

Teacher Preparation in Pennsylvania: Alignment to the National Reading Panel Findings

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Abstract: Students across Pennsylvania are demonstrating an inability to meet proficiency expectations in reading. Emphasis has been on schools of education as one originating source of difficulty with reading instruction. Five universities and colleges in Pennsylvania were analyzed utilizing document analysis of undergraduate course syllabi, schedules, and final exams of 13 required undergraduate courses. The findings of this qualitative study illustrate the participating schools of education are instructing on the pillars of reading in parallel and proportionately less than non-evidence-based practices. The authors offer a four-tier approach to strengthen teacher candidacy programs.

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Introduction

Over the span of twenty years, educators and policy-makers have focused attention on the importance of assuring all children become skilled readers by providing the provision of quality reading instruction by highly qualified teachers (Podhajski et al., 2009). In an attempt to identify the critical components influential in instruction of reading, the National Reading Panel (NRP) was formed. The NRP Report (NICHD, 2000) has been widely accepted among the education field as a summary of principal research findings related to the essential components of the teaching of reading. This report identified five areas in reading instruction decisive to closing the achievement gap. Those five areas of reading are the explicit and systematic instruction of 1) phonemic awareness, 2) phonics, 3) fluency, 4) vocabulary, and 5) text comprehension (NICHD, 2000).

With these areas of instruction identified, the question remains as to why our national literacy scores are displaying poor results. Attention has shifted to the educator providing the instruction. The knowledge-base of teachers and their ability to provide high-quality instruction has been reported on for nearly twenty years. A significant gap appears to exist between research and practice, distancing teachers from the most prominent research proposed to aid daily reading instruction. Those present in primary classrooms demonstrate a minimal understanding or misperception about reading acquisition (Kilpatrick, 2015; Moats, 2009b; Spear-Swerling, & Owen Brucker, 2004). The importance of teacher capacity, as it relates to reading instruction, cannot be overstated.

Teachers are unable to pass on the necessary skillset and understanding of the basics of our language constructs when they themselves do not have the essential

foundational expertise to possess such understanding. This is known as the “Peter Effect.” Based on a biblical story of the Apostle Peter who when asked for money by a beggar replied he could not give what he himself did not have (Binks-Cantrell et al., 2012). Without the necessary skillset, teachers are woefully unprepared for the demands of teaching the arduous task of reading to the youngest learners.

Given the predominant influence of teacher knowledge, why are primary grade teachers inadequately prepared to teach reading? Teacher preparation programs developed nationwide repeatedly neglect the scientific evidence identifying the essential elements of instruction needed to produce proficient readers. During the congressional testimony provided by Dr. Reid Lyon in 1998, it was reported that most teachers receive little to no formal instruction in reading development (Lyon & Weiser, 1998). Extensive investigation into the education preservice teachers receive while attending teacher education programs has occurred to support these claims. Many studies have documented preservice and novice teachers’ feelings of confidence and readiness to teach beginning and struggling readers (Bos, et al., 2001; Cheesman, et al., 2009; Fenty & Uliassi, 2018, Moats, 1994, 2009a, 2009b; Washburn, et al., 2011). These studies indicate a need for more robust instruction around reading acquisition and the delivery of efficacious reading instruction. While evidence suggests the misalignment between research and practice is apparent in colleges and universities across the nation, studies specific to Pennsylvania’s schools/colleges of education regarding this misalignment has not yet been conducted. The research question remains, “To what extent do Pennsylvania schools/colleges of education literacy courses equip preservice candidates with the foundational knowledge and skillset to

deliver effective reading instruction aligned with the National Reading Panel?”

Methodology

The current research study employed a qualitative approach in which undergraduate required courses were included if they met two criteria:

- 1) Any course that could plausibly teach early reading instruction. This would include courses titled ‘early reading’, ‘language arts’, ‘reading assessment’, ‘reading across content areas’, or courses referring to reading methodologies or practices.
- 2) Any course that is required of undergraduate students engaged in the Pre-Kindergarten to grade four teacher certification track.

The study engaged in document analysis in an attempt to answer the guiding research question. Documents for this study took on a variety of forms and included course syllabi, course schedules, and final course exams obtained from five universities and colleges across the Commonwealth of Pennsylvania. The study analyzed teacher education programs and their alignment to the exposure of these critical elements, time allocation devoted to instructing these five components, and the accountability of preservice teachers comprehending and applying acquired learning regarding the five elements. In total, an analysis of 13 courses in education programs from across the five universities and colleges of were included in this study.

