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Grace Oakley  
*Graduate School of Education, University of Western Australia*

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## **Early Career Teachers' Knowledge and Practice in Spelling Instruction: Insights for Teacher Educators**

Grace Oakley  
University of Western Australia

*Abstract: Children who cannot spell fluently are likely to encounter difficulty in writing texts across the curriculum. Furthermore, spelling is often a component in high stakes tests, the results of which have significant implications for students and schools. In the context of debates on teacher quality, it is pertinent to examine the views of early career teachers on their preparedness to teach spelling. This article reports on a small scale study on the views, knowledge and practices of early career teachers in relation to the teaching of spelling, and their views on their pre-service teacher preparation. Participants were early career teachers in Western Australia and data were collected through a questionnaire. This article adds to evidence indicating that many teachers feel inadequately prepared to teach spelling, particularly differentiated spelling instruction. The study is significant in that it focuses on early career teachers' preparedness to teach spelling, an area not previously thoroughly investigated.*

### **Keywords**

Spelling, teacher education, early career teachers, primary teaching, differentiation

### **Background and Literature**

#### **Why is Spelling Important?**

It is crucial that students are taught how to become fluent and accurate spellers. Rightly or wrongly, people are often judged according to their ability to spell, with Ridsdale (2005, p. 249) going so far as to say, "In our society, the association between bad spelling and stupidity is so strong that it is almost taken for granted". Graham, Harris and Hebert (2011) found that teachers judged student writing more harshly when there were spelling errors – this clearly has implications for student achievement and grades across the curriculum. Furthermore, people who are weak spellers often experience embarrassment and low self-esteem (Dickson, 2013) and may spend a lot of time covering up their perceived inadequacy and avoiding writing tasks (Newlands, 2011).

Since spelling is integral to writing, people who are not fluent and accurate spellers can struggle in writing coherent and accurate texts; the act of writing is highly complex and when a person is not able to spell a word with automaticity, this can disrupt the higher order thinking processes involved in generating ideas and representing them in written form (Graham & Santangelo, 2014; Parodi, 2007). In short, just as slow and inaccurate decoding of words can impede fluent reading, slow and inaccurate encoding of words can impede fluent writing. Also, when people do not know how to spell a word, they may select an alternative word that they are more confident in spelling (Berninger, Nielsen, Abbott, Wijsman &

Raskind, 2008; Newlands, 2011), which may not convey the intended message with the same degree of accuracy and nuance.

It is not only writing that can be improved by good spelling instruction; research has indicated that when children learn about words and word parts through spelling activities, this knowledge can transfer to reading (Moats, 2005). Martin-Chang, Ouellette and Madden (2014) found that adults were able to read words more quickly when they were words they could spell accurately. In addition, good spelling instruction involves teaching children about the meanings of word and word parts. This can improve their receptive and expressive vocabulary (Rosenthal & Ehri, 2008), which can be used in the context of written as well as spoken texts.

### **Are Spelling Outcomes in Schools Good Enough?**

In Australia, where this small scale study informing this article was carried out, there is an argument that primary school aged children's spelling achievement needs to be improved (Hempenstall, 2015). In 2017, 93.5% of Year 3 students and 93.8% of Year 5 students met the minimum standard in spelling, and the figures for Western Australia were 92.7% and 93.4% respectively (ACARA, 2017). Whilst these scores may seem to be fairly satisfactory, it should be noted that the minimum standard is somewhat low (Hempenstall, 2015). Moreover, it should not be forgotten that the relatively small percentage of children below the benchmark represents tens of thousands of children who are struggling with spelling and who have a low probability of catching up without intervention. The situation in Australia is not unique and many children in other countries where English is spoken also struggle with their spelling. In the context of the English language, the journey to becoming a proficient speller is not straightforward because the orthography is "deep" (Katz and Frost, 1992); there is not a simple relationship between the pronunciation of words and the way they are written, as is the case in more transparent orthographies such as Turkish and Finnish (Caravolas, 2004). However, this is not to say that there is no logic to English spelling (Bowers & Bowers, 2017). Rather, it means that students need to learn about more than phonology, or how to spell using sounds in words.

In addition to the social and academic issues underlying the importance of teaching spelling well, there are political agendas to consider. In many countries high stakes testing regimes, like the National Assessment Program Literacy and Numeracy (NAPLAN) in Australia, include a spelling component. The results of these tests are often used as a rough means of gauging the effectiveness of teaching in schools and, in some cases, the quality of the schools themselves. It is thus increasingly important to school leaders that spelling is taught effectively. One response by school leaders to this has been to implement whole school literacy policies and practices that focus on improving high stakes test results (Bromley, 2017; Bromley, Oakley & Vidovich, 2018). In their attempt to improve spelling results, school leaders may purchase commercial or published programmes to be put in place across the whole school. Whilst schools with whole school literacy policies and programmes often demonstrate superior learning outcomes (Louden, 2015), it is noted that commercial programmes can vary in quality, and sometimes the underpinning theory about how spelling is learned may not be based on the most up to date research, or may not be explicitly articulated (Davis, 2011). Also, the majority of such programmes have not been stringently evaluated for efficacy (Hempenstall, 2015).

