



The Craft of Preparing Pre-Service Teachers of Reading in a Science-based Landscape

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Abstract:

In response to declining literacy rates and the growing emphasis on evidence-based instruction, teacher preparation programs in the United States are increasingly aligning coursework with the science of reading to equip future educators with the knowledge and skills necessary to support early literacy development. This article explores the efforts of a regional comprehensive university in the Midwest to prepare pre-service teachers through a structured reading methods course and an integrated elementary field experience. Drawing on foundational theories, the program emphasizes explicit instruction in phonemic awareness, phonics, and morphological analysis. Coursework combined with authentic field placements in high-performing rural schools, allows pre-service teachers to apply pedagogical strategies in real-world contexts. The article highlights the importance of bridging theory and practice, fostering teacher identity, and ensuring that future educators are well-prepared to meet the diverse literacy needs of young learners.

Keywords:

early literacy, explicit instruction, preservice teachers

Introduction

In an increasingly digital and textually rich society, literacy remains a cornerstone of academic and personal success. Yet, recent data reveals a troubling trend: fewer than one-third of fourth-grade students in the United States can read at grade level with accuracy, fluency, and comprehension (NCES, 2024). Performance on the 2024 National Assessment of Educational Progress (NAEP) declined by two percentage points from 2022 and four points from 2019, underscoring a persistent challenge in early literacy education.

In response, policymakers and educators have turned to the “science of reading” – an interdisciplinary body of research that examines how profi-

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cient reading and writing develop, why some students struggle, and which instructional practices are most effective (The Reading League, 2025). This movement has prompted state education departments and school districts to prioritize evidence-based pedagogical practices aligned with the science of reading. Concurrently, teacher preparation programs are reevaluating and redesigning literacy coursework to ensure that preservice teachers are equipped with the knowledge and skills necessary to support all developing readers and writers.

Statement of the Problem

For decades, the field of literacy education has been shaped by a contentious debate over the most effective methods for teaching reading (Adams, 1997; Castles, Rastle, & Nation, 2018; Kearns, 2020; Seidenberg, Borkenhagen, & Kearns, 2020; Solari et al., 2020; Tortorelli, Lupo, & Wheatley, 2021). Advocates of whole language instruction emphasize student choice and contextual learning, encouraging children to engage with texts that interest them (Goodman, 1997). In contrast, proponents of phonics advocate for explicit instruction in the relationships between sounds and letters—phonemes and graphemes – using decodable texts to reinforce these foundational skills (Flesch, 1955; Chall, 1967).

The current shift toward the science of reading supports the latter approach, emphasizing systematic and explicit instruction in phonemic awareness, phonics, and morphological awareness as essential building blocks of proficient reading (Petscher et al., 2020). As the science of reading gains traction, teacher preparation programs must ensure that preservice teachers receive rigorous, research-based coursework and meaningful field experiences that reflect these principles.

Despite growing consensus around the science of reading, research indicates a persistent disconnect between evidence-based literacy instruction and teacher preparation programs, particularly in English-speaking countries (Castles, Rastle, & Nation, 2018; Solari et al., 2020). To bridge this gap, schools of education must prioritize instruction for preservice teachers that emphasizes English orthography, foundational reading skills, and pedagogical practices that support developing readers.

This paper reviews relevant literature and presents the efforts of one regional comprehensive university in the Midwest to prepare preservice teachers to effectively teach reading and language arts to early childhood and elementary-aged students within their first reading and language arts methods course. Situated in a rural region of the Midwest, our School of Education strives to promote broadly trained and flexible preservice teachers for placements in rural schools.

Literature Review

English Language Orthography

The English language orthography is complex and has been described by scholars as opaque (Hudson et al., 2021) and quasiregular (Kearns, 2020). English orthography is less transparent than other alphabetic scripts (Ziegler et al., 2010). In other words, English is a difficult language to read because of its spelling and pronunciation irregularities. English as a language has systematic relationships between sounds and spelling patterns; however, these relationships are complicated and are governed by syllable structures, etymology (word origins), and morphology, the study of the structure and form of words (Ehri, 2020). The following table illustrates English words that may pose challenges to developing readers.

