Assessment for learning and teaching improvement: Lessons from NAPLAN
Reports and writing scripts

The writing scripts are there until 30 November.
Thank you for your support this year.
Challenges for 2014

• The delivery period and the School/Easter holidays exactly coincide.
• This will leave 8 days for delivery.

We need you help to achieve a smooth delivery.
You can help us:

• by notifying us immediately materials are received through web-back
• checking straightaway to make sure that all materials are there
• ordering any extra materials straightaway.
Summary of the information with the EQ announcement

• Queensland’s improvement journey continues in 2013
• Queensland is the most improved state 2008-13 and 2012-13
• Year 5 students have improved in all 5 areas since 2012 and in 4 out of the 5 test result areas the 2013 Queensland results are best on record for this year level
• Year 3 results are also strong with all 5 areas improved over 2008 and further improvements in 3 out of 5 test result areas over 2012 to produce best on record results in these areas
• Writing continues to represent a challenge, particularly at Year 9
Summary of the information with the EQ announcement

- Reading results are strong across the board with >92% of students achieving the NMS at every year level.
- Participation has shown a further slight decline – particularly withdrawn students.
- Queensland typically ranks below the ACT, NSW & VIC, clusters with WA, SA and TAS and is above NT.
- Queensland ranks 4th at Years 3 & 5 overall for NMS and MSS.
- At Year 7 Qld ranks 6th for both NMS and MSS and at Year 9 Qld ranks 5th for NMS and 6th for MSS.
Some facts for 2013

On distribution
- 1,698,000 testbooks and stimulus materials were printed
- 260,000 test administration books were printed
- 710,000 testbooks are overprinted
- 7,000 packages were distributed to 1784 school sites — 4000 packages of the actual tests.

On return
- 6 million pages are scanned and processed resulting in 12 million images
- 478 markers working in two shifts mark the writing
- 100 data entry operators verified the scanned resulting data making more than 40 million keystrokes
- 237,000 reports will be sent to schools.
Testbooks are overprinted for 237 000 students.
Writing

• Schools will not be notified of the genre.
• Writing was better this year – less of the formula

Possible teaching emphasis

• Craft of writing
• Developing voice
• Development of mature sentence structures.
Assessment is part of the teaching–learning cycle.

The fatal weakness remains: *going from assessment to instruction.*

*(Fullan et al, 2006)*
All school staff need the skills and ability to turn raw data from many different sources into meaningful information that they and others understand and can act upon.

(Newman, King & Rigdon, 1997)
Our current challenge is to use assessment — all assessment — to inform teaching and learning.

To move from being

data collectors ➔ data givers ➔ data users
Assessment for learning and teaching improvement

Tier 1: accountability indicators —
district/state/nationwide measures

Tier 2: accountability indicators —
school and class level measures

Tier 3: accountability — the narrative that
gives the story ‘behind the numbers’.
Tier 1: accountability indicators — district/state/nationwide measures

- International — PISA, TIMMS, I.B.
- National — NAPLAN, NAP Sample tests – science, C&C, I.C.Ts
- District/ — Normed tests
  Diocesan/ — Diagnostic tests
  Schools — Inventories
  Surveys
Tier 1: accountability indicators —
district/state/nationwide measures

- System-wide — used by everyone
- Clear — broad intent and application is obvious to all stakeholders
- Stable — consistent targets
- Aligned — support system goals
- Focused — minimal in number.
Qualitative
- Reading conferences
- Portfolios
- Think alouds
- Running records, IRIs, Miscues
- Spelling inventories
- Surveys

Quantitative
- Standardised tests
- Teacher-made tests
- Running records, IRIs, Miscues
- Spelling inventories
- Surveys
Tier 2: accountability indicators — school and class level measures

- Relevant — to specific school needs
- Measurable — expressed in numbers or percentages
- Continuous — measured and analysed regularly through the year
- Timely — act as early warning signs and allow teachers/administrators to refine or change approaches.
It is the narratives behind the data that are:
• the building blocks of school improvement
• a catalyst for professional learning.