Since commercial programmes are mandated in many schools, there is a danger that spelling instruction could become programme-centred instead of student-centred, which may make it difficult for teachers to meet the diverse needs of students. It is therefore vital that

teachers are highly skilled in the teaching of spelling so that they can use the programmes mandated in their schools appropriately, and make adjustments where necessary to meet the learning needs of individual students.

### **What do Children need to be Taught In Order to Spell Well?**

In order to become good spellers, children need to receive appropriate instruction and engage in meaningful spelling and writing activities – the idea that spelling is a visual skill that is ‘picked up’ or ‘caught’ through reading and being immersed in texts has been invalidated (Westwood, 2015), although Trieman (2017) has proposed that many children do in fact take ‘statistics’ on visual spelling patterns from a very young age, even before they have any knowledge of phoneme-grapheme correspondences. It is clear that spelling needs to be taught (Farrall, 2012; Graham & Santangelo, 2014) through systematic and explicit instruction as well as closely linked meaningful literacy experiences that uphold student motivation (Alderman & Green, 2011) and understanding about words. Yet, despite the benefits of fluent and accurate spelling, and the pressures of high-stakes testing regimes, the teaching of spelling may not be seen as a priority by many teachers (Author, 2012; Hempenstall, 2015).

There is a lot to know about language and spelling strategies in order to become a good speller. That is, children need to learn how to use knowledge about phonology, orthography, morphology and etymology, and they need to do this strategically. Phonological knowledge is knowledge about the sounds in language, which entails being able to hear and manipulate syllables, rimes and phonemes in spoken words. Orthographic knowledge involves understanding the ways in which letters and groups of letters are used to represent words in written form, and is not isolated from phonological and morphological knowledge; according to Henderson (1984) “Orthography is defined as graphemic patterns of a written language and their mapping onto phonology, morphology, and meaning” (p. 1). Morphological knowledge involves knowing about morphemes and how they work – or the meaning-bearing units of words, such as base words and affixes. In recent years, there has been heavier emphasis on the importance of morphological awareness in children (Apel, Brimo, Diehm & Apel, 2014). It is also essential for children to learn metalanguage – terms such as ‘phoneme’, “syllable”, “affixes” and “morpheme” – as this will assist them in thinking, talking, and reflecting about their spelling knowledge and strategies (Geoghegan, O’Neill & Petersen, 2013). Students also need to learn appropriate metacognitive strategies to help them think about and draw on their linguistic knowledge (Oakley & Fellowes, 2016; Pentecost & Dickie, 2011).

There are several theoretical perspectives on how children learn how to spell. Developmental or stage theories purport that, essentially, children become proficient spellers by first learning about sounds and letters, and then letter patterns within words, before moving on to morphemic knowledge and etymological knowledge (Bear, Invernizzi, Templeton & Johnson, 2008; Gentry 1982, 2004). Developmental theories have been popular in Australia. However, repertoire theories such as triple word form theory (Bahr, Silliman, Berninger & Dow, 2012; Berninger, Garcia & Abbot, 2009) are now gaining traction. Bourassa and Treiman (2010) have explained that children do not necessarily learn spelling in the sequence suggested by developmental theories but, rather, they can and should learn and use all three areas of linguistic knowledge from the start. They should also learn how these three areas of linguistic knowledge interrelate. The idea that children should learn about all three areas from the start is to some extent reflected in the Australian Curriculum: English (ACARA, n.d.). For example, children in the Foundation year (generally five year olds)

should learn about morphemes (“Understand that words are units of meaning and can be made of more than one meaningful part”).

### **What do Teachers need to know and do to be Effective Teachers of Spelling?**

Adonieu (2013, n.p.) has suggested that: “Spelling remains the most relentlessly tested of all the literacy skills, but it is the least taught”. Whilst most teachers, at least in countries such as Australia where there is a mandated curriculum, do indeed teach spelling, many may not have advanced enough pedagogical and content knowledge to teach it as effectively as they would like. In order to assist children, especially those who struggle with spelling, teachers need good content knowledge, or knowledge about language (KAL) (Puliatte & Ehri, 2017). Such “informed teachers” are better able to analyse student spelling performance (including error analysis) and design instruction that targets the needs of individual children (Carreker, Joshi & Boulware-Gooden, 2010, p. 149). Clearly, teachers need thorough understandings of phonology, orthography, morphology and etymology – or the linguistic structure of words (Carreker et al., 2010) and how they interrelate. Related to morphological knowledge is knowledge about grammar, because some morphemes are inflectional morphemes that convey grammatical information (such as plurals and tense). Without adequate knowledge about language structure, teachers will not have the metalanguage needed to help them talk and think about language, or explain it clearly to children. Daffern (2017) has explored how teacher use of metalanguage in their teaching appears to help children talk and think about their spelling strategies. Without metalanguage, metacognition is compromised.