Table 1

Examples of Challenging English Words

Word	Challenge
<i>knight</i>	Silent letters and irregular spelling
<i>enough</i>	Unusual phoneme-grapheme correspondence
<i>psychology</i>	Greek origin with silent letters
<i>colonel</i>	Non-phonetic spelling
<i>receipt</i>	Silent 'p' and complex etymology

To decode words in English, readers must learn to hear individual sounds in words (phonemes), overlay the sound onto the letter(s) or grapheme that represents the sound, and apply the phoneme-grapheme correspondences to read words (Ehri, 1995, 2014, 2020). This complex visual task takes time to master and can pose difficulties for beginning readers of English. When children begin to learn to read, they draw on established oral-language skills, including knowledge of word meanings. They learn to associate visual symbols, including patterns of lines, curves, and dots on a page, with individual sounds that can be blended together to represent words. In order to teach children to read words, teachers and preservice teachers, which is the specific focus of this article, need to have a foundational understanding of English orthography in order to effectively teach students.

Explicit Instruction in Early Literacy

Our brains are hardwired to learn language, but not to read the written word. Although research agrees that skills in decoding are essential for readers, scholars have not agreed on the best method to teach code-related skills to promote word reading for students (Tortorelli, Lupo & Wheatley, 2021).

One great influence on the teaching of reading was Jeanne Chall, who asserted in her book, *The Great Debate* (1967), tenets of reading instruction that all programs should embrace. She called for phonics instruction alongside emphasis on reading for meaning, language instruction, and connected text. According to the author, explicit phonics instruction is more effective than implicit phonics instruction, and approaches that are systematically organized and explicitly taught result in better word recognition, spelling, vocabulary, and reading comprehension for readers, especially for those at-risk of experiencing reading difficulties.

Like Chall, the National Reading Panel report (2000), which provides a framework for schools and teachers related to reading instruction, also supports the use of explicit instruction in phonemic awareness and systematic phonics instruction as key components of effective reading. Explicit instruction is an approach where the teacher clearly and directly explains concepts, or skills to students with step-by-step guidance and modeling. The report highlights the importance of the five pillars of reading instruction, including phonemic awareness, phonics, fluency, vocabulary, and reading comprehension. According to the report and other prominent reading researchers, early reading instruction should include instructional routines and practices that facilitate knowledge of phonics, which emphasizes correspondences between sounds and print (Seidenberg, Borkenbagan & Kearns, 2020).

The goal of reading is to be able to comprehend text. To do so, readers need to recognize words, fluently read them, and compute their meanings rapidly (Castles, Hastele & Nation, 2018). Recent studies agree that knowledge in the areas of phonemic awareness, phonics, and morphological awareness are the essential building blocks for proficient reading (Moats, 1994, 2009; Hudson et al., 2021) and should be prioritized when planning instruction for beginning and developing readers. A review of existing literature related to the teaching of reading reveals that explicit instruction in foundational reading skills provides developing readers with the greatest opportunity to learn to read proficiently (Hudson et al., 2021).

Just as phonemic awareness, phonics, and morphological analysis are critical skills to developing readers, so must they play an essential role in the education of preservice teachers who need to understand early literacy concepts and methods to teach early literacy skills to developing readers. These topics can be explored through traditional methods used in higher education courses, including readings, lectures, discussions, and modeling or demonstrations. Moreover, recent studies have also demonstrated that preservice teachers learn content through engagement with technology such as podcasts, videos, and webinars in addition to traditional coursework. Research revealed that preservice teachers who engaged with a podcast to teach early literacy skills significantly outperformed their peers who read articles (Carlisle et al., 2016; Driver et al., 2014, Kennedy et al., 2013). Like the podcast method, another study found that video tutorials and online study guides

focused on phoneme-grapheme correspondence in addition to coursework provided large effects on measures of phonics knowledge (Gormley & Ruhl, 2007). Given these findings, podcasts and videos could be a more engaging means to deliver content knowledge related to phonemic awareness, phonics, and morphology to preservice teachers.

