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Australian preservice teachers and early reading instruction

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Australian preservice teachers and early reading instruction

University websites and internet search engines were used to locate information about literacy units addressing early reading instruction offered in Australian primary and early childhood teacher preparation programs. Data concerning course organisational details, the content of literacy units, and the qualifications and research interests of unit coordinators were collected for 40 Australian tertiary institutions. Results indicate that references to early reading content in unit descriptions were generally included with other literacy subject matter, the total tuition time available for early reading instruction was limited, and many unit coordinators did not have expertise in early reading. In addition, it would appear that essential research-based content such as phonics, phonemic awareness and the alphabetic principle may not be adequately addressed in many units. An amendment to Standard 2.5 of the guidelines set out in the Australian Professional Standards for Teachers may assist in resolving some of these issues.

Within Australia, the development of nationally agreed policies for education falls under the auspices of the Australian Institute for Teaching and School Leadership (AITSL). AITSL was formed in 2011 and is responsible for the processes involved in the accreditation of initial teacher education and school leadership, as well as the maintenance of a core set of teaching standards known as the Australian Professional Standards for Teachers which outline what teachers should know and be able to do (AITSL, 2011). AITSL and state and territory authorities are responsible for the accreditation of teacher preparation programs based on these standards.

Despite these moves to introduce policies to improve teacher education and teacher performance, both national and international assessment programs report that the reading performance of Australian students has shown a continuous and steady decline between 2000 and 2018. Preliminary results from the Australian National Assessment Program for Literacy and Numeracy for 2018 indicated that a total of 8.7% of Year 3 students scored *below* the national minimum standard for reading (2.6%) or *at* the national minimum standard for reading (6.1%), and 12.8% of Year 5 students scored *below* the national minimum standard

for reading (3.5%) or *at* the national minimum standard for reading (9.3%) (Australian Curriculum Assessment and Reporting Authority, 2018). Similar results from international assessment programs reflect this trend. Results from the reading section of the Programme for International Student Assessment (PISA) 2015, for example, showed that 18% of 15 year-old Australian students were considered to be low performing (Thomson, De Bortoli, & Underwood, 2017), and results from the 2016 Progress in International Reading Literacy Study (PIRLS) revealed that 18 per cent of Year 4 students in metropolitan schools, 22 per cent of students in regional schools, and 30 per cent of students in remote schools, did not achieve the intermediate benchmark. (Thomson, Hillman, Schmid, Rodrigues, & Fullarton, 2017). Results from the reading section of PISA 2018 have shown that Australia's performance trend between 2000 and 2018 'has been steadily declining in reading' (OECD, 2019, p.4), that 20% of 15 year-old Australian students did not attain Level 2 proficiency in reading, and that 'more rapid declines were observed amongst the country's lowest-achieving students' (OECD, 2019, p.2).

Teacher quality and student achievement

Teacher quality is the single, most important in-school factor influencing student achievement (NSW Education Standards Authority [NESA], 2018). International research has also consistently demonstrated the relationship between well-prepared teachers, who provide quality teaching, and student achievement (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2009; Darling-Hammond, 2000; National Institute of Child Health and Human Development [NICHD] 2000; Rockoff, 2004). In order for newly qualified teachers to provide quality teaching, in any subject area, to students of all ability levels, and in particular to those students who struggle to learn, they must have received quality teacher preparation programs themselves. These programs need to include evidence-based instruction in subject-specific content and pedagogical practices.

Teacher preparation for early reading instruction

The 2013 report of the National Academy of Education in the United States included a framework designed to assist in the evaluation of teacher preparation programs (Feuer, Floden, Chudowsky, & Ahn, 2013). Two of the six attributes included in this framework were *quality and substance of instruction* and *faculty qualifications*. Measures of ‘quality and substance of instruction’ were based on the examination of course offerings and the required hours, lectures and assignments, and course syllabi. Measures of ‘faculty qualifications’ included the percentage of faculty with advanced degrees and the percentage of faculty in full-time or part-time employment (Ingvarson et al., 2014). Similarly, Boyd, Grossman, Lankford, Loeb, and Wyckoff (2009) identified five areas that may be used to determine the quality of education programs: program structure, subject-specific preparation, learning and child development, preparation to teach a diverse range of students, and field experiences.

