NAPLAN DATA ANALYSIS

MODULE
Version Control

This document was developed by Christine Masters (Senior Education Officer – Curriculum) and approved by Ursula Elms (Acting AED – Learning and Teaching) in October 2010.

<table>
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<tr>
<th>Date</th>
<th>Changes</th>
<th>Author</th>
<th>AED – Learning and Teaching</th>
</tr>
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<tr>
<td>2011</td>
<td>Added Value Added Growth</td>
<td>Christine Masters</td>
<td>Susan O’Donnell</td>
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PURPOSE

This module is designed for key personnel to lead the school-level analysis of NAPLAN data. It is intended to help school leaders to:

- Understand the state, Diocese and school results
- Confidently lead the analysis of data on the cohort and skills development at the whole-school level
- Develop strategies to promote staff engagement with the data throughout the school, not just the testing year teachers
- Identify issues for further exploration, and
- Contribute to the development of the school’s Annual Literacy and Numeracy Plans.

CONTEXT

In the school context the main areas of analysis involve NAPLAN data at the state, Diocesan, school, classroom and student levels. Specifically, the strategies relate to the following areas:

- Diagnosing school results and making comparisons with Diocesan and state information
- Analyzing skill/item strengths and weaknesses
- Identifying trends related to school level literacy/numeracy skills and particular cohorts in the school
- Developing school level priorities for literacy and numeracy
- Formulating intervention plans for cohorts and individual students
- Determining ways for teachers to identify appropriate teaching strategies to address deficiencies

When considering the results the three fundamental questions to ask are:

- How are we going?
- How do we know?
- What are we going to do about it?

These questions form the basis for leading the analysis and use of the data at the school level.

ANALYSING THE DATA

The focus is on both school and student results and identification of issues from the data. This involves three types of analysis: point-in-time analysis (to identify concerns for this testing period), trends over time (to identify longer term issues), and value added growth of cohorts and individual students (from one testing period to the next).
The key elements of data analysis are:

- **Cohort analysis:** This identifies this year (point-in-time), trend data (different cohorts over successive years) and value added growth (changes in matched-student scores of the same cohort, e.g. Year3, 2008 ad Year 5, 2011).

- **Item analysis:** This identifies strengths and weaknesses for school priorities and possible targeted intervention.

- **Student Analysis:** Identification of students ‘At the NMS’ and ‘Below the NMS’ and who have not achieved expected growth for possible learning support intervention.

**PROCESS**

In analysing NAPLAN results at the school level, the following process outlines the phases undertaken to firstly identify the specific issues from the data, then to develop a literacy/numeracy plan and implement the appropriate and targeted strategies. The final phase involves critical reflection on the measurable changes in student achievement and, importantly, the impact of these on teaching practices within the school.

This process is important in developing, implementing and evaluating the school’s literacy/numeracy plan. A key element is to lead the integration of such information across curriculum areas and classroom-based pedagogy.

**Current Year**

- Analyse testing results
- Identify issues for follow-up

**Plan**

- Formulate whole-school response involving critical mass of staff
- Develop specific strategies to implement Literacy/Numeracy Plan
- Determine adjustments to pedagogy to meet learning needs of students

**Subsequent Year**

- Implement Literacy/Literacy Plan
- Explore links between NAPLAN and classroom pedagogy
- Integrate teaching strategies with curriculum delivery

**Act**

- Monitor and evaluate improvements in student achievement: evidence of change
- Critique impact on teaching practices

**Reflect**

- Analyse testing results
- Identify issues for follow-up
It is important that the school's Leadership Team:

- takes an active role in leading the analysis and use of the data with the staff to effect measurable improvements in student learning.

ACCESSING SUNLANDA

Sunlanda can be downloaded from the QSA website onto all staff computers. The current year specification file needs to be downloaded as well. Schools can access their student data files from the QSA site using the school BIC number.

It is expected that all teaching staff are given access to the Sunlanda application to promote a school-wide understanding of the data, its implications for learning and teaching, and development of priorities for using the results for literacy and numeracy planning.

LOAD THE SPECIFICATIONS FILE

Open SunLANDA

Click File → Read Specifications file

Find the file named 2012.sun. The specification file for 2012 will then be loaded into SunLANDA.

LOAD YOUR SCHOOL DATA.

Click File and select Read student result data file.
On the Results loading screen, select 2012.

Locate where you have saved the data files and select a year level.

Click Begin loading.

Repeat the process for each grade level.

**ACCESSING THE DATA**

On the Year dropdown select the year you wish to view.
Select the Year level.

You can select which student subset you wish to view.

Student results can also be viewed according to class grouping.

