5

Assessment of spelling

In this chapter we discuss the purposes of assessment and describe key principles and techniques of spelling assessment. We also outline some issues in spelling assessment that the research literature raises. In addition, we provide examples of spelling assessment processes used in the classroom, some of which employ new technologies. As in any other learning areas, the assessment of spelling should be fair, educative, valid, comprehensive, and varied (McMillan, 2000). It should also be embedded in, or closely linked to, the spelling curriculum. Multiple assessments need to be used to assess students' spelling progress, and these need to be conducted on an ongoing basis to allow the teacher to build a clear and accurate understanding of each student's learning. Thus, assessment should be seen as a *process* rather than an isolated act.

Assessment purposes

There are different types of assessments for different purposes. Purposes of spelling assessment include:

* **screening to gain an overall idea of where students 'are at' in their spelling** screening is a fairly blunt instrument but it can help teachers identify struggling students, inform initial groupings of students, and can inform the design of appropriate teaching programs for cohorts of students

- **diagnostic assessment** (assessment *for* learning) to dig deeper and identify individual student's areas of strength and need with a degree of precision

- **formative assessment** (assessment *for* learning) to monitor growth/progress and provide timely feedback to students

- **summative assessment** (assessment *of* learning) to measure student outcomes in spelling, to evaluate the efficacy of teaching programs and to report to parents and other stakeholders.

As far as classroom teachers are concerned, the overarching purpose of assessment is to enhance students' learning and to report on their progress to parents and other bodies. In order to enhance students' learning, screening, diagnostic assessment and progress monitoring are required.

Assessment strategies

Readers may already be aware of the differences between formal and informal, norm-referenced and criterion-referenced assessments. While these are not described in depth in this chapter, we refer readers who would like more information about these assessment concepts to Barratt-Pugh and Oakley (2007). In most cases, teachers will use informal, criterion-referenced assessments to assess spelling. These might involve the use of spelling inventories, product analysis of spelling samples, dictations, observation, conversations with students and teacher-made or informal tests from commercial spelling workbooks. The purpose of these assessments will be to gauge each student's growth in spelling and how they are responding to the teaching and learning experiences offered. Students' attitudes towards spellings and use of spelling strategies should also be assessed. Feedback to students should be provided on a regular and ongoing basis, using the assessment information.

Calleira and Howard (2014) note that different spelling assessments, which may purport to assess the same thing (assessing students' spelling ability and performance), may not actually be measuring the same thing because of the different processes and skills involved, and different levels of cognitive load involved. They cite Willet and Gardiner's (2009) study in which 75 per cent of 2369 primary

school students spelt more words correctly when words were dictated compared to their spelling performance on the National Assessment Program Literacy and Numeracy (NAPLAN) spelling error correction and proofreading items. This illustrates why multiple spelling assessment techniques are required, so that a range of skills and abilities are assessed, giving students a fair chance to demonstrate their abilities. Assessment of spelling and error-correction tasks is discussed later in this chapter.

Several assessment strategies relevant to classroom teachers are described in this chapter but the list is not exhaustive. Readers are encouraged to consult dedicated texts on assessment to deepen their knowledge of assessment principles, and to refer to providers such as the Australian Council of Educational Research (ACER) for a range of tests and assessment resources.

Spelling product analysis

Spelling product analysis involves analysing students' spelling, in particular, the kinds of errors they make. Error analysis is a key diagnostic assessment technique that enables teachers to ascertain what students know about spelling and to tailor instruction accordingly. An example is provided in Figure 5.1. There are many different error analysis forms available in different books and programs.

Spelling inventories

According to Barger, (2009), spelling inventories such as those in the *Words their way* resources (Bear, et al., 2008) are useful ways of analysing errors because they give a lot more than just a 'correct' or 'incorrect' rating. They also show which 'features' of words (such as short vowels, long vowels, syllable junctures, prefixes and suffixes) students can use correctly or are attempting to use ('using and confusing'). This information is useful for guiding teaching and can also be helpful in raising students' capacity to learn, as well as their self-esteem – students can be given some useful, positive feedback about what they *can* do. The information gleaned can also be used to provide comprehensive reports to parents about students' progress in spelling.

