THE PRACTICAL APPLICATION OF EDUCATION:
A Scoping Review of Early Literacy Instruction in Teacher Education

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Thank you.

Dedication

To April;

my greatest teacher.

Abstract

This scoping review examines studies on the instruction of early literacy practices to pre-service teachers in teacher education programs. The research questions for this scoping review are: a) What are the major themes in the literature surrounding instructional strategies for early literacy in Bachelor of Education programs? and b) Are there any gaps in the existing literature? Six major education databases were systematically searched, which resulted in 16 articles. After conducting a thematic analysis of these articles, three themes were identified in the literature: B.Ed. program have needs that should be addressed, there are gaps in knowledge and content, and perceptions of pre-service teachers. An unexpected theme appeared during the exclusion process, which was the lack of studies on what pre-service teachers learn in B.Ed. programs regarding early literacy practices, and the high number of articles which study pre-service teacher's perceptions, opinions, feelings, and beliefs about what they learn in B.Ed. programs, regarding early literacy practices. This demonstrates a gap in the literature and the need for further research on early literacy instruction in B.Ed. programs.

Keywords: early literacy; teacher education; pre-service teachers; phonics; whole word comprehension; balanced approach

Table of Contents

Terminology

***B.Ed*.:** an abbreviation for a Bachelor of Education program offered by a faculty of education at a university to qualify students to become teachers. Also called *teacher ed., teacher education, teacher preparation, educator preparation programs,* and *education school(s)*.

***Pre-service teacher (PST)*:** a university student in a B.Ed. program studying to become a qualified teacher. Other terms used include *teacher candidate, student teacher*, and *teacher in training*.

In-service teacher: a teacher who has completed a B.Ed. program and is currently working as an educator in a school.

Teacher educator: an educator who teaches pre-service teachers in B.Ed. programs (typically a professor or researcher from the university faculty of education, or a classroom teacher hired by the faculty of education.

***Practicum*:** a mandatory classroom-based work placement in a B.Ed. program where a pre-service teacher observes and works under a qualified teacher (called an *Associate Teacher* or *Teacher Mentor*) in an elementary or secondary school. Also called a *field placement*.

***Instructional Strategy*:** a method or technique used by an educator to teach a student.

***Early Literacy*:** the fundamental skills and development of skills necessary for learning to read and write, usually referring to primary-aged children in schools.

***Phonics*:** (Phonics-based instruction) an early literacy instructional strategy based on the use of phonemes (sounds made by the letters of the alphabet).

***Whole Word Comprehension*:** (Whole word comprehension-based instruction) an early literacy instructional strategy based on exposure to and rote memorization of 'sight-words' (words a reader can see and know instantly, without reading the individual letters).

***Balanced Method*:** an early literacy instructional strategy based on combining both the phonics-based and whole word comprehension-based methods.

Prologue

Sometimes when people ask me what made me become a teacher, or why I chose to become a teacher, or when did I know I wanted to become a teacher, I laugh because my answer is never what they expect. I always smile and say I never wanted to become a teacher. It normally confuses them because I have been a teacher for years now and I quite enjoy teaching. So why would somebody who enjoys teaching say that never wanted to be a teacher? Quite often I would watch my own teachers struggle with classroom management, with the behavior of students in my class and school, with difficult topics, or with how to best help those struggling students. But no matter what they did, those struggling students sometimes just never got it, fell behind, failed grades, and felt stupid.

I remember throughout my life adults telling me that I would make a good teacher, but I would silently scoff and think to myself, "No thanks. Look at what they have to put up with; look at their struggles. It looks so hard for them sometimes, and they seem so unhappy. I do not want to put up with what they put up with." As a student, I watched many teachers struggle to teach and my classmates struggle to learn at times. Now, this was not the case with every teacher all the time of course. But I saw it enough to firmly believe this was not the profession for me. In the same breath that I would tell an adult, "No, I do not want to be a teacher when I grow up," I would turn to my classmate beside me and teach them what they missed the previous day in class. My teachers would often ask me to help my classmates in this way essentially by teaching them the previous day's lesson. One instance stands out in my mind, because it was the first time that I had encountered a problem in my teaching. My classmate was struggling to comprehend the concept I was teaching, and I was struggling to get him to understand. I tried teaching the way my teacher had done, and then I tried teaching another way that I understood, but neither of those helped my friend. I went home that day frustrated and hugely concerned about how to give him the understanding that I already had, which is the very purpose of teaching! How does one human being transfer the knowledge they have in their own brain into the brain of another human being? I struggled with that concept, and it has stuck with me ever since. I had discovered a flaw in education to which there was no clear answer for me at the time. How do you teach students who do not understand?

This is where my search really began, and I could never shake the feeling of knowing that there was a gap in education. Since that time, researchers have made attempts to fill that gap, and

I have the same desire. I search for answers, and that is why I became an education researcher as well as a teacher. I am not satisfied simply with teaching and standing by while problems exist in teaching, and education suffers when there are solutions to be found. Education is not about the friend I tried to teach, and it is not about me teaching. Education is the process. It is imparting knowledge, wisdom, and understanding from one human mind to another human mind by means of experience. Teaching is a calling. Teaching used to be called a vocation, a skill, and a trade. Teaching was not, and is not, something you can just study in books. It was and is something you must do to learn and understand before you could teach. To teach and to learn is to do. It must be experienced by you. It cannot be done for you, or at you. There was no way I could understand for my friend, he had to know it himself in order to learn. Education cannot be abstract, theoretical, or an idea. It is designed to be real, tangible, and practically applied in every sense of the word. And therein lies the problem with education today: either its practitioners fail to do it because of low confidence, or they do not know how to do it due to poor training.

It is clear to me now, that even when I was a student in school, I was a teacher by nature. I looked at school, teaching and learning with a critical eye, which was unknowingly the eye of a teacher. I did not struggle with math or learning to read. In fact, I was quite good but that is not the case for everyone, including my friend. I have watched children slowly crumble under the weight of the failures that come with their struggles in school; struggles to read, write, add, count, learn, etc. and how it hurts and impacts their self-esteem and self-worth. There is a problem and I want to know the root of it. It frustrates me now just as it did then, trying to teach my friend, that there are problems, holes, and gaps in the way education is implemented and how it impacts learners. Many children struggle with one or multiple subjects in school; for the purposes of this thesis, I use reading as an example. I can see a problem, like many educational researchers do. I am not the kind of person who can just stand by while problem exists without at least trying to find a solution. So, this thesis is my investigation of a suspicion, of a hunch, of a gut feeling I had years ago that there was something wrong and I want to find out what that is, because until you know what a problem is you cannot ever fix it. There is no point in finding a problem if you do not also plan on finding a solution, which is what I intend to do. If education is a calling, then I intend to answer not only by teaching, but by seeking answers wherever they may be found and declaring those answers to whoever has ears to hear.

Introduction

One childhood friend who had trouble in school is a relatable experience. We probably all knew someone in school who struggled in one subject or another. In that sense, we could consider the situation described above as a typical or normal school experience. But therein lies the problem: it should not be. We should not just sit back and accept the fact that there continue to be children who struggle to learn the very basic skills in their primary years, which can cause problems in their future learning. In many ways, educators have attempted to solve this problem, but as an example, many children still struggle learning to read, one of the staples of human communication. Yet, the problem persists. And so, this scoping review is an investigation into what educators can and are doing to help instruct children in their early literacy skill-building, both in the elementary and the university classroom.

Study Purpose

The fact that you are reading this document indicates that someone taught you how to read, and that you learned successfully. Congratulations! Language acquisition, among other basic academic skills, is an incredibly difficult task for many young readers. This daunting task can be even more difficult for those students who have a Learning Difficulty (LD) (sometimes called Learning Disability), whether formally diagnosed or not. To support students who are struggling at school, an IEP (Individual Education Plan) is often put in place to help them to succeed. An IEP is "a written plan describing the special education program and/or services required by a particular student, based on a thorough assessment of the student's strengths and needs that affect the student's ability to learn and demonstrate learning" (Ontario Ministry of Education, 2017, para 5). It is important to note that an IEP can be assigned to a student based on different categories of 'Exceptionalities' (Finlay, 2011). According to the Ontario Ministry of Education (OME), in the 2014-2015 school year more than 178,500 students were identified by an IPRC (The Identification, Placement, and Review Committee) as students with an Exceptionality (OME, 2017). An Exceptionality falls under one of five categories: Behaviour, Communication (including Autism, Deaf and Hard of Hearing, Language Impairment and Learning Disability [or Learning Difficulty]), Intellectual (including Giftedness, Mild Intellectual Disability and Developmental Disability), Physical (including Physical Disability and Blind and Low Vision), and Multiple (including Multiple Exceptionalities) (FASD ONE, 2021).

Students with the Intellectual exceptionality of Giftedness are provided an IEP and program based on their strength(s) to challenge their abilities, unlike most IEPs which support a student's weakness and areas for improvement instead (Ontario Ministry of Education, 2018a; Ontario Directors, 2009). In the 2005-2006 school year, 2% of Canadian students were found to have an LD (Idao Learning Disabilities Association of Ontario [Idao], 2018) and 12.1% of students aged 5 to 14 had an IEP (People for Education, 2019). Whereas, in 2015 to 2016, 3.5% of students had an LD (8.8% of Ontario students) (Statistics Canada, 2018; Idao, 2018), and in 2017-2018, 16.7% of students had an IEP (People for Education, 2019). This shows a clear increase in the need for and implementation of IEPs for students with LDs. Even with IEP support, 11% of Canadian Grade 8 students (12% of Ontario Grade 8 students), were reading below the expected level (Level 2) in 2016 (O'Grady et al., 2016). In 2018, the Programme for International Student Assessment (PISA) survey of 15-year-old students showed that 86% of Canadian students attained a Level 2 proficiency in reading (OECD, 2019). However, between 2009 and 2018 there was an increasing downward trend in reading scores, with low-achieving students presenting larger declines, widening the performance gap between low-achieving (Level 1) and highest (Level 3) students (OECD, 2019). These numbers, however, do not account for students who are undiagnosed and still receive special education and services. In 2014-2015, 162,000 students who were not formally identified according to the Ontario Ministry of Education, were provided special education programs and services in schools (OME, 2017). In Ontario, 17.3% of students were not IPRC identified, yet received some kind of special education support (Idao, 2018). Of the IPRC students who were identified in Ontario in 2015 to 2016, 39.8% had a Communications/Learning Disability Exceptionality (Idao, 2018).

This brings up several questions: Why do so many students need an IEP, and why do the numbers continue to increase? Why is it so challenging for some students to learn what other students learn with ease? Experience as both a student and a teacher has shown me that it is not always an LD or other Exceptionality that impedes the learning of a student. There could be numerous other factors that contribute to a student having difficulty learning a skill, including but not limited to, their home life and family situation, stress and anxiety levels, socio-economic status, bullying, social troubles, relationship with teachers, teaching approaches, learning style, lack of sleep, or even what they ate for breakfast, if anything. Yet, there is no Exceptionality category for these factors, at this time they do not warrant an IEP. Students who face these

challenges do not receive the support an IEP could give them since there is no diagnosable category for having a disadvantaged life, as an example. It could be that some students struggle in school unnoticed, since they still manage to get by, even if they need an IEP but don't get one in any particular subject (e.g., literacy).

Any student's barrier to learning could be caused by an actual LD (identified or not), but it could equally be caused by, or influenced by environmental factors which cause the student to struggle. This can potentially cause an unidentified student to just 'get by' in school and not achieve higher success because they do not have an LD that can be diagnosed or categorized; yet their situation still greatly impacts their success in school.

Many children struggle when learning to read and continue to struggle throughout school; some may never become 'strong' readers despite the help of IEPs or the decades of research on early literacy instruction methods available to educators. There are several methods to help students who struggle, yet some continue to struggle and there does not seem to be a single method capable of helping every child learn to read. This shows that when it comes to literacy instruction, educators are teaching children, yet this teaching continues to produce inadequate results regarding student reading abilities. To teach a child to read, a teacher must first be instructed how to do so, and this training comes from B.Ed. (Bachelor of Education) programs.

Therefore, this scoping review of the literature on early literacy instructional methods/strategies in B.Ed. programs, and in schools, can perhaps provide insight into this apparent discrepancy, and reveal any connections, overlaps, advantages, disadvantages, and gaps.

Research Question

The primary research question is: What are the major themes in the literature surrounding instructional strategies for early literacy in Bachelor of Education programs?"

Supplementary questions include: "Are there any gaps in the existing literature?" (e.g., Pertaining to Ontario? To Canada? To the U.S.A., U.K., or Australia? Pertaining to students with learning disabilities?). "What, if any, are the controversies that exist in the literature?" (e.g., What do researchers agree/disagree on? What do educators agree/disagree on? Are there political or administrative barriers?)

Study Background

Context

To become a certified teacher in Ontario in the public school system, a teacher candidate / pre-service teacher typically must first complete an undergraduate degree. Then they must complete a consecutive B.Ed. program at an Ontario university with a Faculty of Education program (Ontario Ministry of Education [OME], 2016) which grants them the status of Certified Teacher from the Ontario College of Teachers (Ontario College of Teachers [OCT], 2020a). A PST can also take a concurrent program, allowing them to simultaneously complete a B.Ed. and the required undergraduate degree (Ontario College of Teachers, 2020c). The Ontario College of Teachers (OCT) was created by the *Ontario College of Teachers Act, 1996* and given the authority as the regulatory body of teaching profession to; "issue, suspend and revoke teaching certificates; set ethical standards and standards of practice; investigate and hear concerns and complaints about members; [and] accredit teacher education programs and courses" (OCT, 2020a). A teacher or administrator must be a member in good standing of the OCT to teach in a publicly funded Ontario school (OME, 2016; OCT, 2020a). An Ontario consecutive B.Ed. program, in English or French, consists of four semesters over two academic years (Ontario College of Teachers, 2020c). In B.Ed. programs, PSTs learn fundamentals necessary for teaching called their "Basic Qualifications," allowing them to teach a specific range of grades called Divisions (OCT, 2020d). These divisions include Primary (Kindergarten to Grade 3), Junior (Grades 4 to 6), Intermediate (Grades 7 to 10), and Senior (Grades 11 to 12) (OCT, 2020d). PSTs take courses that teach them about two divisions: Primary/Junior, Junior/Intermediate, or Intermediate/Senior depending on the program. These courses also include one to two general education subjects (or 'teachable' subjects), comparable to a minor in an undergraduate bachelor's degree (e.g., music, history, etc.) (OCT, 2020d).

Pre-service teachers also participate in mandatory Practica, where they are assigned to a school classroom based on their division (grade qualifications) (Ontario College of Teachers [OCT], 2010). They work under the supervision of a Faculty of Education advisor or professor, and under the direct supervision of an experienced classroom teacher (called an "Associate Teacher" (OCT, 2010). PSTs spend between 40 and 80 days in one or more Practicum placements observing and learning on-the-job skills, preparing and teaching lessons, and applying them in a practice setting (OCT, 2010; Ontario Ministry of Education [OME], 2016). Over the course of a teacher's career, a B.Ed. program is the first step in their professional

development. After graduating a B.Ed. program, teachers can continue their learning by taking optional Additional Basic Qualifications (A.B.Q.s) and Additional Qualifications (A.Q.s), which provide teachers with experience, knowledge, and qualifications in more subject areas and divisions (OCT, 2020b). These can prepare teachers for specific roles or jobs and advance their careers into specialist or leadership positions (OCT, 2020b). An A.Q. course provides professional learning on a specific subject or topic (e.g., history, math, etc.), and can be offered by various education organizations (Elementary Teacher's Federation of Ontario [ETFO], 2020), while an A.B.Q. course provides extra certification to teach in another grade division (Primary, Junior, Intermediate, Senior, or the recent Technology division), and are only offered by a university Faculty of Education (ETFO, 2020).

