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Linda J. Meeks
Macquarie University

Coral R. Kemp
Macquarie University

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How Well Prepared are Australian Final-Year Preservice Teachers to Teach Early Reading and Spelling?

Linda J. Meeks
Coral R. Kemp
Macquarie University

Abstract: *Preservice early childhood and primary teachers from teacher preparation institutions across five Australian states were surveyed regarding their perceptions of preparedness and ability to teach early reading and spelling skills, as well as their knowledge of components of early reading, such as phonemic awareness, alphabet knowledge and early spelling patterns. Surveys were conducted in the final year of the teacher training courses and targeted students attending teacher education institutions providing teacher training in the area of early literacy. Although preservice teachers generally rated themselves as prepared to teach early reading, most demonstrated minimal to very poor knowledge of the components of early reading, indicating a substantial discrepancy between the general confidence of preservice teachers to teach, and their limited content knowledge of beginning reading skills. The return rates from institutions (16) and students (160) were low; however the results of this study support previous research findings, suggesting that there may be a need for reform in teacher preparation programs, especially in the area of early reading instruction.*

Introduction

There has been a limited amount of research into the knowledge and skills of Australian preservice teachers in relation to early literacy in general and beginning reading instruction in particular. The purpose of the study reported here was to extend this research by collecting information from final-year preservice teachers enrolled in every early childhood and primary teacher education program in Australia.

Existing studies of preservice teachers' knowledge and skills concerning early reading instruction were located for only two English-speaking countries (Australia and the United States of America) and, apart from one state-wide project, each study was based on participants from a single teacher-education institution. The Australian studies were conducted in four different states: Queensland (Fielding-Barnsley, 2010), Victoria (Mahar & Richdale, 2008; Stark, Snow, Eadie & Goldfeld, 2015), Western Australia (Meehan & Hammond, 2006), and New South Wales (Tetley & Jones, 2014). The findings from these studies would suggest that many primary preservice teachers have limited content and pedagogical knowledge concerning effective early/beginning reading instruction (Stark, Snow, Eadie & Goldfeld, 2015). Furthermore, general ratings of preparedness to teach early reading ranged from *not prepared* to *moderately prepared*, with very low ratings for preparedness to teach students who struggle to learn to read.

As with any area of learning, reading included, it is the beginning instruction that supplies the foundation on which to build more complex skills and knowledge. Initial reading instruction needs to be organised and delivered according to the research base that delineates

best practice. The report of the National Reading Panel published by the National Institute of Child Health and Human Development (NICHHD, 2000) listed five critical components of reading instruction: phonemic awareness (a subset of phonological awareness), phonics, vocabulary, comprehension and fluency. Two of these components, phonemic awareness and phonics, are the major skills necessary for initial decoding instruction (McGeown & Medford, 2014).

Phonological awareness is a metacognitive skill concerned with the sound structures of language, rather than the meaning of language. Component skills include awareness of speech sounds at syllable, onset-rime and phoneme levels. Phonemic awareness focuses on the smallest units of speech sounds and includes the ability to locate and process individual sounds within a word (essential for encoding) and the ability to blend sounds together to make a word (essential for decoding) (Stuart & Stainthorp, 2016). The findings of the research are quite clear. Students will struggle to learn to read and spell if their phonemic awareness skills are limited (Spear-Swerling, 2015; Ehri et al., 2001; Foorman et al., 2003; Moats, 2004; Washburn & Mulcahy, 2014). Phonics knowledge is based on the relationship between the alphabet letters and their corresponding sounds. Research has shown that phonics knowledge is significant to learning to read and spell and that it is best taught using a systematic and explicit approach (Fielding-Barnsley & Purdie, 2005; Hatcher, Hulme, & Snowling, 2004; Hattie, 2009; Konza, 2014). In addition, "there is also evidence to support the transfer effects of early encoding instruction on later reading, writing, and spelling performances" (Weiser & Mathes, 2011). In New South Wales, Australia, however, it has been noted that "not all graduate teachers have the skills to provide explicit and systematic instruction in phonemic awareness and phonics despite unequivocal evidence supporting this approach to literacy instruction in the early years" (Board of Studies, Teaching and Education Standards, NSW, 2014, p. 13).