Spelling Error Analysis Form

Name of student	Troy						
Student's attempt	Correct spelling	Errors in representing all sounds	Errors in sequencing of letters	Errors in choosing correct grapheme (eg, 'ai' instead of 'ea' in 'bear')	Errors in using common orthographic rules such as doubling letters	Errors in using morphemes (including prefixes and suffixes)	Other/ comments
kagru	kangaroo	✓ *not all syllables or sounds are represented*		✓ *'u' instead of 'oo'*			
fone	phone			✓ *'f' instead of 'ph'*			
warkig	walking	✓ *'n' in 'ing' missing*				✓ *wark for walk* *ig for ing*	
folig	fooling	✓ *'n' missing*		✓		✓	
runing	running				✓ *no double 'n' in 'running'*		*included 'n' in the 'ing' this time – inconsistent*

Figure 5.1

Spelling Error Analysis Form, partially based on *First Steps* Error Analysis

Words their way was discussed in Chapter 1 of this book as a developmental approach to spelling instruction. The spelling inventories in *Words their way* are: the Primary Spelling Inventory (PSI) for students from the later part of Pre-school to Year 3; the Elementary Spelling Inventory (ESI) for students from Year 1 through primary school; and the Upper-level Spelling Inventory (USI), which is aimed at students in upper primary school onwards. Unlike the more open error analysis shown in Figure 5.1, spelling inventories (Figure 5.3) provide specific lists of words that are used for analysis. The PSI comprises 26 words, beginning with *fan*, *pet* and *dig* and ending with *tries*, *clapping* and *riding*. The ESI begins with simple CVC words like *bed* and ends with multisyllabic words such as *confiden*t and *opposition*.

Through analysing students' spelling attempts using spelling inventories, teachers can gauge their stage of spelling development, and can find out which word features need to be taught. For example, if a student already has a firm grasp of initial and final consonants, and of short vowels, the teacher would not put emphasis on teaching these word features but would concentrate on the next features in the developmental hierarchy, being digraphs and blends. Spellings attempts are analysed by the teacher through referring to a 'feature guide'. Through this process, it is possible to ascertain which spelling features students have control of, which they are attempting (using and confusing), and which are still beyond their reach.

An example of an Elementary Feature Guide, completed for a Year 4 student, is shown in Figure 5.3. It can be seen that the child, Aleisha, has control of beginning and final consonants in words, and short vowels and digraphs (although she missed the /sh/ in *shopping*). She starts to struggle when it comes to long vowels and other vowels. Thus, there should be emphasis on these word features in her instruction. She would be placed in the Within Word Pattern (middle-to-late) developmental stage and word sorts, and other strategies to develop her knowledge of these features should be put into place. Aleisha also has very little knowledge of morphology (she scored 0 in Derivational Relations). According to *Words their way*, morphology should not be an instructional priority for Aleisha until she has vowels and syllables and affixes under control. However, this very low score indicates that she has little understanding of the parts of words that carry meaning, and she would benefit from instruction in vocabulary.

Figure 5.2

Aleisha's spelling test results

Words Their Way Elementary Spelling Inventory Feature Guide

Student _Meisha V._   Teacher _Miss Taylor_   Grade _4_   Date _Jun '15_

Words Spelled Correctly: ___ / 25   Feature Points: ___ / 62   Total ___ / 87   Spelling Stage _____