A major factor which determines the course selection and content in a B.Ed. program is the Ontario Regulation 347/02: *Accreditation of Teacher Education Programs* within the *Ontario College of Teachers Act* (Ontario College of Teachers Act, 1996, S.O., c. 12). The regulations state that according to law, an accredited B.Ed. program must follow OCT Standards of Practice for the Teaching Profession and Ethical Standards, and current teacher education research; and integrate theory and practice into teacher education (p.3.s9 [3.i-iii]). Course content must include theory, and methods and foundation courses for all divisions (O Reg. 347/02, p.3.s.9 [10-11]), and it must make provisions for applying theory to practice (O Reg. 347/02, p.3.s.9 [5]). Courses must also include content that covers all grade divisions, teaching methods, education Acts and regulations, a minimum 80-day practicum in schools or in other approved situations for observation and practice teaching, curriculum guidelines and development (O Reg. 347/02, p.1.s.1 [2 i-v]), as well as provide current curriculum that incorporates what the Ontario curriculum requires of its students (applying current teacher education research and representing wide knowledge base in program components) (p.3.s.9 [4]). To provide a current curriculum, a B.Ed. program must change to reflect changes made in the Ontario school curriculum. For example, when the *The Ontario Curriculum, Grades 9 and 10: Native Studies, 1999* was introduced, another curriculum for Grades 11 and 12 was soon introduced in 2000, and both were updated and replaced in 2019 by *The Ontario Curriculum, Grades 9 and 12: First Nations, Métis, and Inuit Studies, 2019* (OME, 2019). B.Ed. programs now offer courses (i.e., Wilfred Laurier University's *Diversity Series: First Nations, Métis and Inuit [FNMI] Topics in Educational Contexts*) (Wilfred Laurier University, 2020), streams of focus (i.e., Lakehead

University's *Indigenous Education [Canadian Focus]*) (Lakehead University, 2020), and specialized programs (i.e., Trent University's *Indigenous Bachelor of Education*) (Trent University, 2020a) to prepare teachers to implement this curriculum in schools.

A province's curriculum is developed by its respective Ministry of Education (i.e., the Ontario Ministry of Education [OME]) as there is no federal ministry or department for Canadian education, and it is implemented by publicly funded schools and school boards within that province (OME, 2018b). The purpose of a curriculum policy document is to state what information a student must know and demonstrate at the end of each grade or course subject. To develop curriculum in Ontario, the OME maintains a cycle of review (beginning in 2003) to ensure curriculum content is relevant, up-to-date, and developmentally appropriate for each grade (Kindergarten to Grade 12) (OME, 2018b). This review process is intended to support schools, teachers, students, and school boards by targeting areas for improvement and support via the development or updating of relevant materials (OME, 2018b). This process was completed most recently in 2020, when *The Ontario Curriculum Grades 1-8: Mathematics, 2020* was published, replacing the 2005 math curriculum (Ontario Ministry of Education, 2018c). After an update is published, support resources and training on how to implement the new curriculum are developed and offered to ensure that educators have a consistent understanding of the expectations for implementing the revisions (OME, 2018b).

While it is evident that the Ministry develops school curriculum, and a B.Ed. program prepares PSTs to implement said curriculum, it is unclear how a B.Ed. program determines what content their courses should contain, and whether there is academic freedom or professor input in such decisions. While it is mandatory that all B.Ed. programs offer courses that focus on current provincial curriculum topics, the amount appears to be at each institution's discretion, as each program currently offers a different number of courses on a subject. There are currently 14 universities in Ontario which offer B.Ed. teacher preparation undergraduate programs, excluding French programs, and specialty programs tailored to PSTs of First Nations, Métis or Innuit ancestry. Upon an examination of the available course descriptions for the current B.Ed. programs, in the Primary or Primary/Junior divisions, the amount of course content addressing early literacy, literacy or language arts, and language development differs at each institution. To compare the literacy content available in these programs, I applied a point scale: 1.0 was given to courses devoted solely to literacy instruction, and 0.5 given to courses that include literacy and

another subject, or courses that included topics such as early years literacy, childhood language development, or kindergarten instruction. Universities that received a 1.5 rating include: York University, with one course which mentions language development in children (York University, n.d.); and the University of Ontario Institute of Technology (which offers three courses with a shared focus on other topics) (University of Ontario Institute of Technology, 2020). Universities that received a 2.0 rating include the University of Ottawa with two split courses (Arts and Language Arts, and Language Arts and Social Studies) along with the Teaching at the Primary Division course (University of Ottawa, n.d.); Brock University (Brock University, n.d.); and Nipissing University (Nipissing University, 2020). A rating of 2.5 was given to Laurentian University (Laurentian University, 2020); and Wilfred Laurier University (Wilfred Laurier, 2020). Tyndale University received a 3.0 (Tyndale, 2020), while Lakehead University (Lakehead University, 2020) and Redeemer University (Redeemer University, 2020) each received a 3.5. The university which currently offers the largest number of courses with a literacy focus within their B.Ed. program is Queen's University, with four courses devoted solely to literacy instruction (Queen's University, n.d.). Three universities had no course description available (Trent University, Western University, and the University of Windsor), but both Trent University and Western University's programs offer literacy or early childhood aspects (Trent University, 2020b; Western University, 2020) (see Appendix A). This means that while all PSTs are receiving some literacy instruction courses, they are not all receiving the same amount, and therefore they are not receiving the same experience or exposure to literacy or language arts instruction methods or strategies. Essentially, they are not receiving the same level of education training. A PST from Queen's University can graduate with the same qualifications as one from York University, and yet the York PST graduates having had considerably less instruction in early literacy, literacy, and language arts teaching. This can create an imbalanced workforce upon entering the teaching field after graduation. While A.Q. and A.B.Q. courses in reading or writing, etc. are available after completing a B.Ed. program, this imbalanced B.Ed. curriculum creates the need for an A.Q. or A.B.Q. to even exist. All PSTs must pay for their education, and although tuition costs differ between institutions, the quality of the B.Ed. program should not differ if all are accredited deemed equal according to OCT standards. This inequity between programs leaves one wondering: if all consecutive B.Ed. programs are the same length (four terms), offer the same qualifications from the Ontario College of Teachers (Certified Teacher),

and draw from the same Ministry of Ontario curriculum (The Ontario Curriculum), then why is it that they are not offering the same level of training to PSTs? One would expect a certain level of consistency among B.Ed. programs to ensure that all s are receiving the same high level of preparation on every campus.

Research on the teaching of early literacy instructional strategies in B.Ed. programs is essential as it pertains to communication, one of the most fundamental of skills humans require - the ability to read and write. It is essential. No matter what new technologies are developed to assist us, they are no replacement for learning these basic skills. While those of you reading this are clearly capable of reading, someone had to teach you; while you have learned to read successfully, not everyone learns the same way, has the same understanding, or learns with the same ease (Binks-Cantrell, Washburn, Joshi & Hougan, 2012; Castles, Rastle & Nation, 2018). For some, literacy is a natural extension of their learning; for others, it may be a constant struggle (Binks-Cantrell et al., 2012). Mastering the ability to read may be an often-overlooked skill, taken for granted by adults, yet it is one of the largest challenges in the first few years of a child's education. Pre-service teachers entering a B.Ed. program are already capable of reading, and most likely do not remember what it was like to be non-literate (unable to read or write their spoken language). A B.Ed. program is tasked with teaching adults (who already know how to read) how to teach students (who do not) to read. Consequently, how many of us remember what it was like to learn to read and write from scratch, with no prior knowledge? Few, it could be said, as according to multiple researchers, it is difficult for adults to remember what it is like to learn from a student's perspective, which would also make it very difficult to understand a student's struggle (Lenskie et al., 2013; Darling-Hammond, 2006; Joshi et al., 2009). The truth is, if we rely solely on our own past experience, which we largely cannot recall, then we cannot relate to a struggling student's experience. A teacher faces the challenge of trying to teach skills to students who have a largely unrelatable struggle.

There is an uneven acquisition of literacy skills among students, which is a long-standing problem, and one that is clearly not being remedied by modern teaching methods or strategies, as it continues to not only exist, but to grow (Joshi et al., 2009; Wasburn et al., 2015; Binks-Cantrell et al., 2012). This is evident in global literacy rates for elementary school children, where in 2015, an estimated 15-20% of children in English-speaking countries experienced difficulty learning to read and were likely to struggle as they progress through school (Wasburn

et al., 2015). Ontario students in Grade 10, write the EQAO (Education Quality and Accountability Office) Ontario Secondary School Literacy Test. A 2019 international study found that 13.8% of Canadian students in Grade 10 do not even possess the reading skills to read at the baseline level that is needed to navigate in our society (OECD, 2019)! Despite support for student learning, literacy, language acquisition, as well as programs for math and numeracy interventions, the number of IEPs is only increasing (OME, 2017). There is considerable disagreement on which avenue or method is best to implement literacy interventions or supports, such as the debate on a whole word comprehension, versus a phonics-based approach to learning to read and write (Castles, Rastle & Nation, 2018). Consequently, this could lead to disagreement over which should be taught to PSTs and unequal training between B.Ed. programs. A possible cause of poor literacy is that one approach alone is not sufficient to thoroughly teach early literacy skills, which has given rise to the "streamed theory" or Balanced Approach method. This scoping review of the literacy instructional methods and strategies used by and taught to PSTs, can provide an in-depth understanding of the challenges and benefits of implementing effective literacy programs, and create an avenue in which possible solutions may be posed.

Current research on early literacy instruction

There has long been debate over which methods to use when teaching reading (Castles et al., 2018; Snow & Juel, 2007; Van Orden & Kloos, 2007). The two main sides of the debate, referred to colloquially as 'the reading wars,' are phonics and whole word comprehension (Castles et al., 2018; Snow & Juel, 2007; Van Orden & Kloos, 2007). The reading wars date back over 200 years, when professionals advised against the use of the popular 'phonics method' (explicitly teaching the relationship between letters and sounds) (Castles et al., 2018; Adams, 1990). Yet, the 'phonics' method has been used since the 16th century (Hart, 1969; Castles et al., 2018) and was popularized with the publishing of a book by Noah Webster (of Webster's Dictionary) called *The American Spelling Book* (Kendall, 2012). It was further popularized by McGuffey's 'readers' in the late nineteenth century, textbooks which reinforced lessons on various letter sounds with example texts (Snow & Juel, 2007). In contrast, the 'whole word comprehension' method involves teaching letter names, letter recognition and recognizing whole words, all taught using repetition (Snow & Juel, 2007), thereby emphasizing a literacy rich learning environment, where literacy is practiced in classroom subjects and activities (Castles et al., 2018). This method is evident in curriculum materials used in the twentieth century, where

popular poems, nursery rhymes, and folktales were often read, or texts created to emphasize repetition (Snow & Juel, 2007). Texts such as the Scott Foresman series dominated for decades, and had simple phrases repeated throughout, such as a "See Spot play" (Snow & Juel, 2007). While the reading wars are still ongoing, and practitioners continue debating both sides, the pendulum of favour has swung back and forth from phonics to the whole word approach over the years and has not stopped at any definitive consensus (Wyse & Styles, 2007; Davis, 2012).

Phonics

Phonics-based instruction is a literacy teaching method which explicitly teaches the relationship between graphemes and phonemes, and the alphabet (Castles et al., 2018). It teaches children to blend letter sounds in order to read unfamiliar words (Johnston, McGeown, & Watson, 2011). With this, phonics instruction provides children with a small body of knowledge that allows them to decode the meaning of words, if they start with an adequate vocabulary (Castles et al., 2018). There is a general scientific consensus that phonics instruction is particularly important during the initial stages of learning to read (Rayner et al., 2001). The effectiveness of phonics has long been investigated in various research studies (Ehri et al., 2001; Snow & Juel, 2005; Torgerson, Brooks & Hall, 2006; Schmidgall & Joseph, 2007), and meta-analyses have shown that phonics instruction, especially when it begins early (before first grade), improves decoding, spelling and text comprehension skills (Castles et al., 2018). Phonics has been shown to provide lasting benefits and can be particularly vital for struggling readers by improving their letter sound knowledge and their ability to begin the development of sound-letter relationships (Snow & Juel, 2005). Schmidgall and Joseph (2007) found that phonics increased word reading performance, compared to other methods such as interspersal drills, phonics analysis, and traditional drill methods. Connelly, Johnston, and Thomson (2001) further showed that phonics is a valuable tool for reading comprehension in their study, where children who had been taught using phonics had better higher-reading comprehension than children who were taught with other literacy methods, and they made more spoken attempts at reading unknown words. A later study also showed that synthetic phonics (teaching letter sounds and then building up to blending the sounds and reading words) produced better word reading, spelling, and reading comprehension than analytic phonics (showing the whole word and analyzing its sound and the use of the sounds in other words) (Johnston, McGeown, & Watson, 2011).

Phonics is a major building block in learning to read; however, it is not the only skill that needs to be developed, as discussed by research conducted by Wyse and Styles (2007). England, for example, has heavily emphasized the use of phonics through their implementation of national phonics-based literacy curriculum programs, yet there has been push back by professionals, who state that the government policies enforcing literacy instruction using these programs, is not grounded in sufficient research (Wyse & Styles, 2007). While it is clear that phonics is necessary and important to early literacy skills, it is not the clear solution to the reading wars that some researchers claim it to be.

Whole Word Comprehension

To some educators, phonics is not a catch-all method and cannot be the only method of teaching literacy, due to the fact that the English language is not fully consistent in its sound-to-spelling relationships (Castles et al., 2018). In English, 80% of monosyllabic words (words with one syllable) can be pronounced using a small set of grapheme-to-phoneme pronunciation rules, but the other 20% will have one grapheme that deviates from frequent pronunciations (e.g., have, pint, chef) (Castles et al., 2018). Phonics does not cover all the complexities of English, and the exceptions (i.e., "sight words") that do not conform to the rules and patterns of phonics instruction still need to be explicitly taught (Castles et al., 2018).

Sight word reading (recognizing a word upon seeing it without having to read and decode it) happens automatically from the memory of a successful reader and is necessary in English because its alphabetic system is variable and open to decoding errors (Ehri, 2007). The hallmark of a skilled reader is the ability to read individual words quickly and accurately, both alone and within text (Ehri, 2007). In the past, supporters of the whole word method have argued that when reading, we read the word as a whole and not the individual letters (science has now shown that we do indeed read the individual letters, however, the process is nearly instantaneous) (Snow & Juel, 2007). While this belief may be unfounded to an extent, methods that are used for developing sight words have been proven effective, and the methods for teaching sight words varies from classroom to classroom (Castles et al., 2018). In the past, teachers favoured texts that supported the whole word method because they were more interesting to students, and these texts relied on heavy repetition of words and phrases to teach words (Snow & Juel, 2007).

Research has shown that sight words are established quickly and remain in the reader's long-term memory (Ehri, 2007). A traditional method for teaching children to read new words is

the whole word flash card procedure, which consists of presenting a new word, reading it to the student, and having them practice it until they can read it correctly on sight (Tan & Nicholson, 1997; Joseph & Schisler, 2007). This flash card method has been found to be an efficient method to teach children to learn to read new words (Cates et al., 2003; Joseph & Nist, 2006). It takes less time to implement than a phonics method, and it has been shown to produce a greater cumulative rate of reading words than phonics analysis, although both are equally good for generalizing and maintaining words (Schmidgall & Joseph, 2007). While the whole word method is also clearly essential to learning to read, the necessity of phonics and the fact that this method is most successfully used in conjunction with other methods, shows that the whole word method is also not the solution to the reading wars.

Balanced Method

As discussed above, neither phonics nor the whole word method should be used alone for early literacy and reading instruction (Schmidgall & Joseph, 2007; Castles et al., 2018). Phonics instruction still requires that sight words be taught but teaching only sight words is an inefficient practice (Castles et al., 2018). Proponents for both phonics and whole word methods argue that the complexity of English spelling makes the opposing methods impractical and infeasible alone (Snow & Juel, 2007). Phonics supporters state that teaching all irregular English pronunciation and spelling is too large a task; while on the other hand, supporters of the whole word method argue that directly teaching English spelling system is too complex (Snow & Juel, 2007). However, providing mixed phonics and sight word training has shown to give students the same gains in alphabetic decoding ability that pure phonics instruction would provide, with the added benefit of gaining sight word skills as well (Castles et al., 2018; McArthur et al., 2015). Phonics teaches students the basic methods for connecting the spoken and written word while teaching sight words helps to cover the depths of English spelling variation (Castles et al., 2018). Therefore, it can be argued that the two methods need to work together in order to provide the best coverage of reading skills. In fact, a student is likely to be more successful learning sight words if the basic letter knowledge (which can be provided by phonics training) is already present (Levin & Ehri, 2009; Castles et al., 2018). Phonics has always been regarded as necessary, but not necessarily the primary skill a new reader must acquire first (Wyse & Styles, 2007). Researchers have claimed that phonological awareness (the awareness of the sound structure of words) combined with letter sound knowledge is the precursor to learning to learn to

read, not one or the other alone (Ehri, 2007). According to Wyse and Styles (2007), successful schools and teachers use these kinds of 'mixed methods' to reinforce and support the other when instructing early literacy and reading skills. As the reading wars conflict clearly continues, it also seems to be settling into a compromise in the eyes of some researchers and educators, where the best aspects of each method are used to complement one another, providing the reader with the best of both worlds.