According to national and international reports, Australian students' performance in reading has shown a steady decline. The results from the 2016 National Assessment Program for Literacy and Numeracy (NAPLAN) indicated that 11.5% of Year 3 students scored *below* (3.1%) or *at* (8.4%) the minimum standard, and 15.5% of Year 5 students scored *below* (5.2%) or *at* (10.3%) the minimum standard (Australian Curriculum, Assessment and Reporting Authority (ACARA, 2016), demonstrating very little change from the 2015 NAPLAN results when 11% of Year 3 students scored below (3.6%) or at (7.4%) the minimum standard, and 18.1% of Year 5 students scored below (4.9%) or at (13.2%) the minimum standard (ACARA, 2015).

Every three years, since 2000, 15-year-old Australian students have participated in the Programme for International Student Assessment (PISA). In 2015, a sample of 14530 students across Australia completed the survey, with a range of 20 - 30 students, *and* all age-eligible Indigenous students, being sampled per school (Thomson, De Bortoli, & Underwood, 2016, p.6). The Australian results reported for the PISA 2015 assessments have shown that 18% of 15 year-old Australian students were considered to be low-performing (at and below Level 1a) (Thomson, De Bortoli, & Underwood, 2017, p. 106), an increase of nearly 4% from the PISA 2012 results (Thomson et al., 2016, p.16), and also demonstrating a 'significant decline' between 2009 and 2015. (Thomson et al., 2017, p. 195).

Student achievement may be influenced by a number of factors, including national educational systems, student attributes, and teacher quality (Meeks, Kemp, Stephenson, 2014). Research into teacher quality has identified a number of issues including the academic competence of preservice student teachers (Wright, 2015), and the quality of the content and delivery of initial teacher education courses (Hattie, 2009). The quality of content and delivery will strongly influence teacher implementation of research-based practice. If current research regarding the content and pedagogy of reading is not being included in teacher preparation courses, research into reading instruction may not be reaching Australian

classrooms (Coltheart & Prior, 2006; Fielding-Barnsley & Purdie, 2005) resulting in a research-practice divide (Spear-Swerling, 2007) that continues after graduation. Unfortunately, a study carried out by Ohi, based in the State of Victoria, found that "the majority of the teachers interviewed had limited access to educational research. Educational research was not explicitly identified by them as a major source of their professional knowledge for the teaching of reading" (2007, p.68). Similar findings have been reported in the United States (Joshi, Binks, Hougen, Dahlgren, Ocker-Dean & Smith, 2009; Kilpatrick, 2015; Spear-Swerling, 2007) and in Canada (Kosnik & Beck, 2008).

The fact that most of the teacher knowledge surveys cited above were conducted in single institutions may be seen to limit the application of the findings to a wider population. Surveys of preservice teachers in the last year of their teacher education programs from multiple institutions could provide important information regarding the knowledge, skills and self-rating of students' preparedness to teach early reading skills across a broader population.

Three specific research questions were posed:

- How do preservice teachers rate their preparedness and ability to teach beginning reading and spelling?
- What content knowledge and skills do preservice teachers have regarding early reading and spelling instruction?
- Is there a correlation between preservice teacher rating of preparedness to teach early reading and spelling and their early reading and spelling content knowledge and skills?

Method

Preservice teachers in their final year of an early childhood, or primary, teacher education course were surveyed regarding both the extent of their knowledge of the content and skills required for the teaching of beginning reading, and their perceptions of their preparedness to implement such teaching.

Procedure

At the beginning of 2013, the Australian Institute for Teaching and School Leadership (AITSL) website was used to identify those tertiary institutions offering early childhood and/or primary teaching courses. A total of 43 institutions were located: 14 in New South Wales (NSW), 10 in Victoria (VIC), eight in Queensland (QLD), five in Western Australia (WA), three in South Australia (SA), one in Tasmania (TAS), one in the Northern Territory (NT), and one in the Australian Capital Territory (ACT). A search of university websites was used to locate the names and email addresses of Deans or Heads of School of the Education faculty in each university. On receipt of approval by the Human Research Ethics Committee, information about the survey process, a copy of the survey, an invitation to participate, and a consent form were sent by email to the Deans or Heads of School of all 43 institutions. Once an institutional consent form had been received, the student invitation email was forwarded to the nominated contact person for distribution on the student email system. A student reminder invitation was posted approximately one month later. Due to the limited number of respondents in 2013 (N = 81), the survey was repeated in 2014. In order to encourage participation in the survey, respondents were able to enter a draw for one of four monetary prizes. Respondents were also invited to register their interest in participating in a follow-up telephone interview.

