What can we learn from ICAS – Spelling Year 3 (2013–2015) results?
What do ICAS – Spelling Year 3 (2013–2015) results tell us about how to teach spelling?
The design of ICAS – Spelling

Spelling is

- largely predictable and
- based on spelling generalisations.

- Spelling can be

  - taught,
  - learned, and
  - tested.

- Spelling is an important skill

  - it underpins reading and writing.
ICAS – Spelling: range of words

Spelling words that are tested form a continuum.

Frequently-used/common words with simple spelling patterns

Less frequently-used/less common and technical words with difficult or unusual spelling patterns
ICAS – Spelling: types of spelling knowledge tested

1. Visual
   – using memory of the visual features of a word

2. Phonological
   – using sound-letter relationships

3. Morphological
   – using parts of words to build word families

4. Etymological
   – using word origins and derivations
ICAS – Spelling: tests four types of knowledge

1. **Visual: High-frequency sight words**
   - e.g. *the*, *you*, *some*, *one*

2. **Phonological: Phonics** is the knowledge of how sounds are represented by letters or combination of letters, and the knowledge that some sounds are represented by more than one combination

3. **Morphological: Spelling generalisations**
   - e.g. doubling the final consonant when adding a suffix to retain the short vowel sound in the base word (e.g. *run* / *running*, *beg* / *begging*)
   - e.g. adding an *e* or *i* after *c* or *g* changes their pronunciation to make the sounds /s/ and /j/ (e.g. *celery*, *dance*, *gene*, *page*)
   - e.g. knowing that compound words do not lose or gain any letters when the component words are combined (e.g. *lighthouse*, *starfish*)

4. **Etymological**: the knowledge of the origins of a word or parts of a word and how these parts combine
ICAS – Spelling: phonics and spelling generalisations

- Australian and New Zealand curricula strongly encourage the teaching of phonics to improve reading skills.

- This emphasis on the teaching of phonics and word knowledge is supported by ICAS – Spelling.

EAA believes that the systematic teaching of phonics and spelling generalisations will improve student ability in three core skills: Spelling, Reading, Writing.
ICAS – Spelling: structure of the assessment

ICAS – Spelling assesses spelling in four different contexts via two different activities:

1. Section A: Dictation (Spelling production)
2. Section B: Spelling generalisations (Spelling selection)
3. Section C: Error identification (Spelling selection)
4. Section D: Error correction (Spelling production)
ICAS – Spelling: structure (contd. 2)

1. Section A: Dictation (targeted words in separate sentences)

- Traditionally the ‘purest’ test of spelling – no interference from distractors.

- Drawback – variable pronunciation affects students’ perception and spelling of dictated words. Teachers are instructed to read in a normal voice with no exaggeration of syllables.

- ICAS Spelling watch list 1: avoid words with acceptable variations in pronunciation e.g. mischievous (pronounced as /mis-chee-vi-us/ or /mis-chi-vus/).

- ICAS Spelling watch list 2: avoid words with acceptable variations in spelling (Australian and US) according to the Macquarie Dictionary, e.g. organisation or organization, colour or color, judgement or judgment
ICAS – Spelling: structure (contd. 3)

2. Section B: Spelling generalisations (Multiple-choice)

- Best supports the assessment of spelling generalisations, compound words, homophones, and the understanding that a sound can be represented in more than one way.

- **Drawback** – MC items are perceived as easier because students do not produce spelling.

- **ICAS Spelling watch list:** all options within an item (MCQ) should contain words of similar difficulty. All MCQs should also test the same spelling generalisation.
ICAS – Spelling: structure (contd. 4)

3. Section C: Error identification (Proofreading)
   - Continuous text is a more authentic context for testing spelling.
   - Students identify a set number of spelling errors.
   - Reflects and reinforces students’ practice of proofreading for spelling errors.
   - **Drawback** – the mind sometimes overlooks misspellings in common words and sees what should be there. Does this tell us anything about spelling ability?
   - **ICAS Spelling watch list:** distractor words should not be modelled elsewhere in the test.
ICAS – Spelling: structure (contd. 5)

4. Section D: Error correction

- Logical progression from Section C.

- Continuous text with highlighted spelling errors that are written phonetically.

