

Theoretical beliefs and instructional practices used for teaching spelling in elementary classrooms

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Abstract The current study aimed to examine teachers' reported spelling assessment and instruction practices. Analysis of the match between teachers' theoretical beliefs about spelling and their reported pedagogy was conducted to elucidate factors that may support or impede the use of evidence-based teaching strategies in the classroom. An electronic survey was completed by 405 randomly selected (stratified by region and socioeconomic status) elementary school teachers in New Zealand. The survey examined the following areas: spelling assessment, spelling instruction, beliefs about spelling, preparing teachers to teach spelling, and teachers' perceived strengths and weaknesses of their spelling program. There was large variability in spelling assessment and instructional practices across teachers. Most respondents reported implementing some aspects of a developmental approach to spelling instruction through analysis of children's spelling errors (64 %) and/or individualization of the spelling program (60 %). There was a large dissociation between teachers' beliefs about spelling and their frequency of use of specific instructional practices associated with those beliefs (e.g., phonological awareness, orthographic knowledge). The mismatch between beliefs and reported practice appeared to be due to lack of professional knowledge regarding implementing explicit spelling instruction and finding time to teach spelling within the curriculum. Increasing teachers' knowledge about language structure, practical implementation of key assessment and instruction activities, and the links between spelling and other areas of the curriculum are important factors in improving spelling pedagogical practices.

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Introduction

Increasing evidence has accrued regarding the importance of teaching spelling as a linguistic skill. Much of this research, however, has taken place outside the classroom and exploration of teachers' reported spelling instructional practices is relatively scarce. The following study reports a national survey ($N = 405$) of spelling assessment and teaching in order to see whether current research knowledge regarding spelling is reflected in the classroom. In addition, an analysis of the match between teachers' theoretical beliefs about spelling and their reported practice was undertaken to identify potential barriers to utilizing evidence-based spelling instruction.

The most effective spelling instruction teaches spelling as a linguistic (rather than visual) ability by directly facilitating key skills that underlie spelling development (Bourassa & Treiman, 2001). There are three metalinguistic skills that are strongly related to spelling acquisition. One metalinguistic skill that is essential to the acquisition of spelling is phonemic awareness, which refers to the ability to reflect on and manipulate single sounds within words (Gillon, 2004). A second important metalinguistic skill for learning spelling is orthographic awareness which includes (1) alphabetic knowledge, for example, 'sh' makes the /*ʃ*/ sound; (2) orthographic pattern knowledge, such as knowing that the grapheme 'ck' cannot be used in initial position in a syllable; and (3) storage of mental representations of spellings in long-term memory (Apel, Wolter, & Masterson, 2006; Apel, 2011). A third skill that is fundamental for learning to spell is morphological awareness which involves the ability to recognize the parts of words that convey meaning, such as identifying connections in words sharing the same root, such as *heal-health* (Berninger, Abbott, Nagy, & Carlisle, 2010).

Intervention research supports the importance of these three skills for spelling development. Phonemic awareness intervention has proven to be effective at facilitating spelling skills in a range of learners, particularly when combined with teaching orthographic knowledge (for a review, see Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh et al., 2001). Similarly, a meta-analysis of the morphological awareness intervention literature has indicated that the development of morphological awareness skills is effective at enhancing spelling development in children throughout elementary school, especially for low progress literacy learners (Bowers, Kirby, & Deacon, 2010).

Although current research provides support for teaching spelling as a linguistic skill, teacher training and knowledge may restrict the use of such instructional strategies in the classroom. Initial teacher education in the US has been reported to have minimal focus on building teachers' linguistic knowledge (Joshi, Binks, Graham, Ocker-Dean, Smith & Boulware-Gooden, 2009) and a number of studies have concluded teachers' personal metalinguistic knowledge is insufficient to provide direct instruction in phonemic awareness, orthographic patterns and/or

morphological awareness (e.g., Cunningham, Zibulsky, Stanovich, & Stanovich, 2009; Spear-Swerling & Brucker, 2003; Spencer, Schuele, Guillot, & Lee 2008). Similar issues restricting the use of explicit teaching in language structure are mirrored in the New Zealand educational context. For example, Carroll, Gillon, and McNeill (2013) reported that classroom teachers had difficulty segmenting single syllable words into their constituent phonemes, and instead, segmented into onset-rime or syllable components.

In addition to evaluating teacher knowledge that influences spelling instruction, it is also important to examine reported classroom practices and beliefs about teaching spelling to gain insight into the uptake of evidence-based teaching. Previous surveys conducted at a national level suggest that it may not be enough to increase teacher knowledge about spelling to instigate change in teaching practices. Fresch (2003) surveyed 355 Grade 1–5 teachers from across the US in an exploration of the use of developmentally appropriate versus traditional forms of spelling instruction. The survey also allowed a comparison between teachers' beliefs about spelling instruction and their reported practice. Findings showed that although a variety of instructional methods were employed across teachers, the majority of respondents used predominantly traditional strategies. Comparison between teacher beliefs and reported practices showed some dissociation with many respondents agreeing theoretically with a developmental approach to spelling instruction, although this was not reflected in their practice. For example, assigning one common spelling list to the entire class was reported practice for the majority of respondents despite recognizing the importance of differentiated spelling lists for developmental level. Although the Fresch (2003) study gives valuable insight into the dissociation between theoretical orientation and classroom teaching, the survey did not examine the reported frequency of use of fundamental components of spelling instruction identified in the literature (e.g., phonics, phonemic awareness, word sorts to identify spelling patterns). Thus, full exploration of the reported uptake of empirically driven spelling instruction was not possible.