The Science of Reading

The science of reading draws on key ideas and findings from seminal educational theories that assert how children learn to read and how best to teach reading. The findings from the National Reading Panel described above play a central role in the philosophy, as do other seminal theories and models, summarized here.

The alphabetic principle (Liberman, Shankweiler, & Liberman, 1989) asserts that there are systematic and predictable relationships between graphemes in written language and the phonemes they represent in spoken language. Readers who understand that letters represent the sounds heard when words are spoken, demonstrating knowledge of grapheme-phoneme correspondence, grasp the alphabetic principle. The students enrolled in the methods course, respond well to the Figure 1 created by Lane (2024) that illustrates how readers draw on early literacy skills to match sounds to letters with increasing levels of automaticity and systematically learn to read words and longer texts with fluency.

Figure 1

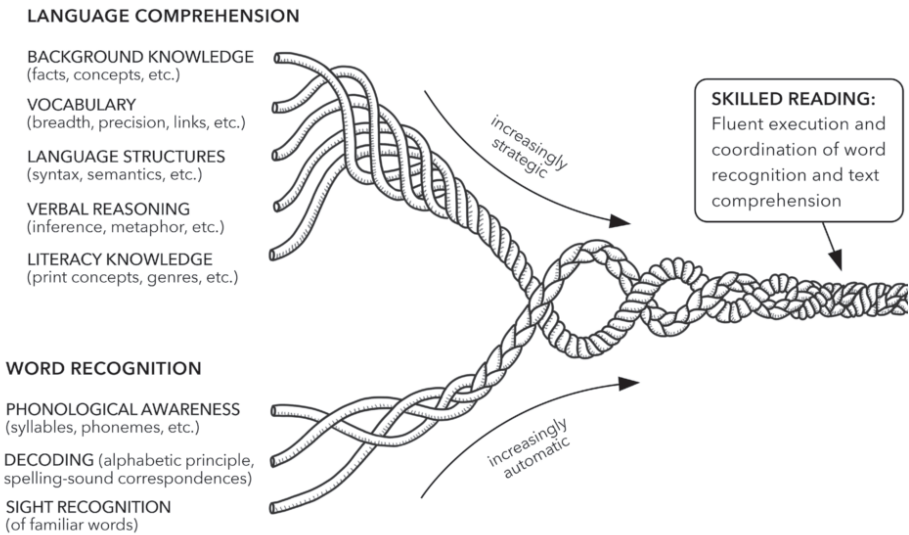
The Road to Fluent Reading
(Source: Lane, 2023)



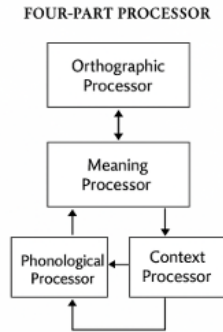
A second important theory included in the science of reading is the simple view of reading (Gough & Tunmer, 1986), which defines reading comprehension (RC) as the product of two independent components: listening comprehension (LC) and decoding (D). The model is often presented as the equation $LC \times D = RC$. According to the theory, young children draw upon their listening comprehension vocabulary while decoding print to decode and comprehend written words. The simple view of reading model is elaborated upon by Scarborough's reading rope (Scarborough, 2001), which illustrates how sub-skills of listening comprehension and decoding intertwine to promote skilled reading. Figure 2 depicts the skills that are included under each strand of the rope.