Teacher preparation is generally based on two specific domains: subject content knowledge and pedagogical knowledge. Subject content knowledge is concerned with the ‘what’ of instruction, whereas pedagogical knowledge covers the ‘how’ of instruction. The authors of this paper take the view that both content and pedagogical knowledge should be based on evidence drawn from scientific research as summarised in the various national reports into the teaching of reading (NICHD, 2000; Rose, 2006; Rowe, 2005). In 2000, the U.S. National Reading Panel (NRP) investigated the subject-specific preparation for the teaching of reading. The findings from this report recommended that the provision of explicit teacher preparation in reading instruction should include five component skills: phonemic awareness (a sub-skill of phonological awareness), which has been shown to improve spelling and enhance reading skills; systematic phonics instruction (including the alphabetic principle), which needs to begin in the first year of school, and requires the integration of phonemic awareness and letter knowledge; methods to improve fluency; and ways to enhance

comprehension (including vocabulary) (NICHD, 2000). Similar international reports have confirmed the findings of the NRP including two Australian reports, *Teaching Reading* (Rowe, 2005) and *Prepared to Teach* (Louden et al., 2005), and the *Independent Review of the Teaching of Early Reading* report published in the United Kingdom (Rose, 2006).

Instructional guidance (the ‘how’ of instruction) may be seen along a continuum ranging from direct, explicit instruction to partial guidance instruction. Research conducted during the last three decades has clearly demonstrated that, for novices, direct and explicit instruction is more effective than partial guidance instruction (Clark, Kirschner, & Sweller, 2012). As pointed out by Rowe (2005), the effective teaching of reading is a highly developed professional skill, requiring knowledge of linguistics and evidence-based practices. Such practices for early reading instruction during the beginning years of schooling include direct, explicit and systematic instruction in the alphabetic principle, phonics and phonemic awareness (Moats, 2014). This paper is concerned with the *subject content knowledge* required for early reading instruction.

There has long been international concern about the adequacy of teacher preparation for the teaching of reading (Moats 2016). It is over 20 years since Moats (1994) pointed out the lack of knowledge of even experienced teachers regarding components of early reading instruction such as phonemic awareness and letter/sound correspondences. Moats (1994) suggested inadequate preservice teacher education was one factor contributing to lack of knowledge. Joshi, Binks, Hougen, Dahlgreen, Ocker-Dean, and Smith (2009) went some way to confirming deficiencies in preservice education when they found teacher educators themselves lacked knowledge of important concepts for early reading and of evidence-based approaches for teaching reading. Further, Washburn, Joshi, and Hougen, (2012) showed a relationship between the basic language and reading knowledge of teacher educators and the preservice teachers they instructed. Specifically, instructors who had received professional

learning on research-based reading instruction were more knowledgeable and had students who were more knowledgeable about the components of reading instruction.

Almost 20 years after Moats (1994), Washburn, Joshi, and Cantrell (2011) found preservice teachers lacked knowledge of phonics instruction and were not well informed about reading difficulties and their remediation. Similarly, and even more recently, Washburn, Binks-Cantrell, Joshi, Martin-Chang, and Arrow (2016) found preservice teachers from Canada, England, New Zealand and the USA lacked knowledge of the component skills required for effective reading instruction, although it appeared that national initiatives addressing particular areas may have had a positive impact. It also appears from surveys in the USA and UK that many preservice and practising teachers lack knowledge about dyslexia and effective instruction for students with dyslexia (Washburn, Binks-Cantrell & Joshi, 2011; 2014).

In Australia, questions have been raised concerning the content of reading units offered to preservice teachers, in particular whether research-based early reading instruction involving the systematic and direct instruction of phonemic awareness and phonics is being included in Australian teacher education courses in sufficient depth (Bostock & Boon, 2012; Fielding-Barnsley, 2010; Fielding-Barnsley & Purdie, 2005; Mahar & Richdale, 2008; Meehan & Hammond, 2006). Several Australian researchers have investigated the relationship between preservice teachers' perceptions of their preparedness to teach early reading and their subject-specific content knowledge (Hammond, 2015; Meehan & Hammond, 2006; Meeks & Kemp, 2017; Stark, Snow, Eadie, & Goldfeld, 2015; Tetley & Jones, 2014). The general findings from these studies suggest that preservice teachers favour the teaching of phonological awareness and phonics but have limited metalinguistic knowledge. Given the recommendation made by Stainthorp (2004) that "a score of 80% can be taken as an indication of reliable explicit ability to identify the phonemic structure of

words” (p. 760), and that Washburn et al. (2016) considered that scores of 70% or less on groups of items related to knowledge relevant for reading showed that participants “did not demonstrate strong knowledge of basic language constructs” (p. 20), the majority of participating preservice teachers in these Australian studies have limited linguistic knowledge. Similar findings have also been reported in Canada (Martinussen, Ferrari, Aitken, & Willows, 2015), the United Kingdom (Stainthorp, 2004), and the United States (Cheesman, McGuire, Shankweiler, & Coyne, 2009).

Research questions

Since the teaching of foundation early reading skills is a critical area of teacher education, it is of interest to determine how this area is addressed in teacher education courses and the weight given to early reading instruction. A number of factors may be considered as contributing to the quality of a unit in early reading in a teacher education course: the unit characteristics (for example, total hours of instruction, learning outcome/s, choice of prescribed texts, assessment tasks and types of learning activities), and the expertise and research interests of unit coordinators (Binks, 2008; Glenn, 2010; Walsh, Glaser, & Wilcox, 2006). The purpose of the study reported here was to examine how content relevant to the teaching of early reading was provided in literacy units included in undergraduate and postgraduate education degrees offered to early childhood and primary preservice teachers in Australia.