Participants

A total of 178 participants, enrolled in 16 tertiary institutions in five states of Australia, completed the survey. Preservice teachers were studying at undergraduate or postgraduate level, were enrolled in early childhood and/or primary courses of study, and were completing their final year of study.

Survey

Preservice teachers responded to an online Qualtrics survey, with twenty-five questions organised under four headings: demographics; perceptions of preparedness and ability to teach early literacy; knowledge of research-based practices for teaching early reading and spelling; and knowledge of components of early reading (see Appendix). Surveys designed by Al Otaiba, Lake, Greulich, Folsom and Guidry (2012), Binks-Cantrell, Joshi and Washburn (2012), Bos, Mather, Dickson, Podhajski and Chard (2001), Mather, Bos and Babur (2001), Moats, (1994), and Washburn, Joshi and Binks-Cantrell (2011) provided the basis for the development of the survey. Author-developed questions on spelling mirrored the existing items on reading. The responses for three of the questions: Question 8 (teaching strategies), Question 10 (components of literacy instruction) and Question 12 (practices supported by research) are reported in a subsequent paper.

Part 1 of the survey collected basic preservice teacher demographics. Part 2 was divided into two sections: (a) preservice teachers' perceptions of their *preparedness* to teach early literacy, and (b) preservice teachers' perceived *ability* to instruct Kindergarten-Year 2 students in phonological awareness, phonics and spelling. Knowledge of recommended instructional practices (NICHHD, 2000; Rowe, 2005) for the teaching of early literacy formed the basis of Part 3, and two types of questions were included in Part 4 in order to assess preservice teachers' knowledge of early reading and spelling skills. Five multiple-choice questions tested students' declarative knowledge (definitions) of terms such as *phoneme, deletion,* and *consonant blend*. Of the questions included for analysis, 12 were worth 1 point each, 1 question was worth 5 points and 1 question was worth 7 points (maximum score of 24).

As too few respondents answered Question 25 regarding the definition of a morpheme, (it was unanswered in 58 surveys), all responses to this question were deleted. Responses to question 21 were also deleted because, after consideration of the responses, the question was deemed to be ambiguous. The question required the respondent to select the word(s) that did not have a silent letter. Choices included three words that clearly had silent letters (bamb, wrin, knam), one without a silent letter (phop), and one word ending in 'e' where the 'e' could be regarded as a silent letter or as part of a split vowel digraph (shipe).

Incomplete surveys were also deleted from the database. These included surveys where the respondents had: (a) completed fewer than three knowledge questions (1 from the 2014 group), or (b) failed to answer any of the questions in Parts 2-4 of the survey (14 from the 2013 group and 3 from the 2014 group). The total number of surveys removed from the database was 18 (10%) (14 from the 2013 group and 4 from the 2014 group), leaving a total of 160 surveys that went forward for analysis.

Data Analysis

A two-tailed t-test was used to calculate whether there was a significant difference between the two groups' scores on the knowledge/skills test. As the difference between the

groups was found to be non-significant ($p = 0.116$), the data were combined and exported to SPSS (version 21) for analysis.

Correlation statistics were used to investigate the relationship between preservice teachers' rating of preparedness in relation to the teaching of early reading and their skills and knowledge. The Likert ratings were entered into SPSS as rank order data. In order to calculate a rank order correlation, the knowledge scores of the participants were also ordered from 1-5. Arbitrary performance classifications and ranks were developed as follows: scores of 8 or less were given a rank of 1 and a classification of very poor; scores from 9 to 11 were given a rank of 2 and a classification of poor; scores from 12 to 16 were given a rank of 3 and a classification of minimal; scores from 17 to 19 were given a rank of 4 and a classification of good; and scores from 20 to 24 were given a rank of 5 and a classification of very good.

Results

Forty-three invitations were issued in 2013. Acceptances were received from nine institutions (20.9%), ten declined to participate (two of these institutions did not have final year students), and 24 institutions did not respond at all. According to the information provided by participating institutions, the total number of potential respondents was 1555. Eighty-one preservice teachers completed the survey (response rate = 5.2%), with data for 67 of the respondents included in the data analysis. In 2014, 13 of the 44 institutions accepted the invitation (29.5%), 11 declined, and 21 did not reply. The potential total of respondents from the thirteen institutions was 2344. Ninety-seven preservice teachers completed the survey (response rate = 4.14%) with the data for 93 included in the data analysis. Six institutions (three in New South Wales, one in Queensland, one in Tasmania, and one in Victoria) participated in both years. Tables 1 and 2 provide details of location of the institutions attended by respondents for each of the two cohorts (2013, 2014) and the courses in which the two cohorts were enrolled.