It is crucial that teachers know how to assess children’s spelling, and be able to plan and implement a range of instructional activities that meet the specific learning needs of the students in their class (Oakley & Fellowes, 2016). As mentioned above, without a deep and sophisticated knowledge about language, they will find it difficult if not impossible to carry out appropriate diagnostic and formative assessments to inform targeted teaching.

In summary, teachers need deep knowledge in the areas of language, pedagogy, and the specific children they teach. They need to be confident in using metalanguage and be able to choose, use and evaluate assessment techniques and instructional strategies. Despite the evidence about the importance of teacher knowledge, several studies have indicated that teachers may have gaps in their knowledge about language (Carreker et al., 2010; Moats, 2009). A recent survey of Australian preservice teachers indicated that they had significant gaps in their knowledge about language structures such as syllables, morphemes, phonemes and so on (Meeks & Kemp, 2017). Other studies have shown gaps in teacher knowledge about language for teaching phonics, which of course relates to teaching spelling (Fielding-Barnsley, 2010) and, in Western Australia, gaps in knowledge of language structure (Meehan & Hammond, 2006). Moon (2014) found that a high proportion of final year pre-service teachers had poor spelling skills, which would indicate poor knowledge about language. Spear-Swerling and Brucker (2003, 2004) presented evidence of a correlation between teacher knowledge about language (namely, word structure knowledge) and student outcomes in reading. Furthermore, a relationship between teacher phonological knowledge and student gain scores in spelling (of weaker spellers) has also been found (Puliatte & Ehri, 2017). It is acknowledged that further research needs to be conducted on the relationships between teacher knowledge about language structure and children’s spelling outcomes (Hempfenstall, 2015). According to Adoniou (2013), there are not only gaps in teacher knowledge about language but also gaps in their pedagogical content knowledge or how to teach spelling.

To compound the issues outlined above, the extent to which research findings on how spelling should be taught are translated into practice in classrooms does not appear to be high despite the fact that many studies have been carried out to ascertain what works in spelling instruction. Teachers need to be aware of such research so that they are not susceptible to being misguided in their practice. For example, it is misguided to *over-emphasise* visual memory and phonics (Bowers & Bowers, 2017; Westwood, 2015). It may also be misguided to over-rely on commercial programmes without a critical understanding of their theoretical and research underpinnings and how to supplement them to support individual needs. In some cases, it may be the case that teacher education programmes are not sufficiently drawing on and discussing research on spelling in preparing teachers (Adoniou, 2013; Hempenstall, 2015; Joshi, Binks, Graham, Ocker-Dean, Smith & Boulware-Gooden, 2009; Meeks & Kemp, 2013). Another issue in the transfer of research into practice is a tendency for early career teachers to follow the lead of their more experienced peers in schools, who may be implementing practices that do not necessarily reflect current research evidence (Adoniou, 2013). There are many further issues relating to transference of teacher knowledge about language into practice (Fenwick, Endicott, Quinn & Humphrey, 2014) that are beyond the scope of this article.

### **What are the views of new Graduates and Early Career Teachers on their Preparedness to Teach Spelling?**

Despite the focus in recent years on initial teacher education and so-called teacher readiness and impact, highlighted in Australia by the report *Action Now: Classroom Ready Teachers* (TEMAG, 2014), as well as the importance of support and professional development in the first few years of teaching, there is a dearth research in this area. Hence, this research aimed to explore ECTs' views about what is important in teaching spelling, how they teach spelling, and how useful they found their initial teacher education in preparing them to teach spelling.

### **Method**

The small scale study being reported here utilised a survey design, which is appropriate for gauging practices and attitudes (Creswell, 2008). A questionnaire was administered to early career teachers (in their first five years of teaching) in Western Australia. The study was carried out in two phases, with 34 early career primary (elementary) teachers participating overall.

#### **Participants**

##### ***Phase 1***

The participants were 34 early career teachers in Western Australia. 11 of the participants were recruited through a professional development session on spelling run by the Australian Literacy Educators Association (Phase 1). 14 more teachers completed the questionnaire during this phase but their data were not used as they did not qualify as ECTs or were secondary school teachers. Approximately 150 people attended the PD session but the composition of the audience in terms of career stage or age groups taught is not known.