Graham et al.'s (2008) survey of 168 primary grade teachers included examination of teachers' reported use of important components of spelling instruction with a particular focus on adaptations made for stronger and weaker spellers in the classroom. Respondents reported using a variety of evidence-based instructional techniques, but the authors posited that these techniques may have been implemented incorrectly given the relatively high numbers of students reported to be progressing slowly in spelling. The study did not directly examine teachers' theoretical perspectives about spelling nor probe teachers' use of techniques that aligned with a more traditional view of spelling as a skill acquired implicitly through immersion in a literature rich environment (i.e., a 'spelling-is-caught' approach).

The current study surveyed a national sample of New Zealand teachers. All New Zealand schools follow a nationally implemented education curriculum (Ministry of Education, 2007). English curriculum objectives, however, are broad and teaching methods are not nationally prescribed (implemented at a school level instead) meaning that there is variability across classrooms in spelling assessment and instruction. Teaching resources are commonly provided by the New Zealand Ministry of Education or distributed through teacher networks where there is no formal process

for ensuring the materials meet a particular standard. The New Zealand Ministry of Education currently advocates a ‘balanced’ approach to literacy instruction where teachers are expected to adopt a particular teaching strategy based on a particular learner’s profile (Ministry of Education, 2003). There has been criticism, however, that teachers continue to follow a predominantly whole-language approach to literacy instruction with limited explicit teaching on skills underlying early success in word level reading and spelling (Tunmer et al., 2008). Such issues resonate in the American context. For example, Joshi et al. (2009) reported that 75 % of US teachers in their sample prescribed to a balanced approach of teaching reading, but cautioned that previous studies had shown that many teachers who believe in a balanced approach actually provided limited explicit instruction in skills underlying decoding and spelling success (Moats, 2010; Vaughan, Moody, & Schumm, 1998).

The current survey was designed to update our knowledge about classroom-based spelling assessment and instruction, to compare teachers’ theoretical perspectives with their reported practices about spelling, and to explore potential barriers to successful classroom based spelling instruction.

The following questions were examined:

1. What are the spelling assessment practices of classroom teachers?
2. What are the spelling instructional practices of classroom teachers? In particular, what is the frequency of use of published spelling programs, group teaching, and individualization of spelling words?
3. How do teachers’ beliefs about spelling instruction compare to their reported current practice?
4. Do teachers feel that they are adequately prepared to teach spelling?
5. What do teachers recognize as the strengths and weaknesses of their spelling program?

Method

Participants

A random sampling procedure, stratified by region and school decile ranking (i.e., aggregated socioeconomic status of the parents or caregivers of the students at a given school), was used to identify 90 schools across New Zealand from the Ministry of Education’s Directory of Schools (www.educationcounts.govt.nz). The principal from each school invited their teachers of year 3–8 students (i.e., ages ranging between 7 and 12 years) to complete an online survey. In all, 985 teachers were requested by email to complete the survey.

Survey instrument

The survey instrument used in the current study was based on Fresch (2003, 2007) with adaptations included to probe further information regarding spelling assessment practices, frequency of use of fundamental components of spelling instruction,

and to match the New Zealand context. The survey was initially piloted on seven respondents (two academics and five classroom teachers). Feedback was sought regarding length of time to complete the survey and clarity of its items. Adjustments were made according to the comments made (e.g., a definition of phonics was provided within the survey to remove ambiguity for some teachers).

The survey instrument (see “[Appendix](#)”) was divided into six sections. Section 1 sought information regarding geographic region, teaching experience and training, and classroom/school profiles. Section 2 sought information regarding spelling assessment tools and how assessment results were used to plan instruction. Section 3 sought information regarding instructional method and the grouping of students for spelling instruction as well as information regarding the selection of words for spelling lists. This section also sought information regarding the frequency of use of common spelling instructional practices (e.g., dictionary skills, explicit teaching of spelling rules) and adaptations made for advanced and struggling spellers. Respondents were asked to rate their use of instructional strategies as daily, several times a week, weekly, monthly, several times a year, or never. Section 4 included 10 belief statements about spelling instruction and respondents were asked to rate each statement as ‘strongly agree’ to ‘strongly disagree’ on a five-point Likert scale. Section 5 sought information regarding the adequacy of initial teacher education, ongoing professional development, the national curriculum and school policy in supporting effective teaching of spelling. Section 6 included two open-ended questions that probed the perceived strengths and weaknesses in the teachers’ spelling programs.

Reliability

Interrater reliability was calculated for all open-ended questions. The first author initially searched the responses to the open-ended questions and created categories which were then used to code the answers. The second author independently classified responses to all open-ended questions according to the categories provided by the first author. The level of agreement between the two coders averaged over all nine open-ended questions was 93.5 % (range 82.6–98.0 %) Any disagreement was resolved through discussion until 100 % agreement was attained.