Each required undergraduate course offered at the five participating universities and colleges was analyzed by the intended course content discernable through the course syllabi. While not every aspect of instruction is likely to be present on a course syllabus, the over-arching concepts and understandings are evident on a syllabus. Course schedules for each of the required undergraduate courses were used to determine the degree to which these Pennsylvania’s teacher education programs allocate time for the instruction of each of the five identified components. The third unique data source was final exams for the required undergraduate courses. Final exams allowed for the exploration of what preservice teachers are held accountable for knowing and applying into practice as it relates to the foundational elements of reading instruction identified by the NRP.

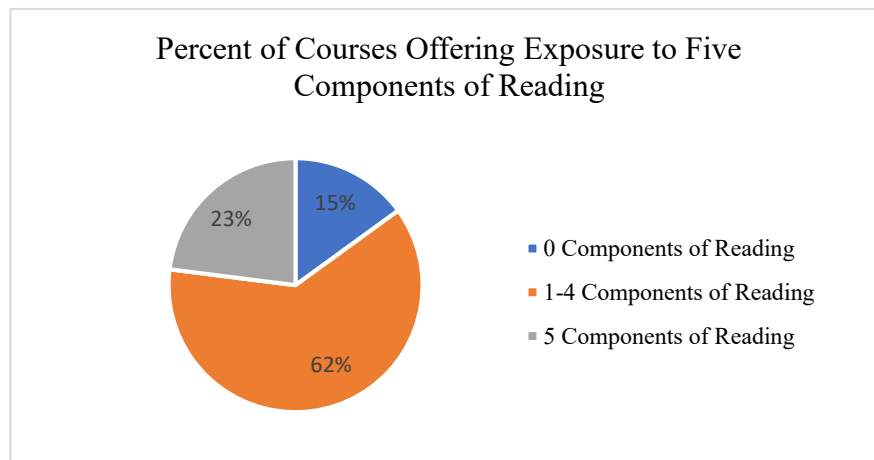
Findings

Exposure

In this research study, 11 of the 13 undergraduate courses analyzed did provide exposure, to some extent, to at least one of the five components identified by the NRP. The 11 undergraduate reading courses that did expose preservice candidates to one or more of the five domains did so in varying degrees. Figure 1 displays the percent of courses in which preservice teachers’ exposure to the identified domains of reading was present.

Figure 1

Percent of Courses Exposing Preservice Teachers to the Domains of Reading Identified by the National Reading Panel



Of the majority of courses that did expose teacher candidates to the identified elements of proficient reading, only three (23%) of the required courses provided instruction in all five domains. Although three of undergraduate required courses did provide instruction in all five critical domains, the analysis of material related to these courses uncovered several contradictions. Though teaching preservice teachers about systematic phonics was present through course lectures, the approach of balanced literacy through guided reading and the cueing system was similarly evident. Guided reading and the cueing system derive from the whole language approach to reading; this approach contradicts the methodologies recommended by the NRP. In addition to course objectives and assignments displaying inconsistencies, course descriptions displayed this pattern as well.

Of the courses reviewed for this study, eight (62%) courses offered variable magnitudes of exposure to the five elements from the NRP. This exposure ranged from one to four elements explored in the course. One of the 13 courses exposed teacher candidates to only one critical component identified for reading instruction, that component

being phonemic awareness. Phonemic awareness, while not mentioned in any course objective or course competency, was taught through the course as indicated on the course schedule and lecture topics. The avenue of instruction for phonemic awareness specifically focused on the articulation of English phonemes. Phoneme articulation is an essential facet of phonemic awareness but merely a facet. Several university and college courses did not offer a continuum of knowledge building through course matriculation, rather focused on chosen elements viewed as important for future teachers' proficiency. One particular course's stated objectives and expectations focused on developing one's own philosophy of how to teach reading opposed to instructing on the empirical evidence of reading acquisition.

Among this major group of eight courses, there was overwhelming evidence of whole language through the instruction of guided reading practices and a balanced literacy approach. Practices such as reading workshop, using leveled readers, and the cueing system were present in all course lectures and assignments. Assessments such as the Developmental Reading Assessment (DRA) and running records were offered as

scientifically based assessments. The courses demonstrated a whole language approach to reading with sporadic teaching of scientifically grounded evidence highlighted by the NRP. Two of the analyzed courses did not offer any exposure to the five elements of reading as identified by the NRP.