Cohort	NSW	VIC	TAS	QLD	SA	NR
2013	31 (46.2)	28 (41.8)	5 (7.5)	3 (4.5)	0	0
2014	45 (48.4)	19 (20.4)	11 (11.8)	11 (11.8)	2 (2.2)	5 (5.4)
Total	76 (47.5)	47 (29.3)	16 (10)	14 (8.6)	2 (1.3)	5 (3.1)

Note: Percentages in brackets. NSW: New South Wales; VIC: Victoria; TAS: Tasmania; QLD: Queensland; SA: South Australia; NR: nil response.

Table 1: Number and Percentage of Preservice Teachers in Each State

Cohort	GD	BEC	BP	B. Ed.	BO	PG	NR
2013	7 (10.4)	9 (13.4)	18 (26.9)	23 (34.4)	2 (2.9)	2 (2.9)	6 (9)
2014	7 (7.5)	3 (3.2)	28 (30.1)	25 (26.9)	11 (11.8)	3 (3.2)	16 (17.2)
Total	14 (8.8)	12 (7.5)	46 (28.8)	48 (30)	13 (8.1)	5 (3.1)	22 (13.7)

Note: Percentages in brackets. GD: graduate diploma; BEC: Bachelor (Early Childhood); BP: Bachelor (Primary); BE: Bachelor of Education; BO: Bachelor - Other; PG: postgraduate; NR: nil response.

Table 2: Number and Percentage of Preservice Teachers in Each Course Type

Preservice Teachers' Perceptions of their Preparedness and Ability to Teach Reading and Spelling

The mean rating for preparedness to teach beginning reading was 3.03 on a five-point scale (*SD* = 1.03) and 3.09 (*SD* = 1.03) for teaching spelling. This indicates that, on the whole, teachers perceived that they were prepared to teach both reading and spelling. Ratings of preservice teachers' perception of preparedness are included in Table 3.

Rating	Preparedness to Teach Reading (N=158)	Preparedness to Teach Spelling (N=158)
1. Not prepared at all	7 (4.4%)	7 (4.4%)
2. Somewhat prepared	49 (31.2%)	45 (28.5%)
3. Prepared	47 (29.7%)	44 (27.9%)
4. Well prepared	43 (27.2%)	50 (31.7%)
5. Very well prepared	12 (7.5%)	12 (7.5%)

Table 3: Preservice Teachers' Ratings of Preparedness to Teach Reading and Spelling

The mean score for preservice teachers' rating of ability to teach phonological awareness was 3.36 (*SD* = 0.83). For ability to teach phonics to this population, the mean score was 3.28 (*SD* = 0.84) and for ability to teach spelling the mean score was 3.46 (*SD* = 0.82). Preservice teachers indicated, therefore, that they were prepared to teach each of these early literacy components. Ratings of preservice teachers' perception of preparedness and ability are included in Table 4.

Rating	Ability to Teach Phonological Awareness (N=157)	Ability to Teach Phonics (N=156)	Ability to Teach Spelling (N=157)
No experience	9 (5.7%)	10 (6.4%)	7 (4.5%)
No ability	6 (3.8%)	5 (3.2%)	5 (3.2%)
Minimal ability	65 (41.4%)	77 (49.3%)	60 (38.2%)
Proficient	74 (47.1%)	60 (38.5%)	78 (49.6%)
Expert	3 (1.9%)	4 (2.6%)	7 (4.5%)

Table 4: Preservice Teachers' Ratings of Ability to Teach Phonological Awareness, Phonics and Spelling

Preservice Teachers' Knowledge and Skills Regarding Phonological Awareness and Phonics

Respondents' scores on the survey of knowledge and skills ranged from 3 to 24 out of a maximum score of 24. More than 76% of the preservice teachers were ranked as having skills that were minimal to very poor, with fewer than 24% having skills that were good or very good. Table 5 provides an overview of respondents' knowledge scores and the frequency and percentage of respondents scoring within each of the five ranks.