Results

Demographic information

A total of 405 teachers responded to the survey, which was a response rate of 41.1 %. Because this survey was submitted anonymously, it was not possible to pursue nonrespondents. The response rate in our study was much higher than that of a survey of teachers’ spelling practices and beliefs by Fresch (2003) where the response rate was only 16 %. A possible reason for this difference is that in Fresch’s study, participants were asked to respond by mail, whereas in our study, participants were asked to submit their responses electronically in a link forwarded from their school principal.

The sample surveyed in our study was generally representative of New Zealand elementary schools and their teachers by region, socioeconomic decile, type of school, school setting, grade level, years of teacher experience, and the educational background of respondents, as can be verified by descriptive statistics provided by the New Zealand Ministry of Education (www.educationcounts.govt.nz) and Statistics New Zealand (2011). Table 1 provides an overview of the demographic characteristics of the respondents. A school's socioeconomic decile indicates the aggregated socioeconomic status of the parents or caregivers of the students at a given school. Decile 1 schools are the 10 % of schools with the highest proportion of students from low socioeconomic communities, whereas decile 10 schools are the 10 % of schools with the lowest proportion of these students. Note that teachers working in schools from lower decile areas (deciles 1 and 2) were slightly under-represented in the sample, making up 3 and 6 % of respondents respectively. The sample was also generally representative of the regional makeup of New Zealand with the sample being within 4 % of the population for all areas except for Auckland (where respondents made up 20 % of the sample versus 33 % of the population) (Statistics New Zealand, 2011).

Spelling assessment practices

Eighty-four percent of teachers reported using formal spelling assessment measures and 42 % of those teachers used more than one formal spelling assessment. Table 2 summarizes the formal spelling assessments used by the teachers in this sample.

Seventy-eight percent of teachers reported using spelling assessment results to plan instruction. Of those teachers who used spelling assessment results to plan instruction, 19 % reported using assessments to identify spelling age, 57 % reported using the assessments to identify gaps in spelling knowledge, and 22 % reported using assessment results to both identify spelling age and identify gaps.

Spelling instruction practices

Seventy percent of teachers reported using a published spelling program with 18 % of teachers using more than one spelling program in their classroom. Table 3 summarizes the published spelling programs used by the teachers in this sample.

Sixty-seven percent of teachers reported separating students into groups based on spelling ability. For most teachers, group assignment was determined either through testing alone (55 %) or through testing in combination with analysis of gaps in spelling knowledge (30 %). The types of testing used by teachers for group placement included formal tests to determine spelling age or spelling level as well as informal weekly spelling tests. A relatively small number of teachers (12 %) reported that they relied solely on analysis of gaps in spelling knowledge to determine spelling groups.

Eighty-seven percent of all respondents gave their students spelling lists to study. The majority of teachers (60 %) assigned students individualized spelling lists "always" or "most of the time". Only 6 % of teachers reported that they assigned the same spelling list to the whole class. A variety of different strategies, outlined in

Table 1 Demographics of respondents

Demographic	Category	Percentage ^a	Actual ^b
Region	Northland	3	3.6 %
	Auckland	20	33.2 %
	Waikato	11	9.4 %
	Bay of Plenty	5	6.3 %
	Gisborne	1	1.1 %
	Hawkes Bay	6	3.5 %
	Manawatu	8	5.3 %
	Taranaki	4	2.5 %
	Wellington	11	11.1 %
	Nelson	4	2.1 %
	Marlborough	1	1.0 %
	Canterbury	16	12.7 %
	Westland	1	0.7 %
	Otago	5	4.8 %
	Southland	4	2.2 %
Socioeconomic decile	1	3	10
	2	6	10
	3	8	10
	4	13	10
	5	11	10
	6	10	10
	7	12	10
	8	10	10
	9	11	10
	10	15	10
Type	Public	85	
	Private	4	
	Catholic	12	
Setting	Main urban (min. pop. 30,000)		32
	Secondary urban (10,000–29,999)		13
	Minor urban (1,000–9,999)		22
	Rural center (300–999)		12
	Rural area (max. pop. 299)		18
Grade level	3		31
	4		31
	5		34
	6		35
	7		41
	8		40

Table 1 continued

Demographic	Category	Percentage ^a	Actual ^b
Years experience	1–5		17
	6–10		24
	11–15		17
	16–20		14
	21–25		9
	26–30		10
	31 or more		9
Educational background	Teacher's certificate; Teacher's diploma		17
	Bachelor; Graduate diploma		71
	Honours degree; Postgraduate diploma; Postgraduate certificate		6
	Masters		6
	PhD		>1

^a Totals may not equal to 100 % due to rounding of percentages and/or no responses; ^b 2011 Subnational population estimates Statistics New Zealand (2011)

Fig. 1, were used to select the words for these lists. Teachers also reported using a number of different instructional activities “several times a week” or “daily” to teach spelling and the percentage of teachers who used these activities are displayed in Fig. 2.