Figure 2
Scarborough's Reading Rope
 (Source: *Really Great Reading*)

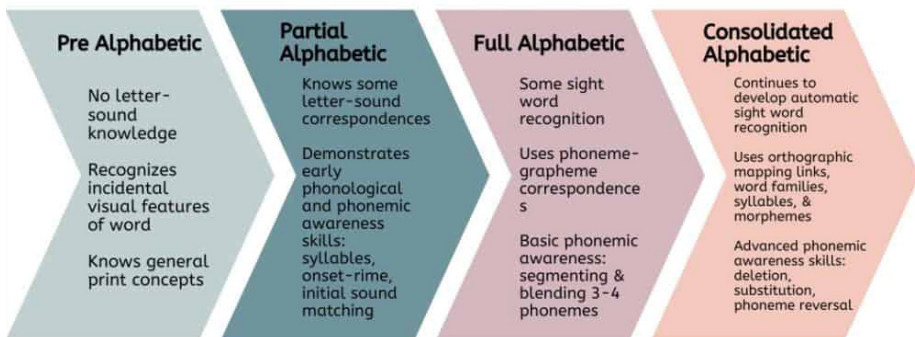
THE MANY STRANDS THAT ARE WOVEN INTO SKILLED READING



A third model, the four-part processor (Seidenberg & McClelland, 1989), illustrates how the brain processes words through the activation of four different areas of the brain as it engages in the complex task of reading. Various areas of the brain are at work to recognize print, understand the meaning, and apply it in meaningful contexts. Figure 3 depicts the four processors and the tasks that each one addresses.

Figure 3*The Four-Part Processor**(Source: Seidenberg & McClelland, 1989)*

Finally, the science of reading privileges Ehri's theory on word reading development (1995), which describes four phases that readers progress through as they learn to read words. In the pre-alphabetic phase, children rely on visual cues, such as logos or shapes, to recognize words without understanding the letters. As they progress to the partial alphabetic phase, they begin to use some letter-sound relationships, often identifying just the first and last letters of a word. In the full alphabetic phase, children can decode words by applying complete letter-sound correspondences, allowing them to sound out words accurately. Finally, in the consolidated alphabetic phase, readers recognize larger units like syllables, morphemes, or familiar letter patterns, which enables more fluent and efficient word recognition. These phases illustrate a gradual shift from visual memorization to skilled phonological decoding and automatic word reading.

Figure 4*Ehri's Phases of Word Reading Theory**(Source: Thrive Literacy Corner 2022)*

To best prepare future teachers of reading who are knowledgeable of both content and pedagogy, state legislatures, departments of education, and school systems are recommending and even mandating that the theories and models included in the science of reading be introduced to preservice teachers through coursework and field experiences. In our home state of Wisconsin, a state law known as ACT 20 was enacted to improve early literacy skills in Wisconsin public schools through a mandate for a science-aligned reading program for children in grades pre-kindergarten through third (2023 Wisconsin Act 20). Similarly, professional development trainings and workshops in the science of reading are also commonplace to enhance teachers' understanding of the teaching of reading and, in turn, bolster students' reading proficiencies and academic progress.

High Quality Teachers

All students have the right to an education and to have access to knowledgeable and qualified teachers of reading (International Literacy Association, 2019). Teachers play a crucial role in the education of children. Growing readers' achievement is influenced by factors such as the teachers' knowledge of the components of reading, the teacher's ability to plan and manage instructional routines, and the quality of the reading program (Hudson et al., 2021). Additionally, effective teachers have a depth of knowledge related to literacy content and pedagogical knowledge. Additionally, they understand how to be socially just and culturally responsive in their practice to serve all students in their classrooms (Wetzel et al., 2020). One of the most powerful predictors of academic success for students is the teacher in front of the class (Darling-Hammond, 2000).

Recent studies have demonstrated that teachers have an insufficient understanding of foundational reading skills necessary for providing effective instruction to students (Hudson et al., 2021). This finding, coupled with stagnant or declining reading scores, has fueled the science of reading movement to ensure that teachers have the requisite knowledge of how to teach reading and to make ILA's vision of knowledgeable and qualified teachers of reading for all students a reality.

Recommendations for Teacher Preparation

It is essential that teacher preparation programs prepare the next generations of teachers with knowledge, skills, and pedagogy to support the developing readers they encounter in their classrooms. To develop this skill, preservice teachers need preparation that includes both knowledge of code-related content and pedagogical methods as well as opportunities to practice teaching it in meaningful ways to students (Tortorelli, Lupo & Wheatley, 2021). A common design in the United States is to provide preservice teachers with a combination of coursework to learn how to teach the content, and field

experiences to provide them opportunities to teach elementary students as they prepare for future careers in teaching.