Stages and gradations →	Emergent		Letter Name			Within Word Pattern		Syllables and Affixes			Derivational Relations		Feature Points	Words Spelled Correctly
	Late	Early	Middle		Late	Early Middle	Late	Early	Middle	Late	Early	Middle		
Features → ↓Words	Consonants Begin.	Final	Short Vowels	Digraphs	Blends	Long Vowels	Other Vowels	Inflected Endings	Syllable Junctures	Unaccented Final Syllables	Harder Suffixes	Bases or Roots		
1. bed	b ✓	d ✓	e ✓											1
2. ship		p ✓	i ✓	sh ✓										1
3. when			e ✓	wh ✓										1
4. lump	l ✓		u ✓		mp ✓									1
5. float		t ✓			fl ✓	oa								
6. train		n ✓			tr ✓	ai ✓								1
7. place					pl ✓	a-e ✓								1
8. drive		v ✓			dr ✓	i-e ✓								1
9. bright					br ✓	igh								
10. shopping			o ✓	sh				pping ✓						
11. spoil					sp ✓		oi							
12. serving							er	ving						
13. chewed				ch ✓			ew	ed ✓						
14. carries							ar ✓	ies	rr ✓					
15. marched				ch ✓			ar ✓	ed						
16. shower				sh ✓			ow ✓			er ✓				1
17. bottle									tt	le				
18. favor our									v ✓	er our				
19. ripen									p ✓	en ✓				1
20. cellar									ll ✓	ar				
21. pleasure											ure	pleas		
22. fortunate							or ✓				ate	fortun		
23. confident											ent	confid		
24. civilize ise											ize ise	civil		
25. opposition											tion	pos		
Totals	7 /7	5 /5	5 /6	7 /7	3 /5	4 /7	2 /5	4 /5	2 /5	0 /5	0 /5	38 /62	9 /25

Dictation

Spelling dictation is a fairly traditional means of assessing spelling. Here, the teacher reads out sentences and the student writes them down. This moves away from writing words in isolation, which is a fairly artificial act (unless writing lists). Once the dictation has been carried out, teachers can analyse the errors. It has been pointed out, though, that dictation can be difficult for some students as they have to remember the sentence as well as spell the words (Reason & Boote, 1994), and thus entails higher cognitive load.

A dictation test taken by a female student at the end of Year 3 is shown in Figure 5.4. She had spent some time learning 'qu' words in class and has been successful in spelling these in the dictation. There are other words in the dictation task, such as *asked*, *answered* and *decided* which were not on her word list for the week that she has not been able to spell, although analysis reveals that she is usually able to use the inflected ending, '-ed' and represents all sounds and syllables in words. She misspelt *quiet* writing *quite* instead, because of a transcribing error on the first day of her Look-Cover-Write-Check process. She then went on to practise *quite* instead of *quiet* each day of the week.
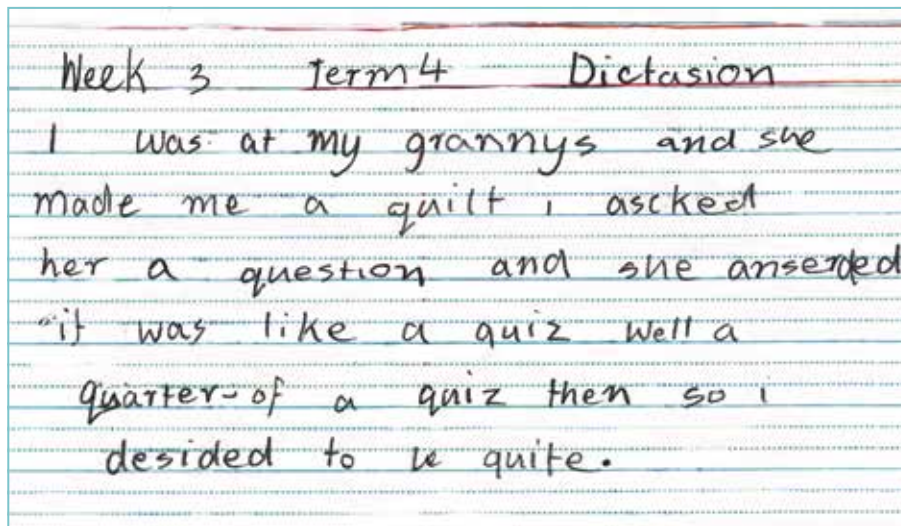
Figure 5.3

