



## **Kelburn Normal School**

### **Analysis of Variance**

For the year ended 31 December 2016

In the plans and targets set out in its charter, the board describes the school's priority learning issues and its expectations for improved student outcomes. The core business of the school is to raise student achievement, but the board could set related objectives about attendance or harassment etc. The board could also identify other priorities, objectives and targets regarding staff and board capability, finances, property, and other ownership matters.

In the annual report the board presents its 'analysis of variance' that describes for the community how the school has gone about addressing those priorities and shows how successful their approach has been. The variance report should describe the outcomes of initiatives that aim to improve the way the school manages its resources, according to the objectives in the charter. To be able to analyse progress towards student achievement targets schools will need to have collected good data or evidence about student outcomes.

A close look at this data may suggest that the school could implement some of its programmes differently to make more progress towards their long-term improvement goals. In other words, the analysis of variance is a key document in our ongoing process of self-review.

School Name:	Kelburn Normal School	School Number:	2876
<b>Reading</b>			
Strategic Aim:	<b>Student Achievement</b> <ul style="list-style-type: none"> <li>• Create a powerful learning culture</li> <li>• Extend individual student progress and achievement</li> <li>• Outstanding delivery of education in all areas, with priority to literacy and numeracy</li> </ul>		
Annual Aim:	<i>To increase the number of students achieving at 'above' as evidenced in relation to National Standards in Reading, Writing and Mathematics.</i>		
Target:	<p><i>1. In 2016, increase the number of boys throughout the school achieving at the 'above' level, from 22.2% to 25%</i></p> <p><i>2. In 2016, improve the achievement of students in the senior classes to attain results in the 'above' level in numbers at least similar in proportion to those in the upper middle.</i></p>		
Baseline Data:	<p><b>READING BASELINE DATA</b></p> <p>Our baseline data (end of year OTJs for 2015) showed that student performance among boys at the 'above' level across the school was not commensurate with the results of girls (24.4% versus 43.5%). When taken into the context of all students assessed in 2015, the relative underachievement of both boys and girls was most pronounced at Year 7 (22.2%) and, to a lesser extent, Year 8 (41.9%). Although relating to quite different student cohorts, when compared with the results of Years 5 and 6 (50% who were achieving 'above'), the achievement of the Year 7 cohort particularly was not satisfactory. These students of Year 7 and 8, especially boys, are under-represented in the 'above' achievement level as reflected in the National Standards data.</p>		

School Name:	Kelburn Normal School	School Number:	2876
<b>Writing</b>			
Strategic Aim:	<b>Student Achievement</b> <ul style="list-style-type: none"> <li>• Create a powerful learning culture</li> <li>• Extend individual student progress and achievement</li> <li>• Outstanding delivery of education in all areas, with priority to literacy and numeracy</li> </ul>		
Annual Aim:	<i>To increase the number of students achieving at 'above' as evidenced in relation to National Standards in Reading, Writing and Mathematics.</i>		
Target:	<p><b>Writing Targets 2016</b></p> <p><b>Target 1.</b> In 2016, increase the number of boys throughout the school achieving at the 'above' level in writing , from 11.5% to 20%.</p>		

	<b>Target 2.</b> In 2016, improve the achievement of students writing to better reflect their achievements in reading.
<b>Baseline Data:</b>	<p><b>WRITING BASELINE DATA</b></p> <p>Our baseline data (end of year OTJs for 2015) showed that student performance among boys at the 'above' level across the school was not commensurate with the results of girls - 11.5% (boys) V 28.6% (girls).</p> <p>Although not an accurate comparison, when comparing all students at the 'above' level, the achievement of both boys and girls in most age groups was between 10% and 20% lower than those achieving 'above' in Reading.</p>

#### KNS year group November writing comparison - 2015-2016

	2015 Writing		2016 Writing	
292 students	At standard	Above standard	At standard	Above standard
Year 1 46 children			93.5%	2%
Year 2 29 (2015) to 31 (2016)	86.2%	7%	74%	7%
Year 3 33 to 25	88%	9%	80%	4% (-5%)
Year 4 26 to 41	77%	19%	71%	17% (-2%)
Year 5 31 to 34	71%	23%	65%	29% (+6%)
Year 6 42 to 47	67%	29%	47%	45% (+16%)
Year 7 26 to 33	62%	31%	46%	36% (+5%)
Year 8 33 to 35	73%	24%	43%	49% (+25%)