Tier 3: accountability — the narrative that gives the story ‘behind the numbers’.
**NAPLAN 2013**

**Language Conventions Year 9 Question 20**

The oil spill was confined to the northern side of the headland so pollution was kept to a minimum.

**Answer and discussion**

**Response**

<table>
<thead>
<tr>
<th>Southern</th>
<th>Proportion</th>
<th>Reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>62.7%</td>
<td></td>
</tr>
</tbody>
</table>

### Common Errors

- **Item Description**: Identifies an error, then correctly spells a multisyllable word with the derivational ending -en.
- **Strand**: Spelling — Not identified
- **Spelling Stage**: Syllables and affixes
- **Layer**: Meaning
- **Link**: Year 7 — Question 21
Tier 1: accountability indicators — district/state/nationwide measures

Curriculum question

Curriculum leadership question
Ways of analysing the data

- Performance on key concepts
- Investigating common incorrect responses
- Comparing results against the State and National mean.
So when do you add *-able* and when *-ible*? What’s the convention?

Guide dogs need the discipline of obedience training when they are puppies, if they are to be manageable when fully grown.

A wipe is selected where there is a noticeable and sometimes contrasting change between successive shots.

Gold is a precious mineral and is very valuable.

The new enterprise was profitable despite fluctuations in the economy.
Our old car often broke down but the new one is more relying.

relying (4\%), realylying (3\%), relylying (3\%), relyable (2\%), relayable (2\%)

High school brings increased responsibilities for all students.

responsibilities (4\%), responsabilites (3\%), responsebilities (3\%), responsibilites (2\%), responsabilitys (2\%)

It took considerable guidance from a qualified instructor for my brother to learn to drive.

guidence (3\%), considirable (1\%), considable (1\%), considerable (1\%), instructer (1\%)
<table>
<thead>
<tr>
<th>Spelling</th>
<th>Error Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>straight</td>
<td>strate (4%), stright (2%), straght (1%), straite (1%), strat (1%)</td>
</tr>
<tr>
<td>ordinary</td>
<td>ordanary (4%), ordenary (2%), ordinary (1%), ordanry (1%), ordenry (1%)</td>
</tr>
<tr>
<td>urban</td>
<td>urbin (3%), urbun (2%), urburn (2%), urbon (2%), urber (1%)</td>
</tr>
<tr>
<td>catchment</td>
<td>cachement (3%), cachment (1%), cashment (1%), cachtment (1%), cachmant (&lt;1%)</td>
</tr>
<tr>
<td>accomplish-ment</td>
<td>accomplishment (5%), acomplishment (2%), accomplishment (1%), acomplisment (1%), accomplisment (1%)</td>
</tr>
<tr>
<td>circuit</td>
<td>circit (6%), circute (4%), curcit (3%), circet (3%), circuit (2%)</td>
</tr>
<tr>
<td>monitor</td>
<td>monitar (8%), moniter (5%), moneter (4%), monater (3%), monniter (3%)</td>
</tr>
<tr>
<td>structural</td>
<td>structurel (11%), structural (10%), structurall (8%), structuall (2%), structurell (1%)</td>
</tr>
<tr>
<td>canyon</td>
<td>cannion (16%), canon (8%), cannon (6%), canion (3%), canian (2%)</td>
</tr>
<tr>
<td>deafening</td>
<td>deffening (13%), defining (11%), deafining (3%), defending (3%), defenning (2%)</td>
</tr>
<tr>
<td>practically</td>
<td>practicaly (14%), practicllly (4%), practicly (3%), practicley (3%), practicely (2%)</td>
</tr>
<tr>
<td>campaign</td>
<td>campain (21%), campaine (6%), campaigne (5%), campagne (3%), compane (1%)</td>
</tr>
<tr>
<td>nurture</td>
<td>nurcher (8%), nercure (6%), nuture (4%), nurchure (3%), nurtchure (3%)</td>
</tr>
<tr>
<td>jeopardy</td>
<td>jeperdy (16%), jepordy (12%), jeprady (3%), jeopardy (3%), jeppoardy (2%)</td>
</tr>
<tr>
<td>incorporated</td>
<td>incorporated (17%), incorporated (8%), incorrperated (5%), incorrperated (3%), incorporared (2%)</td>
</tr>
<tr>
<td>acquired</td>
<td>aquired (11%), aquirred (10%), aquired (8%), equired (6%), aquiered (3%)</td>
</tr>
</tbody>
</table>
# Spelling errors — unidentified — 2013