- Two-step process:
  1. first recognise each targeted word, and
  2. then write the correct spelling (productive demonstration).

- **Drawback** – modelling incorrect spelling may influence spelling outcome

- **ICAS Spelling watch list**: ensure that students know what the phonetically-written words mean. The context of the text should also help with this.
<table>
<thead>
<tr>
<th>Section</th>
<th>Questions per section</th>
<th>Test format and type of marking</th>
<th>Time allocated per section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A: Dictation</td>
<td>12</td>
<td>Teacher dictates words in sentences. Students write target words. Hand marked.</td>
<td>Teacher dictation – flexible/variable time</td>
</tr>
<tr>
<td>Section B: Rules and conventions</td>
<td>13</td>
<td>Students shade in multiple-choice option. Machine marked.</td>
<td></td>
</tr>
<tr>
<td>Section C: Error identification</td>
<td>6</td>
<td>Students fill in bubble under word. Machine marked.</td>
<td>25 minutes</td>
</tr>
<tr>
<td>Section D: Error correction</td>
<td>9</td>
<td>Students write correct word. Hand marked.</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL: 40
The relationship between spelling, reading and writing

- **Spelling** = the decoding of words into sounds and letter patterns.

- **Reading and writing** = the encoding of sounds and letter patterns into meaning.

- **Spelling, reading and writing are mutually reinforcing**
  - what students learn in one area can be applied to the others.

- **In the classroom, spelling is usually assessed in two ways:**
  - as a component of a writing task, and
  - as a list of ‘spelling words’.
The relationship between spelling, reading and writing (contd. 2)

- **Spelling as part of writing tasks**
  - Correct spelling makes writing intelligible. It is crucial in enabling students to express their ideas.
  - However, when marking students’ writing, spelling is not usually given a high priority because teachers often focus on other aspects, such as structure, coherence and grammar.

- **Choice of vocabulary in writing affects spelling performance**
  - Comparing students’ spelling ability in writing is difficult because students make different vocabulary choices.
  - Some use only high frequency words and spell them correctly. Others use more low frequency challenging words and get some right and some wrong. How can you compare their spelling achievement?
### The relationship between spelling, reading and writing (contd. 3)

<table>
<thead>
<tr>
<th>What is tested?</th>
<th>ICAS Writing – Spelling criterion</th>
<th>ICAS Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Ability to write a sustained piece of writing on a specific topic common to all year levels Year 3–12.</td>
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<td></td>
<td>• <strong>Provides a limited ‘spelling IN writing’ score only.</strong></td>
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<tr>
<td></td>
<td>• Is not indicative of students’ ability to spell a variety of words with different sound patterns and spelling rules.</td>
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<tr>
<td></td>
<td>• Ability to spell words in a variety of contexts that are specific to three levels (Paper A – Year 3, Papers B/C – Years 4/5 and Papers D/E – Years 6/7).</td>
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<tr>
<td></td>
<td>• <strong>Contextualises spelling IN reading.</strong></td>
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<tr>
<td></td>
<td>• Tested words are within student vocabulary range.</td>
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<tr>
<td></td>
<td>• Obscure, arcane and technical / scientific words often found on spelling lists and Spelling Bees are avoided.</td>
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</tbody>
</table>
The relationship between spelling, reading and writing (contd. 4)

- Using spelling word lists to teach and test spelling and vocabulary
  
  **Advantage:** comparisons are easier and teachers can judge student progress.
  
  **Disadvantage:** word lists are artificial constructs. No guarantee that a student who can spell a word correctly in a ‘spelling test’ can spell it correctly in a more authentic writing task.

- Spelling word lists should:

  - be based on phonics and spelling generalisations
  
  - specifically target letter-sound relationships and/or spelling generalisations
  
  - **not** be merely theme-based word lists, even though these are useful for extending vocabulary.
What can we learn from ICAS – Spelling Year 3 results?

1. Choice of words

- **Assessing spelling is difficult.** The range of words available to be assessed is as large as the English lexicon.

- ICAS – Spelling aims to assess words that are *mainly within the vocabulary range of students of that age group*, whether they use those words themselves or would have read them in books.

- The following results are therefore only *generally representative* of what students can do.