Example of spelling inventory

Self-assessment and reflection

As in all areas of literacy, self-assessment of spelling should be
employed as this helps students become metacognitive, and thus
strategic, about their spelling. It can also enhance their self-efficacy
and sense of control over their own learning. Students can test
themselves (or be tested by peers) and be encouraged to compare their
spellings with conventional spellings – doing their own error analysis
may help them become more conscious of aspects of phonology,
orthography, morphology and etymology. Furthermore, students can
also self-assess the *strategies* they use to spell (see Figure 5.5).

Spelling strategies self-assessment checklist	
How did I learn this word?	
I did Look, Say, Cover, Write, Check until I got it right	
I compared it with a word I already knew	
I looked at the word parts	
I used mnemonics	
I sounded it out	
I thought about the meaning of the word and looked for the base word	
I pictured it in my mind	

According to Ames, Levin and Joel (1992) it is particularly useful for students to self-assess against the goals that they have set themselves. Self-assessment can be deepened by having students reflect on their learning and the strategies used, and then using these reflections to set new goals, as shown in Figure 5.6.

Figure 5.6

Spelling reflection

My spelling reflections				
Date	*1st October*			
Name	*Jaydan Year 6*			
Words I've learnt to spell this week	How did I do it?	Greek and Latin roots I've learnt this week	Strategies I've improved this week	Words I want to learn next week
operation	*I used a mnemonic – there was opera at the operation. I had to remember the 'tion' not 'sion'.*	*I learnt about 'cracy' in democracy. It looks a bit like 'crazy' and has two Cs. Demo means people but I don't know why demo is in demonstation.*	*Making up mnemonics.* *Only done mnemonics and looking harder for greek and latin roots.*	*More words about the governent and parlimant as we are doing this in HASS.* *I wouldn't mind more words about businness and econs because I would like to do it at uni one day.* *A few more footy words like boundry.*
favourite	*I forced myself to remember it has a 'u' in it like colour – my favourite colour – and it has 'ite' at the end, not 'ate'. I don't know if I will keep on remembering the 'ite' part.*	*'legis' means law and it makes words like legislation.*		
selection	*It has select in it obviously and tion.*	*'poly' means many or quite a few like in polygon or*		
federal	*I always thought it was federel so all I had to rmember was the 'al' at the end. I know feral for some unknown reason so maybe I can remember feral federal.*	*'trans' means across and it's obvious when I think about it. The Transperth buses go across Perth.*		
secretion	*This is a cool word that has secret in it but it is about oozzing liquid out of it. It is another with 'tion' at the end or really just 'ion' because secret has a t at the end.*	*No more.*		
My spelling goals for next week	*Words I want to learn next week are above. I want to get better at mnemonics as well because they help me remeber. I want to start looking harder at words to find greek and latin parts roots.*			

Spelling interviews

As emphasised throughout this book, students' motivation to spell is an important factor in their successful learning. To find out about students' attitudes, spelling interviews can be carried out. Teachers can construct their own spelling interviews, which can include questions such as:

• *Why do you think people need to know how to spell?*

• *How do you feel when you want to write a word but don't know how to spell it?*

• *What kinds of spelling lessons do you like the best?*

• *What is the hardest part of spelling?*

• *What is the easiest part of spelling?*

• *Who do you know who is a good speller? How do you think they got so good?*

• *What kind of things helps you when you're trying to learn a new spelling word?*

Spelling portfolios

Spelling portfolios can be used to display students' spelling achievements and work samples over time. This kind of display can be highly motivational for students and useful for teachers and parents in that students' progress can be made visible. Students' reflections and self-assessments can be included in such portfolios.