<table>
<thead>
<tr>
<th>Category</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>garbage</td>
<td>governments (1%), garbadge (1%), garedge (1%), garbige (1%), garbge (1%)</td>
</tr>
<tr>
<td>classify</td>
<td>classify (1%), weather (1%), wheather (1%), suitable (1%), classefy (1%)</td>
</tr>
<tr>
<td>weird</td>
<td>imaginitive (2%), imaginative (2%), contributed (1%), imagenative (1%),</td>
</tr>
<tr>
<td></td>
<td>imagineative (1%)</td>
</tr>
<tr>
<td>southern</td>
<td>polution (5%), confinned (2%), confined (1%), confined (1%), minnimum</td>
</tr>
<tr>
<td></td>
<td>(1%)</td>
</tr>
<tr>
<td>deforestation</td>
<td>deforestation (3%), habbitats (3%), severly (2%), severaly (1%), threatend</td>
</tr>
<tr>
<td></td>
<td>(1%)</td>
</tr>
<tr>
<td>considerable</td>
<td>guidence (3%), considirable (1%), considable (1%), coniderable (1%),</td>
</tr>
<tr>
<td></td>
<td>instrcuer (1%)</td>
</tr>
<tr>
<td>fulfilling</td>
<td>fullfilling (7%), fullfiling (6%), submiting (5%), forfilling (4%),</td>
</tr>
<tr>
<td></td>
<td>fuilling (3%)</td>
</tr>
<tr>
<td>schedule</td>
<td>schedual (3%), scedule (3%), efficent (2%), shcedule (2%), afficient (2%)</td>
</tr>
<tr>
<td>gourmet</td>
<td>appreciates (5%), gorment (4%), ingrediants (4%), gormat (3%), gormet (2%)</td>
</tr>
<tr>
<td>enzymes</td>
<td>proteins (21%), added (7%), ensimes (4%), aidded (4%), enzymes (2%)</td>
</tr>
<tr>
<td>permanently</td>
<td>permenantly (11%), permently (5%), perminently (3%), permanantly (2%),</td>
</tr>
<tr>
<td></td>
<td>permenatly (2%)</td>
</tr>
<tr>
<td>exhilaration</td>
<td>exileration (16%), exhileration (6%), overwhelming (4%), exillaration (4%),</td>
</tr>
<tr>
<td></td>
<td>exhiliration (3%)</td>
</tr>
<tr>
<td>vacuum</td>
<td>vacum (8%), vaccuum (7%), sucktion (6%), vaccume (5%), extendible (4%)</td>
</tr>
<tr>
<td>dilemma</td>
<td>deserts (15%), dillema (10%), envyable (4%), delema (3%), inviable (3%)</td>
</tr>
</tbody>
</table>
The basic premise of our discussion

Spelling is developing an understanding of the whole system of English orthography.

What it is **not** ... memorising words.
Spelling/orthographic knowledge?

How pronunciation is coded.
- make, stay, seat
- rabbit, lizard, open composition

How sounds are mapped onto letters.
- cat, dog

How meaning/derivational relationships are coded
- homophones – great/grate
- roots – aster, astrolabe, astronaut
- history – two, twelve, camouflage

How word function is coded
- jumped, cleaned, beaded
- education, explosion, magician

Current models explain how English spelling codes deep linguistic knowledge.
Key messages

• Students are around 18 years old before they develop mature control over the English spelling system.
• Spelling needs to be taught in secondary schools.
• Spelling needs to be taught as a system and all aspects of the system need to be taught.
• The spelling-meaning connection has a positive effect on vocabulary development.
• Vocabulary development is critical to learning in the content areas. A focus on vocabulary will have positive on assessments such as the QCS test.
• Students need to develop a spelling conscience.