To support developing their reading content skills, reading methods coursework should prioritize early literacy content, including phonemic awareness, phonics, and morphology in its curriculum. Preservice teachers benefit from explicit instruction and practice with these skills and should have a strong grasp on the phoneme-grapheme correspondence. One recent study in England found that preservice teachers struggle to teach early literacy skills that precede phonics (Hendry, 2020). Preservice teachers were challenged to identify, segment, and blend phonemes in words and lead students in these activities. The phoneme-grapheme correspondence is a critical skill in learning to read and is an example of a skill that preservice teachers need to have mastery over so that they can support developing readers to apply decoding skills to read print. A second skill that should be taught explicitly is morphology, which plays a critical role in word learning, spelling, and vocabulary development (Tortorelli, Lupo & Wheatley, 2021).

The literature related to teacher preparation as it relates to the teaching of reading recommends that preservice teachers gain opportunities to practice teaching reading, to adapt to diverse student needs, and to reflect on the impact of their instruction on student learning (Tortorelli, Lupo & Wheatley, 2021). In one study, large effect sizes were realized for pre-service teachers in the experimental group who tutored elementary students with reading difficulties compared to the control group who did not have an opportunity to apply their skills with students (Peltier et al., 2020). High-quality field experiences are critical to effective pre-service teacher education programs. Opportunities to teach phonemic awareness, phonics, morphological skills, and other literacy areas support pre-service teachers to develop the knowledge of reading skills and pedagogical practices necessary for effective instruction (Ehri, 2022).

A best practice, according to the literature, recommends fostering strong connections between coursework and authentic opportunities to apply pedagogical skills through field and field placements (Hindman et al., 2020). The authors call for a variety of intentional, hands-on experiences with guidance that show preservice teachers how to promote foundational literacy skills to developing readers in the classroom. A promising model places preservice teachers in elementary settings and provides them with opportunities to teach reading with explicit feedback and coaching from professors, university supervisors, or expert teachers. Multiple studies have found that opportunities to observe and teach students with support and feedback lead preservice teachers to refine, reflect on, and improve their knowledge of reading skills and pedagogical practices aligned to the Science of Reading (Hendry, 2019). In an integrated review of available literature related to preparing preservice teachers to teach reading, the authors recommend stronger connections between reading methods courses and the enactment of reading practices

in the field (Tortorelli, Lupo, & Wheatley, 2021). A review of the research reveals the critical importance of high-quality field-based experiences under the direction of cooperating teachers and/or university supervisors who are experts in teaching early reading (Hudson et al., 2021). Intentional training accompanied by opportunities to practice under expert guidance produces the largest effect on teachers' content knowledge (Hudson et al., 2021).

Research to Practice

Students in our educational program take their first of two reading methods classes, Teaching Reading and Language Arts in Elementary School, as a part of a block of classes that includes an elementary field experience in local elementary schools. Through this design, students learn the nuts and bolts of teaching reading explicitly in their college class, and then can observe, support, and reflect on these skills in practice as they complete their experience in an assigned classroom. This section outlines the structure of the course and the aligned field experience as well as the intentional design of instruction and learning experiences, so that the students recognize the great importance of literacy skills and learn methods to teach reading and writing to children in grades prekindergarten through fourth grade.

Reading Methods Course

At the onset of the semester, students are prompted to reflect on what it means to be literate. The students initially define the term literate as meaning the ability to read and write, and they are correct. However, our discussion often morphs into the complexity of becoming literate, which begins with a strong oral language background, including listening comprehension and an ability to decode text. Literacy also requires individuals to apply reading and writing skills in various contexts and for various purposes. Literate citizens can comprehend information in written text and, conversely, convey information themselves through writing. This initial conversation sets the stage for the reading course and the concurrent field experience. The course instructor emphasizes the essential need for all children to have access to excellent teachers and effective literacy instruction so that they establish the building blocks needed to engage in complex literate behaviors throughout their lives.