Spelling tests

Spelling tests, both informal teacher-made tests and informal tests in commercial spelling programs, as well as formal tests such as the spelling test in NAPLAN, are used fairly frequently in primary classrooms. Informal tests are usually intended to monitor progress and provide feedback to enhance learning, whereas formal tests have

a variety of purposes and formats. For example, large-scale tests such as NAPLAN are primarily designed to assess the level of achievement of large groups of students and the efficacy of the education system. Other formal tests may be used for diagnostic purposes – to find out what a student's specific strengths and areas of need are.

The assessment of spelling has traditionally relied on informal teacher-made or spelling workbook tests, usually at the end of each week, where students receive a raw mark such as 3/20 or 19/20. This method of assessing spelling, which is still in place in some classrooms, has been criticised because it clearly does not conform to the principles of assessment listed at the beginning of this chapter. It provides limited useful information to inform teaching, limited constructive feedback to students (is not educative), and can be a source of great stress for them. For many students, this kind of testing can be demoralising if they repeatedly receive low scores. Spelling tests can be questionable in terms of fairness and validity if every student in the class receives the same test regardless of their spelling ability and the words and word features they have been taught. Another issue with spelling tests is that they do not adequately reflect students' ability to spell within the context of authentic writing tasks, where the cognitive load (Sweller, 1988), or the demands made on working memory, is generally higher. In other words, students often get words correct in spelling tests and then spell them incorrectly when writing texts (Farrall, 2012). Furthermore, words are usually marked either 'wrong' or 'right' in tests, without reference to the *features* that the student has mastered or trying to use, and supply little or no information about the *processes* or strategies students are using in their spelling. Following is a discussion of a range of informal and formal spelling tests and their benefits and limitations. First, an overview of main categories of tasks in tests is provided.

Categories of tasks in spelling tests

Spelling tests involve three broad categories of assessment tasks, which are not necessarily interchangeable because they measure different skills and processes. These tasks involve either word production, error recognition or word correction processes. A description of these tasks, pointing out their benefits and limitations, follows.

Production tasks

In word production tasks, students listen to a teacher pronounce a word and then write it down. A problem may arise if the student mishears the word, and this can occur especially if the word is not in the student's listening vocabulary. If the word is a homophone, the student may not know which spelling to use. Sometimes the test involves the teacher pronouncing the word and then reading out a sentence containing the word. However, even if the word is accompanied by a sentence, the student may not have adequate 'attentional capacity' in a test situation to make use of the contextual support given.

Error recognition tasks

In spelling tests that involve the recognition of correct or incorrect spellings, there are also issues to consider. This kind of test is often in a multiple-choice format, where the student must identify the correct spelling out of three or four alternatives. Here, seeing the distractors (such as 'oposite', 'opposit' and 'oppasite' shown in Figure 5.7) can be very confusing for some students, when they may have been able to successfully spell the word through a production task (Pearson, 2012).

Tick the correct spelling

☐ opposit

☐ oposite

☐ opposite

☐ opposate

Figure 5.7

Multiple choice spelling item

Editing/correction tasks

Sometimes spelling tests involve editing or correcting misspelt words in sentences. Pearson (2012) has pointed out that these kinds of tasks involve more than one skill; they often involve the skill of *recognising* an error as well as requiring that the student *correct* the error. In some correction tasks, the incorrect word is identified for the student and all they are required to do is supply the correct spelling, as in the NAPLAN example in Figure 5.8. However, as in the case of multiple choice assessments where the misspelt distractors can cause confusion, seeing misspelt words in correction tasks can be confusing for some students and there may be cases where the student would have been able to spell the word correctly in a production task. If we think back to the dual route connectionist model of spelling, if the correct spelling is not *strongly* represented in memory, the distractors may result in the phonological route becoming dominant, which may result in the wrong word being selected.