Select Item Subset.
## COHORT ANALYSIS

Use the spreadsheets provided by the CES to access graphical information to assist you to:

### COMPARE SCHOOL AND STATE MEANS
For each Domain and year level, the graphs highlight the Mean of the scores for the State, Diocese and school for each Strand.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Year Level</th>
<th>School Mean</th>
<th>Diocese Mean</th>
<th>State Mean</th>
<th>What differences are there when comparing the school with the State, Diocese or National achievements?</th>
<th>What are the pedagogical implications?</th>
</tr>
</thead>
</table>

### IDENTIFY THE PERCENTAGE OF STUDENTS IN A BAND
The graphs highlight the percentage of students in each Band of Development.

<table>
<thead>
<tr>
<th>Band Category</th>
<th>Percentage</th>
<th>Description</th>
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<tbody>
<tr>
<td>% in the top Band</td>
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<tr>
<td>% 'At or Above the National Min. Standard' (2nd bottom to top Band)</td>
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<tr>
<td>% 'At the National Min. Standard' (2nd bottom Band)</td>
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<tr>
<td>% 'Below the National Min. Standard' (bottom Band)</td>
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<tr>
<td>% 'At or Below the National Min. Standard' (bottom two Bands)</td>
<td></td>
<td></td>
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</tbody>
</table>

For each Domain and year level, note the proportion of students in each Band:

- % in the top Band
- % 'At or Above the National Min. Standard' (2nd bottom to top Band)
- % 'At the National Min. Standard' (2nd bottom Band)
- % 'Below the National Min. Standard' (bottom Band)
- % 'At or Below the National Min. Standard' (bottom two Bands)

Is the school under-represented in the TOP band and/or over-represented in the middle-to-lower bands this year? Is this a trend?

What are the pedagogical implications?

### IDENTIFY TRENDS OVER TIME
For each Domain and year level, this shows the Mean scores for different cohorts and school groups on an annual basis.

For each literacy domain and numeracy identify those areas where there is a persistent underachievement compared with the state and Diocese over time, or where this year's results are uncharacteristic of past performance. Did we know this is, or has been, occurring?

What are the pedagogical implications?

### IDENTIFY AVERAGE SCHOOL GROWTH
For each Domain and year level, this shows the growth in mean scores for the school compared with the Diocese, State, National and expected

For each literacy domain and numeracy identify those areas where there is a below average growth in Mean scores for the school compared
growth. with the Diocese, State, National and expected growth.

What are the pedagogical implications?

**IDENTIFY VALUE ADDED GROWTH**

Growth in student scores for across the domains can be viewed by comparing test scores this year with those of the same students two years ago (e.g. Year 5 students this year compared with their Year 3 results).

For each domain and year level:
- Where is the school making the most progress? Least progress?

What are the pedagogical implications?

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**Cohort Analysis Summary - Interpreting the Data**

**Means and Standard Deviations**
1. What differences are there when comparing the school with the State, Diocese or National achievements?
2. Are there any gender differences?

**Percentage in Bands**
1. Is there any under-representation in the top band?
2. Is the school over-represented in the middle bands at the expense of the top band?
3. How does the proportion of students below the National Minimum Standard (bottom band) compare with the Diocese, state, national?

**Trend Data**
1. Are the school's Mean scores in any Domains persistently below those for the with the Diocese, state, national?
2. Are the Means of any groups of students (previously created) below the with the Diocese, state, national this year or in previous years?

**School Growth**
1. Is the school's growth below the with the Diocese, state, national averages this year?

**Value Added Growth**
1. Where is the school making the most progress? Least progress? Why?

**Implications and Response**
1. What are the implications of these results for improving student outcomes and teacher professional learning?
2. What are the implications for classroom pedagogy?
3. What does this information suggest for the school's literacy/numeracy plans?
ITEM ANALYSIS

Use Sunlanda to access information to assist you to analyse school and student performance in particular skill areas.

Item analysis is undertaken to identify particular skill areas in which the school is doing well or poorly.

When underperformance is identified, it is important to find out why wrong options may have been chosen and to identify the students involved.

Which items show where the School % correct is above the State % correct by more than 5%? Is there a pattern of skills represented?

Which items and skills show where the School % correct is below the State % correct by more than 5%? These show the items where the School may have some issues. Is there a pattern of skills represented?

What are the pedagogical implications?

STUDENT ANALYSIS

Use Sunlanda to access information to assist with more detailed analysis of NAPLAN results centred on the individual student.

Use the spreadsheets provided by the CES to access graphical information to assist you to analyse individual growth over time.
**AT OR BELOW NATIONAL MINIMUM STANDARD AND THE TOP BANDS**

Student analysis can best be undertaken to identify those students AT and those BELOW the National Minimum Standard, as well as those in the TOP band. These may indicate the need for involvement by the Learning Support Teacher or for extension work.

Achievement of At or below national minimum standard
- Which students are in the LOWEST BAND? Are there any surprises?
- Which students are in the “At Minimum Standard” Band?