<b>Actions</b>	<b>What did we do? Reading and Writing</b>
<b>Overall</b>	<p>Overall a drop in the number of boys that were achieving above the standard was noted in 2015; this was correlated with the discussions in teacher forums in 2015. The underachievement of this cohort of boys has been identified and addressed as they have moved through the school. At the same time, the disparity for boys and girls between achievement in reading and writing was noted. Areas for further development included; encouraging rich learning conversations about reading and writing, including how to assess it; engaging students with digital media to capture interest and increase student engagement; increasing availability of and proficiency with iPad apps and GAFE (Google Apps for Education); using a range of online nonfiction texts to stimulate the older students' interests and ideas; using a multiple literacies approach to make students more active and creative in making meaning, and more collaborative.</p> <p>Teachers needed to look closely at ongoing student achievement data to make comparisons with student data from 2015, and monitor progress. Any students identified as either making negative shifts or stalled in their progress had targeted intervention to accelerate their learning, and parents/whanau were involved.</p> <p>In depth discussions about students and their needs, especially of the Year 3/4 cohort and of priority learners took place in 2016; continued teacher inquiry and in-school professional development addressed these needs. The development of multiple literacies, including digital literacies and GAFE to engage all students, and to especially develop the interpersonal KCs, was continued throughout the school. Students learnt by combining speaking, drama and writing. For the senior students, the</p>

sense of audience and shared purpose was key to creating a powerful learning culture where dialogue, and feedback on reading and writing lead to higher expectations of each child for themselves, and involvement in learning as a creative, collaborative process.

#### **By Syndicate**

*Junior:* Teachers recorded children's response to text and promote learning conversations about texts. Teachers collected these responses as a resource for their inquiry and problem solving. Teachers used drama to engage students in writing and encourage responses; drama was the context for teacher research into priority learners. Teachers observed each other teaching writing and then discussed what they have saw. Teachers collaborated as a syndicate to make dynamic split screen plans together that sit alongside the KNS planning, and include the KC of the term. Teacher reflections on dynamic planning became part of forums.

*Lower Middle:* Teachers extended conversations about texts, with some use of digital tools. Teachers began to share and record learning conversations from oral rich contexts such as drama on a Google Doc. During writing time, children responded to an oral or written teacher prompt or question by writing their own reflection underneath their work. In syndicate meetings, teachers produced draft split screens and then shared what they were thinking and recording about priority learners in an ongoing discussion. On forums, they started to reflect further on the questions around Managing Self and the term's KC.

*Upper Middle:* In a shared text activity, teachers modelled questioning and children referred to texts to substantiate their responses. Then they extended their response using Google docs, sharing ideas and starting to reflect on teacher feedback. Teachers started to use groups and forums to encourage the children to reflect, expand, and respond to each other on topics they write about, and on creative projects. After a writing conference with the teacher, written questions were posed in the children's books, and the children responded by writing in their books. The syndicate focus on the KC of Managing Self where children's questions were about how they plan and carry out their work and how they assess the success their work.

*Senior:* There is ongoing, collaborative dialogue about reading and writing in written, oral, and online modes so that children share strategies and make links between reading and writing. In the online environment classes explore a wider range of texts to draw on their experiences and interests. Teachers dialogue with each other around student learning and achievement and include students in assessment. Teachers build connections between different modes of making meaning, particularly through the drama process and the use of multiple literacies. Teachers set up close blogs to extend the audience for writing and class programmes, including inquiry, science projects and drama, to parents and whanau.

Outcomes	What happened?
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#### **READING**

##### **Target 1.**

In 2016, increase the number of boys throughout the school achieving at the 'above' level, from 22% to 25%.

Result = **ACHIEVED** ~ At December 2016, 29% of boys were achieving above the standard in reading.

##### **Target 2.**

In 2016, improve the achievement of students in the senior classes to attain result in the 'above' level in numbers at least similar in proportion to those in the upper middle students.

Result = **ACHIEVED** ~ There is a strong similarity between the 'above' outcomes of the upper middle children and the senior school students. Particularly pleasing is year 8 which has gone from 1:3 (30%) above the standard in 2015 to 2:3 (63%) above in 2016 - excellent progress. This shows accelerated progress in 2016 and higher levels of attainment in the senior school.

Please note the even year / odd year level discrepancy - these students are stronger in the even year levels as they complete the level of the curriculum. This trend has been observed over a number of years and in other schools. This trend is reflected by the year 6 performance which has seen growth from 1:2 (50%) above in 2015 to 2:3 (66%) above in 2016. This is also excellent progress.

When we look at those achieving above the standard, we see that girls are performing extremely well and better than the boys. Going forward we will continue to accelerate boys reading achievement. Please note in year 7-8 in 2016 there were 1/3 boys and 2/3 girls in the senior syndicate.