Formal spelling tests

A formal test is a test that has been carefully designed and tested by experts in the field and psychometric experts so that it is valid and reliable. These tests come with strict instructions which must be followed during test implementation and scoring. Formal tests are often norm-referenced, which means that they have been tested on large groups of students and tables of norms are supplied so that teachers can see where a student's performance sits relative to the larger population of students in the same age group. A stanine or a percentile can be assigned to a student's performance.(A stanine is a scale for normed test scores. It has nine points, with stanines 1–3 being below average performance, 4–6 being average performance, and 7–9 being above average performance.) Some formal tests are not norm-referenced but criterion-referenced; that is, students are assessed in terms of their performance against specific criteria and not in terms of their performance relative to other students. A selection of formal spelling tests is described below, some of which are norm referenced and others, criterion referenced.

The Writing Vocabulary Test

This test, part of Marie Clay's Observation Survey, (Clay, 2002), is for young students. In this norm-referenced (New Zealand norms) word production task, students are asked to write as many words as they can think of in ten minutes. If they cannot think of words to write,

the teacher can prompt them by asking questions such as, '*Can you write the names of any people you know*?' or '*Can you write the word "on"*?' Students are not allowed to copy from classroom charts or other spelling resources. In this individually administered (and thus time-consuming for the teacher) assessment, words written have to be spelt correctly to be credited with a point. Words spelt incorrectly can be analysed to inform the teacher's planning for teaching spelling and phonics.

The Hearing and Recording Sounds in Words (Dictation) Test

This is also part of the Observation Survey (Clay, 2002). This test assesses young students' phonological awareness (phoneme segmentation) through their ability to write a short sentence that is read out by the teacher. This test also assesses young students' ability to match plausible graphemes to phonemes. In analysing the student's spelling, the teacher counts the number of phonemes out of a total of 37 that the student is able to represent (often not using conventional spelling). See Figure 5.9.

Figure 5.9

Assessment of student spelling using Clay's dictation test

The International Competitions and Assessments for Schools (ICAS)

Spelling assessment framework assesses spelling in the four main areas of visual, phonological, morphological and etymological knowledge. Students' spelling is assessed in the four contexts of dictation,

proofreading, error correction and the application of rules and conventions. This kind of multi-dimensional test allows teachers to more fully assess spelling skills that students use in different contexts, thus providing insight into how to teach students in these contexts. A multidimensional test also offsets some of the limitations of using only one kind of task for assessment, for example a production task only. This is of value because students do not always transfer their skills and knowledge from one context to another. For more information on the ICAS, see the following website. <https://www.eaa.unsw.edu.au/forms/pdf/icas/subjects/spelling-framework.pdf>.

NAPLAN

The Australian National Assessment Program Literacy and Numeracy (NAPLAN) assesses spelling through production and correction tasks such as those illustrated in Figures 5.8, 5.10 and 5.11. Because this test only takes place in Australia in May of Years 3 and 5 for primary aged students, it can only reveal a limited picture of students' spelling knowledge and growth. Other classroom-based assessments should be used to diagnose students' strengths and areas of need in spelling more regularly.

Figure 5.10

NAPLAN spelling test examples. Students must identify and correct errors

YEAR 5 LANGUAGE CONVENTIONS

Each sentence has one word that is incorrect.
Write the correct spelling of the word in the box.

17 The bus stoped and the children got on.

18 I offen visit my uncle at the weekend.

19 My aunt was nitting a scarf.

20 Last week we went on an eckscursion.

Figure 5.11

NAPLAN spelling test example questions. Students must correct errors

YEAR 3 LANGUAGE CONVENTIONS

The spelling mistakes in these sentences have been circled.
Write the correct spelling for each circled word in the box.

8 The lions were (roring) loudly.

9 Uluru is a (famus) place in Australia.

10 Did you (notis) the red car?

11 I can see my face in the (mirra).

The Astronaut Invented Spelling Test (AIST)

The AIST (Neilson, 2003a), is an instrument for assessing students' phonological awareness through their invented spelling. Students are asked to spell the names of several characters (astronauts) who have names like Bobby Blockhead, Tubby Twinkle, Fred Fix-it and Smiley Sam. From their spellings of these names, students' ability to choose plausible graphemes to match phonemes heard is assessed. Bonus points are given for conventional spellings.