Four specific questions were posed:

- How much content on early reading is included in Australian initial teacher education courses?
- What are the characteristics of the units in Australian initial teacher education courses that include content on early reading instruction?

- What are the characteristics of the unit coordinators in Australian initial teacher education courses?
- To what extent do literacy units in Australian teacher education courses address basic content such as the alphabetic principle, phonics, and phonemic awareness?

Method

Data collection

In this study, *course* refers to a program of study, for example, *Bachelor of Education (Primary)* and *unit* refers to a subject within a course, for example, *Language and Literacies in the Early Years*.

Step 1: institutions and courses listed on the Australian Institute for Teaching and School Leadership website

At the beginning of 2016, the Australian Institute for Teaching and School Leadership website (AITSL, n.d.) was used to identify those tertiary institutions offering courses in early childhood and primary education. The filters used to locate relevant generalist preservice teacher education courses were Early Childhood and Primary; Early Childhood, Primary and Secondary; Kindergarten to Year 12; Multiple Stages of School; Primary; Primary and Secondary; Primary and Secondary (including middle years); and Primary with F-10 Option. This search identified 44 institutions offering 197 undergraduate and postgraduate courses for primary and early childhood education. Courses that were accredited but not currently offered (n=20), pending accreditation (n=18), or repeated in different locations (n=44), were removed from the count, leaving a total of 115 courses. These 115 courses were examined to ensure they were generalist primary or early childhood courses. Two specialist degrees, special education (n=1) and health and physical education (n=1) were excluded. In addition, courses that were not listed on institution websites as current offerings, were excluded (n=3). One hundred and ten courses went forward to step 2.

Step 2: selection of literacy units by title

Tertiary institution websites and the Google search engine were used to locate course overviews and course content descriptions of the 110 courses. This material was downloaded and examined in order to identify literacy units resulting in the location of 448 core literacy units. Only core literacy units were included in order to determine what early reading instruction would have been completed by all enrolled preservice teachers.

The titles of the units were then examined in order to locate those units that were likely to be relevant to beginning or early reading. Units were included as possibly containing content on early reading if the title included any of the following terms: alphabetic principle, comprehension, direct instruction, early literacy, early reading, explicit instruction, fluency, language, literacy, phonemic awareness, phonics, phonological awareness, reading, sounds, spelling, systematic instruction, and vocabulary. Units that included the terms critical literacy, multiliteracies and children's literature or similar variations in the title were excluded. Units were retained if it was unclear if they met the inclusion criteria.

Inter-rater reliability for unit location and unit selection by title was conducted on 30% (n=35) of randomly selected courses (using the online random generator at random.org). The titles of all literacy units were listed for each of these 35 courses, giving a total 94 units. Both authors independently applied the criteria described above to each unit title. Interrater reliability for unit retention by title was 93.6% (calculated using the formula $\frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100$), with disagreements resolved by discussion between authors. Unit selection by title was then completed for the remaining units by the first author only. Of the 448 core literacy units identified, 63 units were excluded by title and 159 duplicate units were removed, resulting in a final total of 226 units being retained for further examination.

Step 3: selection of literacy units by description

As before, searches of institution websites and Google searches were used to locate course and unit overviews, guides, and handbook descriptions for the 226 retained units. Units were included if they made reference to early reading by age or grade (for example *birth to 8 years* and *early years*), or to early reading content (for example, balanced approaches to literacy, curriculum studies – English, coding, decoding, encoding, language, literacy, literacy assessment, literacy development, national and state curricula, phonemic awareness, phonics, phonological awareness, reading, reading instruction (general), and whole language. Units were excluded if they referred only to *grades 3-6*, *middle years*, and *upper primary* or if content included the terms diverse learners, diverse literacies (intercultural, global, multi, professional) English language learning, literacy/reading difficulties, literature, spelling and writing.

Both authors independently examined 30% (n=66) of randomly selected unit descriptions for retention or inclusion. Inter-rater reliability was 90.9% (calculated using the formula $\frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100$). Disagreements were resolved by discussion between both authors. Unit selection by description was then completed for the remaining units by the first author only. One hundred and ten units were excluded by description, resulting in a total of 116 units that went forward for data extraction. At this point four institutions and six courses were removed from further consideration as all units for a given course, or courses, had been excluded during the selection of units by description.

Step 4: full data extraction

In addition to materials already located, Google searches were conducted using unit codes and unit titles, and additional searches were carried out to locate further information on timetables, prescribed texts, and assessment tasks. Full data extraction covered three broad areas: course information, unit information and coordinator information. Searches for prescribed readings were also included, but no reading lists were found.