## WRITING

### Target 1.

In 2016, increase the number of boys throughout the school achieving at the 'above' level in writing, from 11.5% to 20%.

**OUTCOME = NOT ACHIEVED** ~ At December 2016, 9% of boys were achieving above the standard in writing, compared to 38% of girls. Of note however we have seen an improvement with boys in year 5-8 in 2016 show 18% above the standard, which is doubled from results in 2015 and shows some accelerated progress.

### Target 2.

In 2016, improve the achievement of students writing to better reflect the achievements in reading.

**OUTCOME = ACHIEVED IN YEAR 5-8** ~ There was growth in the performance of students in writing of the year 5-6 area of the school which is pleasing. Indeed every year level from year 4-8 improved the students achieving above the standard in writing from 2015 - 2016. However we continue to struggle to get students above the standard in writing in the early years.

While good gains were made in improving some writing performance, writing achievement is still some way from being comparable to our reading performance- to achieve parity here is an aspirational goal. Early next year at teacher only week the teachers will be having 2 days PD with Gail Loane on writing, followed by further professional development and teacher inquiry. This combination of external intervention and a continued in-school focus, particularly getting children engaged and confident with writing and other forms of making meaning in the early years, will lead to better progress in the middle school, for boys, and for all students.

## Reason for the variance      Why did it happen?

The actions and strategies that teachers took to address underachievement were part of our teaching as inquiry process. Staff met in teams to identify and discuss our priority learners; at the same time they work collaboratively to develop powerful learning cultures focused on the development of the Key Competencies. The goals and targets of the 2016 annual plan were discussed collaboratively with the whole staff and the staff came up with the strategies and actions for their areas of the school. This process gave the staff ownership and agency, and led to more effective enactment of the KNS key practices. Responsive reading and writing plans, and personalised strategies for priority learners were crafted by each team of teachers; these were represented in the actions above. Associated with the enactment was the better recording and tracking of these learners, and improved coherence of practice across the school.

### By Syndicate

*Juniors:* the use of collaborative problem solving in syndicate meetings and through forums led to targeted interventions for a number of readers who were below the standard in 2015. These included responsive planning as in the use of split screen thinking, personalised reading programmes and use of reading recovery and teacher aides. Also significant was the use of learning conversations between teacher and students on the use of decoding and comprehension strategies to build fluency.

*Lower Middles:* some personalisation of reading programmes occurred. Ongoing teacher inquiry identified students who were disengaged in reading and oral language, and strategies were implemented to make classroom programmes more inclusive.

*Upper Middles:* some personalisation of reading programmes occurred to draw on student interests and ideas. Teachers used targeted questions to focus on reinforcing comprehension strategies and develop the ULST KC so that students were intent on meaning.

*Seniors:* Most teachers enhanced feedback and response processes by moving these processes from teacher to student, to student to student. Literacy circles and online forums were two contexts where this shift occurred. Students came to use online forums as an extension of their oral discussions around texts, and some parents extended these discussions at home. It was observed that priority learners become more engaged as a result, read more challenging texts and took part in writing as a

collaborative and ongoing process anytime with the affordance of GAFE.

## Evaluation Where to next?

As part of our teacher inquiry and practice-based research, we have formulated a school-wide question for teachers to investigate: How do students respond to the dialogue and feedback that teachers give them about their learning? This question will enable teachers to coordinate the specific strategies they have been using to accelerate progress in reading and writing, using the key processes of dialogue and feedback, and also building the ako relationship. The use of digital tools and overall digital literacy will be implemented further to develop our dialogue key practice by enhancing and extending the oral modes of dialogue and feedback, and also develop the multiple literacies key practice where meaning making becomes a more active and creative process. At the same time, along with staff reflective forums, we are developing a schoolwide record of priority learners, including those below the standard in reading, so that we can monitor and track their progress as they move through the school.

## Planning for next year : READING GOALS

In 2016 our National Standards student achievement information showed 90% of children at or above the standard. This can be broken down as 42% of children above the standard, 48% were at the standard and 10% were below the standard in reading.

Of note there were three areas –

- Gender – In 2016, of the 41.7% of children above the standard in reading, 33% were boys and 66% were girls. This showed that across the school in reading, girls were twice as likely to be above the standard than boys.
- Cohorts – In 2016, our year 5-8 children have over 50% above the standard while our Y3-4 children were below the school 'average' of children above the standard - particularly Y3 (16%) and also Y4 (34%).
- Priority – Of the 10% children (29) below or well below the standard, 66% of this group were boys.