The course is structured through a developmental lens, focusing first on oral language development and emergent literacy skills and moving to decoding and code-related instruction to lead to fluent reading before concluding with vocabulary and comprehension instruction. The science of reading guides our work with heavy emphasis on explicit and systematic instruction in phonemic awareness and phonics.

In recent semesters, I have structured the class in a flipped model where students are responsible for learning content through online course modules,

designed to support the preservice teachers to learn critical content for teaching reading and apply it in meaningful contexts. Students are assigned readings with reflection guides and video modules to complete as homework prior to class. Through this practice, students can build background knowledge related to reading skills prior to the course. This practice ensures that class time can be used to work intentionally on pedagogical skills to teach reading and important instructional routines to establish in the classroom. Table 2 illustrates essential reading skills and methods of teaching them to developing readers.

Table 2

Reading Skills and Methods Emphasized in Reading Course

Essential Literacy Skill	Pedagogical Methods/Assessments
Oral language development	Morning Meeting routines to encourage that students greet one another, share news, engage in an oral language activity, and read a morning message about the day
Phonological awareness: including word awareness, rhyme recognition, alliteration, syllable identification, and onset and rime manipulation	Phonemic Awareness Assessment administered to peers and to a student from their classroom
Phonemic awareness: including phoneme identification, isolation, blending, segmentation, addition, substitution, and deletion	Video lesson sample using the University of Florida Literacy Institute (UFLI) Reading Foundations toolbox
Phonics: including alphabetic principle, decoding, orthographic knowledge, encoding, and fluency	Video lesson sample using the University of Florida Literacy Institute (UFLI) Reading Foundations toolbox
Vocabulary building to develop lexical and morphological knowledge.	Word of the Day and Vocabulary instruction sequences

Perhaps the most significant instructional piece takes place during the second class meeting of each week. Students are invited to share with the class how they have observed or taught the reading skills they've learned in the course during their field experience. These opportunities to share, are where the "magic" happens. Students share anecdotes from their field experience and how they connect to course learning. They get to share aloud how they are supporting literacy instruction in the classroom. They recognize the "why" behind routines such as morning meeting or daily phonics instruction as they either observe or teach them. They've shared that they administered fluency assessments and were able to analyze them to determine students' strengths and needs as it relates to decoding skills. From the perspective of the instructor in higher education, it is particularly rewarding to observe the students connect the dots and share with one another as they engage in the important work of developing their teacher identities.

Elementary Literacy Field Experience

The elementary literacy field experience is an essential and valuable component of our teacher preparation program. The students engage in an 80-hour elementary literacy field experience in area schools providing them with authentic opportunities to support the literacy development of young children through instruction in reading and writing. We selected three partner schools to house the field experience students. Geographically, the schools are near the university, with the closest one being a couple of blocks away and the farthest one being 10 miles from campus. The schools educate children in grades prekindergarten through fourth grade which matches the focus of the course on teaching elementary-aged readers and writers. Finally, the schools are all designated as high-performing schools. The Department of Public Instruction in Wisconsin generates school and district report cards and publishes them annually. Our partner schools are consistently rated either “Meets Expectations” or “Exceeds Expectations.” The score reflects data on multiple indicators for multiple school years across four priority areas: Achievement, Growth, Target Group Outcomes, and On-Track to Graduation. Additionally, one of the schools was recognized as a Blue Ribbon School based on its high performance in testing and success in closing achievement gaps. In 2021, it was selected by the US Department of Public Instruction as one of 325 schools across the nation for high academic performance. Our program is proud to place students within local high-performing schools and to provide them with opportunities to teach reading and writing in an authentic context.

The faculty and school partners worked together to plan the logistics related to offering field experiences on-site at their schools. Team members discussed master schedules to determine best times to offer the field experience experiences to ensure that the college students could support literacy instruction. Although there was some work involved to set the program up, the partners agreed that the placement of the program at the school was essential for the university students to learn about the teaching of reading and gain an opportunity to apply their skills.