Teaching spelling is everyone’s responsibility.
Ways of analysing the data

• Performance on key concepts
• Investigating common incorrect responses
• Comparing results against the State and National mean.
Spellers apply their knowledge in two modes

Expressive

Production — What students do when they focus all their cognitive resources on spelling, e.g. in class tests, word games discussions.

Generation — What students can do when they produce spelling automatically, e.g. in writing.

Receptive/Recognition

Proofreading —
- own spelling, e.g. in writing
- other’s spelling.
What do the results for these words tell?

2013

28. The stuntman experienced an overwhelming sense of exilaration after his first parachute jump. exilleration (16%), exhilleration (6%), overwhelming (4%), exillaration (4%), exhilliration (3%)

15. The abbreviation of a word is shorter than the full word. abreveation (11%), abriviation (10%), abbreviation (8%), abrevation (6%), abrieviation (6%)

2012

8. The new stopwatch was very accurate and timed each lap with precision. precition (4%), presision (3%), precission (2%), presition (2%), precaution (2%)

17. There was a touching reconsiliasion between the two characters at the end of the film. reconsiliation (37%), reconsiliatation (4%), reconsilation (4%), reconcilliation (3%), reconciliasion (2%)
In upper primary and secondary schools

Teach the high-yield affixes – the ones where the spelling stays reasonably stable and are high use.

- Prefixes — *un* (not, opposite), *pre* (before), *re* (back, again), *dis* (not), *mis* (bad, wrong), *uni* (one), *bi* (two), *tri* (three), *in/im/il/ir* (not without), *trans* (across), *post* (after), *anti* (against), *de* (down) etc

- Suffixes — *y/ ly* (like), *er* (comparative), *est* (superlative), *less* (without), *ness* (condition), *ful* (full of, like), *ar/er/or* (one who), *ment* (result, action, condition), *able/ible* (capable of, likely to), *ance/ence* etc

- Teach them with words they know in a context they know before adding newer words in both spelling and vocabulary
Build knowledge of Latin and Greek roots. These are used to create words in different learning areas.

- Greek roots are easier. The spelling is more stable and thus recognisable.
  - therm (heat) — thermometer, thermal, thermostat
  - graph (write) — autograph, biography, graphics

- Build from common Latin roots
  - vis/vid (see) — visual, vision, video, television
  - dict (say) — dictate, dictation, diction, predict.
Note the surprising results

2013

1. How much is three-quarters of $600?
   - $150  24%  M 22%  F 26%
   - $360  24%  M 22%  F 26%
   - $400  7%   M 8%   F 7%
   - $450  59%  M 63%  F 55%
   - $800  59%  M 63%  F 55%

2. Which of these is equivalent to $\text{\textit{\textbf{-}}}(x + 2)$?
   - $-x - 2$  30%
   - $x - 2$  13%
   - $-x + 2$  13%
   - $x + 2$  13%

2012

18. $35 \times \text{?} = 14$
   - Which fraction is equal to?
     - $\frac{2}{5}$  M 32%  F 27%
     - $\frac{5}{7}$
     - $\frac{2}{7}$  M 31%  F 34%
     - $\frac{1}{5}$

Key
Ways of analysing the data

- performance on key concepts
- investigating common incorrect responses
- comparing results against the State and National mean.
2013 calculator allowed
2012 calculator allowed
2013 non calculator
2012 Non calculator

[Graph showing two lines representing Qld and Aust, with the x-axis labeled with numbers from 1 to 32 and the y-axis ranging from 0 to 100. The graph compares the data for Queensland and Australia over the years.]
A gardener plants 50 seeds from the same packet into three pots. This table shows the number of seeds planted and the percentage of seeds that sprouted.