### 2017 READING TARGETS

1. In 2017, increase the number of boys throughout the school achieving at the 'above' national standard level from 29% to 40% as we look for an aspirational target of 50% of students reading above the national standard.
2. In 2017, improve the achievement of students in the Y4-5 cohort to attain results in the 'above' the national standard, at least similar in proportion to those in the upper middle/senior area of the school.
3. Show accelerated progress for students below or well below the standard in reading, reducing the numbers in this category.

## Planning for next year : WRITING GOALS

In 2016 our National Standards student achievement information in writing showed 89% of children at or above the standard. 24.5% of children were above, 64.8% were at the standard and 10.7% were below the standard in writing.

Of note these three key areas –

- Gender – In 2016, of the 41.7% of children above the national standard, 83% were girls and just 17% were boys. This is a wide gap and showed that across the school our highly competent writers were predominantly girls.
- Cohorts – In 2016, of our year 5-8 children, 40% are above the national standard. In 2016, while 80% of our Y2-3 children are at or above the standard, only 6% (Y2) and 4% (Y3) were above the standard. This is well below the school average.
- Priority – In 2016, of the 10.7% children (31) below or well below the standard, 75% of this group were boys, showing an overrepresentation of boys below the standard.

### WRITING TARGETS 2017

1. In 2017, our inclusive goal is to improve the development of all students in writing to according to the ULTC key competency so that the achievements in writing better match the achievement in reading.
2. In 2017, increase the number of boys throughout the school achieving at the 'above' level in writing, from 9% to 20%.
3. In 2017, improve the achievement of students in the Y3-4 cohort to attain results in the 'above' level in numbers towards attaining results of those in the upper middle/senior area of the school in writing.
4. Show accelerated progress for students below or well below the standard in writing, reducing the numbers in this category.

School Name:	Kelburn Normal School	School Number:	2876
<b>Maths</b>			
Strategic Aim:	<b>Student Achievement</b> <ul style="list-style-type: none"> <li>• Create a powerful learning culture</li> <li>• Extend individual student progress and achievement</li> <li>• Outstanding delivery of education in all areas, with priority to literacy and numeracy</li> </ul>		
Annual Aim:	<i>To increase the number of students achieving at 'above' as evidenced in relation to National Standards in Reading, Writing and Mathematics.</i>		
Target:	<b>Maths Targets 2016</b> <ol style="list-style-type: none"> <li>1. In 2016, increase the number of boys throughout the school achieving at the 'above' level, from 24.4% to 30%</li> <li>2. In 2016, improve the achievement of students in the senior classes to attain results in the 'above' level in numbers at least similar in proportion to those in the upper middle.</li> </ol>		
Baseline Data:	<b>MATHS BASELINE DATA</b> <p>Our baseline data (end of year OTJs for 2015) showed that student performance among boys at the 'above' level in mathematics across the school was not commensurate with the results of girls (24.4% (boys) v 30.5% (girls)). When taken into the context of all students assessed in 2015 as above the national standard, the relative underachievement of both boys and girls was most pronounced at Year 7 (19.4%) and, to a lesser extent, Year 8 (30.2%). As an observation, although relating to quite different student cohorts, when compared with the results of Years 5 and 6 (41% who were achieving 'above'), the results were unimpressive. These results were consistent with those for the same cohorts in previous years; now these students were in Year 7 and 8, especially the boys, we were concerned that they continued to be under-represented in the 'above' achievement level as reflected in the National Standards data.</p>		

Actions	What did we do?
	<p>In 2016 our long term plans continued to be focussed on number, and for the strands, measurement and geometry. We continued to monitor students that were either below the standard, or not making any progress above that incrementally expected. For the underachieving students there was a focus on place value for 2016.</p> <p>In the junior area of the school, students mathematics learning was extended in Discovery Time and Makerspace. This included collaborative problem solving and exploration using ipad apps. For the older juniors, the digital environment allowed children to represent relationships and patterns, especially those they discovered in their statistical investigations.</p> <p>In the senior syndicate, a key strategy was to encourage problem solving in authentic contexts. This problem solving promoted engagement, collaboration, and dialogue. Teachers scaffolded the use of mathematical language and encouraged students to share strategies and difficulties. By not streaming maths at the Year 7/8 level and providing examples within the classroom, there was a variety of rich mathematics discussions led by the other students. For geometry, there was an emphasis on the use of equipment in pure maths contexts- for example, drawing and making nets. For measurement, the students were required to conduct inquiries and use measurement in real life contexts i.e. making transects to sample populations.</p> <p>Throughout the school, in conjunction with learning conversations, split screen thinking and planning was used to make programmes more adaptable to student's thinking and errors, and ensure feedback and feed-forward were more focussed. Curriculum differentiation and enrichment was provided by using flexible grouping and providing extra teaching resource for students below the standard.</p>