An important aspect of the program involved faculty who were willing to serve in two roles: as instructor of the course and supervisor of the field experience. The dual roles ensured that the faculty was developing authentic course assignments that could be completed during the course and gaining an understanding of what field experience experiences looked like in the classroom during both informal and formal observations of teaching. The consistent presence of the faculty in the school building was also helpful with regular communication with classroom teachers and university students about progress, potential barriers, and proposed solutions.

Each student is assigned to a classroom and works with a mentor teacher. The mentor teacher is a valuable resource and serves as a model of effective

instruction, a co-collaborator as students begin to plan and teach lessons, and an evaluator of instruction. Through their work with children, preservice teachers can support a variety of diverse learning needs including students with identified disabilities and others who are emergent bilinguals.

The field experience experiences begin early in the academic semester. Instructor observations of university students arriving at their assigned schools reflects feelings of excitement and nervousness just as the elementary aged students do on their first day of school. The field experience students meet with the principal and their university supervisor to discuss expectations and procedures such as entering the building, checking in, and the school's emergency plan prior to the start of the field experience. The preservice teachers take a tour of the school to find their way around and learn expectations for students related to moving through the building and entering and exiting for recess.

Beyond their immediate classroom community and mentor teacher, the PSTs became acquainted with professionals in the school community, including the principal, administrative assistants, classroom teachers, special education teachers, librarians, and paraprofessionals. The PSTs gained true insights into the work of school professionals and got to know them and the community they served through the sharing of experiences.

In the mediated model, where field experiences are coordinated with the outcomes of the university course, future teachers are supported in meaningful training to prepare them for the myriads of complex teaching situations they will encounter in elementary classrooms. Preservice teachers complete weekly time logs where they provide brief summaries of their work in the classrooms along with reflections on what they are learning about teaching. The time logs are shared with their university supervisor so that the document can serve as a two-way dialogue and provide a more in-depth glimpse into their clinical experience.

Discussion

As our understanding of the skills and strategies essential for proficient reading continues to grow, it is critical that this knowledge be integrated into teacher preparation programs. Doing so ensures that future educators are equipped to support children in developing strong oral language and early literacy foundations – key components of becoming skilled readers. Research indicates that enhancing teacher knowledge of early literacy skills can lead to improved student outcomes at the word level (Hudson et al., 2021). Therefore, it is imperative that teacher education programs include comprehensive instruction in language and literacy development.

Our program is designed to provide preservice teachers with both content knowledge and pedagogical strategies related to reading and writing instruction. These are reinforced through meaningful field experiences with

developing readers (Hindman et al., 2020). In the current iteration of our reading course and field experience, students engage with content through assigned readings and interactive online modules that both deliver instruction and assess understanding. Classroom sessions focus on high-level content review and the application of pedagogical practices to support literacy development. The field experience component allows students to practice teaching under the guidance of a mentor teacher and university supervisor, bridging theory and practice in authentic classroom settings.

Limitations

While the National Reading Panel identifies five core pillars of reading instruction, this paper focuses on three early literacy components that have received increased attention in recent research: phonemic awareness, phonics, and vocabulary development.

Additionally, the discussion centers on preparing preservice teachers to instruct a general student population. It does not specifically address the needs of linguistically diverse learners or students with identified learning disabilities. Furthermore, while the paper aligns current practices in one teacher preparation program with recommendations from the literature, it does not present empirical data to evaluate the effectiveness of the approach.

Conclusion

Preservice teachers benefit from explicit instruction in early literacy components such as phonemic awareness, phonics, and morphemic analysis. It is recommended that this instruction be paired with concurrent field experiences that allow pre-service teachers to observe literacy instruction, tutor individuals or small groups, and teach whole-class lessons. Reflection is a critical part of this process, enabling preservice teachers to evaluate their instructional practices and consider their impact on student learning. Analyzing student work samples further supports instructional decision-making and planning.

Our program has made intentional efforts to teach foundational reading content and provide preservice teachers with meaningful opportunities to apply their knowledge in elementary classrooms. These experiences help bridge the gap between theory and practice, preparing future educators to support the literacy development of young learners.

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