With no cookie cutter or magic formula for being successful, there is no one right way to behave as a teacher (Bransford, Darling-Hammond, & LePage, 2005; Nieto, 2013). In an “increasingly complex society and rapidly changing, technology based economy” (Darling-Hammond, 1998), teachers are responsible for educating an increasingly diverse student population to higher academic standards. Teachers, as a result, are faced daily with complex decisions that involve high-stake outcomes affecting students’ futures. These outcomes require different and more demanding kinds of knowledge and skills (Bransford et al., 2005). To make good decisions, teachers must be well-versed in instructional strategies, learning differences, language and cultural influences, and individual temperaments and interests. Teachers must be able to apply their knowledge of learning and performance to make on-the-spot decisions regarding the students’ needs and the instructional strategies and approaches that will be most appropriate for each individual learner (Bransford et al., 2005) within the context of a “standards-based, accountability-driven system of education” (Levine, 2006, p. 5).

While the demands and expectations of teachers are continuing to increase, researchers (Levine, 2006; Rust, 2010) report that teacher candidates often feel underprepared for their first teaching position. Of the 91,623 teacher education candidates graduating with baccalaureate degrees (Snyder, 2016), many have graduated without the skills and knowledge needed to be effective teachers (Levine, 2006; Ruth 2010). Principals, according to Levine’s (2006) report, Educating School Teachers, revealed that teacher candidates were ill-prepared in the following ways: integrating technology into their teaching, implementing curriculum and performance standards, using student performance assessment techniques, working with parents, and managing the classroom. In addition, they are not prepared to address the needs of students with disabilities, limited English proficiency, and diverse cultural backgrounds. These inadequacies likely contribute to the continued teacher shortage. Nearly 17% of teachers leave the field of education within their first five years (Gray, Tale, & O’Rear, 2015). Sutcher, Darling-Hammond, and Carver-Thomas (2016) predict the annual shortfall for teachers nationwide could reach 112,000 by fall 2018.

Rust (2010) and others (Holmes Group, 1995; Levine, 2005, 2006; Maclver, Vaughn, Katz, 2005; Lewis et al., 1999; Walsh, 2001) argue higher education is at least partially to blame. Criticisms of education programs include activities and training in college courses often disconnected from classroom practices, brief student teaching placements, limited supervision in field placement, and field placement isolated from coursework (Lewis et al., 1999; Maclver, Vaugh, Katz, 2006; Walsh 2001). Amidst all of these criticisms, educational researchers (Cochran-Smith, 2003; Cochran-Smith & Zeichner, 2005; Darling-Hammond & Bransford, 2005; Hiebert, Gallimore & Stigler, 2002; Korthagen & Kessels, 1999) agree that teacher educators have the capacity to positively change teacher education, creating a more effective, better-prepared teaching force.

School-university partnerships have the potential to create environments that foster instruction and experiences that more effectively prepare teacher candidates for the classroom. Through these partnerships, teacher candidates can apply their training from college courses to working with P-12 students in the field through practice-based teacher education (Ball & Cohen, 1999) within the Professional Development School (PDS) model. These field placements are likely to last for longer periods of time than the traditional model of teacher education programs (Teitel, 2003). Consequently, they provide greater opportunities for teacher candidates to develop a firm foundation in teaching, resulting
in an increased likelihood for success and retention. Together with these extended field placements, the PDS model can open the door to additional opportunities for hands-on practice to better prepare teacher candidates. In particular, the authors have found that involving teacher candidates in literacy laboratories, in which they apply their literacy course knowledge directly to working with elementary students, increases the teacher candidates' readiness to meet the demands of teaching literacy in their own classrooms.