Outcomes	What happened?
	<p><b>Target 1.</b> In 2016, increase the number of boys throughout the school achieving at the 'above' level in maths , from 24.4% to 30%.</p> <p><b>Outcomes</b> = <b>NOT ACHIEVED</b> ~ At December 2016, 22% of boys were achieving above the standard in maths, although worthy of note the average for Y5,6,7,8 children in 2016 above the standard was 37% which was a 4% increase from 2015.</p> <p><b>Target 2.</b> In 2016, improve the achievement of students in the senior classes to attain result in the 'above' level in maths with numbers at least similar in proportion to those for the Upper Middle students.</p> <p><b>Outcome</b> = <b>NOT ACHIEVED</b> ~ This shows that some of our year 7 group in 2016 have not yet reached the achievement levels of students in the upper middle area of the school. We note the pattern that students in odd years tend to make less progress than those in even years, and that the substantial step up into level 4 in mathematics . Also affecting the year 7 outcome were temporary staffing arrangements that led to some student disengagement and an unevenness in programme quality across the syndicate.</p> <p>However, the levels of achievement for year 8s have improved considerably in 2016; the Board should be pleased with the progress of year 8s where there are twice as many above the standard as the year before. By the end of 2016, 43% were above the National Standard, ahead of the rest of the school average (29.3%).</p> <p><b>Recommendation</b> - We continue to focus on these targets in 2017.</p>
Reason for the variance	Why did it happen?
	<p>The best progress was made by the Year 8 cohort, a group with relative underachievement historically. This progress included the boys so it addressed both targets. The actions detailed above were enacted coherently in two out of the three year 7 &amp; 8 mathematics classes; these two classes included most of the year 8 students. In particular, greater involvement in maths discussions was clearly observed in these classes, both when working on problems and in reflecting afterwards. Students were using mathematical language with greater clarity and showing greater understanding of key concepts such as place value, and what equals means. Some students were using apps to work together; for many the practical tasks were engaging. Goal setting and the use of ways and means was implemented effectively to fill in gaps.</p>
Evaluation	Where to next?
	<p>New systems to monitoring progress of priority learners were designed and enacted at the end of 2016; the information from ongoing syndicate discussions and problem solving around these students has now been recorded so programmes and interventions can be more coherent when students move between syndicates. Data will be used more effectively to inform next steps and goal setting. Extra teacher assistance and extra resources for priority learners will be continued.</p> <p>Our overall teacher inquiry question for the year addresses how students respond to teacher dialogue and actions, which includes feedback and feedforward. In mathematics, this will involve more effective use of the dialogic key practice #3- dialogue for knowledge building. Teachers will develop the mathematical language and scaffolding required to meet the needs of priority learners. The inquiry will extend our syndicate discussions around priority learners to ensure there are coherent quality programmes within all syndicates, something which was missing in some in 2016.</p> <p>For all students, providing opportunities to apply their skills and knowledge in authentic contexts will be an emphasis. For the older students - year 5 to 8- we aim to give students the agency to tutor each other more effectively using dialogue and feedback, so that more students are included in these discussions. Adapting programmes to student's needs and interests using split screen planning and thinking will be continued, as will the use of apps to assist students to increase their skills and fluency. Apps will also enable more students to monitor and assess their own progress independently.</p>

## Planning for next year: MATHS GOALS

In 2016 our National Standards student achievement information showed 92.4% of children at or above the standard in mathematics. 29.3% of children were above, 63.1% were at the standard and 7.6% were below the standard in mathematics.

Of note there were three key areas –

- Gender – In 2016, of the 29.3% of children above the national standard in maths, 36% were boys and 64% were girls. This showed that across the school in reading, girls were twice as likely to be above the standard than boys. With over 90% at or above the standard however, boys were achieving solid results.
- Year levels – In 2016 our Y2-3 children were below the school 'average' (29.3%) of children above the standard...Y2 (16%) and Y3 (21%).
- Priority – In 2016, of the 7.6% children (22) below or well below the standard, 60% of this group were boys.

### **2017 MATHS TARGETS**

1. In 2017, increase the number of boys throughout the school achieving at the 'above' level, to close the disparity between girls and boys achieving above the standard in maths.
2. In 2017, improve the achievement of students in the Y3-4 cohort to attain results in the 'above' level in maths, at least similar in proportion to those in the upper middle and senior area of the school.
3. Show accelerated progress for students below or well below the standard in maths, reducing the numbers of children at KNS working below the standard in maths.