The Sutherland Phonological Awareness Test (SPAT-R)

This test follows on from the AIST (Neilson, 2003b) and is intended as a diagnostic assessment for students who do not appear to be performing well in the AIST. It assesses phonological awareness and students are also asked to spell a series of nonsense words. The rationale for using nonsense words such as 'splad' is so that students' ability to use the phonological system to spell is isolated from their ability to spell memorised words. The SPAT-R has Australian norms from the first to the fourth year of school.

The South Australian Spelling Test (SAST)

The SAST (Westwood, 1979) is a norm-referenced, standardised spelling test intended as a screening instrument. It has 70 words, with the easiest being *on* and the more difficult words in the test including *seismograph* and *conscientious*. Students are given a 'spelling age' once the test has been scored, with the highest spelling age being >15:6 (fifteen and a half or older). Bissaker and Westwood (2006) have shown how this test can also be used as a diagnostic tool through the analysis of spelling errors. To do this, teachers carefully analyse students' spelling errors and categorise them, using the diagnostic form now provided with the SAST.

Progressive Achievement Tests in Reading (PAT-R)

The PAT-R (ACER, 2008) includes a norm-referenced spelling test component, which is useful for ascertaining where a student is in his/her spelling relative to other students in the same age group across

Australia. The test administrator reads out a word in isolation, before reading a sentence containing the word, and then reading the isolated word out again.

Progressive Achievement Tests in Written Spelling, Punctuation and Grammar (PAT-SPG)

These formal, norm-referenced tests assess students' skills in applying conventions of the English language. One of the components is Written Spelling, which comprises eight tests. PAT-SPG (2011) by the Australian Council for Educational Research (ACER) also provides teachers with objective information for setting realistic learning goals and planning effective programs, based on the test results. It is a multiple-choice assessment that involves the identification of a correct spelling and is suitable for Years 2 to 12, and can be administered to groups.

The importance of feedback

Assessment of students' spelling will not be fruitful if is not used to tailor teaching and provide timely and meaningful feedback to students. This will help them on the road to ownership and self-regulation of their own learning in spelling. In this regard, the role of students' self-assessment and reflection should not be underestimated. The case story at the end of this chapter provides an example of how one school in Queensland attempted to make learning and feedback more visible to students using the cutting-edge technology of polling by using a computer app called 'Plickers' as a tool for assessment.

In this chapter we have reviewed a variety of assessment strategies, pointing out some of their advantages and limitations. The main message of this chapter is that multiple assessments should be used on an ongoing basis so that students' learning can be monitored. If students are not making expected progress, diagnostic assessments need to be undertaken to find out what the possible 'roadblocks' to progress might be. We end with a case story of a school in Queensland that used polling as a means of assessing spelling.

Case story 2

Using polling technology to make improvement in students' spelling knowledge visible

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Inspired by the professional development *Feedback that Makes Learning Visible* from John Hattie's Visible Learning group, the staff at St Thomas's School in Mareeba sought to apply the principles learnt to their spelling instruction. According to John Hattie, 'Visible learning is teachers seeing learning through the eyes of their students, and students seeing themselves as their own teachers' (http://visiblelearningplus.com/about-us, n.p.). Our understanding of visible learning is, as the name suggests, being able to *see* learning as it is happening. Learning should be visible to teachers *and* students. Feedback plays an integral part in this process, as it is through feedback that students learn and improve. For learning to be visible, feedback should be on the spot. We used the free App, *Plickers* by Plickers Inc., in conjunction with a spelling game, 'You Can Join My Club' to achieve this.