Rank	Classification	Knowledge Score	Number of Respondents (N=160)
1	Very poor	3-8	17 (10.6%)
2	Poor	9-11	28 (17.5%)
3	Minimal	12-16	77 (48.1%)
4	Good	17-19	27 (16.9%)
5	Very good	20-24	11 (6.9%)

Table 5: Preservice Teachers' Knowledge and Skills Related to Phonological Awareness and Phonics

The correct definition of phonological awareness was identified by 34.8% of respondents; 47.1% identified the correct definition of phonemic awareness; 38.8% identified a word that contained a closed syllable; and 11.3% were able to identify a word containing an open syllable. The correct definition for the term *phoneme* was identified by 77.4% of respondents; 57.5% of preservice teachers could reverse the order of sounds in *ice*; 61.9% could reverse the sounds in *enough*; and 91.8% correctly identified the pair of words that began with the same sound (*chef* and *shoe*). *Deletion* was identified as the correct term for the task, 'Say the word 'cat'. Now say the word 'cat' without the /k/ sound' by 36.9% of the preservice teachers. The majority of respondents correctly counted the number of phonemes in the words *ship* (84%), *moon* (82%), and *knee* (86%); approximately 60% of respondents were able to count the phonemes in *through* and fewer than 50% of respondents were able to correctly count the number of phonemes in *box*, *grass*, and *brush*.

Fewer than 40% of respondents could identify a word that contained two closed syllables; 11% correctly identified a word that contained an open syllable; and fewer than half of respondents could correctly define the term '*consonant blend*'. Two multiple-choice questions tested preservice teachers' knowledge of the same spelling generalisation: (a) A soft 'c' is in the word: *Chicago, cat, chair, city* (a selection task), and (b) What is the rule that governs the use of 'k' in the initial position of a word for the /k/ sound? (an application task). The soft 'c' in *city* (the selection task), was correctly identified by 70% of respondents, with 29.4% correctly identifying the correct spelling generalisation (the application task).

The Relationship Between Preservice Teachers' Perception of Preparedness and Ability to Teach Beginning Reading and Spelling and Measures of their Content Knowledge and Skills

As illustrated in Table 6, moderately strong statistically significant relationships were found between perceived preparedness and perceived ability to teach early reading and spelling. The relationship between the perception of ability to teach beginning reading and the overall measure of knowledge and skill was small and statistically nonsignificant. The relationship between the measure of knowledge and skill and perceived ability to teach spelling was also small and statistically nonsignificant. There were statistically significant relationships between the measure of knowledge and skill and the perceptions of (a) preparedness to teach spelling, (b) ability to teach phonological awareness, and (c) ability to teach phonics, but these relationships were relatively weak.

1. Perceived preparedness to teach beginning reading					
2. Perceived preparedness to teach spelling	723**				
3. Perceived ability to teach phonological awareness	549**	560**			
4. Perceived ability to teach phonics	565**	558**	799**		
5. Perceived ability to teach spelling	561**	620**	690**	687**	
6. Measure of knowledge and skill	101	124	205**	179*	095

Notes:*. Correlation is significant at the 0.05 level.**. Correlation is significant at the 0.01 level.

Table 6: Relationship Between Preservice Teachers' Ratings of Preparedness and Measures of Content Knowledge for the Teaching of Beginning Reading and Spelling

Discussion

If the purpose of teacher education is seen as the development of effective and competent classroom teachers capable of improving student performance, then preservice course content must be based on solid research findings (NICHHD, 2000). Research has consistently identified the importance of phonemic awareness and synthetic phonics instruction in the early stages of learning to read. Preservice teachers' perceptions of their ability to teach phonological awareness and phonics revealed an almost even split between *minimal ability* and *proficient*. However, very few scored at or above the 80% cut-off point for having sufficient knowledge to teach these early reading skills, and more than 76% had rankings of *minimal* to *very poor* knowledge and skills. Given that more than 64% of the preservice teachers rated themselves as *prepared* to *very well prepared* to teach early reading and more than 67% of them rated themselves as *prepared* to *very well p*repared to teach spelling, this indicates that there was a discrepancy between confidence and competence.

The term *preparedness* was used to describe how well preservice teachers felt that an institution had provided them with the knowledge and skills necessary to teach beginning reading and spelling. On average, preservice teachers perceived themselves as being prepared. However, when questioned about their ability to teach the *content* of phonological awareness and phonics skills, up to 50% of preservice teachers indicated that they were not confident in their ability to teach these particular components of early literacy.