- The focus is on the **implications** of these results on the teaching of spelling and reading.
What can we learn from ICAS – Spelling Year 3 results?
(Contd. 2)

2. Wide range of spelling ability

- ICAS – Spelling results show that for some words, the difference between the most able third and least able third of Year 3 students can be up to 60 percentage points.

- This means that 90% of the top third of students can spell a word correctly that only 30% of the bottom third can.

- Three important questions:
  - What these words? (Identify)
  - Why is there such a disparity in results? (Explain)
  - What can we do to reduce the gap? (Strategize)
ICAS – Spelling Year 3 results: Discussion focus

The discussion of results will focus on two areas:

1. Letter-sound relationships/letter patterns, and

2. Spelling generalisation: Adding suffixes to words.
1. Letter-sound relationships/letter patterns

High-frequency monosyllabic words with a long vowel sound as a result of the final silent ‘e’

- **bone** (2015 Section A: Dictation, Q1)
  Facility rate 0.98 (see ICC below)
- **shake** (2014 Section A: Dictation, Q1)
  Facility rate 0.94
1. Letter-sound relationships/letter patterns (Contd 2)

ICAS Spelling tests a range of

1. digraphs
   (two letters that combine to make one sound e.g. /sh/, /ea/),

2. trigraphs
   (three letters that combine to make one sound e.g. /tch/, /our/ as in course), and

3. blends
   (two or three letters that go together, but where each letter is sounded e.g. /nd/, /spl/).

- When the less common letter combinations are assessed, the performance gap between the most able third and the least able third is large.
1. Letter-sound relationships/letter patterns (Contd 3)

- *flown* (2015 Section A: Dictation, Q4)
  Facility rate 0.65, top third 0.88, bottom third 0.34
1. Letter-sound relationships/letter patterns (Contd 4)

- *stalk* (2014 Section A: Dictation, Q5)
  Facility rate 0.60, top third 0.86, bottom third 0.25
1. Letter-sound relationships/letter patterns (Contd 5)

- *coupon* (2014 Section A: Dictation, Q7)
  Facility rate 0.43, top third 0.75, bottom third 0.13
1. Letter-sound relationships/letter patterns (Contd 6)

- *kitchen* (2013 Section D: Error correction, Q32 – misspelt as *kichin*). Facility rate 0.67, top third 0.92, bottom third 0.30
1. Letter-sound relationships/letter patterns (Contd 7)

More complex letter patterns such as /augh/, /ough/ and /tion/

- caught (2015 Section A: Dictation, Q3)
  Facility rate 0.69, top third 0.95, bottom third 0.28
1. Letter-sound relationships/letter patterns (Contd 8)

- *naughty* (2014 Section B: Multiple choice, Q24)
  Options: (A) *noughty* (B) *dough*, (C) *rough* (D) *coughed*.
  Facility rate 0.78. Difference between the top third (0.98) and bottom third (0.45) was less marked than *caught* (0.95 and 0.28).

- Probably reflects the way the word was assessed as a multiple-choice item rather than a dictated word (i.e. selection skill rather than production skill).
1. Letter-sound relationships/letter patterns (Contd 9)

- Finding:

  The results show that the lower ability group of students have significantly greater difficulty mastering less common letter-sound combinations than the higher ability group of students.
1. Letter-sound relationships/letter patterns (Contd 10)

- *juice is an interesting exception* (2014 Section A: Dictation, Q3)
  Facility rate 0.87, top third 0.99, bottom third 0.63
- The combination /ui/ is rarely used as a digraph, but its high frequency probably meant that students of all abilities had few problems with the word. Students also possibly understood the word as a whole, like a sight word.
1. Letter-sound relationships/letter patterns (Contd 11)

- Organising words into groups of letter-sound relationships and letter patterns helps make English words predictable. Grouping words based on sounds or phonemes allows ‘chunking’ to occur. ‘Chunking’ is the term used in psychology for how people group together pieces of information with similar features. Recalling one piece of information brings similar pieces of information to mind.

- Phonics allows the use of ‘chunking’ to aid the teaching of reading and spelling. Teaching students how to ‘chunk’ information can help lower ability students. The more students are able to learn words in ‘chunks’, the more words they will learn.

- This is why spelling lists organised using phonic knowledge and spelling generalisations help students learn more effectively.
2. Spelling generalisation: Adding suffixes to words

- In English, **affixes (prefixes and suffixes)** are used to express meaning. How they are added to base words depends on the meaning units within words (morphemes) and word origins (etymology).