## *Phase 2*

The second phase of the study took place several months after Phase 1. 160 invitations to participate were sent out to school principals (with follow up reminders). The schools invited were selected according a stratified sampling strategy using school sector (Government, Independent and Catholic) and location (Urban, Regional and Remote).

From these invitations, 22 (14%) school principals gave consent for teachers at their school to participate and, ultimately, 23 early career teachers completed the online survey. The response rate for teachers at each school is not known as the principals did not indicate how many teachers at their schools were going to be invited. Those who gave reasons for declining the invitation stated that they had no ECTs at their school or that staff were too busy to participate in research.

Participating teachers (both phases combined) represented all year groups in primary schools from the Foundation (Pre-primary) year (5 year olds) to Year 6 (11 year olds). The majority of the participating teachers had a B.Ed (69%), 17% had a one year Graduate Diploma and 17% had a two year Master of Teaching. The majority of the teachers worked in urban and regional schools with only one participant being from a remote school (as defined on *MySchool* – see [www.myschool.com.au](http://www.myschool.com.au)). Forty percent had trained in Early Childhood, 52% had trained in Primary and 8% had undertaken a K-7 course. Most of them worked full time (84.5%).

## **Data Collection Procedure**

Participants in Phase 1 of the study (which also served as a pilot) were attendees at a free professional development session on spelling run by a professional association. After reading an information letter, they were invited to approximately spend 15 – 20 minutes completing a paper version of the questionnaire before the professional development session started. A link to an online version of the questionnaire was also disseminated to members of the professional association within Western Australia and out of 7 responses, 4 qualified to be used.

Phase 2 of the study took place several months later as an online questionnaire (see Appendix 1 for list of survey questions pertinent to this article) disseminated through schools. Two to three months after the initial invitation, reminders were sent to those principals who had not responded.

## *Instrument*

The questionnaire had several sections. The first section was a multiple choice component asking what the respondents thought was important in the teaching of spelling. Several questions beginning with ‘It is important to’ were asked and respondents selected ‘true’, ‘false’ or ‘unsure’ (see Appendix 1). Secondly, teachers were asked questions about their teaching. They responded to statements asking about their teaching practices with ‘usually’, ‘sometimes’ or ‘never’. The next questions were open ended questions and asked how respondents felt about their initial teacher education. Finally, they were asked to list the key strategies they used to teach phonology, orthography, morphology and etymology, as well as listing key resources and assessment techniques used. Finally, they were asked to list professional development received. They were also asked to briefly describe assessment processes used.

The questionnaire was developed using the following processes. First, areas for investigation were identified by the researcher from a literature review as well as from comments made by experienced teachers during a series of professional development sessions in Western Australia and New South Wales, where teachers indicated difficulties they had in teaching spelling. Gaps in their knowledge were identified by the researcher during these professional development. This increased face validity and content validity.

The Phase 2 survey contained the same questions as the first phase, with the addition of a question about geographical location, a question asking how long the teacher had worked part time or as a relief teacher, if at all, and questions on metalinguistic awareness. Slight rewording of several other questions was carried out to enhance clarity.

**Data Analysis**

Data from the paper-based survey were entered into Qualtrics by the researcher. In analysing the data, only frequencies were calculated; due to low number of responses, simple descriptive analysis was appropriate. Answers to each open-ended question were categorised and copied and pasted in full into a table (see Figure 1 for a sample). Further analysis involved refining some of the categories of responses through renaming, merging or splitting. The questions invited a limited range of short responses, which facilitated analysis (Andres, 2012).

<b>What did you Learn at University (about Spelling) that you have Found most Useful in Practice?</b>		
<b>Summary</b>	<b>Phase 1 comments</b>	<b>Phase 2 comments</b>
Little or no spelling at university or can't remember learning about spelling at university	<p><i>I had very little spelling instruction at University level.</i></p> <p><i>Didn't do spelling - just overall literacy - more writing lesson plans.</i></p> <p><i>Nothing I can remember - focus on phonological awareness</i></p> <p><i>I can't remember learning anything specific about spelling at uni</i></p>	<p><i>I do not remember any specific things taught about spelling.</i></p> <p><i>I cannot recall</i></p> <p><i>Nothing</i></p> <p><i>Nothing</i></p> <p><i>I feel that I did not learn enough about spelling at University to help me as a teacher in school.</i></p> <p><i>I cannot remember any unit that focussed on spelling.</i></p> <p><i>Only literacy as a whole.</i></p> <p><i>N/A</i></p>
Teacher KAL and metalanguage		<i>The difference between phonemes and graphemes.</i>
N/A because I do not teach spelling in pre-primary		<i>I also feel it is hard to reflect on as I don't specifically focus on spelling in Pre-Primary as they are just beginning to sound out words, and spell phonetically.</i>

**Figure 1. Sample of responses to open-ended questions**



### Ethical Considerations

The study was carried out with ethics approval from the University of the University of Western Australia as well as the Catholic Education Office of Western Australia and the Department of Education of Western Australia. All participants were informed that their involvement was voluntary and that their responses were anonymous. For Phase 2, school principals as well as teachers provided consent.