Part three of the survey assessed preservice teachers' content knowledge. If we use the proposition that, "A score of 80% can be taken as an indication of reliable explicit ability to identify the phonemic structure of words" (Stainthorp, 2004, p. 760) and apply it to all knowledge questions, then only 6.9% of respondents reached this criterion for explicit early literacy knowledge and skills. Fewer than half of respondents could (a) correctly define the term *consonant blend*, or (b) identify a word, out of a list of five, as containing two closed syllables (*napkin*). Total knowledge scores indicated that more than three-quarters of preservice teachers scored fewer than 66%, and only 11 students (6.9%) scored 80% or above.

Preservice teachers' knowledge of specific components of early reading instruction, such as phonemic awareness and phonics, was highly variable. For example, although most preservice teachers chose the correct definition for the word *phoneme*, fewer than half chose the correct definition for the term *phonemic awareness*, and fewer still could identify a deletion task. Furthermore, the skill of selecting a pair of words that had the same initial sound was correctly answered by most preservice teachers, but many were unable to reverse the sounds in *ice* and *enough*, or count phonemes in words. Variable results were also

reported by Bos et al. (2001) who found that "Whereas more than 50 percent of the preservice and inservice teachers were able to segment the phonemes in a two-phoneme word, they were unable to do this for more complex four-phoneme words." (p.114), and Washburn et al. (2011) who reported that, as a group, preservice teachers had a varied range of knowledge concerning these basic skills. This variability might be explained by the way in which this knowledge was assessed.

Two types of questions were used to assess preservice teachers' knowledge: (a) declarative (definitions), and (b) application (skills). Noting the distinction between explicit knowledge and implicit knowledge is important. Explicit knowledge is formal, systematic and can be easily shared. Implicit knowledge, on the other hand, is not easily articulated and is typified by not knowing how you know what you know. Once you become skilled or automatic at a task, explicit knowledge generally becomes implicit (Stainthorp, 2004). This explanation may well clarify the variability in preservice teacher knowledge scores. Two examples from the survey results may be used to demonstrate this point. Being able to *select* the correct definition for the word *phoneme* may be regarded as implicit knowledge, whereas being able to count phonemes in words could be perceived as explicit knowledge. Also, being able to identify a word containing a soft 'c' may be seen as implicit knowledge, but being able to identify the rule regarding the use of 'k' in the initial position of words could be labelled explicit knowledge. If the techniques of explicit instruction are recommended in the research, then explicit knowledge of the components of early reading is equally important. As Washburn et al. have emphasised "… teachers cannot rely on their implicit skill/ability alone to teach reading, explicit teaching requires explicit understanding" (2011, p. 38).

The purpose of this study was to examine the extent of early childhood and primary preservice teachers' content knowledge concerning important components of early reading and spelling, as well as their perceptions of both their preparedness and ability to provide research-based beginning reading instruction. All tertiary institutions offering early childhood and primary teacher education courses across Australia were invited to participate by distributing the survey through their student email system. Nine institutions (out of 43) participated in 2013, and 13 (out of 44) participated in 2014, resulting in a total of 178 student responses, 160 of which were included in the analysis. This low response rate from tertiary institutions, and from the students themselves, is cause for concern. Two issues need to be considered: first, the question of why such a large number of deans, or heads of school, declined to participate in this study (or simply did not reply); and second, whether a participation bias exists based on the student nonresponse rate. Nonresponse bias occurs when some of the respondents invited to participate in a survey do not take part, and may result in data that do not represent the target population. Considering the results from this study, a nonresponse bias could occur if the survey was completed mostly by students who were confident in their ability, knowledge and skills, whether or not this confidence was warranted.

Feedback was received from some of the institutions that declined to participate as follows: their students were already over-surveyed; other surveys had already been booked in for the year; government and institutional surveys of quality control research needed to be conducted; conflicting priorities and projects; too much pressure on staff and students; and the need to protect response rates for their own research surveys. With so much media attention on education, and the recent public discussions and debates concerning best practice for early reading instruction, education may be seen as a sensitive issue. Implicit nonresponse factors may include: conflict of ideology; concerns over the quality and/or content of specific units within an early literacy course; the possibility of negative course feedback from students; and perceptions that students may not be able to answer knowledge and skill questions correctly.

Because of the low student response rates, it is important to note that a nonresponse bias might exist in the data collected. However, the highly variable range of perceptions of preparedness and ability, and of knowledge and skills, may suggest that nonresponse bias may not have had a significant impact on the results of the survey. Interpretation of the results must therefore be considered within the context of the study.