Teacher Education

A key component in teaching children early literacy and reading skills, beyond the methods chosen by the teacher, are the teaching methods provided to the teacher (from their own Bachelor of Education program) (Snow & Juel, 2007). Teachers and other educators, like early childhood educators (ECEs) and educational assistants (EAs), are often the ones who deliver a literacy program, but the ability of the teacher has a large impact on a program's success, no matter the program being used (Snow & Juel, 2007).

Many pre-service teachers report that little time is focused on the theories and methods of early literacy or reading instruction during their coursework in B.Ed. programs (Schrader et al., 2003). Some also report a lack of strong mentors to model effective literacy practices (Schrader et al., 2003; Teale, Leu, Labbo, & Kinzer, 2002). In designing literacy programs for PSTs, research has found that university programs do not all focus on the same Standards for Reading Professionals, as outlined by the International Reading Association (Lenskie et al., 2013), and generally, teachers in schools have been found to have a poor understanding of the skills needed for language-focused reading instruction (Binks-Cantrell, Washburn, Joshi & Hougan, 2012). Teachers cannot teach what they do not know (Binks-Cantrell et al., 2012), and according to Joshi et al., (2009) they often do not know the basic building blocks of language, literacy and reading instruction. In practice, Briceno and Klein (2015) found inconsistencies in teachers' interpretations of language related errors, and the weakest link found in teacher education is translating PST knowledge to applied skills in the classroom (Fitzgerald, Wilson, & Semrair, 1997; Schrader et al., 2003). In other words, the main weakness teachers have is not knowing how to practically apply the theoretical knowledge they may have learned during their B.Ed. program to their actual teaching practice.

When undergraduate students enter a B.Ed. program, they come with their own personal beliefs and misconceptions about how to teach young children and how they learn to read, which

can impact their implementation of a literacy program (Pletcher, 2016). Pre-service teachers have spent most of their lives in schools, so when they enter B.Ed. programs, they incorrectly believe that they already know how to teach (Lenskie et al., 2013; Darling-Hammond, 2006). They assume they have more knowledge than what they do (Joshi et al., 2009), and individual experiences and environments shape each of their understandings and practices differently (Gee, 2004; Grossman et al., 2000; Lenskie et al., 2013). Learning to teach is a process that is highly influenced by an individual's beliefs and knowledge (Borko & Putnam, 1996; Lenskie et al., 2013), and PSTs construct their professional teaching knowledge through the lens of their own past school experience (Lenskie et al., 2013). The personal beliefs teachers bring to their own teaching are powerful, possibly misleading, and have been found to be difficult to change (Holt-Reynolds, 1992; McDiarmid, 1990; Koehler, 2007). These firmly held beliefs inform how a PST interprets teaching (Bullough & Knowles, 1991; Koehler, 2007), and their beliefs strongly influence how and what they learn from their B.Ed. programs before they even begin (Lenskie et al., 2013).

Teachers and pre-service teachers believe that, as English speakers, they know how to teach English literacy, yet when tested, they often do not have the necessary knowledge to deliver reading instruction accurately and successfully (Binks-Cantrell et al., 2012). PSTs often display a lack of knowledge about constructs needed for instruction, and consequently, cannot possibly provide the necessary instruction to struggling readers (Washburn et al., 2015). In English speaking countries, teachers are simply unprepared to instruct phonics (Binks-Cantrell et al., 2012), and over 20 years of research shows that teachers, not just PSTs, only have a limited knowledge of basic constructs (Washburn et al., 2015). This basic knowledge is necessary for teachers to possess, yet according to multiple studies, B.Ed. programs are not supplying it (Binks-Cantrell et al., 2012; Joshi et al., 2009; Washburn et al., 2015).

The problem appears to be that teachers are not being taught how to teach reading effectively (Binks-Cantrell et al., 2012; Joshi et al., 2009; Washburn et al., 2015), and therefore, it is beneficial to conduct a scoping review to explore the early literacy and reading methods that are being implemented in B.Ed. programs and school classrooms alike.

Hypothesis

Based on a review of the current literature of literacy instruction, I hypothesized that for this scoping review the literature examined would provide an overview of how B.Ed. programs

used Phonics-based instruction, Whole Word instruction, and/or the Balanced Approach to literacy instruction to educate pre-service teachers hereafter referred to as pre-service teachers (PSTs). I used the following questions to guide my research: What are the major themes in the literature surrounding instructional strategies for early literacy in Bachelor of Education programs? Are there any gaps in the existing literature? What, if any, are the controversies that exist in the literature?

Methodology

Researcher Positionality: Bias

It is important to address and understand researcher bias, as it exists in all research, is difficult to eliminate, and it impacts the reliability and validity of findings, which "can have important consequences for practice" (Smith & Noble, 2014). The Cambridge Dictionary defines bias as: "the action of supporting or opposing a particular person or thing in an unfair way, because of allowing personal opinions to influence your judgment; the fact of preferring a particular subject or thing; an unfair personal opinion that influences your judgment" (Cambridge Dictionary, 2020). When I first entered into my B.Ed. program to become a teacher, I had no opinion, experience, knowledge or personal preference when it came to early literacy, teaching methods, or teacher education for that matter; I simply had the desire to become a teacher. This absence of bias continued when I entered into my Master's program. Prior to beginning this scoping review, I believed that B.Ed. programs teach reading and literacy theories for early literacy instruction to primary PSTs. I was not a primary PST and believed that the absence of this kind of instruction in my B.Ed. experience must be due to my division (junior/intermediate).

When I started conducting my research, I examined all theories and methods with an open mind with no agenda or opinion. As I continued, however, I found that every method of early literacy learning was good and useful, and I believed that together, all were beneficial for students. I used them to inform my teaching practice and to improve my early literacy instruction; this became my bias. Consequently, I did not want to use any method in isolation. As I became aware of my developing bias, I tried to address and counter it. I researched through a new lens and instead looked at the opposite view to my own: that each method should be used in isolation (i.e., using only phonics-based instruction over whole word comprehension). As a

result, I found what I believe to be the flaws in each theory when used alone, which in turn, gave me an additional but opposing bias: that the prevalent theories used in isolation are flawed and are inadequate on their own. Having started out with no biases, not only did I develop one bias to fight the other, neither won out, and now I have two as a result. I now believe that all methods for teaching early literacy, reading, and writing, are best only when used in tandem with the others, taking the best from all of them, and leaving behind the proverbial chaff. In this way, I am in effect, attempting to move past both of my biases, by arriving at the opinion that all theories are good for instruction, they just simply are not good enough on their own. Conducting this research did consequently change my views. I previously believed this kind of literacy instruction was division specific (primary, not junior or intermediate). But, having completed a primary division A.B.Q. course, as well as this scoping review, I believe that the evidence supports the notion that there are B.Ed. programs which are not adequately preparing PSTs for early literacy instruction.

Method

For this research, a scoping review was conducted. Also called a scoping study, scoping method, literature review, scoping exercise method, or mapping of research (Colquhoun et al., 2014), it is used to create a map of the themes relevant available literature in a broad area or topic of interest (Arksey & O'Malley, 2005) as well as present any gaps in the literature (Colquhoun et al., 2014) and evidence that can be used to inform policy making, practice and further research (Dault, van Mossel, & Scott, 2013). A scoping review can be performed as a "stand-alone" project such as this thesis, and especially in an area which is complex or has not previously been comprehensively reviewed (Mays, Roberts, & Popay, 2001, p. 94). It differs from a systematic review, which address a specific question within a topic, and is also less likely to explicitly answer a specific research question from a narrow range of selected literature; it also does not judge the quality of the literature included (Arksey & O'Malley, 2005). However, not judging literature quality is a topic that researchers disagree upon, as some argue that there should be some way of doing so (Daudt et al., 2013). Scoping reviews have become increasingly popular and incorporate a range of study designs to inform practice, policy, and programs, and give direction to future research priorities (Colquhoun et al., 2014). In emerging fields, scoping reviews provide diverse study methodologies, and in established fields, they have access to an abundance of evidence with which to provide a 'lay of the land' (Colquhoun et al., 2014).

There are six main steps to completing a scoping review, which are sometimes repeated as the research develops. These were initially described by Arksey & O'Malley in their 2005 article, entitled *Scoping studies: Towards a methodological framework*, and are an accepted standard for scoping reviews. These steps were applied to my scoping review in the following ways:

1. Identify a research question

For this scoping review, the research question is: "What are the major themes in the literature surrounding instructional strategies for early literacy and Bachelor of Education programs?" The term 'and' refers to the fact that the research question is addressing two levels of literacy instruction, the university classroom and the elementary school classroom. For this study, 'early literacy' refers to all literacy related skills that precede the ability to read and write, which are normally acquired by children during their first 5 years of schooling (Kindergarten to Grade 3) but excluding pre-reading skills acquired before entering school.

Working with an education librarian, multiple drafts of search terms were made and tested in the selected databases before finalizing the terms. I used the "thesaurus" or the "subject terms" tool on various databases to find relevant synonyms to include in the search terms. Two main subjects were used to search, "*teacher education*" and "*early literacy*." For the main subject "*teacher education*," synonyms for teacher candidates such as "*pre-service teacher*," "student teacher," "initial teacher," "teacher in training," and "education student" were used. Synonyms for "teacher education program" included "teacher training," "teacher program," "teacher preparation," "bachelor of education," "bachelor of education program" and "teacher's college." For the main subject "early literacy," "emergent literacy," "beginning reading," "beginning writing," "literacy education," "literacy instruction," "literacy teacher/ers/ing," and "literacy skills" were used in most search criteria (see Appendix B for full list of search terms and Boolean search syntax).

2. Identify the relevant studies

For this scoping review, relevant studies were identified by searching six electronic databases for peer edited academic sources and grey literature, limited to English language sources published after the year 1995. These six databases were Educational Resources Information Clearinghouse (ERIC-ProQuest), APA PsycINFO (ProQuest), Linguistics and Language Behavior Abstracts (LLBA-ProQuest), Education Source (EBSCO), Academic Search

Complete (EBSCO) and Web of Science (Clarivate). A search in ERIC produced 756 sources, APA PsycINFO produced 268 sources, LLBA produced 179 sources, Web of Science produced 759 sources, Academic Search Complete produced 776 sources, and Education Source produced 1,478 sources, for a total of 4,215 sources. 1,856 sources were removed as duplicates, leaving 2,359 sources to be screened. Search terms included "early literacy" and "teacher education" combined with synonyms and other related subtopics (see Appendix B).

3. Study selection

For this scoping review, studies were screened using *Covidence*, an online source management tool. The 2,359 sources were first examined by the title and its relevance, followed by reading the abstract. 1,819 of the studies did not fit the inclusion criteria and were removed, leaving 540 to be full text screened. The remaining articles were then read and screened (full text review) by two researchers, another graduate student and I, leaving 134. I conducted a secondary round of full text reviewing to further exclude studies that did not meet the inclusion criteria, leaving 13, conferring with the secondary reviewer for studies which were difficult to determine. Hand searching study references provided 3 additional studies, bringing the final total to 16 sources for extraction. A set of inclusion and exclusion criteria was made prior to searching for sources in order to determine which sources are acceptable for the purposes of this scoping review, such as language, date, and format of publication/study type, population and methodology. A full list of reasons for exclusion are listed below (see **Exclusions** section and Table 2).

4. Charting the data (Extraction)

For this scoping review, I extracted and charted the data using Microsoft Word. I chose to create my own table rather than use the table building feature in *Covidence* as it seemed better suited to data extraction. Information that was extracted from each study included authors, date of publication, country of publication, study design, study purpose, and the main themes that arose. I made multiple tables before I settled on my final version, to add or remove themes that were not the main point or a major finding in the study and found the process to be rather cyclical. I had to continuously return to each study after extracting data to summarize the themes in more concise terms (see Table 8).

5. Collating, summarizing, and reporting the results

This scoping review presents an overview of all the literature that has been screened and the most prevalent applicable themes found throughout (see Results section). As the studies selected for data extraction were all qualitative (with some quantitative sections), I did not make any numerical analyses or summaries. I started by systematically examining each source and then highlighting recurring comments and findings. I then summarized these themes, condensed them into a single phrase description, and grouped similar themes together. **Analyze:** I present an analysis of the selected literature, the three themes that arose from the 16 sources relating to PST early literacy instruction in teacher education (see Results section). **Report the Results**: data extraction charts are presented along with the thematic analysis. **Discuss the Findings:** the findings and implications are discussed for future research, practice and policy (see Discussion section).

6. Consultation

This step is optional and provides consumers or stakeholders the opportunity to make suggestions and provide additional insights (Colquhoun et al., 2014). As there are no stakeholders involved in this current research, no consultations were necessary, and therefore this step was not conducted. This research was focused solely on the published literature which the original Boolean search results produced, and hand-searching their reference sections. It was not focused on recommended sources or input from expert opinions.

Theoretical Framework

Of note, no theoretical framework or conceptual lens is present for this scoping review. As the purpose is not to seek out specific findings or to examine the literature with an explicit point to prove (Colquhoun et al., 2014), the only lens to be used here is the metaphorical magnifying lens - to bring to light the themes that are present in the existing literature. No one research site or participant selection is necessary, as scholarly documents are the main source of data.

Inclusions

- Literature on English early literacy instruction in B.Ed. programs
- Literacy instruction in B.Ed. programs (for primary grades)
- Digital full-text academic and scholarly sources which are available online.
- Print articles or books which have been scanned/are in a digital format.

- Full-text and peer-reviewed academic articles and their abstracts and reference lists (which can be hand sourced).
- Sources published between 1995 and 2021.
- Sources published in, or translated into, English.
- Relevant grey literature.

Exclusions

- Non-primary PSTs (junior, intermediate, or senior [grades 4-12])
- Technology-literacy (not early literacy)
- Early Childhood Education (E.C.E. programs)
- In-service teachers (not pre-service teachers)
- Wrong language (not in English or not about English instruction)
- Inappropriate study design (book review, erratum, synopsis of review of multiple articles)
- Incorrect patient population (graduate students, literacy specialists, special education teachers, educators who have already graduated from B.Ed. programs)
- Inappropriate intervention (English as a second language, English language learning, special education, social-emotional development, adult literacy, financial literacy, critical literacy, subject-specific/disciplinary literacy)

Validity And Ethics

Using multiple sources is one way in which a study can attain higher validity. With this scoping review, at least 100 documents and sources were used, as a "researcher is expected to draw upon multiple (at least two) sources of evidence; that is, to seek convergence and corroboration through the use of different data sources" (Yin, 1994 in Bowen, 2009, p. 29). Triangulating the data through analyses will help to create a unification of evidence that creates heightened credibility (Eisner, 1991, p. 110), and such an analysis is presented in the following results section. Corroborating research findings reduces the impacts of potential biases that may be present in one source (Bowen, 2009), and this helps protect the researcher from the accusation that the findings of their study are a product of personal or single-source bias (Patton, 1990).

Results

Study Selection and Screening

I used C*ovidence*, the online source management tool, to import and screen the sources found from my search of the 6 databases. There were 4,215 studies imported, and 1,856 total duplicates were removed in C*ovidence*, leaving 2,359 for screening. I first read each study title, and then read the abstract to judge if it was relevant to answer my research question and fit the inclusion criteria. I removed 1,819 studies that did not fit the criteria. The remaining 540 I screened the full text and worked collaboratively with a secondary researcher. After one round of this full-text review, 134 studies remained. I conducted a secondary round of full text reviewing to further exclude studies that did not meet the inclusion criteria. After examining these studies, I realized that some of them did not accurately fit the inclusion criteria, and I was including too wide a range of studies which did not properly answer my research question. Some studies fit the criteria better than others by comparison, so some of those which I had included earlier in the full-text review did not seem as suitable. While they were related to literacy instruction in B.Ed. programs in general, the majority of studies were not specific to early literacy or to primary division literacy instruction. I conducted a secondary round of full-text reviews, leaving 13 studies. A hand search of references provided 3 more studies, which made 16 total sources from which to extract information.

This process follows PRISMA requirements for systematic reviews and meta-analyses. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) is “an evidence-based minimum set of items for reporting … [which] primarily focuses on the reporting of reviews evaluating the effects of interventions, but can also be used as a basis for reporting systematic reviews with objectives other than evaluating interventions” (PRISMA, 2021). From *Covidence*, the following the PRISMA data was exported and charted in two ways: one, as a table, and two, as a flow diagram (see Table 1 and Figure 1).