### Results

A high percentage of participating ECTs indicated that they thought it important to teach phonology (98%), orthography (96%) and morphology (100%) (see Table 1), and that it is important to offer differentiated teaching of spelling (100%). They also indicated that it is important to link the teaching of spelling with reading, writing and vocabulary and to teach children a range of spelling strategies. Only 14% indicated that it is important to give a weekly spelling test and the vast majority (95.5%) did not think it important to use a commercial spelling programme.

<i>True/False response used in calculation. *Valid responses only used in the calculations</i>	<b>Phase 1 n=11</b>	<b>Phase 2 n=23</b>	<b>Average (Phases 1 and 2)</b>
Differentiated spelling instruction	100%	100%	100%
Students participating in setting own spelling goals	87%	79%	83%
Teaching phonology	100%	96%	98%
Teaching orthography	100%	91%	96%
Teaching morphology	100%	100%	100%
Linking spelling with writing instruction	90%	91.5%	90.5%
Linking spelling with reading instruction	100%	91%	95.5%
Linking spelling with vocabulary instruction	70%	91%	81%
Giving a weekly test	10% (30% unsure)	17%	13.5%
Teaching children a range of spelling strategies	100%	100%	100%
Using a range of instructional strategies	100%	100%	100%
Teaching metalanguage	Not asked	82.5%	82.5%
Using commercial programmes	0% (9% unsure)	9%	4.5%

**Table 1. Early career teachers' views on what is important in teaching spelling**

In terms of practices, there were some aspects of spelling instructions that were not being taught (see Table 2), according to the survey responses, revealing a discrepancy between teachers' views about what is important and their practices. Although 100% of the teachers indicated that they taught phonology always or sometimes, over 10% indicated that they were not teaching morphology and almost 20% indicated they were not teaching orthography. In the open ended questions of the survey where the teachers were asked to describe the key strategies they used to teach morphology, only a minority of teachers stated that they explicitly taught morphology. A few mentioned incidental teaching during reading. Only two respondents mentioned a commercial programme or resource for this aspect of spelling – both mentioned *Words Their Way* (Bear et al., 2008), which is a resource that assumes that spelling is developmental (see Table 3). In terms of teaching orthography, the teachers who reported that they did not teach it were predominantly either Year 1 teachers or Year 6 teachers. A third of the teachers reported that they used commercial programmes for teaching orthography, with others using explicit instruction and orthography instruction within the

context of reading and writing. Between 30% (Phase 1) and 43.5% (Phase 2) of the respondents indicated that they were not teaching etymology. These teachers were teaching all year levels. Teachers who reported that they did teach etymology reported using dictionary work, investigations and discussion as key strategies. Two teachers indicated that they used commercial programmes to teach etymology. It is possible that more teachers were actually teaching these aspects of spelling, but did not understand the language used in the survey (although the terms were defined).

	Phase 1 “Always”	Phase 1 “Sometime s”	Phase 1 “Never”	Phase 2 “Always”	Phase 2 “Sometime s”	Phase 2 “Never”	Mean (Phases 1 and 2) “Always & Sometimes ” combined. <i>Rounded to nearest 0.5.</i>
Differentiated spelling instruction	80% n=8	10% n=1	10% n=1	91.3% n=21	4.3% n=1	4.3% n=1	93% n=33
Students participate in setting own spelling goals	22% n=2	55% n=5	22% n=2	22.73% n=5	55.09% n=13	18.18% n=4	79% n=31
Teaching phonology	89% n=8	11% n=1	0%	95.65% n=22	4.35% n=1	0%	100% n=32
Teaching orthography	50% n=5	30% n=3	20% n=2	39.15% n=9	43.48% n=10	17.9% n=4	81.5% n=33
Teaching morphology	30% n=3	60% n=6	10% n=1	60.87% n=14	26.09% n=6	13.04 n=3	88.5% n=33
Teaching etymology	20% n=2	50% n=5	30% n=3	26.09% n=6	30.43% n=7	43.48 n=10	65.5% n=33
Linking spelling with writing instruction	30% n=3	60% n=6	10% n=1	43.5% n=10	47.83% n=11	8.7% n=2	90.5% n=33
Linking spelling with reading instruction	30% n=3	70% n=7	0%	47.83% n=11	47.83% n=11	4.35% n=1	98% n=33
Linking spelling with vocabulary instruction	40% n=4	50% n=5	10% n=1	56.42% n=13	43.48% n=10	0%	95% n=33
Giving a weekly spelling test	30% n=3	30% n=3	40% n=4	43.48% n=10	21.74% n=5	34.78 n=8	62.5% n=33
Using a range of instructional strategies	67% n=6	11% n=1	11% n=1	72.27% n=17	22.73% n=5	0%	89% n=30
Teaching metalanguage	<i>Not asked</i>	Not asked	Not asked	34.79% n=8	47.83% n=11	17.39 n=4	83% n=23
Using commercial programmes	40% n=4	50% n=5	10% n=1	78.26% n=18	8.7% n=2	13.04% n=3	88.5% n=33