Although elements from the NRP were documented at varying degrees across the undergraduate courses, many inconsistencies existed throughout. Course objectives, lecture topics, and assignments overpoweringly highlighted guided reading within balanced literacy, a whole language approach to reading acquisition and instruction. Such instruction deemphasizes code-based instruction, which is the recommendation of the NRP.

Time Allocation

The analysis of course schedules permitted a time study to determine the allocation of instructional time to each of the five critical elements identified by the NRP. This time study allowed for perspective on what each course emphasized and deemed relevant and pertinent to instruction for preservice teachers. Through the investigation of 13 required undergraduate education courses from five Pennsylvania universities and colleges, a total of 2,484 hours of instruction was reviewed through this document analysis. Of the possible instructional hours, the time dedicated to each of the five critical elements of reading identified by the NRP varied from course to course.

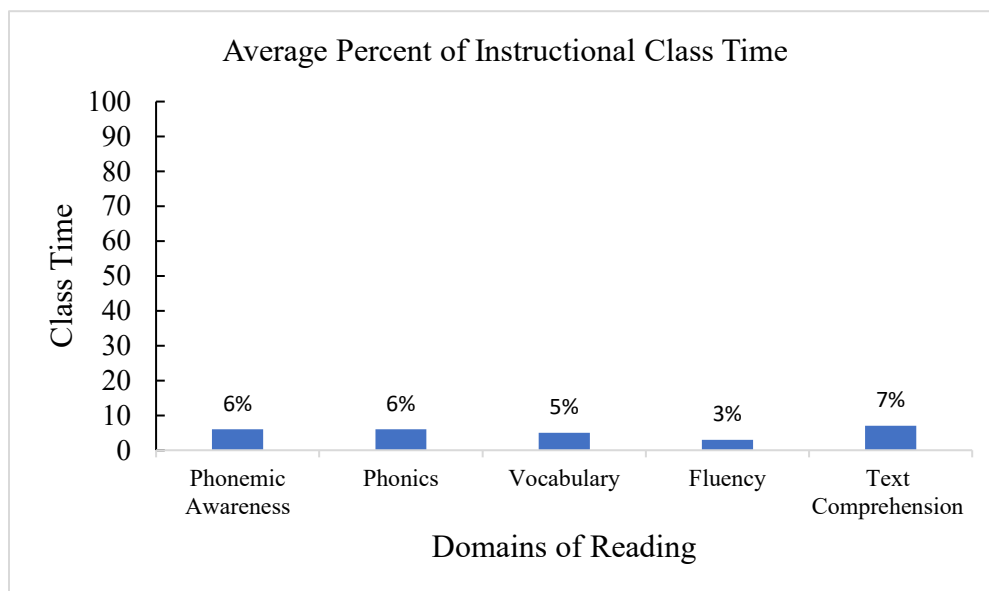
Analysis of lecture topics and assignments revealed little instructional time dedicated to each of the five necessary components of reading. Figure 2 displays the percent of undergraduate course time devoted

to each element of reading. From all courses investigated, the least amount of instructional time was devoted to fluency, the automaticity of word retrieval. An average of 3% of instructional class time was devoted to this instruction for teacher candidates to focus on this critical element. Lecture topics concentrated on the understanding of accuracy and rate as the determining factors of fluency. The second to least amount of instructional time was dedicated to vocabulary with merely 5% of classroom lessons going towards building the academic language of students. Evidence collected revealed vocabulary lectures spoke to the difference between direct and indirect instruction. There was detection of the classification of tiered vocabulary words in lecture topics.

Phonics, the mapping of sounds onto our printed symbols, and the foundational skill of phonemic awareness were present in course topics, lectures, and/or assignments on average 6% of scheduled class time. Lecture topics and instructional time concentrated on the three levels of phonemic awareness with limited expectations for teacher candidates to produce independent assignments targeted to phonemic awareness. Phonics instruction varied from course to course. Lecture topics included the alphabetic principle, automatic word recognition, and the use of methodologies for teaching phonics. Those methodologies largely consisted of non-scientific-based practices such as the use of a word wall, context clues to decode, and structural analysis of printed words. The most class time (average 7%) was earmarked for comprehension. Lecture topics analyzed focused on specific comprehension strategies, literacy elements of text, and text structures.