**Literature Review**

Literacy courses taught in a more traditional way in teacher preparation programs focus on the knowledge base of theory and strategies in teaching reading. However, in this more traditional setting, preservice teachers can be more passive receivers and often lack the opportunity to transfer their developing theoretical knowledge into practice in an authentic way. Researchers (Al Otaiba, Lake, Greulich, Folsom, & Guidry, 2012; Haverback & Parault, 2008; International Reading Association, 2003a, 2003b; Maloch et al., 2003) have identified a gap in research related to effective instructional approaches for reading teacher education. Several reports have indicated the need for higher quality learning experiences for preservice teachers, specifically in the area of literacy education (Al Otaiba, Lake, Greulich, Folsom, & Guidry, 2012; Hoffman et al., 2005). Among the currently available research, one of the commonly cited solutions related to this need is the importance and impact of more authentic, field-based experiences in developing a deeper understanding of teaching. Hoffman et al. (2005) summarized, “Specifically, supervised, relevant, field-based or clinical experience in which preservice teachers receive ongoing support, guidance, and feedback is critical” (p. 269).

A 2003 report of the International Reading Association highlighted course-related field experiences with interaction and modeling from mentors as a key element in high quality programs in teaching reading (International Reading Association, 2003). In addition to the field experiences themselves, scaffolded reflection has been discussed as a major aspect in making field-based literacy experiences more effective and meaningful (Bean & Stevens, 2002).

A survey of teacher education programs and reading teacher educators conducted by Hoffman and Roller (2001) indicated a growing move toward incorporating a more hands-on approach involving extensive field experiences within courses before student teaching. These researchers also noted the faculty preparing preservice teachers in reading believed these field experiences were highly important. When preservice teachers are provided with the opportunity to work directly with striving readers in a one-on-one setting, they are able to put their beliefs and strategies into practice in an authentic way. According to a review of the literature related to the benefits of this more authentic context for developing teachers, Haverback and Parault (2008) found that preservice teachers in a field-based, hands-on setting report a positive impact on their teaching beliefs, perceptions of students as individuals, and understanding of theory and reading strategies. In addition, the impact of extensive field experience in the teaching of reading has been cited to extend into the first years of teaching (Hoffman et al., 2005; Maloch et al., 2003).

The enduring impact of authentic teacher preparation experiences, specifically the PDS model, was discussed in a study by Sandoval-Lucero et al. (2011). Beginning teachers were surveyed in order to determine the impact of the type of program on their perceptions and decisions related to teaching. These beginning teachers graduated from teacher education programs implementing three different types of models, including a traditional model, a PDS model, and a Teacher In Residence model. More than half of the beginning teachers surveyed who graduated from a teacher education program using the PDS model identified receiving and applying a solid theoretical foundation for methods and strategies as a strength of their program. Furthermore, the authors claim, “They found value in learning theory and then getting the practical application of theories in their partner school placements” (p. 342). A deeper understanding of theoretical foundations and research-based practices is especially important in identifying reading difficulties and appropriately selecting intervention strategies.

Lefever-Davis and Heller (2003) further described the benefit of the PDS model, specifically in developing literacy educators. Through the authentic context of the PDS partnership, “No longer does the preservice student learn in isolation from children...undergraduates move from campus to schools and back again, interacting with children and practicing the art of teaching reading and writing” (p. 2). The PDS model and guided laboratory experiences discussed in this article aim to provide these elements.

**Context**

The Professional Development School model allows teacher candidates, in-service teachers, college literacy professors, and elementary students to benefit from an ongoing collaboration. According to Teitel (2003) in the Professional Development Schools Handbook, professional development schools are “...innovative types of school-college partnerships designed to...bring about the simultaneous renewal of schools and teacher education programs - restructuring schools for improved student learning and revitalizing the preparation...of...educators at the same time” (p. 2). Promotion of student learning is the primary goal of a PDS partnership. In this context, stakeholders in the PDS partnership are committed to working together to provide authentic learning experiences for teacher candidates and elementary school students.