Course information

Course information extracted for each retained unit included the name of the tertiary institution and its location by state; course name; the type of program (primary; early childhood; primary/early childhood; other); and the level of program (bachelor; double degree; graduate diploma; master). A final total of forty institutions offering 104 early childhood and primary teacher education courses at undergraduate and postgraduate levels was used for unit analysis.

Unit information

Unit information collected included title and code number; year of program when the unit was offered; the total hours of face-to-face tuition provided (including lectures, tutorials and workshops); unit learning outcomes; unit descriptions; prescribed texts and assessment tasks. If a unit had combined content areas, such as literacy and numeracy, only information related to literacy content was coded.

Learning outcomes and unit content descriptions

The degree of focus on early reading in unit outcomes, and descriptions of unit content, was coded for each using the following criteria: a focus on early reading instruction; early reading instruction mentioned but included with other content; a broad focus on literacy: early reading instruction is not specifically mentioned, but reading is mentioned; a broad focus on literacy: no mention of reading; unclear; and no information provided.

Using recommendations from national and international reports about crucial early reading skills, materials relating to each unit were examined for mention of beginning reading concepts relating to phonics (including terms such as *decode* and *encode*, but not *reading* and *spelling*); alphabetic principle (including terms such as *alphabet*, *grapho-phonics*, *letter-sound relationships*, *graphological*, and *consonants*); and phonological awareness (including *phonemic awareness* and any subskills such as *blending*, *segmentation*, *onset and rime*)

(Louden, et al., 2005; NICHHD, 2000; Pressley, Roehrig, Bogner, Raphael, & Dolezal, 2002; Rowe, 2005; Zygouris-Coe, 2001). Units were also examined for mention of whole language approaches and balanced approaches (i.e., for those actual words appearing in content descriptions or other material). Those units designated in the descriptions as 'balanced' were examined to determine whether they also contained references to phonics and phonological awareness.

Prescribed texts

Both authors independently examined the titles of each of the prescribed textbooks. Textbooks were retained for further study if the title included reference to literacy, phonics and reading, and were excluded if the title contained reference to grammar, language, literature, meaning or writing. The contents pages, index pages and glossaries for each of the retained prescribed textbooks were then examined for inclusion of any of the following concepts: balanced, whole language, alphabetic principle, phonemic awareness, phonics, and phonological awareness.

Assessment tasks

Assessment tasks were coded according to type and content. Assessment types included essay, unit of work/lesson plan, case study, assessment (exam, quiz, test), portfolio, presentation (poster), reflective journal, production of resources, no information given, and 'other'. The content of assessment tasks was analysed using the same coding system as described for learning outcomes and unit content.

Coordinator information

Information concerning the unit coordinators for each retained unit was retrieved from staff profiles and resumés on university websites as well as publicly available information located on Google Scholar, Trove (National Library of Australia) and EBSCOHOST. The data collected included coordinator name, highest qualification, thesis subject area, research

interests, peer-reviewed journal articles published during the previous ten years, and teaching areas. The following coding was used for the content of theses, peer-reviewed journal articles and teaching areas: early reading; literacy, but not early reading; no reference to literacy topics; not given or found; and no information at all. Coordinator research interests were coded as follows: active interest in early reading; 'interest only' listed; no interest in early reading stated; no reference to literacy topics; no research interests given; no information given at all.

Inter-rater reliability

Inter-rater reliability checks were conducted on all of the coding categories for 25 (20%) of the units retained for in-depth analysis. Both authors conducted independent searches in the first instance, with any differences in content located being shared for final coding. Mean reliability across course and unit categories, unit content, and prescribed texts was 89.3% (range 84%-100%). The mean reliability across unit coordinator data was 90% (range 84%-100%). Following the resolution of any disagreements by discussion between both authors, unit coding for the remaining units was completed by the first author only.

Results

Undergraduate and postgraduate early childhood and primary education courses

The results are presented separately for course data, unit data and coordinator data.

Course details

Course details included institution location, course levels, course types, and number of literacy units included per institution.

Location. The location of courses by state is shown in Table 1. Seventeen of the 40 institutions delivered a course at different campuses in the same state, or across a number of states, adding a further 44 sites and resulting in a final total of 84 locations. Twenty-five of the 104 courses (24%) were also available online, by distance or off-campus. Over half the

courses (57%) were offered by universities in NSW or Queensland (N=24 each), with 20 offered in Victoria (23.8%), 5 in WA (6%), 3 (3.6%) each in SA, Tasmania and NT and 2 (2.4%) in the ACT.

Course level and type. Seventy-eight of the 104 courses were offered at undergraduate level and 26 were offered at postgraduate level (one graduate diploma, one graduate entry and 24 master's degrees). Twenty-four of the primary undergraduate courses were double degrees, for example, *Bachelor of Education/Bachelor of Disability Studies* and nine were specialist degrees, for example, *Bachelor of Education (Primary) (Creative Arts)*. Of the 104 courses, 20 (19.2%) were early childhood, 71 (68.2%) were primary, 9 (8.7%) were early childhood and primary combined, and 4 (3.8%) were primary and secondary combined.