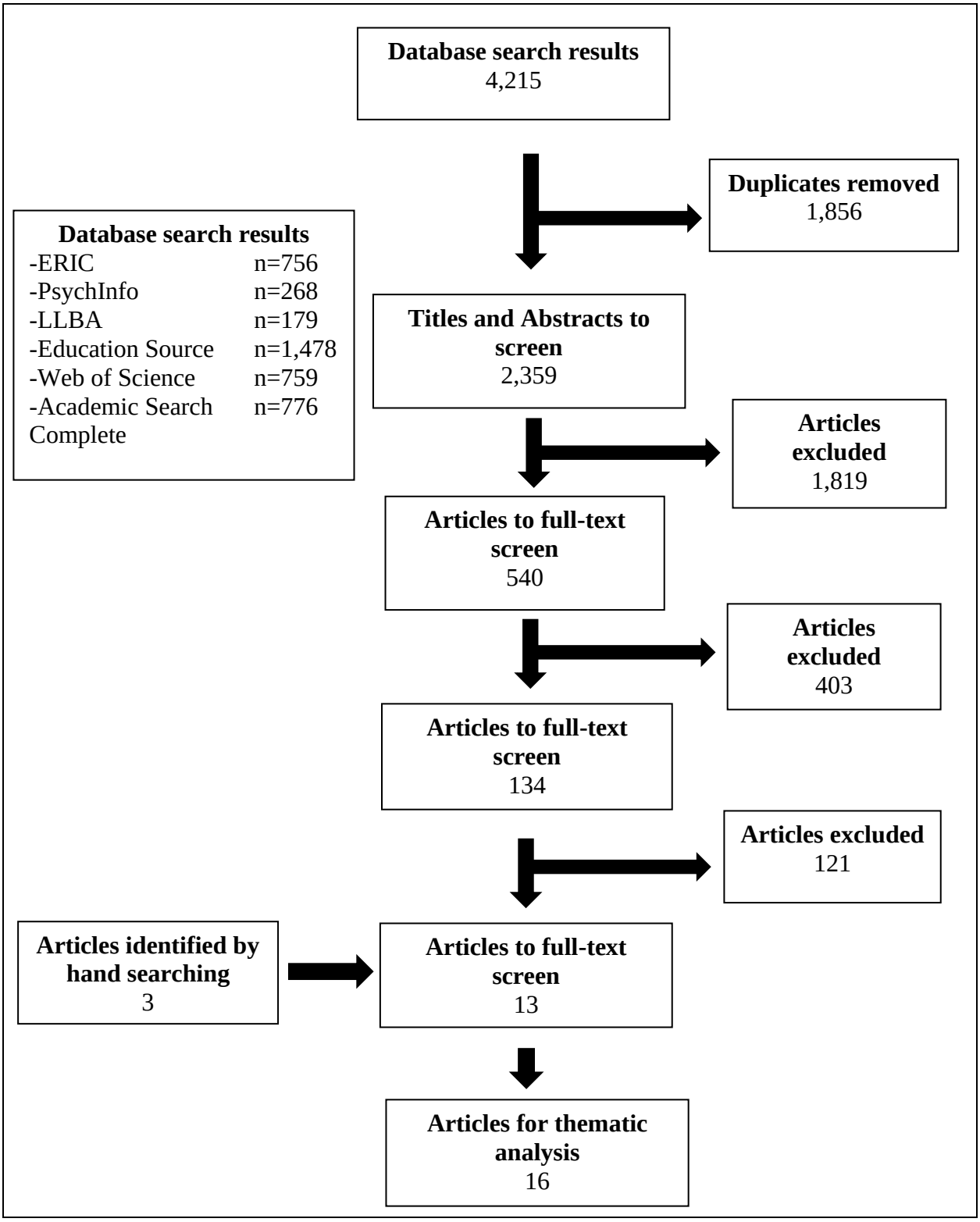
Table 1
PRISMA data

Action taken	**Number of studies**
References imported for screening	4,215
Duplicates removed	1,856
Studies screened against title and abstract	2,359
Studies excluded	1,819
Studies assessed for full-text eligibility	540
Studies excluded (total)	524
Studies included	13
References imported for screening	3
Studies assessed for full-text eligibility	3
Studies included	3
Studies included (total)	16

A PRISMA flow diagram (see Figure 1) shows the "flow of information through the different phases of a systematic review," mapping out the number of sources identified, included and excluded, and the reasons for exclusions (shown in a secondary table for this review; see Table 2.) (PRISMA, 2021).

Figure 1

PRISMA flow diagram



All studies were screened using a pre-made set of inclusion and exclusion criteria, which was used by both researchers during the screening process.

Table 2
Inclusion and exclusion criteria

Inclusions	**Exclusions**
• Literature on English early literacy instruction in B.Ed. programs. • Literacy instruction in B.Ed. programs (for primary grades). • Digital full-text academic and scholarly sources which are available online. • Print articles or books which have been scanned/are in a digital format. • Full-text and peer-reviewed academic articles and their abstracts and reference lists (which can be hand sourced). • Sources published between 1995 and 2021. • Sources published in, or translated into, English. • Relevant grey literature.	• Wrong topic (e.g., general literacy K-12, adult literacy, critical literacy, science literacy, English as a second language, etc.). • Wrong study design (e.g., erratum, book review). • Wrong population (e.g., students in primary schools, special education teachers). • In-service teachers. • Non-primary PSTs (e.g., high school). • Perceptions and abilities of literacy instruction • Use of technology in literacy. • E.C.E. (early childhood education) programs. • Wrong language (not English or not about English literacy). • Duplicate. • Wrong setting (e.g., field-based experience, community centre, etc.).

After two rounds of exclusions, the 540 studies were reduced to 16. The reasons for exclusions are shown in the table below (see Table 3), along with the number of studies excluded for each reason.

Table 3
Number of studied excluded

Number of studies	Exclusion criteria for full text review, second review
138	Incorrect topic (e.g., general literacy K-12, adult literacy, critical literacy, multimedia literacy, mathematical literacy, etc.)
89	Inappropriate study design
85	Incorrect population (e.g., students in primary schools)
64	In-service teachers
30	Non-primary PST (e.g., high school)
29	Perceptions and abilities of literacy instruction
26	Use of technology in literacy
23	E.C.E. programs
21	Wrong language
10	Duplicate
9	Incorrect setting (e.g., field-based experience, community centre, etc.)

Data Extraction

The data I extracted from each source included: author name(s), date of publication, location of study/publication, study type, study purpose, and the main theme(s) of the study.

Location, date, study type and purpose

All of the 16 selected sources were published in the same four countries: Australia, Canada, New Zealand, and the U.S.A. The vast majority of studies were published in the U.S.A. (n=10), while two studies each were published in both Canada and Australia. One studied was published in New Zealand, and source was published by a combination of Canadian and American researchers.

Table 4
Location of study

Location of study	Number of studies
Australia	2
Canada	2
New Zealand	1
U.S.A.	10
Combination Canada and U.S.A.	1

While the search criteria included sources published between 1995 and 2021, the final 16 studies used were all published between 2005 and 2020 (no studies between 1995 and 2004). In each year between 2005 and 2020, only one source had been published, with the exception of 2017 (which had four: Young et al., 2017; Sharp, Coneway, & Diego-Medrano, 2017; Rutherford, Carter, Riley, & Platt, 2017; and Lohfink & Adler, 2017) and also 2018 (which had two: Wetzel et al., 2018; and McNeill, 2018) (see Table 4).

Table 5
Year of publication

Year	2005	2006	2008	2010	2013	2014	2015	2016	2017	2018	2019	2020
No. of studies	1	1	1	1	1	1	1	1	4	2	1	1

Study types varied and included: survey design (n=3), explanatory mixed methods (n=1), comparative (n=2), exploratory (n=1), content analysis (n=2), action research project (n=1), national government report / inquiry (n=2), longitudinal study / inquiry (n=2), and longitudinal case study / cross-case analysis (n=2). All studies were published in academic journals except for two national government reports / inquiries (Australian Government: Department of Education, Science and Training, 2005; and National Council on Teacher Quality, 2006) (see Table 6).

The purpose of each study fell into three broad categories: one, to examine PST literacy knowledge, beliefs, and practices (n=7); two, to examine the preparation of PST in B.Ed. programs (n=6); and three, a combination of both (n=3) (see Table 7).

Table 6

Study type

Study Type	**Number of studies**	**Author of studies**
Survey design	3	Ciampa & Gallagher, 2019; Meeks, Madelaine, & Kemp, 2020; and Rutherford, Carter, Riley, & Platt, 2017
Explanatory mixed methods	1	Clark, Jones, Reutzel, & Andreasen, 2013
Comparative	2	Clark, Helfrich, & Hatch, 2015; and McNeill, 2018
Exploratory	1	Myers et al., 2016
Content analysis	2	Kosnik & Beck, 2008; and Sharp, Coneway, & Diego-Medrano, 2017
Action research project	1	Lohfink & Adler, 2017
National, government report / National inquiry	2	National Council on Teacher Quality, 2006; and Australian Government: Department of Education, Science and Training, 2005
Longitudinal study / inquiry	2	Young et al., 2017; and Wetzel et al., 2018
Longitudinal case study / Cross-case analysis	2	Courtland & Leslie, 2010; and Grisham et al., 2014

Table 7

Study purpose

PST literacy knowledge, beliefs, and practices	**B.Ed. programs' preparation of PSTs**	**Both**
• Ciampa & Gallagher, 2019 • Courtland & Leslie, 2010, • Grisham et al., 2014, • Kosnik & Beck, 2018 • Lohfink & Adler, 2017 • Meeks, Madelaine, & Kemp, 2020 • Rutherford, Carter, Riley, & Platt, 2017	• McNeill, 2018 • Sharp, Coneway, & Diego-Medrano, 2017 • National Council on Teacher Quality, 2006 • Young et al., 2017 • Myers et al., 2016 • Australian Government: Department of Education, Science and Training, 2005	• Clark, Jones, Reutzel, & Andreasen, 2013 • Clark, Helfrich, & Hatch, 2015 • Wetzel et al., 2018

While some of the 16 studies touched on early literacy, these studies were mostly in reference to Early Childhood Education programs, which are not the same as Bachelor of Education teacher training programs. In other studies, early literacy was the subject, but the participants were not pre-service teachers, and included in-service teachers or actual early literacy students in primary schools. Some studies did focus on how PSTs were instructing early literacy, but in a field-based or practicum setting, and did not focus on what they had been taught during their B.Ed. program concerning early literacy. Other studies focused on PSTs and literacy but were overwhelmingly about high school English. It was unexpected to see that other studies appeared to examine early literacy instruction provided to PSTs, yet they only discussed the beliefs and perceptions of the PSTs, sometimes comparing these to their actual skills and abilities, and did not examine what exactly they had been taught (see Table 8). Of the 16 sources that were included for data extraction, only three directly examined both reading and writing in early literacy (Courtland & Leslie, 2010; Young et al., 2017; and Lohfink & Adler, 2017). The vast majority of studies focused overwhelmingly on reading instruction (early and general instruction), while only one study (Myers et al., 2016) focused on general writing instruction provided to PSTs.

Table 8
Data extraction chart

Author(s), Year, Country(ies)	**Study Design**	**Purpose**	**Themes (3)**
1. Ciampa & Gallagher, 2019 Canada & U.S.A.	Survey design	To examine PST's knowledge of literature instruction & field-work experience.	• PSTs believe they know more about literacy teaching than they actually do
2. Clark, Jones, Reutzel, & Andreasen, 2013, U.S.A.	Explanatory mixed methods	To examine: a) how PSTs rate their ability to teach reading; b) how much B.Ed. instruction is reflected in in-service teaching; c) how beginning teachers describe their reading B.Ed. training, and their teaching ability in year one.	• PSTs have concerns about being literacy teachers and want more training

3. Clark, Helfrich, & Hatch, 2015, U.S.A.	Comparison	To determine how to better prepare teachers with the necessary knowledge to teach reading, by examining the reading instructional knowledge of PSTs from two B.Ed. programs. Program A required five reading methods courses and Program B required two methods courses.	• Quality of literacy courses and training outweigh quantity
4. Courtland & Leslie, 2010, Canada	Longitudinal multisite case study	To describe the beliefs and practices of three literacy teacher educators in a literacy course.	• B.Ed. practicums need good communication relationships and partners
5. Grisham et al., 2014, U.S.A.	Longitudinal study; cross-case analysis	To examine the impact of teacher preparation on the literacy instructional practices of PSTs.	• Gap in PST literacy knowledge
6. Kosnik & Beck, 2008, Canada	Content analysis	To examine the views of Teacher Educators (of literacy courses), and those of graduates of their program in their first three years of teaching.	• Gap between literacy theory and practice
7. Lohfink & Adler, 2017, U.S.A.	Action research project	To examine how the participation of PSTs in early literacy simulated course activities impacted how they learned Direct Explanation and Transactional Strategy models of comprehension instruction.	• Gap in PST literacy knowledge
8. McNeill, 2018, New Zealand	Comparison	To compare phonemic, morphological, and orthographic awareness for spelling instruction of PSTs in a methods course, vs. three groups: • PSTs without the course • in-service teachers • in-service teachers with professional development training on the same subject.	• Quality of literacy courses and training outweigh quantity
9. Meeks, Madelaine, &	Survey design	To determine whether PSTs were knowledgeable on current evidence-base relating to content and pedagogical	• Gaps in PST literacy knowledge

Kemp, 2020, Australia		practice for literacy instruction, including: • the five main components of reading • current research & recommended practices for teaching early literacy • what PSTs consider the most important early literacy teaching strategies	
10. Rutherford, Carter, Riley, & Platt, 2017, U.S.A.	Survey design	To determine current PSTs' knowledge of early reading content, including: • how much are the five components of reading taught in B.Ed. • how prepared PSTs felt to teach reading • how much content knowledge of the five components do PSTs actually have	• PSTs believe they know more about literacy teaching than they actually do
11. Sharp, Coneway, & Diego-Medrano, 2017, U.S.A.	Content analysis	To analyze elementary PST programs for specialized attributes of stand-alone children's literature courses.	• PSTs believe they know more than they do about teaching early literacy
12. National Council on Teacher Quality, 2006, U.S.A.	National, Government Report	To determine what PSTs are taught about reading instruction in B.Ed. programs, and how well courses taught the five components of the science of reading.	• B.Ed. inconsistencies and lack of reading instruction
13. Young et al., 2017, U.S.A.	Longitudinal inquiry	To understand the relationship between B.Ed. literacy learning in the classroom and instructional decisions made during the PST practicum. To understand how PSTs use the Standards of Reading Professionals during practicum.	• B.Ed. programs should teach problem solving
14. Wetzel et al., 2018, U.S.A.	Longitudinal study	To explore how one university's practice-based B.Ed. program prepared literacy teachers to develop practical knowledge for teaching and how that knowledge was tested and adapted in the first years of teaching.	• B.Ed. programs should teach problem solving

15. Myers et al., 2016, U.S.A.	Exploratory	To explore how PSTs are taught writing instruction in B.Ed. programs.	• Gap in B.Ed. course content
16. Australian Government: Department of Education, Science and Training, 2005, Australia	National inquiry	To examine the adequacy of teacher education courses for reading instruction.	• B.Ed. inconsistencies and lack of reading instruction

Themes

After extracting information like author(s), date, location, study type and study purpose, I extracted the major themes from each study. I began to construct an extraction chart to organize all the information. To extract the themes, I examined the full text, and made detailed notes of the main points researchers presented. I highlighted recurring comments and findings, summarized, and condensed them. I analyzed all the themes and began to categorize those which were similar. A full list of themes is charted below (see Table 9).

Table 9

Themes in studies

Major themes	**Theme descriptions**	**Studies**
1. B.Ed. program needs that should be addressed	• B.Ed. programs should teach problem solving	• Young et al., 2017 • Wetzel et al., 2018
	• B.Ed. inconsistencies and lack of reading instruction	• National Council On Teacher Quality, 2006 • Australian Government: Department of Education, Science and Training, 2005
	• Quality of literacy courses and training outweigh quantity	• Clark, Helfrich, & Hatch, 2015 • McNeill, 2018
	• B.Ed. practicums need good communication relationships and partners	• Courtland & Leslie, 2010 • Young et al., 2017

	• PSTs have concerns about being literacy teachers and want more training	• Clark, Jones, Reutzel, & Andreasen, 2013
2. Gaps in knowledge and content: • PST knowledge • B.Ed. course content • Theory and practice	• Gap in B.Ed. course content	• Myers et al., 2016
	• Gaps in PST literacy knowledge	• Grisham et al., 2014 • Lohfink & Adler, 2017 • Meeks, Madelaine, & Kemp, 2020
	• Gap between theory and practice	• Kosnik & Beck, 2008 • Meeks, Madelaine, & Kemp, 2020
3. PST perceptions	• PSTs believe they know more than they do about teaching early literacy	• Ciampa & Gallagher, 2019 • Rutherford, Carter, Riley, & Platt, 2017 • Sharp, Coneway, & Diego-Medrano, 2017 • Kosnik & Beck, 2008

Thematic Analysis

Three major themes were extracted from the final 16 sources in this systematic review. The first theme, which was found in eight out of sixteen sources, was that B.Ed. programs have needs that should be addressed. The second theme found in six of the articles showed that there are gaps in knowledge and content relating to literacy instruction in B.Ed. programs. The third and final theme present in the literature demonstrated the presence of inconsistencies between the perceptions and abilities of PSTs, found in three sources.