All teachers reported making a number of adaptations to their spelling instructional practices for children who struggle with spelling. The most common adaptation was to provide one-on-one help “several times a week” or “daily” either from the teacher, another adult, or peer (55 %) or from literacy or learning specialist, Resource Teacher of Literacy (RTLit.) or Resource Teacher of Learning and Behaviour (RTLB; 19 %). Teachers also reported assigning words that are easier to spell (13 %) or assigning fewer words (8 %) to struggling spellers.

Eighty-two percent of teachers reported making adaptations to their instructional practices for advanced spellers. The most common adaptation for advanced spellers was an emphasis on the meanings of words, including the derivations of words, generation of word families, and thesaurus work (47 %). In addition, 30 % of teachers reported adapting their spelling program for advanced students by including more challenging words and by working on more advanced skills but without specifying any further details. Another adaptation made by teachers was to allow more advanced spellers greater ownership of the learning process by having them create their own spelling lists through the selection of words from a dictionary, the internet, or a book on a topic of interest (16 %).

Comparison of beliefs about spelling instruction and reported current practice

To explore the relationship between teachers' beliefs about spelling instruction and current practice as reported by these teachers, frequencies of responses for related theory and practice items were compared using a 2×2 Chi square test. An instructional practice was considered current if teachers reported using it several

Table 2 Formal spelling assessments used by respondents

Name of test	Percent reported ^a
Schonell (1985)	33
Peters (1979)	30
Essential word lists (Croft & Mapa, 1998)	20
Allcock (2010)	16
Burt (Vernon, 1956)	9
SAST (Westwood, 2005)	9
You can spell (De Ath, 2000)	5
SSPA (Croft, 2010)	4
PRETOS (Croft et al., 1981)	3
asTTle (Ministry of Education, 2001–2004)	3
GWST (Vernon, 2006)	3
Others <2 % each	18

SAST South Australia Spelling Test, SSPA supplementary spelling assessments, PRETOS proofreading tests of spelling, asTTle assessment tools for teaching and learning, GWST graded word spelling test

^a Percentages do not add up to 100, as 42 % respondents reported using two or more formal assessments

times a week or daily. The frequencies of the theoretical statements were used as the expected values and the frequencies of the practice statements were used for the actual values. In addition, Cramér's V coefficient was calculated to measure the strength of these relationships. We followed Cohen's (1988) suggested standards for interpreting Cramér's V, such that when V is .30 to .50, the effect size is considered to be medium and when $V > .50$, the effect size is considered to be large.

Figure 3 shows the comparison between reported practice in the classroom and the level of support that was given by teachers for each of the 10 theoretical statements about spelling instruction. The results of the Chi square test showed there were significant statistical differences between the frequencies for the teachers' beliefs and their reported current practices for 8 of the 10 comparisons at alpha level $<.0001$. In addition, Cramér's V was either medium or large for all eight of these comparisons. This suggests that for the majority of comparisons, there was a clear disparity between what teachers believe about spelling instruction and how they actually teach spelling in the classroom. A more detailed discussion of each of the comparisons between theory and practice follows, beginning with those comparisons where there were disparities between beliefs and current practice.

Table 3 Spelling programs used by respondents

Name of spelling program	Percent reported ^a
Switch on to spelling (Allcock, 2010)	39
You can spell (De Ath, 2000)	21
Essential words lists (Croft & Mapa, 1998)	20
Schonell (1985)	6
Smartwords (Bulluss & Coles, 2006)	6
Chunk Check Cheer (Birch, 2007)	4
Successful Spelling for Frustrated Teachers (McLeish, 1994)	2
Others <2 % each	24

^a Percentages do not add up to 100, as 18 % of respondents reported using two or more spelling programs

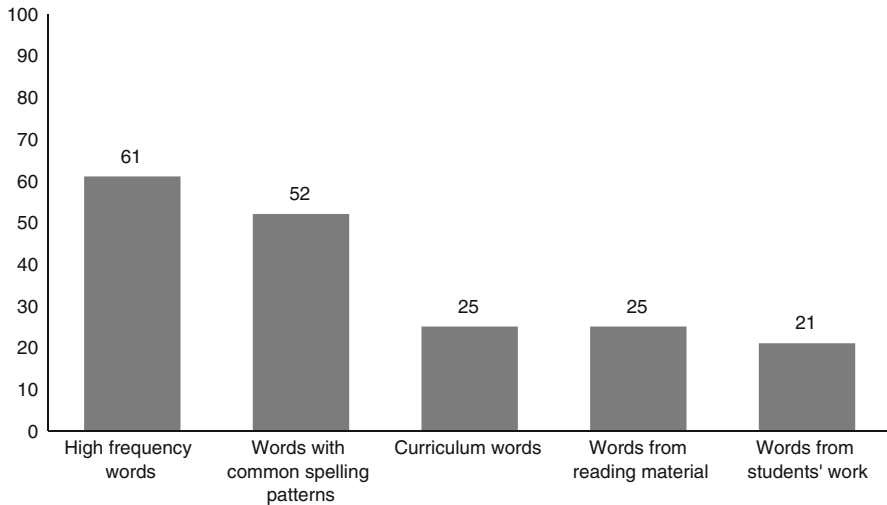


Fig. 1 Strategies used by teachers to select items for spelling lists “always” or “most of the time” (in percentages)