Number of literacy units included per course. The number of units per course meeting the inclusion criteria related to early reading is shown in Table 1. Four courses had no identifiable units.

Table 1 near here

Number of literacy units offered in each year of a given program. Data regarding the year that units were offered within a course were available for 69 of the literacy units offered in undergraduate courses and 29 of the postgraduate courses. The majority of the core literacy units were offered in the first two years of undergraduate degrees with 39.1% (n=27) in the first year, 42% (n=29) in the second year, 14.5% (n=10) and 4.3% (n=3) in the fourth year. Similarly, most units (75.9%) (n=22) were offered in the first year of postgraduate degrees with 24.1% (n=7) in the second year.

Unit details

Unit details included total hours of face-to-face tuition, learning outcomes, content descriptions and assessment tasks.

Total hours of face-to-face tuition per unit. Data regarding the total hours of face-to-face tuition provided within literacy units were available for 93 (80%) of the 116 literacy units. The majority of units (63.5% of undergraduate, n=40, and 63.3% of postgraduate, n=19) provided between 30 and 39 hours of face-to-face tuition per unit. Between 10 and 29 hours were provided by 12 (19%) of undergraduate and eight (26.7%) postgraduate units with more than 40 hours provided in 11 (17.5%) of undergraduate and three (10%) postgraduate.

Unit learning outcomes, content descriptions and assessment tasks. Four sources of information were used to determine unit content: outcomes, assessments, handbooks and unit guides. Of the 116 units, outcomes information was available for 93 (80%) units, assessment task information was available for 52 (45%) units, and content descriptions were available from handbooks and unit guides for 115 (99.1%) of the units. Only 15 unit outcomes, 40 content descriptions and seven assessment tasks included any mention of early reading. In addition, only one unit was specifically designed to teach early reading instruction and, of the 262 assessment tasks, only three tasks specifically focused on early reading instruction (see Table 2).

Table 2 near here

Two hundred and sixty-two assessments were recorded for the 116 units, with information concerning the type of task being provided for 162 of the assessments. The main types of assessment were exams, quizzes or tests (n=37), essays (n=26), portfolios (n=15) and various types of lesson programming exercises (n=14) (see Table 3). Examples of tasks coded as *other* include ‘parent information flyer’, ‘fieldwork’, ‘tutorial exercise’, and ‘oral storytelling’.

Table 3 near here

The four sources of information described above were also used to determine the number of references to specific content relating to early reading and to balanced approaches and

whole language. Of a total of 115 units, the alphabet was mentioned in 16 (14%), phonics was mentioned in 20 (17%), and phonological awareness was mentioned in 27 (23.5%). A balanced approach to teaching reading was mentioned in 20 units (17%). Mention of phonics or phonemic awareness, however, was found in only three of these 20 units (see Table 4).

Table 4 near here

Prescribed texts. Of the 116 units, one unit guide contained a statement that no prescribed texts were required, no information was available for 50 (43%) units, and information regarding prescribed texts was provided for 65 (56%) units. Thirty-three literacy textbooks were prescribed altogether. One title was out of print and unavailable through an inter-library search. The title, contents pages, index pages and glossaries for each of the retained prescribed textbooks were reviewed to determine the content related to early reading instruction. Fifteen of the remaining 32 prescribed textbooks contained detailed references to the alphabet, phonics, phonemic awareness and/or phonological awareness.

The most prescribed texts were *Developing early literacy: Assessment and teaching* (Hill, 2012) (n=11); *Literacy in Australia: Pedagogies for engagement* (Seeley Flint, Kitson, Lowe, & Shaw, 2014) (n=10); *Language, literacy and early childhood education* (Fellowes & Oakley, 2010) (n=7); *Literacy: Reading, writing and children's literature* (Winch, Johnston, March, Ljungdahl, & Holliday, 2014) (n=7); and *Literacy for the 21st century: A balanced approach* (Tompkins, Campbell, Green, & Smith, 2015). Two of these texts contained references to the alphabet, phonics, phonemic awareness and/or phonological awareness within a balanced approach to literacy instruction (Tompkins et al., 2015; Winch et al., 2014), one text devoted three chapters to phonological awareness and phonics (Hill, 2012), and one text devoted a complete chapter to phonological awareness and phonics (Fellowes & Oakley, 2010).

A comparison of references to early reading concepts in unit content and in prescribed textbooks revealed that 18 units included mention of early reading instruction that was supported by the content of the prescribed textbooks; 35 units did not include any reference to early reading instruction, but the prescribed textbooks did contain early reading content; four units included early reading content, that was not supported in the texts; 11 units did not include early reading instruction in unit content or the text; and 50 units did not provide any details regarding textbook requirements.