**Table 2. Practices of early career teachers in teaching spelling (%)**

<b>Commercial programmes used</b>		
	<b>Always</b>	<b>Sometimes</b>
School's own programme	1	
<i>Word Up</i> spelling book	1	
<i>Diana Rigg</i> resources	9	2
<i>Words Their Way</i>	7	
<i>Letters and Sounds</i>		2
<i>Jolly Phonics</i>		3
<i>Jolly Grammar</i>		1
<i>Phonics International</i>		2
<i>Rules, Rules</i>		1
<i>ABC Cracking the Code</i>		1
<i>Soundwaves</i>		4
Spelling Mastery		1

**Table 3. Practices of early career teachers in teaching spelling: Commercial programmes used (%)**

In terms of feeling that their initial teacher education degree had adequately prepared them, 48% of the participants reported that they felt satisfactorily prepared (or better) to teach spelling and 52% said that they felt unsatisfactorily prepared to teach spelling as graduate teachers. In the Phase 1 group, 60% reported that they felt unsatisfactorily prepared (which may have been the reason they were voluntarily attending a spelling professional learning session on spelling), whilst 44% of the Phase 2 survey respondents reported that they felt unprepared.

Although the early career teachers indicated that did not think it was important to use commercial spelling programmes or give weekly spelling tests, most of them (around 90%) were in fact using them. This indicates a tension between beliefs and practices.

The open ended questions in the survey asked about the early career teachers' pre-service teacher education and challenges they had faced in the teaching of spelling as new graduates. In response to the question, "What did you learn at university (about spelling) that you found most useful in practice?" (see Figure 1), 12 of the teachers said that they did not recall learning anything useful about spelling during initial teacher education ("I cannot remember any specific things taught about spelling"; "I feel I did not learn enough about spelling at university to help me as a teacher"). Most responses in Phase 2 related to learning about the importance of teaching phonological awareness and phonics. Some respondents from Phase 1 also indicated that they had learned some teaching strategies.

In response to the question, "When you first commenced teaching, what did you find most difficult about teaching spelling?" 16 of the teachers (48%) indicated that differentiation or catering for a range of different needs was most difficult. Another prominent challenge reported by the ECTs (18%) was that they had insufficient knowledge about language. Comments such as "What even are the correct sounds?" and, "Not knowing/remembering all the actual spelling rules from primary school" were made. Equally challenging for the ECTs was insufficient knowledge about pedagogy, or instructional strategies (18%). Furthermore, some (12%) mentioned that they had difficulties knowing how to use commercial programmes. Other difficulties mentioned were issues relating to assessment ("Making children sit a weekly test"), finding time in the busy curriculum to teach spelling properly, and programming and planning for meaningful and integrated spelling instruction. The question, "What do you know about spelling now that you wish you had known when you first commenced teaching?" yielded responses that were very similar to the question above. Differentiation and instructional strategies were the two most prominent categories of responses. Eight of the ECTs (23.5%) mentioned that they now had more knowledge about

language, and five of the teachers (15%) mentioned that they now knew about commercial programmes. In response to, “What advice would you give universities about how to prepare pre-service teachers to teach spelling?” respondents indicated that universities should teach them more about language, should expose them to more commercial programmes, and should teach them more about planning and classroom organisation, and how to differentiate their spelling instruction. In terms of instructional strategies, some mentioned that they would like more in their pre-service course on how to teach spelling explicitly. A few stated that they would have liked more content on the assessment of spelling.

## Discussion

McNeill and Kirk (2014) found in New Zealand that 69% of teachers felt they had not received adequate preparation in their initial teacher education in how to teach spelling. Similarly, the present study found that a high proportion of ECTs (52%) felt unsatisfactorily prepared to teach spelling as graduate teachers. The fact that this relatively large percentage of participating teachers felt unprepared to teach spelling upon graduation from university may be seen as a cause for concern, although it is acknowledged that the sample was small and possibly unrepresentative.