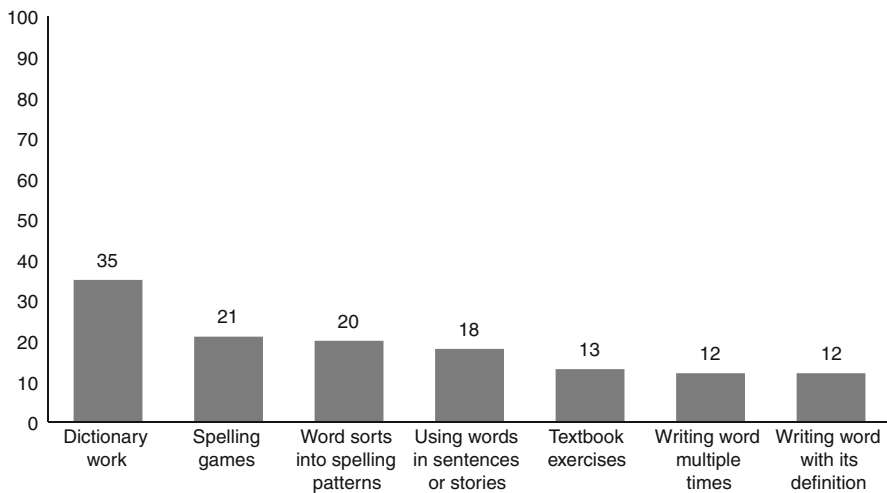


Fig. 2 Instructional activities reportedly used “several times a week” or “daily” (in percentages)

Components of spelling instruction

Almost all teachers agreed that the teaching of letter-sound knowledge, phonological awareness, spelling rules, and pattern recognition were important components of spelling instruction (between 92 and 97 %). However, relatively few teachers reported teaching these fundamental spelling skills “most of the time” or “always” (between 27 and 42 %). Thus, there is a huge disparity between what teachers believe should be taught in the classroom and what they report teaching. We offer

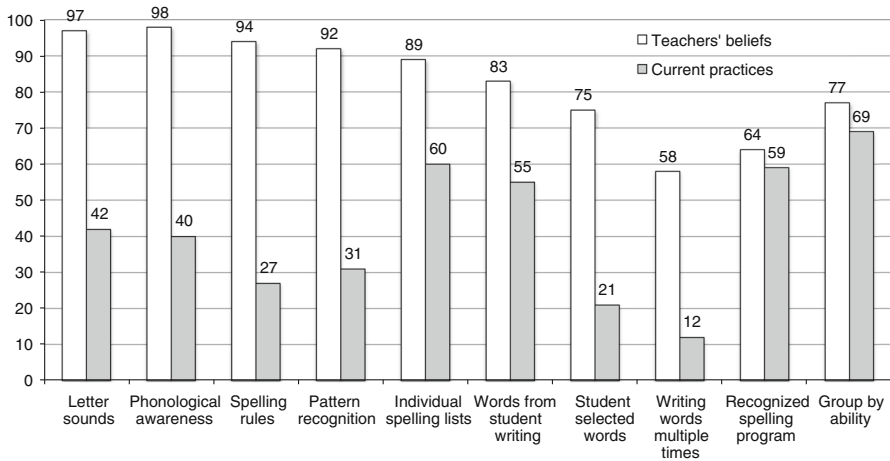


Fig. 3 Overall comparison of theoretical beliefs and current spelling practices (in percentages)

some potential explanations for this disparity in the discussion section of this paper where we provide some suggestions on how this gap could be addressed.

Individualizing spelling lists

Almost all teachers agreed that students should receive spelling lists based on their individual needs (89 %). However, only 60 % of teachers put this into practice.

Selecting words from student writing

Most teachers agreed that spelling words should come from students' own writings (83 %), but only just over half of teachers reported selecting words from that source.

Self-selection of words by students

Three-quarters of teachers agreed that students should self-select some of their own words for study, but only 25 % of teachers did that in practice “most of the time” or “always”.

Writing words multiple times

Over half of teachers reported that writing a word several times is an effective way to learn to spell that word, but very few reported incorporating this strategy into their current practice on a regular basis (12 %).

Using a recognized spelling program

Almost two-thirds of teachers (64 %) believed that using word lists from a recognized spelling program is an effective way of helping students develop spelling skills. The