- In spelling, the addition of affixes can be generalised:
  - **Prefixes** do not usually affect the spelling of the base word.
  - **Suffixes** do affect the spelling of the base word.

- Changes with the addition of a suffix – some examples
  - to keep a short vowel short, double the final consonant; or
  - to keep the long vowel sound, drop the silent ‘e’; or
  - in words ending in short vowel sound ‘y’, change ‘y’ to ‘i’.

- Students need to learn these spelling generalisations to be effective spellers.
2. Spelling generalisation: Adding suffixes to words  
(Contd 2)

- Spelling generalisations are assessed in ICAS – Spelling. The following are examples of items from Section A: Dictation that assess rules regarding suffix addition.

- *hiding* (2015 Section A: Dictation, Q2)  
  Facility rate 0.85, top third 0.97, bottom third 0.67
2. Spelling generalisation: Adding suffixes to words
(Contd 3)

- *sprained* (2015 Section A: Dictation, Q8)
  Facility rate 0.57, top third 0.87, bottom third 0.19

The most common error was not in the consonant blend /spr/ or the digraph /ai/ but in the past tense suffix when students added only /d/ instead of /ed/.
2. Spelling generalisation: Adding suffixes to words

(Contd 4)

- Spelling rules are usually assessed in Section B: Multiple-choice as this section allows a targeted assessment.

- To test the addition of a suffix, ICAS – Spelling normally presents the base word (e.g. *run*) and the word with the suffix added (e.g. *running*). The options are in a table and students select the correct option when the suffix is added.

<table>
<thead>
<tr>
<th>15. Choose the word spelt CORRECTLY when ‘y’ is added.</th>
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<tbody>
<tr>
<td><strong>WORD</strong></td>
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<tr>
<td>(A)</td>
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<td>(C)</td>
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<table>
<thead>
<tr>
<th>16. Choose the word spelt CORRECTLY when ‘er’ is added.</th>
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<tbody>
<tr>
<td><strong>WORD</strong></td>
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<tr>
<td>(A)</td>
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</table>
2. Spelling generalisation: Adding suffixes to words (Contd 5)

- *gloomy* (2015 Section B: Multiple choice, Q15)
  Options: (A) *gloomy* (B) *curlly*, (C) *stary* (D) *tastey*
  Facility rate 0.67, top third 0.90, bottom third 0.33
2. Spelling generalisation: Adding suffixes to words (Contd 6)

- *miner* (2015 Section B: Multiple choice, Q16)
  Options: (A) shoper (B) beginer (C) rober (D) miner
  Facility rate 0.49, top third 0.76, bottom third 0.18
2. Spelling generalisation: Adding suffixes to words (Contd 7)

- *shadows* (2014 Section B: Multiple choice, Q15)
  Options: (A) *heros* (B) *familys* (C) *shadows* (D) *elfs*
  Facility rate 0.59, top third 0.84, bottom third 0.32
2. Spelling generalisation: Adding suffixes to words
(Contd 8)

- **loaves** (2013 Section B: Multiple choice, Q15)
  Options: (A) *loaves* (B) *glases* (C) *storys* (D) *tomatos*
  Facility rate 0.51, top third 0.78, bottom third 0.24
2. Spelling generalisation: Adding suffixes to words
(Contd 9)

Applying generalisations makes spelling predictable

- As with letter-sound relationships or letter patterns, rules about the addition of suffixes help to make English spelling predictable.

- Teaching students these generalisations means that they can apply them to words they may not have encountered before.

- Incorrect spelling is more predictable in terms of the errors made.

- Teaching the exceptions to or extensions of the generalisations increases the pool of words that students can spell correctly.
Conclusion

- This discussion of ICAS Spelling Year 3 results has focussed on two main areas:
  1. letter-sound relationships or letter patterns, and
  2. spelling generalisations relating to the addition of suffixes to words.

- The performance gap between the most able third and least able third in these two areas is up to 60 percentage points. This gap is too large and the aim should be reduced.

- The performance gap can be reduced in a systematic and practical way through the use of targeted spelling lists based on the largely predictable and rules-based nature of English spelling.