**Professional Development Community Model**

For the purposes of discussing the authors' experiences, it is important to define what is meant by a professional development community (PDC), especially in relation to a PDS. In reference to the field-based piece of student teaching, Teitel (2003) states that the organization and structure of PDS’s involve “clusters of preservice teachers working together as a cohort, placed in a school community, rather than with one individual teacher, and often for longer or more intensive internships” (p. 128). These elements align
with the PDC model that operates at our university, although the school community reaches beyond one school. Typically, each PDC includes five or six elementary schools in which teacher candidates are placed for their field experience three days a week. Teacher candidates are usually part of a different PDC during each of the two years of the Elementary and Special Education (ELE/SPED) program. In order to meet the requirements of the dual-certification program, it is sometimes necessary for the same teacher candidate to split his/her field placement between two elementary schools within the same PDC. University classes are held in one of the elementary schools included in the PDC, when space is available. However, the courses are held on the university campus when no elementary schools in the PDC have open space for additional courses.

Holding university classes in the elementary school makes it easier to conduct a laboratory in which teacher candidates work with elementary students. These laboratory experiences involve authentic opportunities for teacher candidates to implement the pedagogical practices they learn about in their university classes with elementary students. Additionally, the teacher candidates have the support of their professor as they work with the elementary students in the event issues or questions arise. Three of the four literacy classes in the ELE/SPED program at the University of North Georgia have utilized laboratories at some point.

Laboratory Experiences in Literacy Courses

Laboratory experiences can be meaningfully integrated in teacher education coursework creating authentic learning experiences. Some common characteristics of a successful laboratory include: interactive teaching methods in the college coursework, authentic teaching opportunities in the laboratory experiences, opportunities for written reflection, and time and space for critical and thoughtful talk through a collaborative planning and problem-solving. The laboratory setting scaffolds teacher candidates to implement reading lessons for a striving elementary reader. The teacher candidates provide the elementary students with hands-on, real-life, field-based literacy assessment experiences once a week in the laboratory. Teacher candidates plan and conduct real-life, field-based literacy assessment experiences once a week in the laboratory. Teacher candidates plan and conduct reading lessons and conduct weekly assessments. This opportunity offers teacher candidates genuine learning experiences in terms of assessment techniques, data analysis, assessment-driven instruction, learning theories, and reading intervention techniques.

This two-and-a-half-hour literacy assessment course is strategically organized around a consistent and structured weekly schedule. The class time is divided between course content instruction, the laboratory experience, written reflection, debriefing through a Socratic seminar, and planning. The time allocation is outlined in Figure 1.

In class each week, teacher candidates learn about and practice a variety of literacy assessments to aid them in identifying the elementary laboratory students’ strengths and weaknesses. This information is then used for teacher candidates to create assessment-driven instruction for the elementary students.

Following the content instruction in the college classroom, teacher candidates participate in a 45-minute Reading and Assessment Laboratory where they administer the assessments addressed in class and provide individualized reading instruction for a striving elementary reader. The laboratory experience situates learning in an authentic context of teaching and learning, enabling teacher candidates to marry theory and practice and to learn in and through practice. Content learning regarding literacy assessments and literacy instructional approaches and activities becomes contextualized and embedded into the ongoing work of the laboratory.

Further, the laboratory setting scaffolds teacher candidates’ developing understanding of the relationship between assessment and instruction. While administering these assessments, teacher candidates receive just-in-time support from their professor related to clarifying confusions, modeling procedures, and analyzing results. Teacher candidates appreciate the risk-free, comfortable environment, because it allows them to assume the primary role of the PDC setting as they practice for their future classroom teaching responsibilities.

The other literacy course that has included a laboratory, and is the focus of the information provided below, is Assessing Literacy in Early Childhood Education. The content of this class involves teacher candidates learning about various literacy assessments, including those associated with emergent literacy, word recognition and spelling, informal reading inventories, and reading comprehension. Conducting a laboratory in conjunction with this class allows the teacher candidates to practice giving the assessments to an elementary student and to analyze the results for the purpose of developing assessment-based reading lessons individualized to the students’ identified strengths and needs.