<table>
<thead>
<tr>
<th>Pot label</th>
<th>Number of seeds planted</th>
<th>Percentage that sprouted</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12</td>
<td>75%</td>
</tr>
<tr>
<td>B</td>
<td>20</td>
<td>50%</td>
</tr>
<tr>
<td>C</td>
<td>18</td>
<td>50%</td>
</tr>
</tbody>
</table>

What percentage of the seeds from the packet sprouted?

56%
This fence has five sections of equal length.

Three of the sections have been painted black.

What percentage of the whole fence has been painted black?  

3%  18%  30%  40%  60%  

Key  

81%  3%  4%  77%  

M: 84%  F: 4%
Tim earned $300 in 5 days.
After the first day, he earned $10 more each day than the day before.
How much did Tim earn on the first day?

$30 $40 $50 $60

2015 is called a tri-square year because

$2^2 + 0^2 + 1^2 = 5$

The next tri-square year after 2015 will be

2019 2028 2109 2116

Queensland Studies Authority
Who does this best?

5  $6 \times (4 + 2) \ ? \ 4 \times 5 + 6$

Which symbol (<, =, >) should replace ? to make the number sentence correct?

<table>
<thead>
<tr>
<th>Symbol</th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;</td>
<td>66%</td>
<td>71%</td>
</tr>
<tr>
<td>=</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8 Which arrow is pointing to the approximate position of $\sqrt{800}$ on a number line?

![Number line with arrows pointing to approximate positions of $\sqrt{800}$]

Which arrow is pointing to the approximate position of $\sqrt{800}$ on a number line?

23 Jason uses these formulas to calculate how the money in his bank account grows.

$Year_1 = $1000, \quad Year_2 = Year_1 + \frac{Year_1}{10}, \quad Year_3 = Year_2 + \frac{Year_2}{10}, \quad Year_4 = Year_3 + \frac{Year_3}{10}$

What is the value of $Year_4$? $
One year ago Jay was 140 cm tall. He is 5% taller now than he was then. How tall is Jay now?

133 cm 145 cm 147 cm 210 cm

Finn put some flour on his kitchen scales. The picture shows part of the dial.

How many grams of flour did Finn put on the scales?

230 260 275 280 325
Tim takes 72 paces to walk across the school yard. His pace is 90 centimetres long. Lara’s pace is 80 centimetres long.

How many paces does Lara take to walk across the school yard?

- 62
- 64
- 81
- 82
- 100
Tier 1: accountability indicators — district/state/nationwide measures

Curriculum question
results
Curriculum leadership question
Guiding assumptions for data-driven collaborative inquiry.

- Data have no meaning.
- Knowledge is both a personal and social construction.
- There is a reciprocal influence between the culture of the workplace and the thinking and behaviour of its members.
- Understanding should precede planning.
You don’t need an advanced degree in statistics and a roomful of computers to start asking data-based questions about your school and using what you learn to guide reform.

Victoria Bernhaus
A theory of action for schools

Although student outcomes are deeply affected by forces beyond the school, such as socioeconomic status, schools play an important role in what happens to students.

We do not know the limits of human capacity to improve; all we know is that we have not yet reached those limits and that people continue to surprise us with their abilities to achieve and their resilience, sometimes in the face of enormous obstacles.

The heart of school improvement rests in improving daily teaching and learning practices in schools, including engaging students and their families.
A group of 200 Year 9 students was asked which activity they spent most time doing after school.

The table shows the results.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport</td>
<td>52</td>
</tr>
<tr>
<td>Music practice</td>
<td>40</td>
</tr>
<tr>
<td>Part-time work</td>
<td>59</td>
</tr>
<tr>
<td>Homework</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td>17</td>
</tr>
</tbody>
</table>

One of these students is chosen at random.

What is the probability that the student spends most time doing music practice after school?

Key

- 33%
- M 34%
- F 35%
- 7%
- 2nd