Unit coordinator details

The qualifications, thesis subject area, research interests, peer-reviewed publications and nominated teaching areas were investigated for unit coordinators. Coordinator names were not provided for 32 (27.5%) of the 116 units. The names of 13 unit coordinators appeared twice, and the name of two unit coordinators appeared three times, giving a final total of 67 unit coordinator names.

Qualifications. Information regarding unit coordinators' qualifications was located for 54 (81%) of the 67 unit coordinators. Forty-six of the 54 coordinators for whom information was available had doctoral qualifications and six had a master's degree.

Thesis subject area, peer-reviewed journal articles and teaching areas. Limited information was available for the research background of unit coordinators. Of those coordinators for whom information was available, fewer than half appeared to have qualifications (31%) or publications (43.2%) related to literacy. However, 64.5% of coordinators listed literacy as a teaching area, with only two of these coordinators specifying early reading instruction (see Table 5).

Table 5 near here

Research Interests. From the research-interests information available for 36 of the 67 unit coordinators, only 16 (44%) indicated any research interest in early reading instruction.

Discussion

The information available on Australian tertiary institution websites regarding the organisation and content of literacy units included in early childhood and primary teaching degrees was highly variable. It might be expected that information relating to early reading instruction regarded as important would be noted in even brief unit descriptions and outcomes, and that information would be more likely to be omitted when it was not regarded as essential. It is difficult to be certain, however, to what extent the materials that were examined reflected the content as presented to students, and the nature of information and the style in which it was presented varied, depending on the institution. Outcomes were provided for 80% of the units, prescribed texts were listed for 56% of the units, and assessment requirements were outlined for 45% of units. Information concerning teaching content was available for 115 of the 116 units. However, 68% of these unit descriptions provided minimal detail, and only 15% provided detailed weekly outlines.

How much content on early reading is included in Australian teacher education courses?

Information about the literacy units included in primary and early childhood teaching degrees was collected from all Australian tertiary institutions. The majority of tertiary institutions offered one or two reading units containing some early reading content in early childhood and primary courses, with the full range being between one and four units. Most reading units were offered in the first two years of undergraduate degrees and in the first year of postgraduate degrees. As most units addressed literacy content other than early reading, the time allocated to early reading instruction in most units would appear to be limited.

What are the characteristics of the units in Australian teacher education courses that include content on early reading instruction?

It could be expected that both Early Childhood degrees and Early Childhood and Primary degrees would include units devoted to the teaching of early reading. Of the 104 courses

included in this study, 18 were early childhood and nine were early childhood and primary combined, suggesting that 27 (26%) of all courses would specifically target the early years of education. Of a total of 116 literacy units, only one unit, included in one primary teaching program, specifically focused on early reading instruction with a further 39 units including early reading instruction with other content. In addition, although the majority of units in both undergraduate and postgraduate degrees provided between 30 and 39 hours of face-to-face tuition per unit, this ranged from as few as 10 hours to more than 40. This suggests that the emphasis, and the teaching time, given to components of early reading must be limited. These findings are similar to those reported in a 2014 Australian government report, which found that less than 10% of course time was dedicated to early reading (Board of Studies, Teaching and Educational Standards NSW [BOSTES], 2014).

Who is coordinating the units and what are the characteristics of the unit coordinators?

Generally, a unit coordinator is responsible for the overseeing and administration of a given unit, and may be responsible for unit content, assessment and teaching. It could be assumed that coordinators who have the responsibility for the provision of early reading content and instruction would have expertise in this area of literacy. However, from the limited amount of data available, it would appear that fewer than half of the coordinators for whom information was available had specific qualifications, publications, research interests or expertise related to early reading instruction. A similar observation was made in a NSW Government report investigating the quality of initial teacher education (BOSTES, 2014). This finding is of concern because the percentage of faculty members with advanced degrees has been identified as one of the contributing factors to the quality of teacher preparation programs (Feur et al., 2013; Ingvarson et al., 2014) and, in much the same way that classroom teacher quality affects student achievement, it can be argued that teacher educator quality will affect teacher performance. In addition, the work of Joshi et al. (2009) and Washburn, Joshi, and

Hougen (2012) showed that teacher educators themselves may have poor linguistic knowledge and this may be reflected in lack of knowledge of the pre-service teachers they work with. The apparent lack of expertise in early reading of some unit co-ordinators may thus be a contributor to poorer quality teacher education.

What is the nature of the content included in literacy units in Australian teacher education courses and how well does this match content identified in the research literature?