1. Needs of B.Ed. programs that should be addressed

The theme that was the most prevalent in the literature is that B.Ed. programs have a number of needs that should be addressed, which has five sub-themes.

a. Problem-solving instruction

Young et al., (2017) and Weztel et al., (2018) both noted that in their examination of B.Ed. programs and B.Ed. practicum components. They found that PSTs encountered obstacles, tensions, struggles, roadblocks, and other forms of resistance or conflicts that they did not always know how to resolve. Both studies stated that the B.Ed. programs should be purposefully and explicitly teaching PSTs problem-solving strategies. Young et al., (2017) questions whether or not teacher educators are actually preparing PSTs to teach literacy when the PSTs come across a

challenge that impacts their planned instruction. The researchers posit that perhaps teacher educators are not teaching PSTs to "search in a professional way for space to enact their learning when encountering roadblocks or resistance" (Young et al., 2017, p. 93) while teaching literacy in their practicum placements under teacher mentors. The authors call for B.Ed. programs to provide PSTs with strong content to give PSTs declarative subject knowledge and situated procedural knowledge (citing Snow et al., 2005); more so, however, that teacher educators need to consider ways to help PSTs "anticipate and respond to obstacles they may encounter in the classroom" (citing Gambrell et al., 2011) (Young et al., 2017). They questioned how deeply PSTs embraced and carried over practical knowledge of literacy instruction into their own classrooms (Young et al., 2017). When the researchers examined one PST involved in the study, they noted that the PSTs experienced frustration when planned literacy sessions were taken over by the classroom teacher to prepare students for tests but failed to note how the PST did or did not deal with this "frustration" (Young et al., 2017).

Wetzel et al., (2018) sought to identify and analyze "points of tension, challenge, or dissonance in the first years" (p. 96) of teaching by following PSTs from their initial training into full-time teaching. The authors found that B.Ed. programs should be designing practicum experiences that purposefully "include opportunities to reflect on tensions" PSTs may face in their first years of practical teaching (Wetzel et al., 2018, p. 88), giving the distinct implication that PSTs are not being prepared to face such tensions in their B.Ed. training. These kinds of purposeful tensions and struggles could potentially help to give PSTs practical knowledge and allow them to encounter what they call 'productive' tensions in their work (Wetzel et al., 2018). The researchers state that professionals who educate PSTs have long understood that the transition from teacher training in a B.Ed. program into a full-time classroom teaching position is "rife with competing philosophies and expectations" (Wetzel et al., 2018, p. 89); this in turn takes in PSTs and produces teachers who then face the tensions of being pulled in conflicting directions (Wetzel et al., 2018). It is clear to the researchers that B.Ed. programs, therefore, need to increase the amount of conversation instruction and explicit instruction when it comes to "strategic approaches to tensions and struggles in teaching" (Wetzel et al., 2018, p. 107) in order to better prepare PSTs to face these tensions and struggles. Wetzel et al., emphasize the importance of engaging in problem-solving strategies to create authentic learning opportunities for PSTs when they deal with conflicts and tension (cites Beach & Pearson, 1998), as there is a

current lack of such opportunities (Wetzel et al., 2018). These findings, along with those of Young et al. (2017), support the larger theme where B.Ed. programs currently have some areas of need which should be addressed.

b. Quality instruction

Both of the two comparative studies (Clark, Helfrich, & Hatch, 2015; and McNeill, 2018) and this review shared a similar conclusion: that quantity of early literacy courses does not ensure PSTs knowledge of the basics of reading. In fact, the authors found just the opposite, and that it is quality, rather than quantity, which better prepared their PSTs. Clark, Helfrich, and Hatch (2015) compared two different B.Ed. programs which each had a different number of required reading methods courses; one B.Ed. program required PSTs to take two reading methods courses; the other required five courses. The researchers found statistically significant differences in the literacy knowledge PSTs had based on the B.Ed. program in which they had attended, and the number of courses they had completed. While the PSTs did show improvement in their knowledge of the basics of early literacy, those PSTs who were in the B.Ed. program which required them to complete five reading methods courses ended up scoring significantly lower than those PSTs who had only taken two reading methods courses for the B.Ed. program (Clark et al., 2015). The researchers also state that they have "concerns [which] raise questions about how preservice teachers are being taught to teach reading" (Clark et al., 2015, p. 2). As teachers are the "most important factor in shaping student growth and student achievement, then an effective, well-trained, and knowledgeable teacher is essential in preventing or diminishing the possibility of reading failure" (Clark et al., 2015, p. 2). Yet, the number of reading methods courses required in B.Ed. programs varies widely, and further, it does not indicate or reflect the quality of skill ability of the teacher the B.Ed. program produces (Clark et al., 2015). This only complicates the researchers understanding of how PSTs are prepared to teach children to read, and B.Ed. programs are "left with little to no research to guide them in making decisions about the number of methods courses that are needed or how these courses influence teacher knowledge" (Clark et al., 2015, p. 2-3).

McNeill (2018) examined how coursework impacted building PSTs' metalinguistic knowledge and teaching approaches for spelling instruction. Overall PSTs' knowledge mirrored that of in-service teachers, which was generally low; there is evidence of some growth over the course of a B.Ed. program, but PSTs generally graduate with "inadequate knowledge to provide

explicit teaching in encoding and decoding processes" (McNeill, 2018, p. 29). The study compared a group of PSTs who received ten extra hours of metalinguistic instruction to three other groups: other PSTs in the same literacy methods course but without the extra instruction, in-service teachers, and in-service teachers with thirty hours of professional development on metalinguistics. McNeill found that with the extra instruction, PSTs outperformed both the non-instructed PST group and the in-service teacher group and performed equally to in-service teachers who had received the professional development (2018). While in-service teachers had thirty hours of training, PSTs with ten hours performed just as well, suggesting that quality training makes for more skilled educators (McNeill, 2018). McNeill noted, however, that while other metalinguistic opportunities were available for PSTs, this was normally offered as a one-off workshop or session (2018). Such sessions may not provide enough quality time to "master the content;" instead, they just temporarily improve a PST's skill (McNeill, 2018, p. 30). This would also not allow PSTs to relate their newly acquired knowledge to other literacy education content from their B.Ed. program (McNeill, 2018). These kind of one-off attempts "could also imply that the content is an 'add on' rather than core information in their preparation as reading and spelling teachers" (McNeill, 2018, p. 30). While multiple options exist for advancing PSTs' knowledge in metalinguistics for spelling instruction, it is again the quality of the teaching that makes a meaningful impact on the learning for the PST. These two comparative studies both demonstrate that not only is quality instruction necessary in a B.Ed. program, but it also points to the fact that quality instruction is something that B.Ed. programs should examine.

c. Inconsistencies and lack of reading instruction preparation

Two sources that also came to a shared conclusion also both happened to be national reports: What Education Schools Aren't Teaching about Reading and What Elementary Teachers Aren't Learning, published by the National Council on Teacher Quality (2006) and Teaching Reading: Recommendations and Reports published by the National Inquiry into the Teaching of Literacy (Australian Government: Department of Education, Science and Training, 2005). Both reports share the theme of discovering that the B.Ed. programs they investigated showed inconsistencies and general lack of 'acceptable' reading instruction being provided to PSTs.

In their report, the National Council on Teacher Quality (NCOTQ) (2006), investigated how well B.Ed. programs were teaching the five components of the science of reading (phonics, phonemic awareness, fluency, vocabulary, and comprehension). The researchers examined the

course descriptions, syllabi, and lectures of the B.Ed. program, and gave each aspect a percentage score. B.Ed. programs that taught all five components of reading received 100% and programs that taught only one component received a 20% score (National Council on Teacher Quality, 2006). In their results, the authors found that fewer than 15% (11 out of 72) of B.Ed. programs were teaching the five components of the science of reading. Most of the 72 programs failed even though a passing score could be obtained if the teacher educator were teaching the science of reading in less than 20% of lectures (NCOTQ, 2006). Programs could also pass if their course materials referenced each of the five components of the science of reading, and yet 22 programs still failed completely, neglecting to mention any of the five components in any aspect of the program (NCOTQ, 2006). A full 33% of programs made zero reference to the science of reading in any of the reading courses, even though some programs required up to four reading courses (NCOTQ, 2006). Of the 93 courses which B.Ed. programs claimed offered a 'balanced approach' to reading instruction (mixing phonics and whole word comprehension), only 8 courses (9%) actually mentioned the 'balanced approach' during lecture periods "as an approach that aspiring teachers might need to know" (NCOTQ, 2006). The findings also suggested that teacher educators may not be teaching the science of reading because they are "reluctant to teach what they themselves do not know" (NCOTQ, 2006, p. 27). This opposes the idea that teacher educators are ideologically against the science of reading; as after a review of course texts, it was clear that the phonics aspect of the science of reading was still being taught in the same manner in which it was taught 20 and 30 years ago, despite the advances made in the meantime (NCOTQ, 2006). The majority of programs dismissed reading research, encouraged techniques that would not benefit up to 40% of children, and used textbooks that were overwhelmingly deemed 'not acceptable' (NCOTQ, 2006). Much of current reading instruction examined was found to be incompatible with science and PSTs were being taught that reading via exposure to literature would "spark a natural development of reading skill," that the right motivation would be sufficient to build this skill in students, and that reading is a "natural, organic process, despite the fact there is no evidence to support such a view" (NCOTQ, 2006, p. 29). Teacher educators were found to portray the science of reading instruction as an approach that is "no more valid than others" and that direct reading instruction by a teacher is outdated and potentially harmful to students (NCOTQ, 2006). In general, the researchers found that there is a distrust of scholarly contributions to reading instruction from other fields (such as cognitive psychology and

linguistics), there is a general disdain and skepticism for facts proven by the science of reading, and that reading coursework in B.Ed. programs are "undemanding [and] far too often juvenile in tone, content, and expectation" (NCOTQ, 2006).

The report from the Australian Government's Department of Education, Science and Training (AGDEST) (2005), sought to identify how much PSTs are provided with "reading teaching approaches and skills that are effective in the classroom" and how much they are given the opportunity to develop and practice "the skills required to implement effective classroom reading programs" (Australian Government: Department of Education, Science and Training, 2005, p. 113). The authors found that, after examining B.Ed. programs for reading instruction accuracy, that reading instruction was not being taught consistently between programs; some programs prioritized reading methods courses, whereas others did not (AGDEST, 2005). Less than 10% of course time was devoted to teaching PSTs to teach reading to students, and that most B.Ed. programs were not giving enough attention or priority to literacy and reading instruction (AGDEST, 2005). Some B.Ed. programs offered elective subjects or courses where reading instruction was included, and researchers found that these electives significantly improved PST preparedness to teach reading (AGDEST, 2005). Yet, since these courses are not mandatory and only some PSTs participate in these courses, it suggests "that some graduates are better prepared than others to teach reading because they have completed such electives," and "raises the question of why these are elective subjects/units rather than compulsory subjects/units" (AGDEST, 2005, p. 113). Two thirds of courses (21 of 34) provided a list of compulsory skills PSTs need to develop in order to effectively teach reading, whereas the remaining third of courses showed a significant gap in what skills they offered to teach PSTs (AGDEST, 2005). This suggested to the researchers that "considerable gains would accrue if all institutions made provision in their curriculum for the development of all of the understandings, skills and capabilities that graduates need to become effective teachers of reading" (AGDEST, 2005, p. 114). Other findings reported that many PSTs lacked the literacy skills that are necessary to teach reading, and that they required more help in order to develop their own foundational literacy skills (AGDEST, 2005). Some PSTs appeared to need more explicit instruction from teacher educators on meta-linguistic concepts (phonemic awareness, phonics, and the alphabetic principle), and also "lacked knowledge of the range of children's literature appropriate for use in classrooms" due to a lack of reading themselves (AGDEST, 2005, p. 116).

Some B.Ed. programs had a system in place where PSTs who lacked the necessary skills were required to take specific remedial coursework, but this is not present in all programs and there is "no national approach to determining entry standards in literacy" (AGDEST, 2005). The researchers found that there was considerable variation across B.Ed. programs and that this contributed to why their study did not fully answer their research question of how well-prepared PSTs were to teach reading upon graduation (AGDEST, 2005). They recommend that those B.Ed. programs which appear to offer reading courses as low priority should make immediate alterations, and state that all PSTs who complete a B.Ed. would be better prepared to begin teaching literacy if their courses taught them all the basics of reading instruction prior to graduation (AGDEST, 2005). Both of these national reports clearly lay out the present need for B.Ed. programs to have more consistency amongst them in order to better support their PSTs and the future students whom PST will be teaching to read.

d. Improved communication with practicum partners

In Courtland and Leslie's article (2010), they were attempting to describe the preparation of PSTs in elementary literacy and their experiences during their first two years of literacy teaching, and the theme of poor communication between B.Ed. programs and practicum partners emerged. In their B.Ed. training, PSTs had two five-week field placements (one in the fall and the other following the completion of their second term); PSTs "expressed concern that literacy practices in some associate teachers' classrooms were not consistent with the intent of the approaches" PSTs had learned during their B.Ed. program (Courtland & Leslie, 2010, p. 26). The article cited numerous sources for what they found to be a "lack of congruence between courses and field placements" which can cause problems for the development of PSTs (Courtland & Leslie, 2010). One researcher (who was also a teacher educator involved in the study) even noted the inconsistency in physical surroundings; the teacher educator contrasted the literacy enriched practicum classrooms PSTs were experiencing to the "bland classrooms at the university" where teacher educators were "unable to expose students to the wealth of resources available" (Courtland & Leslie, 2010, p. 25). The teacher educators "emphasized best literacy practices in their courses with little reference to theory" perceiving their role as preparing PSTs for the early years of teaching by introducing them "to a breadth of experiences, materials, and approaches" (Courtland & Leslie, 2010, p. 25). In theory, having the opportunity to be a tutor during a practicum placement as a PST appeared to be "an ideal strategy to promote connections"

between the concepts taught in the course and the practicum experience itself (Courtland & Leslie, 2010, p. 26). But researchers found that while this was the intention of the B.Ed. program teacher educators, this was not always acted out by the principals or teachers involved in the PSTs' practicum; PSTs were often just seen "as another pair of arms and legs and ears and eyes and my students [PSTs] were used mostly as reading buddies" (Courtland & Leslie, 2010, p. 26). It seemed that there was poor communication between the B.Ed. program instructors and the community partners when it came to the actual goals and purposes of the practicum experience, and the responsibilities of all those involved (Courtland & Leslie, 2010). They emphasized the importance of increased communication between teacher educators, B.Ed. programs, and their partners in order to make the practicum placements provided for their PSTs to be both useful and meaningful experiences (Courtland & Leslie, 2010).