Reading and Assessment Laboratory

The aim of the Reading and Assessment Laboratory is twofold: to provide teacher candidates with opportunities to administer and analyze literacy assessments in a supportive environment and to provide elementary students with individualized and responsive reading instruction. The teacher candidates provide the elementary students with hands-on, real-life, field-based literacy assessment experiences once a week in the laboratory. Teacher candidates plan and conduct reading lessons and conduct weekly assessments. This opportunity offers teacher candidates genuine learning experiences in terms of assessment techniques, data analysis, assessment-driven instruction, learning theories, and reading intervention techniques.

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role of teacher as they work with their students. They can receive instructional recommendations from their instructor and peers that are based on their students’ specific needs and are given immediate instructor feedback, when needed, while administering a new literacy assessment. Additionally, they have the ability to listen-in on peers’ reading lessons if they need modeling or additional support.

**Self-reflections and Socratic seminars.**

A time for written and oral reflection follows the laboratory experience. Teacher candidates first reflect in writing on their experience in the Reading and Assessment Laboratory by addressing their performance, their questions about the assessments and instruction, and what they learned about their elementary student. After reflecting through writing, the teacher candidates come together as a learning community to share their reflections within the context of a Socratic seminar. In a Socratic seminar, participants “listen closely to the comments of others, thinking critically for themselves, and articulate their own thoughts and their responses to the thoughts of others” (Israel, 2002, p. 89). This structure encourages teacher candidates to share their reflections, ask questions, make connections, and analyze their assessment data, creating a professional learning community. Additionally, the laboratory component provides a shared experience for all teacher candidates to ensure this type of dialogue can occur.

The written reflection and reflective discussions in the Socratic seminar become the vehicle for teacher candidates to puzzle through and define their beliefs and practices as related to striving readers, assessment, and assessment-driven literacy activities and approaches. The informal, collaborative discussions during the Socratic seminar make learning a collective endeavor where teacher candidates are learning from one another, capitalizing on the group’s existing capabilities and enriching their learning opportunities. In this context, teacher candidates are invited to engage in critical and thoughtful talk about their instructional practices, beliefs, and educational theories. Discussions, situated in the concrete tasks and artifacts of learning, enable teachers to clarify their needs and collaboratively problem solve. These ongoing, reflective discussions encourage teacher candidates to explore and refine their philosophical and pedagogical beliefs. Additionally, they prepare them for the reflective, adaptive, and responsive aspects of teaching and learning. Literature supports that when teacher candidates are engaged in learning opportunities that are focused on the particulars of teaching, learning, subject matter, and students, they “can deepen [their] knowledge of subject matter and curriculum, refine their instructional repertoire, hone their inquiry skills, and become critical colleagues” (Feiman-Nemser, 2001, p. 1042).

**Benefits of one reading and assessment laboratory.**

Teacher candidates taking the Assessing Literacy in Early Childhood Education course in their junior year of the Elementary and Special Education (ELE/SPED) Program at the University of North Georgia participated in a weekly Reading and Assessment Laboratory at one of the elementary schools in the PDC. In the Reading and Assessment Laboratory, the University of North Georgia teacher candidates worked with kindergarten and first grade students, who were selected by their teachers based on literacy needs.

These teacher candidates noted that the combination of interactive teaching methods in the literacy assessment course, authentic teaching opportunities in the laboratory, and debriefing through Socratic seminars positively impacted both their teaching and learning. Specifically, they noted that as they learned about and administered a wide variety of literacy assessments, they gained a meaningful understanding of how to implement literacy assessments and analyze the assessment data to determine responsive paths for instruction. As teacher candidates were provided instruction on data analysis and asked to analyze their students’ assessment data, they began to use this information to identify students’ strengths and weaknesses. Based on this analysis, teacher candidates then began to create targeted, purposeful literacy instruction at the cusp of their students’ learning. Through this experience, teacher candidates acknowledged the value of using assessment data to guide their instruction.