The current study found that what the ECTs believed about teaching spelling and what they actually practised were generally in alignment (see Tables 1 and 2). This contrasts with the findings of McNeill and Kirk (2014), who found discrepancies between what teachers believed about spelling instruction and how they practised it. Two major discrepancies identified in the current study were around the use of commercial programmes and weekly spelling tests. Whilst only 4.5% of respondents thought that it was important to use a commercial spelling programme, 88.5% were using one or more. Only 13.5% of respondents thought that weekly spelling tests were important, yet 62.5% were using them. School policies may have been the reason for these discrepancies.

Possible gaps in teacher knowledge, which may affect their ability to provide effective and appropriate teaching of spelling, were indicated in this study. Bowers and Bowers (2017) have asserted that children need to be taught the logic of the English writing system and Fisher and Frey (2009) take a similar position when they propose that children should be taught “word solving”. Repertoire theories of spelling such as Triple Word Form Theory (Bahr et al., 2012; Berninger et al., 2009) also point to the need for teachers to provide instruction to children in phonology, orthography and morphology and how to use these three areas of linguistic knowledge in concert to inform the spelling of words. Without sophisticated knowledge about language and understandings about how children learn language, teachers will find it challenging to apply repertoire theories, to teach “word solving” (which can be motivational to students), to teach children necessary metalanguage, and to plan and implement appropriate assessments and differentiated teaching. Meek and Kemp (2017) reported that Australian preservice teachers had significant gaps in their knowledge about language structures such as syllables, morphemes and phonemes. Adoniou (2013) also identified gaps in teacher knowledge about language, as well as gaps in pedagogical content knowledge regarding the teaching of spelling. The current research supports these findings, although no attempt was made to measure teachers’ KAL directly.

In order to address gaps in teacher knowledge and preparedness in the teaching of spelling, enhancements to some initial teacher education programmes may be required. Adoniou (2013) has outlined how initial teacher education courses at her institution were changed to better prepare pre-service teachers in the area of spelling. Firstly, measures were taken to improve pre-service teachers’ knowledge about language. Pre-service teachers were

also required to read and critique research, theory and curriculum documents pertaining to spelling. This is a crucial element of teacher education as, without knowing the research, teachers are unable to formulate convincing rationales for their practice. In addition, in Adoniou's institution, pre-service teachers were required to create spelling programmes that developed all types of spelling knowledge, in line with repertoire theories. The impact of the course changes described has not yet been published. Thwaite (2013) has also shown how it is possible for pre-service teacher institutions to improve pre-service teachers' KAL in meaningful contexts such as through the analysis of their own linguistic interactions with children. In-service professional development may also need an increased focus on up-skilling teachers in this area. In the current study, only 29% of the respondents said that they had received in-service professional development in spelling since graduation.

The current research also suggests that pre-service and early career teachers should have opportunities to engage with and evaluate commercial spelling programmes and learn practical strategies to differentiate their teaching, especially within the context of mandated whole of school programmes. Attention should be given in initial teacher education courses to the assessment of spelling, including diagnostic assessment to inform targeted teaching.

Finally, in order to enhance the preparation of pre-service teachers in the area of spelling, some staff members in teacher education institutions may benefit from professional development. It was found by Binks-Cantrell, Washburn, Joshi, and Hougen (2012) that teacher educators in the USA had gaps in their basic language constructs. Although there is no research to suggest that teacher educators in Australia would benefit from professional development in this area, it is feasible that some educators may not have the required depth of knowledge, especially since many teacher educators are casual tutors who may not be in possession of particular expertise in language structures. This is an area warranting further investigation.

There are obvious limitations in the small scale research presented in this article. The number of respondents was small, thus no claims can be made that findings represent a larger population of early career teachers. In addition, the surveys were self-reports that were not verified by observation or other means. Despite such limitations, as noted by Punch (2003), small scale surveys can contribute to substantive knowledge through providing insights that lead to further investigation. It may be worth reiterating that the low response was in part because only a small percentage of principals gave consent for teachers at their school to participate, perhaps indicating that principals do not see spelling research as a priority.

## **Conclusion**

This article adds to the discussion on the preparedness of teachers to teach spelling, with a focus on early career teachers in their first five years of service. The study supports the argument that teacher education programmes may need to pay more attention to improving pre-service teachers' KAL and helping them understand how to translate this knowledge to practice. Without deep knowledge in this area, it is perhaps not surprising that many early career teachers find it difficult to differentiate their spelling instruction, especially in the context of mandated spelling programmes within schools. Furthermore, there is a mounting argument that it is time to move on from linear developmental perspectives towards a recognition that all children need to know how to use different types of knowledge about language in order to spell, and that this knowledge needs to be applied differently according to the linguistic context (Trieman, 2017), necessitating the use of metalanguage and metacognition. Clearly, teachers who do not have the appropriate metalanguage themselves cannot teach it to their students.