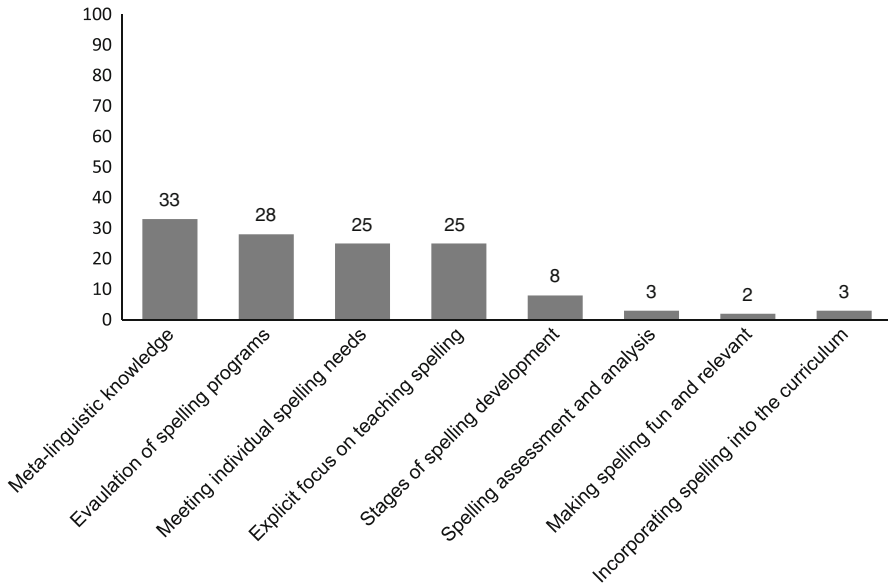


Fig. 4 Areas where respondents felt that they would benefit from further focus in teacher preparation (in percentages)

proportion of teachers who reported using word lists from a recognized spelling program was very similar (59 %) and there was no statistically significant difference between theoretical beliefs and spelling practices on this measure and the strength of the relationship was also very small (Cramér's $V = .05$).

Grouping students by ability

Most teachers believed that students should be grouped by ability for spelling instruction (77 %). This is only slightly greater than the proportion of teachers who report the practice of grouping their students by ability (69 %). Although this comparison was statistically significant ($p = .02$), the very small effect size (Cramér's $V = .09$) suggests that this difference is of little practical significance.

Preparing teachers to teach spelling

The majority of teachers who participated in the survey (69 %) felt that they had not received adequate preparation to teach spelling as part of their teacher training program. When those teachers who felt they had been inadequately prepared to teach spelling were provided with the opportunity to identify what they would have liked to have learned as part of their training, seventy-four percent chose to respond. The areas where teachers identified they would benefit from further learning are displayed in Fig. 4. Note that some of these teachers identified more than one area in which they would have liked to have learned more.

Only 31 % of the teachers surveyed felt that they had been provided with adequate preparation during their teacher training program to teach spelling. When these teachers were provided with the opportunity to identify those aspects of their teacher training that best prepared them, only 40 % chose to respond. One third of the teachers who responded to this open-ended question identified observation of other teachers teaching spelling while on professional placements within their teacher training as being an important factor that helped to prepare them to teach spelling. Twenty-two percent of respondents identified learning about the English language, including building their knowledge of phonemic awareness, morphological awareness, and spelling rules (phonics), as an important part of their training. In addition, 15 % of respondents identified gaining an understanding of the relationship between reading and writing as an important aspect in preparing them to teach spelling.

Teachers' perceived strengths and weaknesses in their spelling programs

The most commonly identified spelling program strength by respondents was having some degree of flexibility to adapt to individual needs (34 %). Other strengths listed by a large proportion of respondents include: the provision of explicit teaching in spelling, including phonological awareness, letter-sound correspondences, or spelling rules (22 %), spelling being made relevant and meaningful (e.g., using topic related words or words from student work) (14 %), and having regular/daily sessions on spelling (13 %).

The most commonly identified weakness in their spelling program was the lack of time available to teach spelling (41 %). Other commonly identified weaknesses included not being able to cater to students' individual needs (17 %), lack of knowledge about spelling instruction (9 %), and providing insufficient instruction on the skills that are fundamental to learning to spell (i.e., letter sound knowledge, phonemic awareness, morphological knowledge, or spelling rules) (9 %).

Discussion

This study aimed to update our knowledge about the spelling assessment and instruction practices that are used in elementary schools with a particular focus on the frequency with which teachers provide explicit teaching in the skills that underlie spelling development. A comparison of teachers' theoretical beliefs about spelling instruction and their reported practice was also conducted. In addition, we investigated teachers' perceived preparedness to teach spelling and teachers' perceptions of the strengths and weaknesses in their classroom spelling programs. The findings of our study allow us identify areas where professional development is needed to enhance the provision of evidence-based spelling assessment and instruction practices in the classroom context.

The first research question sought to identify the reported spelling assessment practices of classroom teachers. The results showed that most teachers used formal assessment measures as a basis to plan instruction. There was large variability in the

assessment measure selected and their respective psychometric properties. The majority of respondents who used formal assessment appeared to be adopting some form of developmental approach, by indicating that the assessment results were analyzed for gaps in spelling knowledge (64 %), rather than reporting standardized scores alone.