Figure 2

Average Percent of Class Time Allocated for Domains of Reading Identified by the National Reading Panel



While minimal time was dedicated to the five components of reading, other literacy foci were addressed at great length. An average of 13% of class lectures were devoted to the practice of guided reading with the assessment of running records pervasively used. Running records are a non-evidence-based practice concentrating on meaning-based versus code-based instruction. That is more than double the amount of teaching hours dedicated to phonics. This practice consumed more instructional hours than those foundational elements of reading identified by a panel of literacy experts.

Accountability

Through the exploration of final course exams of the 13 undergraduate courses involved in this study, the perception of what preservice teachers are held accountable for knowing and applying as it relates to the foundational elements of reading

instruction identified by the NRP was investigated. This research study was unable to include data from all 13 undergraduate course exams, as five of the courses did not share their final exams for document analysis. While the research is unable to compare emphasis on accountability measures through exam questions related to the five elements of reading, several notable observations were made among the eight final exams that were analyzed.

Of the courses that did provide instruction on one or more of the five elements of proficient reading identified and final course exams shared, each one held preservice teachers accountable for retaining the subject matter to some extent. Table 1 exposes the percent of exam questions related to each of the five components of reading as identified by the NRP for the eight undergraduate courses that provided final course exams.

Table 1

Percent of Queries Related to Each Component of Reading as Identified on Final Course Exams

Exam Number	Phonemic Awareness %	Phonics %	Vocabulary %	Fluency %	Comprehension %
1	0	100	0	0	0
2	31	11	4	14	26
3	10	2	2	4	6
4	9	24	14	0	0
5	15	23	12	12	12
6	0	0	0	0	0
7	0	0	0	0	0
8	11	17	11	5	5

Note. Exam # indicates the coding number of each exam shared through data collection. Percent of course exam questions that directly related to the five components of reading as identified by the NRP. The two assessments presented without any questions also did not provide any instruction related to the five components.

As is discernable from the data shared, the courses analyzed for this study placed varying levels of pertinence on the components of reading. In addition to the number of questions related to each domain, the exam questions themselves were important to consider in terms of emphasis and how well these education programs prepare teacher candidates. Phonemic awareness was addressed in five of all exams collected. Questions pertaining to phonemic awareness were comprised of content knowledge around all three levels, early, basic, and advanced; in addition, they addressed the issue of how to provide instruction to young learners.

Of all the exams analyzed, four (50%) addressed phonics more than any other domain as evident through the number of questions directly related to phonics, phonetic patterns, or instructional practices related to phonics teaching. Preservice teacher knowledge was assessed either through a very specific test of teacher knowledge, such as the *Phonics Test for Teachers*, or through probes intended to measure the

understanding of the sound to print relationship. Only one exam asked teacher candidates to explain why teaching phonics was important. How to assess phonics knowledge in young readers or how to intervene in the event of a struggling reader, was absent in course exams.

Vocabulary was the least addressed element of reading. Teacher candidates were asked to explain the tiers of vocabulary and identify words that would be identified in each tier. Effective approaches (oral language, direct and indirect instruction, wide reading) to instruction for young readers in the area of vocabulary was observed. Preservice teachers were assessed on areas of comprehension overwhelmingly related to comprehension strategies. Such queries related to comprehension strategies, such as when and how to have students make predictions, guiding visualization tasks, when students need to use inferencing skills, and how to identify the main idea and details in a selection of text. Very few questions were present regarding the role background knowledge contributes to a child's ability to

comprehend text. There was little evidence among all the examinations analyzed of the importance fluency with word recognition has on one's comprehension ability. Fluency questions on the investigated course exams were minimal and concentrated on the concept that fluency was merely reading at a desired rate.

Evident in all exams explored for this research study were inaccuracies and misinformation regarding the elements of proficient reading and the instruction of reading to young learners. Terms were used incorrectly, courses emphasized classroom activities that are not aligned to evidence-based practices, and hindrances to reading were addressed as effective practices. On two final assessments, the terms *letters* and *graphemes* were used synonymously. Those terms are not interchangeable yet used in this way in final exam questions. The importance of teaching students multiple decoding strategies rather than one method, phoneme-grapheme correspondence, was present on half of all exams. The belief that there has been no identification of one way to teach reading to beginning readers and/or struggling readers appeared on two-thirds of final examinations. Inaccuracies such as these may impede preservice teachers from becoming experts in their field.