Quality in-service professional development should be available to help early career teachers build their knowledge and confidence in the teaching of spelling and other areas of literacy. Being insufficiently prepared is likely to not only negatively impact on children's learning but may also reduce teachers' self-efficacy, resulting in heightened workplace stress (McCormick & Ayres, 2009). Further research into the views and practices of early career teachers, particularly in differentiating spelling instruction within the context of whole school literacy policies that mandate the use of commercial programmes, seems to be warranted.

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## Appendix 1

### Spelling survey questions

#### Demographic information

- I have the following teaching qualification/s:
- I specialised in the following in my initial teacher education course:
- I have been teaching for the following length of time:
- I currently work (full time or part time):
- I have worked part-time, in total, for the following length of time:
- Since graduating as a teacher, I have worked with the following year groups: (Tick all that apply. For example, if you have taught a Year 2/3 class, tick both Year 1 and Year 2):
- I currently teach the following year group/s:
- I have spent most of my time since graduation teaching in the following sector:
- The school I work at currently is located in (as per *My School* category):

#### What is important in teaching spelling?

- It is important that children learn to set their own spelling goals (True/False/Unsure).
- It is important that teachers differentiate spelling instruction (True/False/Unsure).

- It is important to link spelling instruction with writing instruction (True/False/Unsure).
- It is important to link spelling instruction with reading instruction (True/False/Unsure).
- It is important to teach about morphology (meanings of words and word parts) (True/False/Unsure).
- It is important to teach children about phonology (the sounds in words) (True/False/Unsure).
- It is important to teach about orthography (conventions about how words are written) (True/False/Unsure).
- It is important for children to take a spelling test every week (True/False/Unsure).
- It is important to use a range of instructional strategies to teach spelling (True/False/Unsure).
- It is important to use a commercial spelling programme (True/False/Unsure).
- It is important to link spelling instruction with vocabulary instruction (True/False/Unsure).
- It is important to teach children metalanguage to help them learn to spell (True/False/Unsure).

**Teaching practices**

- In my teaching of spelling, I link spelling instruction with writing instruction (Usually/Sometimes/Never).
- In my teaching of spelling, I link spelling instruction with vocabulary instruction (Usually/Sometimes/Never).
- In my teaching of spelling, I link spelling instruction with reading instruction (Usually/Sometimes/Never).
- In my teaching of spelling, I use a range of instructional strategies (Usually/Sometimes/Never).
- In my teaching of spelling, I differentiate spelling instruction (Usually/Sometimes/Never).
- In my teaching of spelling, I use a commercial programme. (Please name any commercial programmes used, in the text boxes provided.)
- The key strategies and resources that I use to teach about phonology (sounds in words) are:
- The key strategies and resources that I use to teach about orthography? (rules and conventions about how words are written) are:
- The key strategies and resources that I use to teach about morphology (meanings of words and word parts) are:
- The key strategies and resources that I use to teach about etymology (word origins) are:
- The key strategies and resources that I use to assess children's spelling are: The key strategies that I use to motivate children to learn how to spell are:

**What is taught: strategic**

- In my teaching of spelling, I help children to set their own spelling goals (Usually/Sometimes/Never).
- In my teaching of spelling, I teach children a range of spelling strategies (Usually/Sometimes/Never).

**What is taught: linguistic**

- In my teaching of spelling, I teach about phonology (sounds in words) (Usually/Sometimes/Never).
- In my teaching of spelling, I teach about morphology (meanings of words and word parts) (Usually/Sometimes/Never).
- In my teaching of spelling, I teach about orthography (conventions about how words are written) (Usually/Sometimes/Never).
- In my teaching of spelling, I teach about etymology (word origins) (Usually/Sometimes/Never).
- In my teaching of spelling, I teach children metalanguage (Usually/Sometimes/Never).

**Assessment of spelling**

- In my teaching of spelling, I give children a spelling test every week (Usually/Sometimes/Never).

**Perceptions of preparedness and pre-service teacher education**

- When I began teaching, in terms of teaching spelling, I felt: (unsatisfactorily prepared, satisfactorily prepared, well prepared, extremely well prepared)
- The things I know now, about teaching spelling, that I wish I had known when I first commenced teaching are (briefly describe):
- The three things that I found most difficult about teaching spelling, when I first commenced teaching, were (briefly describe):
- The three things that I learnt at university (about spelling) that I have found most useful in practice are (briefly describe):
- I would like to give universities the following advice about preparing pre-service teachers how to teach spelling:

**Professional Development Received**

- I have received professional development (PD) in teaching spelling since I graduated as a teacher.