Implications for Teacher Preparation

There may be many reasons why students fail to learn to read, but the issue of inadequately prepared teachers must be considered as a possible cause. It should be noted, however, that general inadequacies in preservice teacher responding might be due to factors other than non-coverage of important component skills for teaching early reading and spelling in course content, but this needs further investigation. What is clear, however, is that the systematic and explicit instruction of phonemic awareness and phonics is an essential component of an early reading and spelling program and that, in order to provide this instruction to their students, pre-service teachers need to have acquired explicit and detailed content knowledge. In order to implement the early literacy content of the F-10 Curriculum English (ACARA, n.d.) it is important that providers of primary and early childhood preservice teacher preparation programs include, in sufficient quantity and detail, information on research-based instruction in early literacy content and the knowledge pedagogy, supported by appropriate practice teaching opportunities.

Limitations and Future Research

Data were collected from final-year preservice teachers from 16 universities across Australia. Given the small number of institutions that supported this study, and the subsequent limited participation by students, consideration must be given to any factors that might influence the interpretation of the results. First, it is unclear whether the institutions that did forward the invitation on to students are representative. For example, were the participating tertiary institutions those that were confident about the content of their courses, and believed that their students would report favourably? Second, the small number of survey completions by preservice teachers may suggest that the student cohort is not representative of all final-year preservice teachers.

In light of these limitations, further research investigating preservice teachers' perceptions, knowledge and skills is needed. Such research might clarify the causes of the disparity between preservice teachers' confidence and competence to teach early reading. It should include a more representative sample of participating institutions and final-year preservice teachers. Given the small number of institutions willing to participate in the survey, alternative approaches such as an investigation of the content of early literacy units offered to early childhood and primary preservice teachers at tertiary institutions across Australia may be required.

Conclusion

In spite of international concern about stagnating and declining standards of literacy, the research base related to preservice teachers' knowledge of language structure, as well as their perceptions of preparedness and ability for early reading instruction, is limited. The

results from the current study are comparable to those reported in the existing small body of available research. As a group, preservice teachers demonstrated a substantial discrepancy between their general confidence to teach early reading and spelling, and their content knowledge of this area, leading to the conclusion that few preservice teachers had sufficient expertise to be effective teachers of early reading and spelling.

Given that competent literacy skills contribute to the well-being of individuals and society in general, and that poor reading skills may influence one's quality of life, it is important that preservice teachers are armed with exceptional knowledge and teaching ability in order to support beginning readers on their literacy journey. This study may have obtained limited participation, but when it is considered with the results of previous studies, it is clear that preservice teachers generally possess highly variable levels of knowledge about language structure and unwarranted perceptions of their ability and preparedness to teach early literacy.

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Appendix

Perceptions and Knowledge of Final Year Education Students on Early Literacy Instruction

Part 1 Demographics

1. Which teaching course are you enrolled in? (e.g. Bachelor of Education, Bachelor of Teaching, B.A. Special Education, Master of Teaching, etc.)
2. In which Australian State or Territory are you completing / have you completed your course?
   - Australian Capital Territory
   - New South Wales
   - Northern Territory
   - Queensland
   - South Australia
   - Tasmania
   - Victoria
   - Western Australia

Part 2 Perceptions of preparedness to teach early literacy

3. How well prepared do you feel to teach *beginning* reading?
   (Fielding-Barnsley, 2010)

Not prepared at all	Somewhat prepared	Prepared	Well prepared	Very well prepared

4. How well prepared do you feel to teach spelling?

Not prepared at all	Somewhat prepared	Prepared	Well prepared	Very well prepared

5. How would you rate your ability to instruct Kindergarten-Year 2 students on phonological awareness?
   (Al Otaiba, Lake, Greulich, Folsom, & Guidry, 2012)

No experience	No ability	Minimal ability	Proficient	Expert

6. How would you rate your ability to instruct Kindergarten-Year 2 students on all aspects of phonics, including consonant blends, digraphs, etc.?
   (Washburn, Joshi & Binks-Cantrell, 2011)

No experience	No ability	Minimal ability	Proficient	Expert

7. How would you rate your ability to instruct Kindergarten-Year 2 students on spelling generalisations/rules?

No experience	No ability	Minimal ability	Proficient	Expert

8. Please list the FIVE most important literacy teaching strategies that you learnt in your preservice teacher education course.
   1.
   2.
   3.
   4.
   5.