The second research question sought to identify the spelling instructional practices of classroom teachers. The majority of respondents utilized a published spelling program (70 %) and separated students into instructional groups based on assessment results (67 %). The frequency of grouping reported in this sample is similar to the 60 % level reported in the Fresch (2003) study. In addition to group based instruction, a high proportion of respondents used some degree of individualization of the spelling program with 60 % of teachers providing individualized spelling lists. In fact, only 6 % of respondents used the same list for the entire class. These results are inconsistent with those reported in previous surveys where most teachers reported using a common spelling list across the classroom (Fresch, 2003; Johnston, 2001; Traynelis-Yurek and Strong, 1999). Such differences across studies are likely due to the difference in contexts (New Zealand versus US) and/or changes to teaching practice over time in response to increased pedagogical knowledge about spelling. The New Zealand curriculum has traditionally had an emphasis on small group/individualized instruction for reading (Ministry of Education, 2003), and although skills underlying spelling development have not traditionally been taught explicitly in New Zealand classrooms (Tunmer et al., 2008), teachers may feel more comfortable individualizing aspects of their literacy program. Teacher knowledge regarding the importance of an individualized approach to spelling instruction may also have increased over the 10 years since the last large-scale survey of teacher's spelling practices. Despite most teachers providing some degree of individualization in their spelling instruction, a large proportion of respondents were concerned about their inability to provide adequate individualized instruction.

Teachers reported providing some explicit instruction in a range of skills underlying spelling success including phonics, phonological awareness, proofreading, dictionary skills, and studying spelling rules. The provision of such reported teaching strategies, however, appeared to be generally unsystematic with teachers implementing a range of possible strategies sporadically. Graham et al. (2008) also explored the frequency that explicit instruction was provided in a number of skills 'at least weekly': phonics (84 %), phonological awareness (88 %), spelling rules (83 %), proofreading (71 %). The current results showed the following provision of 'at least weekly' instruction: phonics (74 %), phonological awareness (73 %), spelling rules (89 %), proofreading (98 %). The divergence in results may be due to the different grade levels included across the studies. The current study focused on older students (equivalent to US grades 2–6) where explicit instruction in phonological awareness and letter knowledge skills, for example, would be less routinely warranted in the upper grades.

The third research question sought to compare teachers' beliefs about spelling instruction with their reported practices. The results showed a large dissociation between beliefs and practices, with a mismatch identified in 8 out of the 10 variables investigated. The greatest level of mismatch was present for exploring important

components of spelling instruction (i.e., phonics, phonological awareness, spelling rules, spelling patterns). Although Fresch (2003) also reported disparity between teachers' beliefs and spelling practices for the majority of areas they explored, our study is unique in providing an analysis of the divergence between teacher beliefs about specific spelling instruction tasks and their reported use. It should be noted that what teachers actually teach is likely to be even less robust and frequent than what they report teaching. Therefore, there is likely to be an even larger disparity between teachers' beliefs about teaching spelling and instruction than indicated in the current data. The teachers' thoughts regarding their preparedness to teach spelling and identified strengths and weaknesses in their spelling programs (research questions 4 and 5) give some insight into why there was such high dissociation between their beliefs and practices in this area. In general, respondents were dissatisfied with their training in spelling instruction and many cited needing further focus on implementing explicit instruction in skills underlying spelling success. Research demonstrating the difficulty many New Zealand and US classroom teachers have with phonological awareness tasks is in line with these results (Carroll et al., 2013; Spencer et al., 2008).

The results also suggest that professional development for teachers regarding spelling instruction needs to go beyond providing teachers with content knowledge (the 'what' to teach) and be more focused on supporting teachers to implement specific strategies in their classroom (the 'how' to teach). In a similar vein, Neuman and Cunningham (2009) showed that teacher training that included both coursework and coaching had a superior impact on teachers' early literacy instructional practices. In fact, providing coursework alone had a negligible effect in the classroom. Other studies have also shown the value of including both workshop and mentoring components to in-service professional development for teachers (e.g., Brady et al., 2009).

The most commonly identified strength of the spelling program was the teachers' ability to provide individualized instruction. This response fits the assessment and instructional practices reported above and, in contrast to previous studies, suggests a developmental approach to spelling was taken by the majority of teachers. The second most frequently reported strength was the provision of explicit instruction (reported by around 20 % of respondents). Such results imply that some teachers feel proficient in their ability to explicitly teach important components of spelling development, and highlight the variability in strategies used and level of expertise across teachers.

The most commonly identified weakness of spelling programs was lack of time to teach spelling (recognized by over 40 % of respondents). The large proportion of teachers struggling to find time to teach spelling may go some way to explaining the dissociation between teacher beliefs and practices about spelling instruction highlighted above. For example, Fang (1996) proposed that the reality of classroom life frequently acts as a barrier to the implementation of classroom practice that aligns with teachers' pedagogical beliefs.

Implications

Teachers who responded to this survey seemed to recognize the importance of spelling as a distinct instructional area in the curriculum and most subscribed to the belief of spelling as a linguistic skill. The reality of reported practice, however, was

generally at odds with teachers' theoretical beliefs about spelling. The results indicated that such disparity may be due to a lack of focus on teaching skills that underlie spelling success in initial teacher education, inadequate ongoing professional development in this area for classroom teachers, and the reality of a crowded curriculum with many demands placed on teachers.

The results call, once again, for a focus on building students' knowledge of language structure in initial teacher education (see Moats, 2009). Additionally, professional development for classroom teachers needs to go beyond espousing the importance of spelling and the essential skills needed to be a good speller, and instead to support implementation of evidence-based spelling practices in the classroom (e.g., through mentoring or coaching of teachers). Only then will students' full potential be realized, not only in spelling accuracy, but in the multiple areas of the curriculum influenced by spelling skills.