The article by Young et al., (2017) looked at the impact of B.Ed. programs on PSTs' knowledge and practices and shared the same theme as above. The authors noted that B.Ed. programs needed to have good relationships and communication with mentors; this would help B.Ed. programs to align the theory taught to PSTs with actual teaching practices in the field and help with placing PSTs with mentor teachers who are a 'good fit' (Young et al., 2017). During practicum placements, the researchers found that classrooms which did not have a pre-determined core reading program gave PSTs the freedom to use what they had been taught in B.Ed. to instruct early literacy; but when classrooms already had a reading program in place, PSTs did not have the opportunity to use what they learned in their B.Ed. program (Young et al., 2017). In some cases, the actions of PSTs were "incongruent, even starkly opposed, to what they were taught in their preparation programs" (Young et al., 2017, p. 91). Some PSTs explicitly pointed out the fact that there was a clear lack of congruence between their B.Ed. program experiences and the classroom literacy instruction they performed or were expected to perform, demonstrating that "while they experienced a mismatch between their formal knowledge and their teaching practice, they were aware of incongruities" (Young et al., 2017, p. 91). Teaching in mentor classrooms appeared to have indirectly caused some PSTs to go against their own teaching beliefs as a type of conflict avoidance (Young et al., 2017). Yet, it was unclear how deeply PSTs adopted the practices of their mentors over their learned practices from their B.Ed. program (Young et al., 2017). In addition to literacy practices and approaches in the classroom, some PSTs also failed to align with their mentor teacher when it came to philosophical

approaches for literacy instruction (Young et al., 2017). These incongruities and failures to align in theory, philosophy, and practical approaches suggests a lack of communication between B.Ed. programs and mentor teachers in community schools as well as a disconnect between theory and practice. Both these studies demonstrate the fact that in order to make PSTs more successful, B.Ed. programs need to increase their levels of communications with their field-placement partners.

e. Training needs of PSTs

Clark, Jones, Reutzel, and Andreasen (2013) were tracking the ability PSTs felt that they possessed to teach reading as they progressed through their B.Ed. program. A clear theme was present, where researchers found a need and desire for more literacy training from PSTs in their B.Ed. program (Clark et al., 2013). The researchers examined one specific B.Ed. program where all elementary PSTs were required to take two reading courses (Clark et al., 2013). The first course was on reading instruction, which provided general information about effective elementary reading instruction (including oral language, concepts about print, phonemic awareness, phonics, fluency, comprehension, and vocabulary, as well as how to organize whole group and small group literacy instruction) and had no practicum component (Clark et al., 2013). The second course was a reading methods course "designed to teach preservice teachers how to design assessment and instruction for the struggling elementary school readers," and included a six-week practicum placement (consisting of lessons, classroom management, and literacy instruction organization) (Clark et al., 2013, p. 91). After completing both these two courses, PSTs began a full semester of student teaching (Clark et al., 2013). The researchers stated that some PSTs did demonstrate knowledge they had learned in their reading methods courses while in their practicum placements, but equally there was evidence that other PSTs did not (Clark et al., 2013). When they became beginning teachers, participants stated that they were 'pleased' with their B.Ed. reading training, and emphasized their research-methods course, core standards training, and feedback and mentoring, but did not mention either of their required reading courses (Clark et al., 2013). Yet, these same beginning teachers "repeatedly expressed concern and a desire for more training on how to teach reading," especially to the specific age group they were hired to teach (Clark et al., 2013, p. 98). These beginning teachers also demonstrated some concepts, ideas, and teaching strategies for reading instruction that were *not* taught in their B.Ed. programs and some that were explicitly discouraged by their teacher educators and by

professional reading organizations (Clark et al., 2013). Those beginning teachers who used these discouraged and ineffective literacy practices began to struggle with other aspects of teaching such as classroom management during literacy lessons (Clark et al., 2013). The beginning teachers also continued to seek feedback on their teaching and asked researchers (who were also their former teacher educators in their B.Ed. program) how they could improve (Clark et al., 2013). Beginning teachers expressed concern and wanted additional training on "how to practically meet the individual and varied literacy needs of all their students" (Clark et al., 2013, p. 97). This study very plainly shows that in order for beginning teachers to feel confident in their literacy teaching abilities, B.Ed. programs need to provide as many training opportunities as possible to fill the knowledge and experience gaps of the PSTs they are training.

2. Gaps in literacy knowledge and content

The next most common theme in the literature was the presence of a gap in literacy instruction knowledge and B.Ed. literacy course content. The sub-themes include gaps in PST literacy knowledge, gaps in B.Ed. literacy course content, and gaps between literacy theory and practice.

a. Gaps in PST literacy knowledge

In the article by Grisham et al. (2014), the researchers were interested in the impact B.Ed. programs had on the literacy instructional practices of PSTs and beginning teachers (i.e., how much did PSTs learn what they were taught), and the impact these practices have on their students' learning. After examining the literacy course syllabi, interviewing faculty members, and surveying PSTS, the researchers found the same theme as Lohfink and Adler (2017) - that there was the lack of logistical knowledge demonstrated by PSTs. Around 70% of PSTs felt that what they had learned was 'fairly' congruent with what B.Ed. programs taught (Grisham et al., 2014). However, the authors also noted that PSTs were on a 'tell me what to do' mode and appreciated when teacher educators demonstrated *how* to enact a concept for them (Grisham et al., 2014). While PSTs expressed confidence in assessment procedures in general, they were less confident about their knowledge of the specifics of assessment procedures; this revealed a lack of knowledge for the use of assessment data and PSTs stated that they did not know how to use this data to inform their teaching, or convey data to parents (Grisham et al., 2014). The PSTs were unsure of how to practically implement the knowledge they had learned in their B.Ed. program before experiencing a practicum placement, and there were clear differences between their

declarative knowledge (knowing about something), and the procedural knowledge (knowing *how* to do something) they needed in order to practically use their declarative knowledge (Grisham et al., 2014). PSTs' declarative knowledge about the basics of literacy instruction was "quite tentative and possibly even superficial;" and even when PSTs had learned the proper literacy terminology and concepts, PSTs were still "uncomfortable" with the idea of having to practical apply their knowledge in a classroom (Grisham et al., 2014, p. 181). PSTs were "often unsure about how to implement [their] knowledge in their teaching," and the researchers found "little evidence to suggest that [PSTs] will learn how to apply this declarative knowledge in actual teaching" (Grisham et al., 2014, p. 181).

Lohfink and Adler's article (2017) shares this theme as they explored PST knowledge in a literacy methods course. The researchers looked at PSTs' comprehension strategies for teaching informational texts as PSTs participated in early literacy simulated activities, and how this impacted PSTs' own teaching tools and comprehension instructional strategies (by examining their literacy comprehension lesson plans). PSTs were introduced to such strategies as investigating texts for structures and features, examining award-winning picture books, summarization, making inferences, and comprehension tools for key ideas/details (Lohfink & Adler, 2017). PSTs then had to create lesson and unit plans to demonstrate their knowledge and understanding of the concepts they had been taught, and how they would use them to teach early literacy. The researchers found that PSTs demonstrated only a "surface knowledge level" of teaching the particular early literacy frameworks they had been taught "rather than a deeper knowledge level" (Lohfink & Adler, 2017, p. 18). The researchers did note that these PSTs were still 'early' in their B.Ed. programs, but that the data collected from the lesson and unit plans reflected that less than half (only 43%) of the PSTs demonstrated adequate "conceptual understandings in their teaching strategies" (Lohfink & Adler, 2017, p. 24). The majority of PSTs did not display mastery levels of teaching in any of the conceptual tools or frameworks they were introduced to in the course, and over half (approximately 57%) of their simulated teaching "reflected a surface knowledge of elements inherent to the framework" (Lohfink & Adler, 2017, p. 24). Even though the teacher educators used simulation literacy activities and direct literacy instruction, the PSTs showed a clear gap in their knowledge of how to apply the knowledge from their course to their own literacy teaching.

Meeks, Madelaine, and Kemp (2020) studied PSTs in the final year of their B.Ed. program to determine their knowledge of current evidence-based early literacy instruction practices. The authors focused on knowledge of the five components of the science of reading, which include phonics, phonemic awareness, fluency, vocabulary and comprehension (Meeks, Madelaine, & Kemp, 2020). In their investigation, they found that PSTs lacked knowledge in the five components, namely in the areas of phonics and phonemic awareness (Meeks, Madelaine, & Kemp, 2020). While PSTs did seem familiar with the terms themselves, that did not prove any level of "deep understanding of them" (Meeks, Madelaine, & Kemp, 2020, p. 12). When PSTs were asked to identify the five components literacy instruction from a list of eight items, only 10% of PSTs could identify all five, and less than 55% could correctly identify phonics at all (Meeks, Madelaine, & Kemp, 2020). When PSTs were asked to name which early literacy practices were supported by research from a list of nine options, less than 60% of PSTs named phonemic awareness, phonics, and phonics-based readers, and only 37% named direct instruction (Meeks, Madelaine, & Kemp, 2020). The researchers suggested that the remaining PSTs appeared to be unaware of the research that supported teaching these skills as nearly 70% of PSTs chose "the use of a rich language environment" instead of systematic instruction, and 54% preferred using whole language instruction for students who struggle learning to read" (Meeks, Madelaine, & Kemp, 2020, p. 7). PSTs were also asked to provide a list of their preferred literacy teaching strategies. Of the 474 responses provided, over half were not strategies at all; only 176 items were genuine teaching strategies, whereas the other items listed included organizational strategies (n=50), content (n=66); programs (n=29); assessment (n=13); activities (n=13); and resources (n=11) (Meeks, Madelaine, & Kemp, 2020). Nine PSTs even stated that they had learned zero teaching strategies, stating, "I'm really ashamed to say that I don't feel that I have any at all, at least not any that I learned at uni[versity] … [The course is] dealing more with my own writing, not how to teach or improve children's writing" (Meeks, Madelaine, & Kemp, 2020, p. 8). The remaining 107 responses were not codeable, and included answers such as "being compassionate", "literacy is a daily occurrence", "onomatopoeia" and "know students and how they learn" (Meeks, Madelaine, & Kemp, 2020, p. 8). The researchers noted that these results suggest that PSTs "are not learning how to teach the fundamental components of early reading" (Meeks, Madelaine, & Kemp, 2020, p. 14). The authors also stated that perhaps some B.Ed. programs may not be including the practices of the five components of the science of

reading at all (Meeks, Madelaine, & Kemp, 2020). The study concluded that PSTs demonstrated a significant lack of knowledge with which they should be familiar, which could mean they are unaware of current literacy research and practices used for early literacy instruction (Meeks, Madelaine, & Kemp, 2020). These three studies make it very evident that PSTs have larger gaps in their literacy instruction knowledge and abilities than they should, and that these gaps have yet to be resolved.

b. Gap in B.Ed. literacy course content

Myers et al., (2016) conducted a small scale, exploratory study which highlighted the perspectives of teacher educators on the current state of writing methods instruction provided for the PSTs in their B.Ed. programs. The main theme that arose in their article was that there is a gap in course content of B.Ed. programs when it comes to writing instruction (Myers et al., 2016). The study found that teacher educators for B.Ed. programs rarely taught stand-alone courses on writing instructions (only 28%), yet 72% claimed that writing instruction was an embedded part of their reading courses (Myers et al., 2016). Teacher educators also stated that they felt there was a lack of time to teach writing instruction due to the heavy emphasis that it placed on reading instruction (Myers et al., 2016). Time spent on writing instruction was found to be between one class session to half of the course (a reading course), where teacher educators found writing to be "woefully unaddressed" (Myers et al., 2016). Other teacher educators in the study stated that each assignment they give to PSTs requires a writing component, suggesting that they believe if their PSTs work on their own writing skills this would be analogous to teaching them how to teach writing skills to others (Myers et al., 2016). Teacher educators stated that they find writing is a 'difficult sell' and find it "challenging to convince [PSTs] of the importance of writing" (Myers et al., 2016, p. 319). The teacher educators said that PSTs have to believe they are good writers which is difficult because they only want academic writing; they are more concerned with grammar, whereas some course content focuses on content supported by grammar (Myers et al., 2016). Only 25% of the teacher educators in the study indicated that they felt "very successful" when it came to teaching their PSTs writing instruction, citing time as a major contributing factor and that they often felt rushed in their instruction (Myers et al., 2016). In addition to time constraints, teacher educators also showed a lack of confidence for teaching writing methods to PSTs, as well as their own perceived abilities as writers and how strongly they identify as writers themselves (Myers et al., 2016). Teacher educators showed a

strong love for writing, emphasized the importance of writing for PSTs' learning, and that PSTs need to know how to teach writing to their students (Myers et al., 2016). However, the authors found that similar to how in-service teachers and PSTs tend to receive little writing instruction, "it appears as if the same is true for the teacher educators" (Myers et al., 2016, p. 317). One teacher educator noted that while she believed she was doing well instructing her PSTs to write, she also believed that was not teaching her PSTs to teach *their* own students to write (Myers et al., 2016). The researchers support the argument that methods courses in B.Ed. programs should devote more time to explicitly teaching writing, as even the instructors can clearly see it is falling between the cracks in teacher education (Myers et al., 2016). If writing instruction is falling through the cracks according to those who are meant to be teaching it to PSTs, then this is clear evidence of a gap in literacy course content in B.Ed. programs.

c. Gap between literacy theory and practice

In their article, Kosnik and Beck (2008) examined the views and practices of teacher educators who taught literacy, and the beginning teachers who were their former PSTs. The researchers noted the theme that "there were gaps between what was taught and what the new teachers wanted to learn" (Kosnik & Beck, 2008, p. 115). The beginning teachers brought up a few issues they were facing. Firstly, they struggled with literacy program planning in their new jobs; secondly, they wanted to know more practical tools and strategies for teaching literacy; and thirdly, they desired more instruction on things like how to set up their class for literacy in September, as opposed to learning about the theory of reading instruction or current controversies in academic literature (such as the 'reading wars') (Kosnik & Beck, 2008). Beginning teachers felt that their teacher educators spent too much time focusing on some topics, like poetry, and not enough time on topics like emergent literacy, which were presented superficially, were too vague, and deprived them of opportunities to gain necessary knowledge on other literacy topics (Kosnik & Beck, 2008). "There were insufficient links made between the classes" and beginning teachers did not feel ready to "develop a comprehensive workshop plan for their teaching that was structured, balanced, integrated, and complete" even though many teacher educators believed they had provided a 'balanced program' (Kosnik & Beck, 2008, p. 121). The study analyzed many course outlines which were shown to be "highly disjointed," where teacher educators were 'skipping' from one topic to the next (Kosnik & Beck, 2008, p. 121). The "connections between topics were not always evident," and some teacher educators

even stated that they were “aware that it [the course] lacked cohesion” (Kosnik & Beck, 2008, p. 121). More than half of the teacher educators used a constructivist approach to instruction by presenting multiple options, tried to have PSTs “work from their own beliefs”, and used teaching strategies that allowed PSTs “to experience first-hand many of the suggested methods” (Kosnik & Beck, 2008, p. 121). Yet, some of the teacher educators also felt that they needed to address key components of literacy teaching in more detail, and “work through the topics” to ensure PSTs had “a sense of the ‘big picture’ of literacy” (Kosnik & Beck, 2008, p. 121). The teacher educators likewise believed that some of their teaching methods clouded the issues in literacy, were confusing to their PSTs, and were “simply ineffective” (Kosnik & Beck, 2008, p. 127). The researchers cite Darling-Hammond and Bransford (2005), saying that PSTs should be taught knowledge that is deemed essential for beginning teachers, rather than teacher educators giving PSTs “lists of all the things teachers should know” (Kosnik & Beck, 2008).

3. Perceptions of PSTs

A recurring theme that emerges in three studies (Ciampa & Gallagher, 2019; Rutherford, Carter, Riley, & Platt, 2017; and Sharp, Coneway, & Diego-Medrano, 2017) is the notion that PSTs believe they know more about literacy teaching than they actually do.

Ciampra and Gallagher examined field-work experience and PST knowledge of literacy instruction in their study (2019). Both content knowledge (subject matter knowledge) and pedagogical knowledge (knowledge of how to teach the content to the student) were part of this study, and questions covered topics such as phonics, phonological awareness, fluency, alphabetic principle, comprehension, vocabulary and writing instruction (Ciampra & Gallagher, 2019). Each question fell under one of three literacy categories (decoding, comprehension, and writing), and the researchers found that there was a “mismatch” between PSTs self-efficacy (how efficient they believed themselves to be in literacy instruction) and their actual knowledge of literacy instruction (Ciampra & Gallagher, 2019). Not only was there a mismatch between the two, but the apparent discrepancy showed that PSTs had “inflated” beliefs about their own literacy teaching abilities, even before they participated in any field-based experiences (Ciampra & Gallagher, 2019). When the authors examined the actual knowledge of literacy instruction that PSTs possessed, they found that PSTs demonstrated knowledge “lower than their self-ratings,” and it appeared that PSTs “believed that they knew much more than what the results indicate[d]” (Ciampra & Gallagher, 2019, p. 10). PSTs believed that they were already capable of performing

certain literacy tasks even though "they did not explicitly know or understand the literacy constructs involved" (Ciampra & Gallagher, 2019, p. 10). The researchers cite Bostock and Boon's (2012) study which also showed that having a high level of self-efficacy, or high perceived ability and knowledge in no way indicated high levels of skill competency or actual knowledge (Ciampra & Gallagher, 2019). They also cite Barr et al. (2016) who found that while PSTs and in-service teachers may hold positive attitudes about literacy teaching abilities, that does not reflect a higher level of literacy knowledge, and in fact, reflected lower literacy instruction knowledge (Ciampra & Gallagher, 2019). Ciampra and Gallagher (2019) also found that writing instruction topics appeared to be an area of weakness common to many PSTs and that teacher educators should therefore be concerned since, as a consequence, beginning teachers are ill-equipped to teach writing to their students. The researchers note that texts included in pre-packaged writing programs do not provide in-service teachers "the *how* to teach writing, but rather the *what* to teach in writing" (Graham et al., 2014 in Ciampra & Gallagher, 2019, p. 11).