Part 3 Knowledge of research-based practices for teaching early literacy

9. Phonological awareness is: (mark ***one*** response only)
(Mather, Bos & Babur, 2001)
   - the ability to use letter-sound correspondences to decode words
   - *the understanding of how spoken language is broken down and manipulated*
   - a teaching method for decoding skills in reading
   - the same as phonics
   - unsure

10. Which of the following are the five main components of literacy instruction? (mark ***five*** of the options only)
   - *vocabulary*
   - *fluency*
   - *comprehension*
   - context
   - *phonics*
   - spelling
   - *phonemic awareness*
   - accuracy
   - unsure

11. Phonemic awareness is: (mark ***one*** response only)
(Washburn, Joshi & Binks-Cantrell, 2011)
   - the same as phonological awareness
   - the understanding of how letters and sounds are put together to form words
   - *the ability to break down and manipulate the individual sounds in spoken language*
   - the ability to use sound-symbol correspondences to read words
   - unsure

12. Which of the following practices have support in the literacy research? (mark as many responses as apply)
   - teaching invented spelling
   - *the systematic teaching of phonics*
   - *ensuring that all children have good phonemic awareness skills*
   - encouraging the use of picture cues in early reading
   - *using phonics-based readers in the early grades*
   - providing a rich language environment rather than systematically teaching component skills
   - using a whole-language approach for students who are having difficulty learning to read
   - *using a direct instruction approach for the teaching of reading*
   - unsure

Part 4 Knowledge of early literacy skills

13. A phoneme refers to: (mark one response)
(Mather, Bos & Babur, 2001)
   - a single letter
   - *a single speech sound*
   - a single unit of meaning
   - a morpheme
   - unsure

14. A combination of two or three consonants, pronounced so that each letter keeps its own identity is called: (mark one response)
(Moats, 1994)
    - silent consonant
    - consonant digraph
    - diphthong
    - *consonant blend*
    - unsure
15. How many speech sounds are in each of the following words? For example, the word 'cat' has three speech sounds 'k'-'a'-'t'. Speech sounds do not necessarily equal the number of letters.
(Moats, 1994)
    - box *4*
    - grass *4*
    - ship *3*
    - moon *3*
    - brush *4*
    - knee *2*
    - through *3*
16. What kind of task would the following be
"Say the word 'cat. Now say the word 'cat' without the /k/ sound." (mark one response)
(Binks-Cantrell, Joshi & Washburn, 2012)
    - blending
    - rhyming
    - segmentation
    - *deletion*
    - unsure
17. A soft 'c' is in the word: (mark one response)
(Bos, Mather, Dickson, Podhajski & Chard, 2001)
    - Chicago
    - cat
    - chair
    - *city*
    - unsure
18. Identify the pair of words that begin with the same sound: (mark one response)
(Binks-Cantrell, Joshi, & Washburn, 2012)
    - joke - goat
    - *chef - shoe*
    - quiet - giant
    - chip - chemist
    - unsure
19. The next two questions involve saying a word and then reversing the order of the sounds. (For example, the word "back" could be "cab".)
If you say the word, and then reverse the order of the sounds, 'ice' would be: (mark one response)
(Mather, Bos & Babur, 2001)
    - easy
    - sea
    - size
    - *sigh*

- unsure

20. If you say the word, and then reverse the order of the sounds, 'enough' would be: (mark one response)
(Mather, Bos & Babur, 2001)
    - fun
    - phone
    - *funny*
    - one
    - unsure
21. All of the following nonsense words have a silent letter, except: (mark one response)
(Binks-Cantrell, Joshi, & Washburn, 2012)
    - bamb
    - wrin
    - shipe
    - knam
    - *phop*
    - unsure
22. Which of the following words has 2 closed syllables? (mark one response)
(Moats, 1994)
    - wave
    - bacon
    - paddle
    - *napkin*
    - unsure
23. Which of the following words has an open syllable? (mark one response)
(Moats, 1994)
    - wave
    - *bacon*
    - paddle
    - napkin
    - unsure
24. What is the rule that governs the use of 'k' in the initial position of a word for the /k/ sound? (mark one response)
(Moats, 1994)
    - *'k' is used for /k/ in the initial position before e, i, or y*
    - the use of 'k' for /k/ in the initial position is random and must be memorised
    - 'k' is used for /k/ in the initial position before a, o, u, or any consonant
    - unsure
25. A morpheme refers to: (mark one response
(Moats, 1994)
    - a single speech sound
    - *a single unit of meaning*
    - a grapheme
    - a single letter
    - unsure

Thank you for taking part in this survey.
Your participation is much appreciated!

Note: *Answers are in italics.*