Achievement Beyond national minimum standard
- Is the HIGHEST BAND more than two bands above the National Minimum Standard?
- Which students are in the HIGHEST BAND? Are there any surprises?

**VALUE ADDED GROWTH**

Growth in student scores for across the domains can be viewed by comparing test scores this year with those of the same students two years ago (e.g. Year 5 students this year compared with their Year 3 results).

For each domain and year level:
- Who is making the most progress? Least progress?
- What does this information suggest about the needs for learning support?

What are the pedagogical implications?

**PUTTING THE INFORMATION TOGETHER**

The analysis of cohort, item and student data raises the following questions for further investigation:

1. What is the school’s picture from this year’s NAPLAN analysis, in comparison with overall Diocesan and state sector results, regarding:
   a. comparison of Mean scores?
   b. proportion of students in achievement bands?
   c. identification of skill areas in need of attention?

2. What has been the trend in these areas at the school over the past three years?

3. What evidence exists of growth in student learning at the school, cohort and student levels?

4. What areas from the literacy/numeracy domains can be identified for further action and professional learning of staff?

5. What is the most effective way to lead the response to these results across the whole school?

6. What strategies and resources are appropriate for such intervention?
7. How is staff engagement with the data to be facilitated across the school to make the link between NAPLAN results and classroom based pedagogy and curriculum delivery?

8. In what ways can these NAPLAN results contribute towards the development of the school’s Literacy/Numeracy Plan?

9. Revisit the three guiding questions:
   a. How are we going?
   b. How do we know?
   c. What are we going to do about it?

### LINKING DATA WITH PEDAGOGY

The following is suggested as a structure for, and approach to, leading learning throughout the school based on information from NAPLAN testing.
CREATING CUSTOM CLASSES

A feature of SunLANDA is the ability to create custom classes based on NAPLAN results. For example:

- there are a number of students in the cohort who have performed below the school average on several questions in the Reading test. The school may wish to create a Remedial Class of the students who achieved below (or level with) national minimum standards.
- There are a number of students who have been identified with learning delay. The school may wish to create a class of these students to compare results.

On the main screen, click Create.

This will open the custom class screen.

Click in the column next to each child’s name.

In the bottom right corner, type in a name for the group. Click “Create class”.

[Images and diagrams showing the process of creating custom classes in SunLANDA]
Appendix One

Data

Analysis

Proforma
NAPLAN ANALYSIS

School: Year Level: Strand:

COHORT ANALYSIS

COMPARISON OF SCHOOL AND STATE MEANS

What differences are there when comparing the school with the State, Diocese or National achievements?

PROPORTION OF STUDENTS AT OR BELOW BENCHMARK

What differences are there when comparing the school with the State, Diocese and National achievements on each strand? Is the school over-represented?

PROPORTION OF STUDENTS IN TOP 2 BANDS

What differences are there when comparing the school with the State, Diocese and National achievements? Is the school under represented?

TRENDS OVER TIME

Is there an area of persistent underachievement comparing the school with the State, Diocese and National achievements? Were this year’s results uncharacteristic of past performance?

AVERAGE SCHOOL GROWTH

Identify those areas where there is a below average growth in Mean scores for the school compared with the Diocese, State, National and expected growth. Why?

VALUE ADDED GROWTH

Where is the school making the most progress? Least progress? Why?
SUMMARY

ITEM ANALYSIS

SCHOOL PERFORMANCE ON EACH ITEM

Which items and skills show where the School % correct is ABOVE the State % correct by more than 5%? Is there a pattern of skills represented?

Which items and skills show where the School % correct is BELOW the State % correct by more than 5%? These show the items where the School may have some issues. Is there a pattern of skills represented?

SUMMARY

STUDENT ANALYSIS

ACHIEVEMENT OF AT OR BELOW NATIONAL MINIMUM STANDARD

Which students are in the LOWEST BAND? Are there any surprises?

Which students are in the “AT MINIMUM STANDARD” Band?

ACHIEVEMENT BEYOND NATIONAL MINIMUM STANDARD

Is the HIGHEST BAND more than two bands above the National Minimum Standard?
Which students are in the **HIGHEST BAND**? Are there any surprises?

**VALUE ADDED GROWTH**
Identify individual students making the most progress. Are there any surprises?

Identify individual students making the least progress. Are there any surprises?

**SUMMARY**
Appendix Two

LITERACY

AND

NUMERACY

ACTION

PLAN
# 2012 Literacy and Numeracy Action Plan

## School:

### LITERACY

<table>
<thead>
<tr>
<th>Goal</th>
<th>Learning, Teaching and Assessment Processes</th>
<th>Professional Learning</th>
<th>Responsibility</th>
<th>Resources</th>
<th>Timeline</th>
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### NUMERACY

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