As it was apparent with more than half of the undergraduate courses that underscored guided reading through course lectures and assignments, course exams also emphasized holding teacher candidates accountable for retention of such information. Course exams overwhelmingly evaluated preservice teachers on knowing how to prompt readers by directing attention to the picture clues rather than to the sound-symbol correspondence to decode unknown words. The cueing system employed in a guided reading lesson appeared frequently on course assessments asking teacher candidates to explain the cues or prompts

provided to students when struggling to read an unknown word. Such cues included looking at the picture, identifying the first letter in the word, and guessing what word would make sense in the sentence. In alignment with the cueing system exercised in a guided reading lesson, leveled text was accentuated as the most applicable way to provide practice for young readers. Repeatedly in the course exams that were available for investigation, decodable text was misconstrued to be a hindrance to beginning readers because of the less than attractive nature of such books, contrived text, and overwhelming use of a specific phonics pattern, all of which are the premise of decodable text to offer repeated exposure to a particular phonics pattern. Teacher candidates were offered opportunities in three of the final exams to identify errors in oral reading by using the whole language assessment tool of running records to conduct miscue analysis. Of the eight course exams investigated for this research study, one did pose a question to preservice teachers about the NRP. This exam question was offered as extra credit to preservice teachers. To receive the additional points, teacher candidates had to list all five areas identified in the NRP Report published in 2000.

Teacher candidates engaged in instruction from the participating courses likely leave their education programs at varying levels of proficiency and expertise as it relates to reading. The evidence collected in this research study indicates a lack of consistency among the studied education programs in exposing preservice teachers to the NRP's findings, allocation of learning time to the instruction of these findings, and holding teacher candidates accountable for the knowledge and skills of delivering effective reading instruction. The answer to the question of why children in Pennsylvania schools continue to demonstrate weak reading proficiency is partially found in how the

education programs studied here fail to adequately prepare future teachers to provide the necessary instruction needed to build such capacity.

Discussion

The National Council on Teacher Quality (NCTQ) in 2006 found a large majority of colleges and universities failed to provide instruction in all five components of reading as identified by the NRP (Walsh et al., 2006). These findings were similar to what was discovered in this sample of schools in Pennsylvania. Less than one-fourth of the courses analyzed for this research study exposed teacher candidates to all five identified areas of reading. With eight of the 13 courses providing exposure to one to four elements of reading, the varying degree to which preservice teachers receive instruction on the five components of reading confirms the initial assumption that preservice teachers are not adequately prepared to teach reading at these institutions. What teacher educators place value on for instruction can be observed in their course syllabi and assessments. On the national level, Walsh and colleagues (2006) discovered much attention given to the whole language practice of guided reading. This study found similar findings in a small population of Pennsylvania-based teacher education programs. An average of 13% of instructional time was devoted to guided reading with the use of running records. This is more than double the amount of teaching hours, on average, courses dedicated to the mapping of sounds onto print, phonics. The dichotomy of both guided reading and phonics present in coursework leaves preservice teachers to determine, for themselves, which practices to embed into classroom instruction.

In the education courses studied, all five components of reading were given minimal instructional time, ranging from 3% to

7%, however, a significant amount of time was dedicated to other foci, which largely resembled whole language practices. Additionally, the courses analyzed for this study did not afford teacher candidates opportunities to attain sufficient instruction on evidence-based practices particularly as they relate to reading.

The 13 courses, from a small sample of universities and colleges in Pennsylvania, allocated abundant instructional time to practices not grounded in evidence. Mirroring national findings, in the education courses studied here whole language approaches dominated lectures and course assignments. Teacher educators presented non-scientifically based reading research in parallel to scientifically based reading research at a disproportionate and alarming rate, as evidenced through the analysis of instructional content and allocated time provided to preservice teachers. Teacher candidates are then left to parse for themselves what knowledge and practices are grounded in research from those simply grounded in the beliefs or experiences of the teacher educators. With overwhelming amounts of course content, instructional time, and accountability measures allocated to whole language instruction, preservice teachers' views of reading and reading acquisition are likely inappropriately skewed in this direction.