The positive impacts of this model are demonstrated through the words of our teacher candidates. One teacher candidate admitted that she initially felt overwhelmed by the responsibility to administer so many different assessments and plan reading instruction in response to these assessments for the laboratory. However, by the end of the course, she said she understood that the assessments narrowed her focus “beautifully,” allowing her to teach with purpose. Another teacher candidate also recognized this important relationship between assessment and instruction sharing, “We are actually using our assessment to inform instruction. So we get to see the [student] growth.” An additional benefit of this model was acknowledged by one of the teacher candidates, who stated, “Not only was my student’s confidence boosted [as a result of the laboratory], but it has also boosted me”. “And a light bulb went off and I realized I can do this [create assessment-driven instruction].” Similarly, other teacher candidates admitted feeling more prepared and knowledgeable in their field placements, as a result of this experience.

One classroom teacher, who is a graduate of the University of North Georgia teacher education program, recognized the significance of the laboratory for teacher candidates, as well as the elementary students. He shared the following reflection:

I feel like this is a very UNIQUE opportunity because the model is not one of pushing in and simply observing, but it allows the interns [teacher candidates] to pull the student away and gather individualized data. From this data, it allows them to develop a comprehensive plan tied to all ELA [English/Language Arts] standards of kindergarten. The focus of reading lets the interns see the foundational needs/strategies that are essential to this developmental stage. They consistently had the students engaged, giving them a differentiated lesson that they may not get on a weekly basis, since they are always in a group setting. The lab really gives them an insight into how reading is built from the ground up.
This unique time with another student is so valuable and I know this from experience! (Email, May 19, 2017)

As this quotation reveals, teacher candidates do not just master the course content through the laboratory experience, but they develop a deeper understanding of reading development, assessment-driven instruction, and effective instructional practices. Consequently, they establish a greater sense of their philosophical and pedagogical beliefs.

Elementary students also benefit from individualized and responsive reading instruction during the Reading and Assessment Laboratory. Since teacher candidates prepare weekly lesson plans based on the state standards, elementary students are given opportunities to practice rereading familiar books, participate in hands-on word work activities, and experience read alouds or guided reading of new books. These literacy-focused instructional activities provide students with multiple, scaffolded learning opportunities. Considering these lessons are customized to each individual student’s strengths and weaknesses, based on the results of previously administered literacy assessments, each student receives literacy instruction at the cusp of their learning.

Conclusions

Implementing a laboratory experience with elementary students in conjunction with university coursework provides a more constructivist approach to training teacher candidates than most university courses typically afford (Andrew, 2007). Rather than sitting in a lecture, the students apply what they are learning about in their coursework to working with elementary students and then engage in individual written reflection, as well as discussions with their peers about their experiences through the Socratic seminar. Together, they can problem-solve and brainstorm ideas about their next steps. In doing so, the teacher candidates are able to refine their craft, adapting their instructional decisions to meet the needs of the students they work with in the laboratory. These more purposeful and meaningful learning experiences enable teacher candidates to engage in situated learning (Lave & Wenger, 1991) and to more effectively make connections between theory and praxis, leading to more significant shifts in their beliefs and practices.

Laboratory experiences integrated into teacher education coursework are a positive example of the powerful learning opportunities that can occur for teacher candidates and elementary school students, as a result of the PDC model. The PDS and PDC models allow for these types of collaborations to occur. Laboratory experiences can become a meaningful part of teacher education courses, contextualizing and embedding course content in practical teaching experiences and allowing teacher candidates to refine their philosophical and pedagogical beliefs. Replacing more traditional, lecture-oriented instructional approaches with more practice-based methodologies, such as laboratories, can provide a means to authentic, practical learning experiences for teacher candidates. At the same time, elementary students are provided the opportunity to receive assessment-driven, individualized instruction that meets their needs. Consequently, teacher candidates and elementary students benefit from the interactions involved in the laboratories. The marriage of the laboratory experience, interactive teaching methods, and debriefing through Socratic seminar aims to alleviate the concerns regarding quality teacher education (Levine, 2006; Rust, 2010) and to ensure teacher candidates leave their undergraduate education programs feeling more prepared.

Figure 1

Weekly Class Schedule
References


### About the Authors

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