As research has clearly demonstrated that instruction in phonics, phonological awareness (including phonemic awareness), and the alphabetic principle provides the foundation for early reading (Louden et al., 2005; NICHD, 2000; Rowe, 2005; Rose, 2006), it is important that early reading instruction in teacher preparation courses for early childhood and primary teachers reflects this extensive evidence-base. The results from this study, however, would suggest that the literacy units provided in early childhood and primary programs contain limited mention of the alphabetic principle, phonological awareness and phonics. For example, of 116 units, only one was specifically designed to teach early reading instruction, and less than 22% of the unit descriptions, and 15 of the 32 prescribed literacy textbooks, included any reference to early reading concepts. A balanced approach to teaching reading was mentioned in 20 of the units, but it is of concern that reference to phonics and/or phonemic awareness only occurred a total of three times in those particular units.

Although the overall data that were available for primary and early childhood courses and literacy units may be limited, learning outcomes, handbook descriptions, unit guides, and assessments were all available for 83 (72%) of the units. However, the information regarding 46 (55%) of these units made no reference to any early reading terms (alphabetic principle, phonics, and phonological awareness) as supported by research, suggesting that between 20% and 40% of early childhood and primary literacy units do not cover the foundational skills necessary for early reading.

As one measure of the quality of instruction provided in initial teacher education programs concerns subject-specific preparation (Feur et al., 2013; Boyd et al., 2009), it is of concern that the findings from this study highlight a number of issues that may affect the quality of teacher preparation offered to Australian preservice teachers in the area of early reading. These issues include a lack of focus, or no mention at all, of early reading in course content, limited hours of instruction, and fewer than half of unit coordinators having identifiable qualifications, research interests or publications associated with early reading skills. These factors may also provide some explanation for the lack of reference in publicly available materials to the important concepts of early reading instruction (alphabetic principle, phonics and phonological awareness), and to the extensive evidence-base that supports these concepts.

Teacher preparation

Two international studies (Al Otaiba, Lake, Greulich, Folsom & Guidry, 2012; Leader-Janssen, 2013) and one Australian study (Tetley & Jones, 2014) have demonstrated that it is possible for preservice and in-service teachers to acquire a broad and deep knowledge of the skills for the teaching of early reading through the provision of specific, in-depth instruction in early reading content. At the present time, however, it would appear that most Australian primary and early childhood preservice teachers do not have the opportunity to acquire this depth of knowledge as only one of the 116 units included in this study specifically focused on early reading instruction, with a further 39 units mentioning early reading instruction in conjunction with general reading content.

In addition, the results of this study suggest that there appears to be little consistency between institutions regarding the number of reading units required, the content of those units, the choice of prescribed textbooks, or the prescribed hours of tuition provided in early childhood or primary degree programs. Units may include early reading only or combine

early reading instruction with the teaching of reading in middle and upper primary years. Assessment tasks range from a concentration on early reading to general reading issues, and coordinators' theses, publications, and research interests may focus on early reading or have no discernable connection to reading. This may reflect the academic freedom given to university staff in designing and teaching their units, and acceptance that academics may adopt philosophical approaches other than a scientific approach (Moats, 2014).

The accreditation of Australian initial teacher education programs is managed by the AITSL, and a set of standards and procedures outlines the requirements for program accreditation. Included in Standard 2, which relates to program development, design and delivery, are requirements that a program will be evidence-based, will be delivered by appropriately qualified staff, and will ensure that preservice teachers meet the standards set for graduates (AITSL, 2015). On the assumption that the design of a unit includes the choice of content material, the AITSL is responsible for ensuring that unit content is evidence-based. It would appear, however, that the Standard 2.5 requirement that graduates must "know and understand literacy and numeracy teaching strategies and their application in teaching areas" (AITSL, 2011, p.11) is not specific enough to ensure research-based content relevant to early reading instruction is included in all programs. It is encouraging that one of the standards specifically refers to literacy and numeracy; however, this standard gives a simplistic view of these two important subject areas. In particular, this format does not ensure that preservice teachers are getting the specific content they need for early reading instruction. A simple remedy would be to separate Standard 2.5 into two separate standards. The literacy standard could then be expanded to contain specific mention of the recommendations from various reading panels that detail the crucial role that phonics, phonological awareness and the alphabetic principle play in the acquisition of early reading skills. An outcome of such an

amendment may be an increase in the number of literacy units that includes research-based instruction for early reading.

Limitations

A number of limitations should be considered. First, the unit selection process began with an examination of unit names, with a requirement that there was some indication that the content of the unit included literacy, reading and/or early reading. It is possible that units may have included early reading concepts that were not evident from the unit name and thus relevant units may have been excluded, although where there was any doubt units were included for further examination. A second limitation concerns the *variability* of publicly-available information, especially concerning unit and coordinator details, resulting in difficulty with the coherent integration of information collected from various internet sources. This was particularly problematic when searching for information regarding unit coordinators and for the number of hours provided in face-to-face tuition. A third limitation concerns the *amount* of information available. For some units, minimal information was provided in unit descriptions and/or guides, and sometimes only a brief handbook description was available. These three issues together may be seen to have some impact on the reliability of the data extracted, but even so, it would be fair to expect that important concepts regarding early instruction in reading would appear in even the briefest of unit outlines. Finally, the research carried out for this paper was based on the subject-specific content of units (the ‘what’ of instruction) and did not include any reference to pedagogical knowledge (the ‘how’ of instruction). This could be seen as a limitation but may well provide a subject for subsequent research into teacher preparation in the area of beginning reading.