Appendix: Survey instrument

1. Demographic Information

What province is your school located in?

What decile is your school?

At what type of school do you teach?

Public

Private

Catholic

Which of the following best describes your school setting?

Main urban (min. pop. 30,000)

Secondary urban (10,000–29,999)

Minor urban (1,000–9,999)

Rural center (300–999)

Rural area (max. pop. 299)

What is the total number of students at your school?

What year(s) do you currently teach?

How many students in your class?

How many years have you been teaching?

What is your highest educational degree?

Bachelor

Masters

Doctoral

Other (please specify)

2. Spelling Assessment Practices

2-1. If you use a formal spelling assessment measure, please identify it here.

2-2. Do you use spelling assessment results to plan instruction? (yes–no)

- 2-3. If you use spelling assessment results to plan instruction, please explain how you do this.
3. Spelling Instruction Practices
- 3-1. If you use a published spelling program in your classroom, what do you use?
- 3-2. Do you separate students into spelling groups based on spelling ability? (yes–no)
- 3-3. If you separate students into spelling groups based on spelling ability, how is spelling ability determined?
- 3-4. Are students given spelling lists (e.g., a weekly set of words) to study? (yes–no)
- 3-5. If students are given spelling lists to study, how are these lists assigned? Please rate how often you used each of the strategies listed below. (never—not very often—about half the time—most of the time—always)

The whole class receives the same word list

Each spelling group receives the same list

Each student receives an individualized spelling list

Other (please specify)

- 3-6. If students are given spelling lists to study, how is the content of lists determined? Please rate how often you used each of the strategies listed below. (never—not very often—about half the time—most of the time—always)

Words that share common letter combinations or spelling patterns

Words from a published spelling program

Words from the curriculum

Words from current reading materials

Words suggested by students

Words misspelled in the students' writing

Common high frequency words

Other (please specify)

- 3-7. Please rate how often you use each of the following instructional activities to teach spelling. (never—several times a year—monthly—weekly—several times a week—daily)

Completing text book exercises

Spelling games

Sorting words into different spelling patterns or word families

Writing the words multiple times

Alphabetizing the words

Looking up the words in the dictionary

Writing the words with their definitions

Using the words to write complete sentences or stories

Other (please specify)

- 3-8. How often do you provide explicit instruction in letter-sound knowledge? (never—several times a year—monthly—weekly, several times a week—daily)
- 3-9. How often do you provide explicit instruction in phonological awareness, such as rhyming, identifying the individual sounds in words, deleting or adding sounds in a word, substituting one sound for another in a word? (never—several times a year—monthly—weekly—several times a week—daily)
- 3-10. How often do you provide explicit instruction in the spelling rules of English? For example, “When we add a suffix to a word with a short vowel, the final consonant of the base word is doubled”. (never—several times a year—monthly—weekly—several times a week—daily)
- 3-11. How often do you provide explicit instruction in identifying meaningful chunks within words? For example, root/base words and common prefixes and suffixes. (never—several times a year—monthly—weekly—several times a week—daily)
- 3-12. How often do you provide instruction in visual strategies (e.g., look-cover-write-check) for spelling? (never—several times a year—monthly—weekly—several times a week—daily)
- 3-13. Please rate how often you make each of the following adaptations to your spelling curriculum for children who struggle with spelling. (never—several times a year—monthly—weekly—several times a week—daily)

One-on-one help from the teacher, another adult, or peer

Help from another professional (e.g., RTLit or RTLB)

Teaching of phonological awareness

Teaching of letter-sound correspondences

Assigning extra homework

Assigning fewer spelling words

Assigning words that are easier to spell

Other (please specify)

- 3-14. Do you make any modifications for advanced spellers? (yes—no)
- 3-16. If you do make modifications for advanced spellers, please briefly describe these modifications.
4. Comparison of beliefs about spelling instruction and reported current practice
- 4-1. Please rate the following beliefs about spelling (strongly agree—somewhat agree—neither agree nor disagree—somewhat disagree—strongly disagree)

Teaching letter-sound correspondences is an important component of spelling instruction.

Teaching phonological awareness is an important component of spelling instruction.

Teaching spelling rules is an important component of spelling instruction.

Spelling instruction should include practice at recognizing patterns and relationships between words through activities such as word sorting. Writing a word several times is an effective way to learn to spell that word.

Students should be grouped by ability for spelling instruction.

Students should receive spelling lists based on their individual needs.

Using word lists from a recognized spelling program is an effective way of helping students develop spelling skills.

Spelling words should come from students' own writings.

Students should self-select some of their own words for study.

5. Preparing teachers to teach spelling

5-1. Do you feel that you had adequate preparation in your teacher training program to teach spelling?

5-2. If you feel that your teacher training program did not adequately prepare you to teach spelling, what would you have liked to have learned?

5-3. If you feel that you received adequate preparation to teach spelling, what aspects of your teacher training program best prepared you?

6. Teachers' perceived strengths and weaknesses in their spelling programs

6-1. The biggest strength in my current spelling program is....

6-2. The biggest weakness in my spelling program is....

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