Implications for Policy and Practice

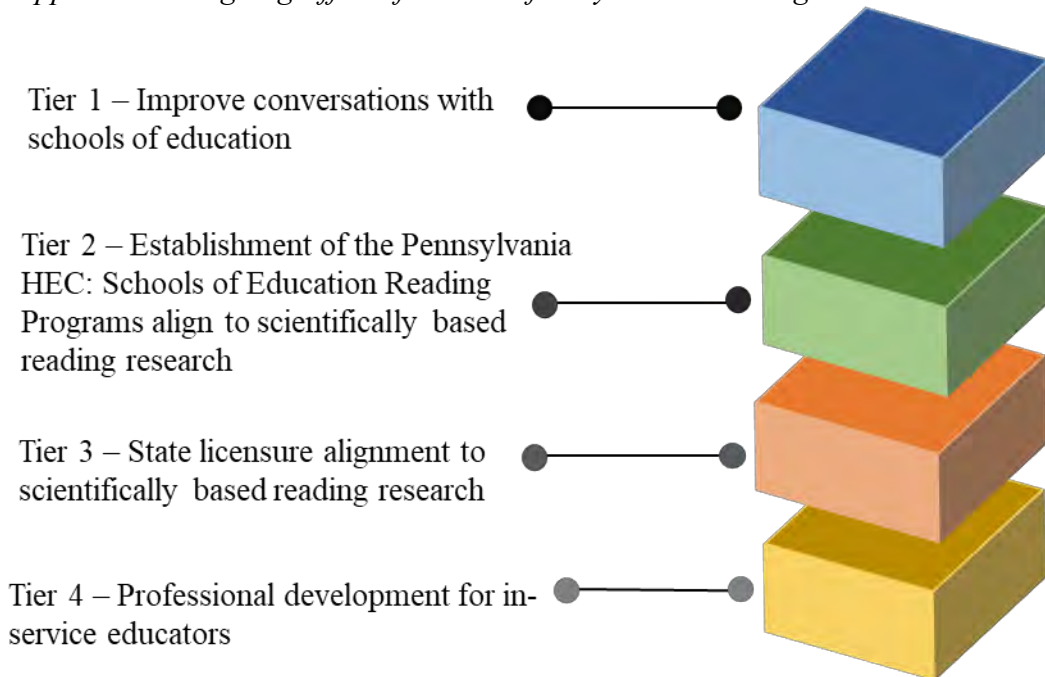
Analysis indicates that the five education programs in this study are not exposing preservice teachers to the critical components of reading determined by the NRP. Courses designed for the instruction of reading and reading acquisition were shown to allocate minimal instructional time toward the identification of these elements and how to instruct young readers in each reading component. In examining final course exams, preservice teachers are being held to

varying degrees of accountability regarding understanding the five components of reading. The findings of this research study indicate the need for a more strategic and systematic approach to amending the misalignment of teacher education programs with

scientifically based reading research and instruction. Based on this study, a four-tiered approach is proposed. Figure 3 displays each suggested tier necessary to address the education of preservice teachers and increase alignment to the findings of the NRP.

Figure 3

4-Tiered Approach to Aligning Efforts for Scientifically Based Reading Instruction.



Tier 1 addresses the manner in which schools of education engage in efforts to properly prepare teachers through communication with those in the profession. With the recent release of the podcast episode, *Hard Words: Why aren't kids being taught to read?* (Hanford, 2018) much attention has been given to institutes of higher education, specifically schools of education reading programs. This podcast discussed what reading programs across the nation were and were not providing to preservice teachers.

Hanford (2018) did what others have been writing about for more than 10 years, declaring that schools of education are not providing instruction to teacher candidates that aligns to scientifically based reading research. Harsh criticism dominates the

narrative regarding universities and colleges and their lack of appropriate teacher preparation. Teacher education has been identified as a significant factor in why our nation's children are unable to meet proficiency standards in reading (Bos et al., 2001; Cheesman et al., 2009; Foorman et al., 1998; Joshi, et al., 2009; Lyon & Weiser, 2009; Moats, 1994, 1995, 1999, 2009a, 2009b, Spear-Swerling & Brucker, 2004; Walsh et al., 2006). Educators are not able to provide appropriate instruction on content which they have not had adequate exposure to. Schools of education are severely condemned in many of these works for their part in contributing to the trend toward a failure in reading instruction in the United States. If the intent is to improve the ability

of teacher candidates to provide reading instruction, we must begin with schools of education programs relating to reading instruction.