Conclusion

Nearly two decades ago, Stanovich (2000) remarked that if any teachers of early reading were not aware of the need to include both phonological awareness and explicit code

instruction in their teaching, they were either acting in an unprofessional manner or had been taught by faculty members who did not include established scientific knowledge in their preservice courses. Given the limited time devoted to early reading instruction in teacher education courses and the apparent absence of content related to phonics and phonemic awareness in many courses, this observation may still be relevant today.

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Australian Preservice Teachers and Early Reading Instruction

Table 1. Number of primary and early childhood courses offered by site: States and Territories.

New South Wales	Victoria	Queensland	West Australia	South Australia	Tasmania	Northern Territory	Australian Capital Territory
24 (28.5%)	20 (23.8%)	24 (28.5%)	5 (6%)	3 (3.6%)	3 (3.6%)	3 (3.6%)	2 (2.4%)

Table 2. Number of literacy units per course that included beginning reading instruction.

No. of units per course	Early Childhood	Primary	Early Childhood and Primary	Primary and Secondary	Total
1	12	36	7	3	58
2	8	30	2	1	41
3	0	2	0	0	2
4	0	3	0	0	3
	20	71	9	4	104

Table 3. Number of literacy units offered in each year of undergraduate and postgraduate courses.

Undergraduate units (<i>n</i> = 69)				Postgraduate units (<i>n</i> = 29)	
1 st year	2 nd year	3 rd year	4 th year	1 st year	2 nd year
27 (39.1%)	29 (42%)	10 (14.5%)	3 (4.3%)	22 (75.9%)	7 (24.1%)

Table 4. Total hours of face-to-face tuition per unit.

Undergraduate Units (<i>n</i> = 63)			Postgraduate Units (<i>n</i> = 30)		
10 – 29 hours	30 – 39 hours	> 40 hours	10 – 29 hours	30 – 39 hours	> 40 hours
12 (19%)	40 (63.5%)	11 (17.5%)	8 (26.7%)	19 (63.3%)	3 (10%)

Table 5. Coding of learning outcomes, unit content descriptions and assessment tasks.

Category	Learning outcomes (<i>N</i> = 116)	Content descriptions (<i>N</i> = 116)	Assessment tasks (<i>N</i> = 262)
Specifically focuses on early reading instruction	0	1 (0.9 %)	3 (1.2%)
Mentions early reading instruction, but is included with other content	15 (12.9%)	39 (33.6 %)	4 (1.5%)
Has broad focus on literacy: early reading instruction not specifically mentioned, but reading is mentioned	28 (24.1%)	44 (37.9 %)	17 (6.5%)
Has a broad focus on literacy: no mention of reading	36 (31%)	14 (12 %)	21 (8%)
Unclear	15 (12.9%)	17 (14.7 %)	162 (61.8%)
No information given	22 (19%)	1 (0.9%)	31 (11.8%)
Not literacy	-	-	24 (9.2%)

Table 6. Types of assessment tasks.

Task type	Number (%)
Assessment – exam, quiz, test	37 (14.1%)
Essay	26 (9.9%)
Portfolio	15 (5.7%)
Unit of work/lesson plan/teaching program	14 (5.3%)
Case study	9 (3.4%)
Analysis of curriculum and policy documents	7 (2.7%)
Presentation (poster/group)	6 (2.3%)
Reflective journal/reflection	6 (2.3%)
Literature review	3 (1.2%)
Production of resources	2 (0.8%)
Other	35 (13.4%)
No information given	102 (38.9%)

Table 7. Number of units where specific content was mentioned.

Content	Number of units (<i>N</i> = 116)
Alphabetic principle	16 (13.8%)
Phonics	20 (17.2%)
Phonological awareness	27 (23.3%)
Balanced	20 (17.2%)
Whole Language	5 (4.3%)

Table 8. Unit coordinators' thesis subject areas, published articles and teaching areas.

Category	Thesis subject area (<i>N</i> = 42)	Peer-reviewed journal articles (<i>N</i> = 37)	Teaching areas (<i>N</i> = 31)
Early reading	2 (4.8 %)	3 (8.1%)	2 (6.4%)
Literacy, but not early reading	11 (26.2%)	13 (35.1%)	18 (58.1%)
No reference to literacy topics	29 (69%)	21 (56.8%)	11 (35.5%)

Table 9. Unit coordinators' research interests.

Active interest in early reading	4 (11.1%)
'interest only' listed	12 (33.3%)
No interest in early literacy stated	20 (55.6%)