Rutherford, Carter, Riley, and Platt (2017) attempted to answer three research questions: How much are the five components of reading (phonics, phonemic awareness, fluency, vocabulary, and comprehension) emphasized in B.Ed. programs? How prepared do PSTs feel to teach reading after they graduate? How much do PSTs know about the five components of reading after completing their B.Ed. program. The researchers discovered that PSTs in their final stages of their B.Ed. had perceptions that were "very different from their knowledge base" (Rutherford, Carter, Riley, & Platt, 2017, p. 1). When the authors analyzed the course content, 52% of PSTs stated that they felt that phonemic awareness was covered a considerable amount, and 53% of PSTs felt that phonics was covered a considerable amount (Rutherford et al., 2017). Other components covered a 'considerable' amount were fluency and vocabulary (both at 53%), and comprehension (60.5%) (Rutherford et al., 2017). There were 182 PSTs who rated their level of preparedness to teach each of the five components of reading, with "definitely prepared" being the highest level. "Definitely prepared" was rated by 36% of PSTs for phonemic awareness, 43% for phonics, 50% for fluency, 51% for vocabulary, and 49% for comprehension (Rutherford et al., 2017). When asked how prepared PSTs felt to teach kindergarten and grade one, only 34% felt "definitely prepared", and 40% felt the same about teaching grades two and three (Rutherford et al., 2017). PSTs were also tested on their actual knowledge and skills, focusing on the phonological and phoneme awareness, and the phonics components of reading.

Only 40.5% of PSTs answered questions on phonological and phonemic awareness correctly, and 2% did not even complete one or more of the questions (Rutherford et al., 2017). For questions on phonics, only 36.16% of PSTs responded correctly, and 1.5% left one or more items blank (Rutherford et al., 2017). Survey responses clearly indicated that even though the majority of PSTs felt considerably prepared to teach all five components of reading, "they may not be as prepared as they perceive themselves to be" (Rutherford et al., 2017, p. 8). The researchers suggest that B.Ed. programs may need to review their curriculum and opportunities for PSTs, in order to help them to retain more of the content knowledge they are taught (Rutherford et al., 2017, p. 8).

Sharp, Coneway, and Diego-Medrano (2017) conducted a systematic analysis of stand-alone children's literature courses in B.Ed. programs by examining their course catalogue descriptions in order to learn what their specialized attributes were. Of the 128 B.Ed. programs the researchers examined, children's literature courses were mandatory in 53 programs (Sharp, Coneway, & Diego-Medrano, 2017). Three course catalogues had explicitly stated prerequisites in order for PSTs to take the course; 14 required PSTs to have already completed one or more of the following subject areas before being allowed into the course: English, education, English as a second language, humanities, pedagogy, psychology, and/or reading (Sharp, Coneway, & Diego-Medrano, 2017). One catalogue even required having an advisor code (permission) before acceptance (Sharp, Coneway, & Diego-Medrano, 2017). This would ensure that PSTs had ample knowledge of some aspects of literacy prior to studying children's literature. Over 40 course descriptions mentioned that the course would include specific instructional approaches; interactions with print and nonprint materials was the most cited approach (23 courses), then analysis and interpretations of children's literature (8 courses), and "authentic experiences" with children's literature (6 courses) (Sharp, Coneway, & Diego-Medrano, 2017, p. 16). References were also made to participating in literacy projects (2 courses), oral reading of children's literature (2 courses), and the discussion of children's literature (2 courses) (Sharp, Coneway, & Diego-Medrano, 2017). The courses also noted that they would cover specific topics such as teaching techniques and methods (in 56 courses), including: planning and implementing literature-based activities, addressing diverse learning needs, integrating children's literature across the curriculum, incorporating drama, practice storytelling, and using children's literature as a tool to motivate and engage students (Sharp, Coneway, & Diego-Medrano, 2017). Yet, the

researchers found that there was a discrepancy between what the teacher educators said they were teaching in their children's literature courses, and what their PSTs said that they had learned (Sharp, Coneway, & Diego-Medrano, 2017). They noted that most of the courses were offered in the last two years of a B.Ed. program and argue that PSTs need more frequent experience with children's literature earlier in their studies and prior to taking a children's literature course (Hoewisch, 2000 in Sharp, Coneway, & Diego-Medrano, 2017). They also found that for a considerable number of course codes, their prefixes (e.g., EDU or ENG) corresponded to English departments as opposed to education; they suggest that departments differ vastly in their emphasis on education and faculty qualification, among other factors (Singleton & Atkins, 2016, in Sharp, Coneway, & Diego-Medrano, 2017). Therefore, these courses may not be taught by teacher educators, rather by English professors of the post-secondary institution, and may drastically affect how and what PSTs learn from the course (Sharp, Coneway, & Diego-Medrano, 2017). Sharp, Coneway, & Diego-Medrano (2017) were also surprised at the wide variety of topics courses covered and felt that there should be more consistency among children's literature courses so that all PSTs can develop equal understanding of pedagogy to bring into their classrooms (Kosnik & Beck, 2008, in Sharp, Coneway, & Diego-Medrano, 2017). They also agree with Kosnik and Beck (2008), saying that having stand-alone children's literature courses may be somewhat beneficial, and it is also important to explore the perspectives of PSTs regarding their preparedness. While the courses cover many topics and PSTs state that they feel prepared, the concepts presented by teacher educators or other faculty members "may or may not align" with what the PSTs "perceived that they learned" (Sharp, Coneway, & Diego-Medrano, 2017, p. 17). This further proves that the perceptions held by PSTs do not accurately reflect their actual abilities in literacy instruction.

Discussion

The purpose of this scoping review is to investigate two main research questions: What are the major themes in the literature surrounding instructional strategies for early literacy in Bachelor of Education programs?" and "Are there any gaps in the existing literature?" In seeking to answer these questions, three major themes emerged from within the literature. Firstly, that B.Ed. programs have literacy instruction needs that should be addressed, with five sub-themes present. Secondly, that there are gaps in literacy knowledge and content, with three sub-themes;

and thirdly, that the PSTs perceptions of their abilities are higher than their actual abilities when it comes to early literacy and literacy instruction.

1. a) PSTs need more opportunities to purposefully reflect on how to deal with the problems, tensions, and "roadblocks" they will encounter in their teaching while working in practicum schools (Young et al., 2017). They are not being prepared to deal with the transition from PST to beginning teacher, a process that teacher educators know is full of competing philosophies and expectations where PSTs will experience being pulled in conflicting directions (Cuban, 1993). PSTs need more practical strategies and approaches to learn how to overcome these challenges in their literacy planning and instruction while working with teacher mentors in their classrooms (Wetzel et al., 2018). This view is supported by Beach and Pearson (1998), who argue that it is important for PSTs to engage in active problem-solving strategies when they are struggling with conflicts and tensions because these become the basic foundations of forming and reforming their personal teaching theories. Darling-Hammond (2006) also state that a strong B.Ed. program ensures that PSTs develop not only content and pedagogical knowledge, but also the disposition for problem-solving in their teaching practices. PSTs are not being taught how to deal with their 'frustrations' and tackle the problems which they are sure to encounter (Young et al., 2017), and B.Ed. programs need to deal with this issue.

b) B.Ed. programs must also provide PSTs with high quality literacy instruction. This is not equivalent to a high quantity of literacy methods courses, as some B.Ed. programs are prone to offer (Clark, Helfrich, & Hatch, 2015). The number of reading methods courses varies in B.Ed. programs, but a high number of courses does not indicate that they are of a high quality, which is what PSTs require (Clark, Helfrich, & Hatch, 2015). Often teacher educators end up 'overstuffing' PSTs with information and overwhelming them with data (Medina, 2008) thinking this will ensure understanding and can substitute practical hands-on learning. This is a cause for concern (Clark, Helfrich, & Hatch, 2015), as some PSTs are receiving high quality instruction, while others are receiving lower quality instruction, meaning that some PSTs are graduating ill-prepared to teach reading as beginning teachers. Those PSTs who receive extra support in linguistic development perform higher than practicing in-service teachers, which shows that current in-service teachers were also ill-prepared to teach reading after graduating their B.Ed. programs (McNeill, 2018). Quality reading instruction is essential for PSTs as it will influence their perceptions and understandings of what it means to teach (Maloch et al., 2003). PSTs need

to receive more literacy instruction in their B.Ed. programs, although there are concerns over whether or not this will provide PSTs with surface level / temporary knowledge, or long-term skills (McNeill, 2018). Helfrich and Bean (2011) call for more longitudinal studies to determine the long-term effectiveness of B.Ed. programs when it comes to preparing PSTs to teach reading. PSTs would strongly benefit from high quality courses, rather than extra support outside of coursework, emphasizing literacy content and pedagogical knowledge (Matthews & Seaman, 2007; Quinn, 1997).

c) There are very clear and obvious inconsistencies and a lack of reading instruction preparation among B.Ed. programs. The five components of the science of reading (phonics, phonemic awareness, fluency, vocabulary, and comprehension) are barely taught to PSTs in fewer than 15% of B.Ed. programs (NCOTQ, 2006). Some teacher educators are reluctant to teach the five components because they are do not know enough about them to instruct PSTs (NCOTQ, 2006), but those who do possess knowledge of the five components make for more effective teachers (Spear-Swerling & Sternberg, 2001). It is a major problem if PSTs are not learning the basics of reading instruction because the teacher educators also do not know the basics themselves! This also suggests that B.Ed. programs may be hiring underqualified educators to instruct their PSTs, which is another major problem. According to an interview of expert members of the International Reading Association conducted by Baumann, Hoffman, Duffy-Hester and Ro (2000), PSTs are inadequately being prepared to teach reading, do not know *how* to teach students to read, and have little expertise in early literacy acquisition and instruction. The skills PSTs are being taught are also directly opposite to the science of reading, and that PSTs are performing juvenile tasks and un-challenging work (NCOTQ, 2006). Literacy instruction is not being provided equally to all PSTs, where some reading courses are not mandatory (AGDEST, 2005). PSTs are graduating with a lack of basic reading instruction knowledge, and students continue to struggle to learn to read, and Clark et al., (2015) hypothesize that this is due to the fact that beginning teachers do not learn the literacy knowledge that their B.Ed. programs claim to provide their PSTs.

d) B.Ed. programs need to improve the communication with their practicum / field-placement partners. Once PSTs start teaching in their practicum placement, they become aware of and concerned about the fact that what they are seeing and being asked to teach in literacy does not match what they learned in their B.Ed. programs (Courtland & Leslie, 2010). PSTs are

entering the field unprepared and end up being used as ‘extra hands’ in a school, rather than being provided with challenges and an opportunity to practice what they have been taught (Courtland & Leslie, 2010). Although PSTs develop strong ideas about teaching and learning during their B.Ed. program, they tend to abandon these ideas rather quickly once they are in a classroom (Korthagen & Lunenberg, 2004). Perhaps this stems from a lack of clear expectations from both the B.Ed. programs and the partner schools, where PSTs become caught in the middle. This lack of congruence between B.Ed. programs and practicum placements is incredibly problematic for PSTs and has a huge impact on how they develop as teachers (Darling-Hammond, 2006). Often PSTs are placed with mentor teachers who are difficult to get along with and learn from, enter a classroom with literacy practices already in place that do not coincide with what they have learned, or learn practices from in-services teachers that are directly opposed to what their B.Ed. programs teach (Young et al., 2017). This can cause PSTs to abandon what they have been taught in order to please their teacher mentor and change their focus away from student literacy learning (Clift & Brady, 2005).

e) PSTs have a conscious desire for more training from their B.Ed. programs when it comes to early literacy instruction. Even after completing required reading methods courses, some PSTs still fail to show adequate literacy teaching abilities in their practicum placements (Clark et al., 2013). Some PSTs receive an excess of information in their B.Ed. without any clear application to practical teaching and feel less prepared to teach and assess literacy as a consequence (Bainbridge & Macy, 2008). PSTs are aware that they feel under-prepared to teach students early literacy reading skills and have low confidence in their abilities to do so as a result (Fielding-Barnsley, 2010; Mahar & Richdale, 2008). Beginning teachers also repeatedly say that they want more training on how to teach reading and often end up using teaching strategies that they were never taught in their B.Ed. programs, some of which were specifically discouraged by teacher educators (Clark et al., 2013). Beginning teachers need and want more help in making important instructional decisions to meet the needs of their students, as they feel overwhelmed (Maloch et al., 2003). It could be assumed that novice educators are trying to do their jobs and be responsible teachers who want to properly serve their students. But these beginning teachers can also experience struggles due to their lack of training, lack confidence, and do not know *how* to meet the reading needs of all their students (Clark et al., 2013). They also want and need help in bridging the gap between theory and practice, as learning the theoretical background of a literacy

concept does not practically help them apply it to real life teaching situations (Bainbridge & Macy, 2008).

2. a) PSTs have gaps in their logistical knowledge about literacy instruction. While PSTs are sometimes confident in their abilities, they are consistently demonstrating a lack of knowledge in the basics of literacy instruction (Grisham et al, 2014). PSTs do not know what to do with literacy data, or how to use what they learned during their B.Ed. program in their practicum placements (Grisham et al, 2014). There is a distinct absence of the ability to teach literacy, as most PSTs only show that they have learned *about* teaching, not *how* to teach (Grisham et al, 2014). They have superficial, shallow declarative knowledge of literacy instruction basics, and there is little evidence that PSTs will learn how to apply it to actual teaching (Wilson, Grisham, & Smetana, 2009). They express their discomfort at the notion of having to apply what they learned and are acutely aware of the fact that they do not know how to act out what they have been taught (Lohfink & Adler, 2017). And while PSTs do have some knowledge of the components of early literacy, their necessary subject specific knowledge and pedagogical strategies is insufficient for implementing evidence-based practices (Meeks, Madelaine, & Kemp, 2020). After graduating, these beginning teachers are also generally not confident in their ability to teach specific aspects of early literacy (such as spelling, grammar, phonics, etc.), (Louden et al., 2005).

b) There is an enormous gap in the course content of literacy courses in B.Ed. programs, which is the incredible lack of writing methods instruction (Myers et al., 2016). There are far more reading methods courses offered to, or required for, PSTs than there are writing methods courses (Brenner, 2013). There are very few writing methods courses offered in general, and often writing instruction is taught as part of reading methods courses, which takes away time from learning about reading instruction (Myers et al., 2016). It is something that teacher educators are all too aware of and struggle with, as they often feel like they have too much to teach in too little time and try and work writing into other assignments in their courses (Morgan, 2010). While it is expected that PSTs should be taught how to teach writing in their B.Ed. programs, neither in-service teachers nor PSTs tend to receive much instruction in how to teach writing, despite the fact that it is a major part of English Language Arts as a primary subject (Calkins, Ehrenworth, & Lehman, 2012; Cutler & Graham, 2008). Even though teacher educators are aware of the weakness in their B.Ed. programs, the National Commission on

Writing in the United States reports that very few states require a separate writing methods course for PSTs in order to become certified (National Commission on Writing, 2003). Farnan and Grisham (2006) argue that B.Ed. programs create beginning teachers, who must then continue their professional development throughout their careers. While this may be framed as being a continual learner and that it is good for teachers to always keep learning (which is true), it also demonstrates that B.Ed. programs produce teachers who *automatically* require more training after graduation. This implies that PSTs do not receive enough training to be properly prepared to begin working as a teacher and that beginning teachers need to spend more time and money on extra training on top of what they have already spent for their B.Ed. program.

c) There is a third gap, which is between the literacy theory and practice of PSTs and beginning teachers. Beginning teachers struggle with literacy planning when they are in their new jobs (Kosnik & Beck, 2008). They also desire more instruction, similar to how PSTs desire more instruction, and practical tools / strategies for actually teaching literacy (Kosnik & Beck, 2008). Beginning teachers do not seem to want more instruction on theories of literacy instruction and instead want more practical tools, like how to set up a class for literacy in September (Kosnik & Beck, 2008). They feel they spent too much time on unit topics like poetry, and not enough time on the basics of early literacy (Kosnik & Beck, 2008). This is a very pertinent point, since students have no way to access the finer aspects of poetry (besides simply hearing it) without the ability to read or write. While PSTs should be taught essential literacy teaching knowledge, links between theory in the B.Ed. classroom are not being linked clearly enough to the elementary classroom, and some teacher educators even note that there is a lack of cohesion within their own teaching (Darling-Hammond and Bransford (2005); Kosnik & Beck, 2008). Other teacher educators lean towards practices like literacy as an abstract, big picture concept where PSTs should work from their own personal beliefs, none of which provides useful tools for how to teach a struggling child the alphabet (Kosnik & Beck, 2008). Teacher educators also see that what they are teaching PSTs is cloudy, confusing, and simply ineffective. Meeks, Madelaine and Stephenson (2020) interviewed beginning teachers who had shown insufficient knowledge of how to teach early reading skills and found that these teachers were critical of their B.Ed. programs. They felt especially critical of the lack of translating theory into classroom practice and noted that this has serious implications for the quality of student learning in primary classroom, especially for struggling students (Meeks, Madelaine, & Stephenson 2020). An

unprepared teacher creates unprepared students. This lack of connecting theory to practice is a widespread problem and cause for concern. The main idea and format of PST learning tends to fragment / break up the 'practice' (practical) aspect of literacy instruction and leaves it up to PSTs to tackle the challenge of integrating what they have been taught into what they have to teach in their literacy classrooms (Ball, 2000). Teacher education is not the same as other post-secondary education; PSTs need to know more than what to teach and the theory behind why it is good to teach it (Phelps and Schilling, 2004). They need to know *how* to teach it, and this simply is not happening in all B.Ed. programs.