To better align instruction to scientifically based reading research, education programs need to engage in professional conversations targeted at growth rather than punishment. The discourse teacher educators engage in within institutes of higher education and about these institutes needs to improve. Educators at these institutions are often entrenched in whole language, thus making the shift to scientifically based reading research that much more challenging and personal. The goal is to not affront these educators, but rather to collaborate and educate for the betterment of our preservice teachers and ultimately, their future students. In practical application, this resembles professional conversations around personal beliefs versus scientific evidence. The objective would be for all professionals, including policy-makers and the media, to abandon attributing reading failure to just one group or party and accept responsibility as a collective society. The days of blaming institutes of higher education must end and the era of partnership must begin.

The second tier of this problem-solving process is the proposed development of a Higher Education Collaborative (HEC) in the Commonwealth of Pennsylvania. The establishment of the Pennsylvania HEC would ensure the successful implementation of scientifically based reading research into preservice teacher education programs across the commonwealth. Texas established a similar approach, the Texas Reading First Higher Education Collaborative, in 2000 funded by the Texas Education Agency's Reading First initiative (Joshi et al., 2009). Through partnerships, the Texas HEC offers professional development and support to teacher educators in the state on the principles of scientifically based reading

instruction. Faculty members teaching reading in undergraduate, graduate, post-baccalaureate programs, and community colleges receive professional development on reading and reading acquisition, with community support to assist in the transfer of such knowledge to preservice teachers (Joshi et al., 2009). This research study is advocating for a similar approach.

In Pennsylvania, a HEC would permit those universities and colleges electing to participate to join other teacher educators in aligning efforts to the empirical findings of the NRP and the convergence of evidence around reading and reading instruction. The alignment would include the modification of course syllabi, expectations, and assessments. Within this study, the majority of reading course content is sprinkled with scientifically based reading research but overwhelmingly populated with whole language-based learning. Through a Pennsylvania HEC, teacher educators could work together to adjust course syllabi to reflect the five components of reading and evidence-based practices for a more effective reading model. Modifications to course content would lead to appropriate instructional time being allocated for these components and practices rather than to practices regarded as non-evidence based and ineffective.

The third tier goes beyond institutes of higher education. In order to obtain a Pre-Kindergarten to grade four teaching certification in Pennsylvania, a teacher candidate must successfully pass the state licensure assessment. Licensure assessments reflect what is taught in education programs. If the intent is to align instruction with the science of reading to obtain positive student outcomes in reading, we must also align the state examination to this purpose. An analysis of 13 state licensure exams demonstrated a large variance in the importance placed on the alphabetic principle and the exposure to key areas of reading (Stotsky, 2009).

Pennsylvania was not included in this particular study however, the commonwealth uses the PRAXIS I and II exams from the Educational Testing Service (ETS) which were evaluated in the above mentioned study. Better alignment of licensure exams to scientifically based practices ensures teacher candidates are not entering a classroom without the necessary foundational knowledge and skillset needed to instruct future learners. With the Knowledge and Practice Standards (IDA, 2018) in hand, state teacher exams would be more effective in assessing preservice teacher knowledge of the structure of the English language and how to provide evidence-based reading instruction.

The fourth and final suggested tier includes professional development provided to in-service teachers. Many of those currently teaching have graduated from education programs that may not have adequately prepared them for the challenging task of teaching children to read. The responsibility to improve this preparation now falls to the school districts that hired these individuals. Recognizing that schools of education may not have offered preservice teachers the opportunity to acquire essential skills, professional development opportunities such as Language Essentials for Teachers of Reading and Spelling (LETRS) would provide such knowledge base. LETRS is a professional development solution providing educators with the skills they need to master the fundamentals of reading instruction addressing all five pillars as identified by the NRP. To enhance the knowledge and skillset of in-service teachers, a large-scale commitment to scientifically based reading instruction needs to be the focus of professional development for all PreK-4 educators, schools, and districts.

Conclusion

Teacher candidates engaged in courses from the five participating education programs courses likely graduate with varying levels of proficiency and expertise as it relates to reading instruction. Among these education programs studied here, there is a lack of consistency in exposure of preservice teachers to the National Reading Panel's findings, how instructional time is allocated toward these findings, and the degree to which these education programs hold teacher candidates accountable for the knowledge and skill of delivering effective reading instruction. The question of why our children continue to demonstrate weak reading proficiency is partially answered by examining how we prepare our teachers to provide the necessary instruction needed to build such capacity. For these five education programs, the standards they hold preservice teachers accountable to do not meet the standards necessary of developing proficient readers.

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