'You Can Join My Club' aims to encourage students to identify the critical features of words to decide which words should be in 'the club' and which should not. Essentially, the game is a word sort completed as a whole class, using a T-chart on the board. Students are not told the criteria for words that can be 'in the club' – they have to determine this through word analysis. The game can be played with words that follow a particular spelling rule, containing certain sounds, or focusing on the meaningful parts of words. For example, if words with the /ay/ sound are in the club and all other vowel sounds are not, students will practise sound discrimination or phonological awareness through playing the game.

The teacher starts the game by putting a few words in the club, and students have to work out what their common features are. For example, students could be asked to develop the conditions for application of a spelling rule or doubling f, l, s or z at the end of a word. Students think about how adding a suffix can change the meaning of a word – for example, the word 'happily' may be in the club, but 'happy' may not,

so how are the words different in spelling and meaning? The process of playing the game has been seen to improve both the observational and analytical skills of students in the area of spelling and beyond. However, as is often the case, some students struggle to see the patterns. We wanted to find out if instant feedback could create visible learning for students playing this game.

Plickers is an app that captures, with the iPhone or iPad camera, individual student responses, as shown on their Plickers card (see Figures 5.A and 5.B). The teacher creates a class in the app, assigning student names to each unique card, and creates the questions that the class will answer. One example we used was, 'Which word can join the club? Hold up your 'A' Plickers card for 'say' or your 'B' plickers card for 'said', when the club consisted of words with the /ay/ sound. As each card/shape is unique to the student, other students cannot tell which answer others have chosen. As the teacher scans the Plickers cards on the iPad, it reveals whether students have answered correctly or incorrectly. This information is not available to the students, however.

Figure 5.A

Students holding Plickers cards with answers

Figure 5.B

Teacher scanning students' Plickers cards

Once the information is collated, the teacher can click on the 'live view' section of the website that is projected on a screen and reveal the correct answer. The students' (anonymous) responses are also shown in the bar graphs. This is the instantaneous feedback that students need to think about, to inform their next decision about which words can join 'the club'. Students' learning becomes visible as the number of incorrect responses diminishes with each question; students and teachers can both see students 'getting it', as shown in figure 5.C below.

We have found that students delight in the use of this technology, silently holding the cards (which remind them of minecraft!) ever so still, rejoicing in the instantaneous feedback and becoming increasingly motivated to achieve 100%. This, however, is not as important as the discussions that surround the activity. It has been useful to motivate students to see patterns in words, to stop, notice and think. The real joy for the teachers has been listening to students' conversations with each other, hypothesising about why certain words can or cannot be in 'the club'. It has given meaning to the number of syllables, whether they are open or closed, whether vowels are long or short, what part of speech the words are, and so on – metalanguage that students did not previously use.

Case story references

Plickers
https://www.plickers.com/

Visible Learning
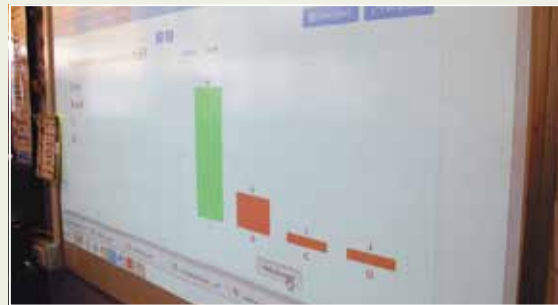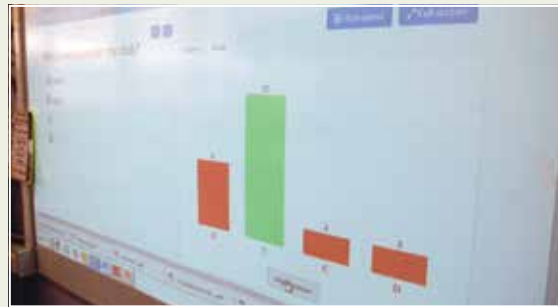http://visiblelearningplus.com/about-us

Figure 5.C

Graphing students's responses to see their learning in real-time