3. Many PSTs unfortunately hold tremendously inaccurate perceptions of their literacy teaching abilities. More often than not, PSTs think that they have all the knowledge and skills they need in order to teach reading and writing (Ciampra & Gallagher, 2019). But when this is put to the test, their skills are overwhelmingly lacking in comparison. It is unclear whether this is due to arrogance or innocence, but PSTs continue to claim levels of knowledge which they in no way possess (Rutherford, Carter, Riley, & Platt, 2017). It seems unclear if teacher educators are aware of the over-confidence that some of their PSTs possess. Yet, what teacher educators assume PSTs can do versus what PSTs are capable of doing regarding literacy instruction are very different (Kosnik & Beck, 2008). PSTs have little to no knowledge of the five components of reading (phonemic awareness, phonics, fluency, vocabulary, and comprehension), while at the same time stating that they felt definitely prepared to teach them (Rutherford et al., 2017). This theme stands directly opposed to theme 1. e), where PSTs showed low levels of confidence and sought more training in literacy instruction. It seems to be that PSTs are either over-confident without cause, or under-confident with cause, which just goes to show that PSTs are not learning what they should be learning in their B.Ed. programs. It is entirely possible for both groups to coexist simultaneously, and further proves that teacher educators are not adequately preparing their students. PSTs either feel too confident and lack skills or lack confidence and have few skills to draw on. In either case, there is a clear and present problem that needs to be addressed in how PSTs are being instructed in literacy teaching. It seems that PSTs are merely being taught about teaching, and not being taught how exactly they should do it (Graham et al., 2014). These inaccurate perceptions can have serious consequences for B.Ed. programs and elementary students alike (Spear-Swerling, Brucker, & Alfano, 2005). Addressing these perceptions held by PSTs is often overlooked by teacher educators (Barr, Eslami, Joshi, Slattery, & Hammer, 2016;

Ciampa & Gallagher, 2018). PSTs are often unable to correctly assess their own knowledge of language related constructs, and high self-efficacy does not equal high competency (Bostock & Boon, 2012), and sometimes this actually reveals a greater lack of competency (Barr et al. 2016)

This is true for any student, not just PSTs. Just because a student in grade one feels, believes or claims that they are good at counting, does not automatically mean that their teacher should simply believe them without testing their actual ability. More than two-thirds of in-service teachers perceive beginning teachers to be unprepared, and some school principals believe that new teachers are graduating without the necessary skills and strategies to improve the literacy standards in their schools (Parliament of Victoria Education and Training Committee, 2005). Adequately preparing students gives them skill competency and saves them from any embarrassment they might encounter by either being unprepared or feeling over-prepared unjustifiably. Not only is this necessary to do, but it is also a kindness and a service to students and PSTs.

Implications

The facts presented in this scoping review paint a dreary and alarming picture of the state of PST education in general. While the themes presented do not necessarily apply to every B.Ed. program, they can be seen as an accurate representative of the majority. The many studies discussed here show that there are various problems in the field of education and in teacher education. But they also point to B.Ed. programs as the heart of these problems. Students continue to struggle to read, and we cannot as educators continue to blame the student. If we cannot blame the student, then we blame the content, and if not that, then the teacher. But who trains the teacher? Were they not also a student? If we cannot blame our primary students for struggling to learn to read, how can we, at the same time, place blame on the teacher for struggling to learn to teach? Again, we must look further, to the teachers of the teachers, where we find the source. B.Ed. programs are not perfect and do not claim to be. Yet, they are responsible for preparing teachers to teach the next generation how to read and write and should be taking every possible step to ensure that they are providing PSTs with the best quality education they are paying for. And, if B.Ed. programs find that they are not doing everything they can do, they should institute changes to learn and improve.

More research should be done to further investigate how B.Ed. programs teach early literacy to their PSTs, and B.Ed. programs should consider the gaps presented in this study and

in the literature. As an institution, a university faculty of education could further investigate the state of their own B.Ed. programs and if there are gaps present in their faculty or content. Students struggle in early literacy and teachers struggle to teach it. One implication is that B.Ed. programs could also be experiencing struggles, and that these struggles are permeating down to the PST and early literacy student level. Using this or other research, B.Ed. programs could reflect on their own practices and how this informs the practice of PST and in-service teachers. If they identify areas for improvement or gaps in the teaching, program then have the information needed to take the necessary steps to institute changes. The purpose of identifying a 'problem' is so that a solution can be found. As there are a number of issues discussed in this scoping review, the larger benefit is that positive changes could be made to B.Ed. programs. Better programs produce better teachers, who provide better instruction to early literacy students. As the purpose of all learning is to change and be changed, B.Ed. programs should continue to change for the better. "Teacher educators also need to perform long-term evaluations of their teaching, as well as of their existing teacher education programs," (Helfrich & Bean, 2011, p. 259) in order to create new and positive changes. "Education can no longer be productively focused primarily on the transmission of pieces of information that, once memorized, comprise a stable storehouse of knowledge" (Darling-Hammond, 2010, p. 4) but should be a culmination of all learning to be presented in the most practically applicable manner possible. If you can practically apply what you have learned, that is when it becomes useful.

After completing this scoping review, I have found that the process is thorough and in-depth. I think that consultation of stakeholders is a good optional sixth step, and while my research focused only on published literature, other researchers may be interested in, and benefit from, literature and expert opinions from practitioners, families, or other parties involved in the field of study.

Contributions

It is worth noting that the results of this study were rather surprising. At the outset of this research, I sought to discover which instructional strategies were being taught to PSTs to prepare them to teach early literacy and if there were any gaps in the literature. As I researched the basic components of reading (such as phonics and comprehension) and discovered the ongoing 'reading wars' in the theory of reading, I expected that some of these theories would be present in the final sources of this review. The results, however, were entirely different from what I

anticipated, and barely touched on theories of phonemic awareness or whole word comprehension, etc. There was also a surprising lack of studies focusing on early literacy instruction at all, and an apparent gap began to present itself. I found it very difficult to find studies that focused not only on early literacy instruction, but specifically early literacy instruction for PSTs in B.Ed. programs. We do not know clearly enough what reading theories are being taught to PSTs and if they are being applied as in-service teachers. We also do not understand why students and teachers struggle when the teachers themselves are supposedly being 'prepared' by their B.Ed. programs. Are they truly prepared? Further research should be done to discover more about how B.Ed. programs instruct PSTs in early literacy practices, and what practices are being used by in-service teachers in schools. This could be done through, but not limited to, program evaluations, surveys, comparative studies, or case studies. This would greatly benefit not only the research community but the education community as a whole. Primary teachers especially could be beneficiaries and could use it to influence and inform their classroom literacy teaching practices.

Limitations

A possible limitation of a scoping review is an overabundance of literature, academic and grey. Therefore, delimitation requires narrowing the research parameters to focus on elementary school children, specifically those in kindergarten to grade three (primary division); focusing on B.Ed. programs provided in English; and selecting English as the primary language of instruction and topic of study for early literacy skills. It should be noted that there are only a small number of studies presented in this study. These studies are also only from a small number of countries, and mostly from the U.S.A., each with its own different national / state / provincial curriculum. While the majority of studies are from the last ten years, two studies are from 2005 (AGDEST) and 2006 (NCOTQ) and may or may not reflect current practice. For more recent data, see the NCOTQ 2020 Program Performance in Early Reading Instruction (NCOTQ, 2020). Although it did not appear in the results along with the 2006 report, it nonetheless shows clear improvement with regards to instruction of the Science of Reading in B.Ed. programs.

Conclusion

The results of this scoping review did not clearly answer the research question of what instructional strategies are taught to PSTs for early literacy instruction in Bachelor of Education programs, but rather presented themes from the literature which suggest that clear instructional

strategies are not being taught. What is abundantly clear throughout the literature, however, is a gap regarding early literacy instructional strategies in B.Ed. programs. This gap is evident in the fact that, when over 500 studies that made it to the full-text review stage, over 100 were excluded in the second round, and only 16 remained for data extraction. The excluded studies discussed numerous unrelated areas of literacy such as adult literacy, second language literacy, media literacy, financial literacy, critical literacy, or general English literacy for all grades, to name a few. There is a copious amount of literature surrounding early literacy that exists, yet very few of these studies actually discuss how it is taught to PSTs in B.Ed. programs. This begs the question: why is early literacy, the first literacy children learn in school to set them up for a lifetime of literacy skills, not being researched to the same extent as other literacy areas of teacher education?

It is evident from this scoping review that studies which touch on the topic of early literacy instruction for PSTs in B.Ed. programs prove difficult to find (or at least were difficult to find based on the search syntax used in this study), and do not provide an overly informative picture of how PSTs are being taught at all. Specific attention should be given to all aspects of literacy teacher preparation in B.Ed. programs, especially including how and what PST are taught about the component processes of reading (Hikida, Chamberlain, Tily, Daly-Lesch, Warner, & Shallert, 2019). Not only does this study show a large gap in the literature, but it also shows that within this gap, another gap exists on early writing instruction as well, whereas reading instruction is far more represented. This is not to say, however, that PSTs are not being taught how to instruct early literacy during their B.Ed. program. The themes and results analyzed and presented simply demonstrate that the research does not tell us what exactly, or with what methods, PST are being taught to instruct early literacy within their B.Ed. programs.

> “Much remains to be addressed that would consider how to best prepare reading teachers in ways that encompass the complexity of what it means to read … We hope that by drawing attention to the relative silences in this body of research, we have challenged the research community to critically interrogate what preservice teachers are being prepared to value and to do” (Hikida et al., 2019, p. 191).

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Appendices

Appendix A

University B.Ed. program course content ratings (2021)

Rating	University	Name of 0.5 course
N/A Courses not listed	University of Windsor	
1.5	York University	Child Development and Health
	University of Ontario Institute of Technology	Digital Literacies I (Language Arts and Digital Technology), Digital Literacies/Social Studies II (Language Arts and Social Studies), and Teaching Kindergarten
2.0	University of Ottawa	Arts and Language Arts, and Language Arts and Social Studies
	Brock University	
	Nipissing University	
2.5	Laurentian University	Early Childhood Special Topics (Primary Junior)
	Wilfred Laurier	Teaching in Kindergarten
3.0	Tyndale University	
3.5	Lakehead University	Teaching Kindergarten
	Redeemer University	Play-based Learning and Teaching in the JK-SK Program
4.0	Queen's University	
Specialty Program	Trent University	Supporting Literacy Program-Learners with Special Education Needs
B.Ed. stream	Western University	P/J Specialty area: Early Childhood Education

Appendix B

Boolean Search Terms

Database	Boolean Search Terms Used
ERIC Pro Quest	(MAINSUBJECT.EXACT("Teacher Education") OR TI,AB("teacher education*") OR TI,AB("pre-service teach*" OR "preservice teach*" OR "teacher candidate*" OR "initial teach*" OR "student teacher*" OR "student-teacher*" OR "teacher train*" OR "teacher* in training" OR "teacher* program*" OR "teacher preparat*" OR "bachelor of education" OR "bachelor of education program*" OR "teacher* college*")) AND (MAINSUBJECT.EXACT("Emergent Literacy") OR (MAINSUBJECT.EXACT("Emergent Literacy") AND (MAINSUBJECT.EXACT("Beginning Reading") OR MAINSUBJECT.EXACT("Beginning Writing"))) OR TI,AB("emerg* literac*" OR "literacy education" OR "literacy instruction*" OR "literacy teach*" OR "literacy skill*" OR "early literac*"))
APA PsycINFO ProQuest-269	(MAINSUBJECT.EXACT("Teacher Education") OR MAINSUBJECT.EXACT("education students") OR TI,AB("teacher education*" OR "pre-service teach*" OR "preservice teach*" OR "teacher candidate*" OR "initial teach*" OR "student teacher*" OR "student-teacher*" OR "education student*" OR "teacher train*" OR "teacher* in training" OR "teacher* program*" OR "teacher preparat*" OR "bachelor of education" OR "bachelor of education program*" OR "teacher* college*")) AND TI,AB("emerg* literac*" OR "literacy education" OR "literacy instruction*" OR "literacy teach*" OR "literacy skill*" OR "early literac*")
LLBA ProQuest	(MAINSUBJECT.EXACT("Teacher Education") OR TI,AB("teacher education*") OR TI,AB("pre-service teach*" OR "preservice teach*" OR "teacher candidate*" OR "initial teach*" OR "student teacher*" OR "student-teacher*" OR "teacher train*" OR "teacher* in training" OR "teacher* program*" OR "teacher preparat*" OR "bachelor of education" OR "bachelor of education program*" OR "teacher* college*")) AND (MAINSUBJECT.EXACT("Early Literacy") OR (MAINSUBJECT.EXACT("Early Literacy") AND (MAINSUBJECT.EXACT("Beginning Reading") OR MAINSUBJECT.EXACT("Beginning Writing"))) OR TI,AB("emerg* literac*" OR "literacy education" OR "literacy instruction*" OR "literacy teach*" OR "literacy skill*" OR "early literac*"))
Web of Science	TS=(("teacher education*" OR "pre-service teach*" OR "preservice teach*" OR "teacher candidate*" OR "initial teach*" OR "student teacher*" OR "student-teacher*" OR "teacher train*" OR "teacher* in training" OR "teacher* program*" OR "teacher preparat*" OR "bachelor of education" OR "bachelor of education program*" OR "teacher* college*") AND ("emerg* literac*" OR "literacy

	education" OR "literacy instruction*" OR "literacy teach*" OR "literacy skill*" OR "early literac*"))
Academic Search Complete	(DE "TEACHER education" OR DE "EDUCATION of kindergarten teachers" OR DE "EDUCATION of preschool teachers" OR DE "EXTENDED teacher education programs" OR DE "STUDENT teachers" OR TI("teacher education*" OR "pre-service teach*" OR "preservice teach*" OR "teacher candidate*" OR "initial teach*" OR "student teacher*" OR "student-teacher*" OR "teacher train*" OR "teacher* in training" OR "teacher* program*" OR "teacher preparat*" OR "bachelor of education" OR "bachelor of education program*" OR "teacher* college*") OR ("teacher education*" OR "pre-service teach*" OR "preservice teach*" OR "teacher candidate*" OR "initial teach*" OR "student teacher*" OR "student-teacher*" OR "teacher train*" OR "teacher* in training" OR "teacher* program*" OR "teacher preparat*" OR "bachelor of education" OR "bachelor of education program*" OR "teacher* college*")) AND (DE "EMERGENT literacy" OR TI("emerg* literac*" OR "literacy education" OR "literacy instruction*" OR "literacy teach*" OR "literacy skill*" OR "early literac*") OR AB("emerg* literac*" OR "literacy education" OR "literacy instruction*" OR "literacy teach*" OR "literacy skill*" OR "early literac*"))
Education Source	(DE "TEACHER education" OR DE "EDUCATION of kindergarten teachers" OR DE "EDUCATION of preschool teachers" OR DE "EXTENDED teacher education programs" OR DE "STUDENT teachers" OR TI("teacher education*" OR "pre-service teach*" OR "preservice teach*" OR "teacher candidate*" OR "initial teach*" OR "student teacher*" OR "student-teacher*" OR "teacher train*" OR "teacher* in training" OR "teacher* program*" OR "teacher preparat*" OR "bachelor of education" OR "bachelor of education program*" OR "teacher* college*") OR ("teacher education*" OR "pre-service teach*" OR "preservice teach*" OR "teacher candidate*" OR "initial teach*" OR "student teacher*" OR "student-teacher*" OR "teacher train*" OR "teacher* in training" OR "teacher* program*" OR "teacher preparat*" OR "bachelor of education" OR "bachelor of education program*" OR "teacher* college*")) AND (DE "EMERGENT literacy" OR TI("emerg* literac*" OR "literacy education" OR "literacy instruction*" OR "literacy teach*" OR "literacy skill*" OR "early literac*") OR AB("emerg* literac*" OR "literacy education" OR "literacy instruction*" OR "literacy teach*" OR "literacy skill*" OR "early literac*"))