

NASDAP SCHOLARSHIP AWARD 2007

NCEA/NQF Data Analysis in a Secondary School Context



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INTRODUCTION

The scope of this report was to explore existing practice in a range of case study schools, with regard to the analysis of National Qualifications Framework (NQF) and National Certificate of Educational Achievement (NCEA) results and how this analysis allows school leadership to appropriately gauge improvements in performance over time. In particular, I was interested in attempting to determine the extent to which Heads of Department use templates to enable credible analysis, not only quantity of credits gained, but the quality of the achievements in those credits gained. Additionally, I wished to determine from the case study schools, how this assessment information is subsequently used to guide programmes of teaching and learning.

Finally, and of no more or less importance than any other aspect of this research, I wanted to create as common a picture as possible about how Principals' Nominees, Head of Department/Faculty and Principals went about providing feedback to the Board of Trustees and other key stakeholders. My set of eleven research questions¹ centred on the existing practice within the case study schools and was intended to review existing NQF data analysis.

I chose to explore interdepartmental NCEA/NQF Data Analysis in a Secondary School Context due to casual conversation with colleagues in a range of schools who collectively found that the availability of analysis tools for meaningful NCEA data analysis was causing a great deal of angst. Exacerbating this situation is the fundamental reality that many of the educational professionals charged with ensuring appropriate analysis and reporting of NCEA/NQF data to key stakeholders (Boards, Principals, ERO, NZQA, etc) are lacking the mathematical/statistical background understanding to allow them to confront the issue with understanding and due rigour. To contribute to the easing of this burden would be of great benefit to school leaders and decision makers.

The aim of this piece of research is to provide schools with information on tools in use in secondary schools that provide robust and meaningful NCE/NQF data analysis and provide meaningful outcomes for students and meaningful data for the other community stakeholders.

¹ Refer to appendix 1 for a copy of the research questions.

METHODOLOGY

I intend to explore the existing methods of data analysis currently being used by the sample set of schools. I have chosen to use a Case Study research method to undertake this research task. Case study research excels at bringing us to an understanding of a complex issue or object and can extend experience or add strength to what is already known through previous research. Case studies emphasise detailed contextual analysis of a limited number of events or conditions and their relationships. Researchers have used the case study research method for many years across a variety of disciplines. Social scientists, in particular, have made wide use of this qualitative research method to examine contemporary real-life situations and provide the basis for the application of ideas and extension of methods (Soy, 1997). Researcher Robert K. Yin defines the case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used (Yin, 1984, p. 23).

Many well-known case study researchers such as Robert E. Stake, Helen Simons, and Robert K. Yin have written about case study research and suggested techniques for organizing and conducting the research successfully (Soy, 1997). In simplifying these combined works, the following six steps are proposed as a scaffold for producing a piece of case study research:

- Determine and define the research questions
- Select the cases and determine data gathering and analysis techniques
- Prepare to collect the data
- Collect data in the field
- Evaluate and analyse the data
- Prepare the report

After some literature review of case study design, the above process was followed in the construction of this case study research report.

Defining the Questions

- How does The Case Study High School currently analyse NCEA/NQF assessment data?
- What systems are used to analyse data in the sample set of case study schools?
- What questions are asked in all of these schools of the resultant analysis?
- How is the analysis used to improve the quality of teaching and learning in the schools?
- What vehicle is used to report NZQA data to the Board of Trustees?

Data Collection Techniques

- Observation of current practice.
- Interviews.
- School Visits.
- Email questionnaire distribution
- Review of existing documentation.

It should also be noted that the format of this report was created to make accessing the responses from the case study schools as simple as possible. To this end, I have not followed the common practice of reporting the feedback from each case study school in its entirety. Instead, I have chosen to report each school's responses by questions asked to give the reader a common view of how each issue is approached.

Case Study Schools

The seven case study schools had the following demographic;

CSS	Decile	Comp	Roll	Type
1	3	Co-ed	2080	State
2	7	Girls	1035	State
3	4	Co-ed	1800	State
4	10	Co-ed	547	State
5	n/a	Girls	1439	Private
6	5	Boys	1018	State
7	9	Co-ed	2020	State

CASE STUDY QUESTIONS

QUESTION ONE:

How does <The Case Study High School> currently analyse NCEA/NQF assessment data?

CSS1

A spreadsheet was developed late 2006 that incorporates NZQA data from the web and internal data from the schools SMS. HoDs manipulate this data and produce graphs using an excel spreadsheet template crafted in late 2006. They then answer a series of focussing questions to guide them in their analysis of the data.

CSS2

Each department analyses their own data to produce an 'Evaluative Statement' for the Principal and BoT. This statement is analysed in terms of N, A, M, E per subject and year level. This analysis is then compared to previous years' analysis (to provide some longitude) and with local schools and other benchmarks such as decile and school .

CSS3

The NZQA provided .csv file is downloaded at the beginning of the year and results separated into year groups. Within each year level group a detailed analysis is produced (eg L1, L2, L3 and Literacy, Numeracy, Credit average). This file is then manipulated such that subject areas information is combined (%/Number/Decile etc) into one sheet.

In SMS, summary sheets are produced for each subject showing results for every standard. This shows 'not achieved' for both internal and external standards. HoDs use a template to record results for each standard. This is shown as a percentage and a comparison is made of the last three years when compiling the Annual Report for the Board of Trustees.

CSS4

The Principal's Nominee (PN) is responsible for school overview data to be presented to BoT (data due for May meeting but usually at April meeting). HoDs prepare their own departmental material and report (via standard template questions), via the Principal to the BoT. Most data analysis is drawn directly from NZQA website but some departments embellish the template with their own material.

CSS5

Once the results file is available and imported into the SMS, we compare NQF achievement data with the previous year. In addition grade point averages (GPA) are calculated (including not achieved) for each subject. Information by standard is then compared to national results and this information is then reviewed and interpreted by HoDs. All subject results are compared to national benchmark data. This data is used to assess whether departments are performing. Poor results may be the result of the particular cohort taking the subject that year but may also indicate a need for;

- PD in a particular area,
- further resources,
- Assistance with classroom management.

When this is discussed with the HoD and department they usually have an idea of reasons for inconsistent success or consistent lack of success.

Overall GPA's are calculated for each student in order to recognise the top scholars at each level. These scholars are recognised in a public assembly (with notable guest speaker). Students' previous years' results are used to determine whether each individual will require an extra literacy course and students' current results (for the existing year including internals and practice externals) are considered in the advice offered when option choices are being made.

CSS6

Faculties track key standards at all levels (self selected) and report direct links to the annual plan. A variance analysis is undertaken to identify areas of interest. Additionally, HoFs undertake ongoing internal analysis for the current year for all internally assessed achievement standards (AS). Most of the school wide statistical analysis is completed by the Principal (with some help from the Deputy Principal and the aDapT (an SMS add on).

Reporting to the BoT is completed via a standard template and the data obtained by aDapT is incorporated into this report. Departmental annual plans are developed directly from the school annual plan

CSS7

Once the .csv results file has been received and imported into the SMS, data is analysed by subject using the SMS analysis functionality. This is used to compare results internally across subjects, classes and teachers. Analysis against national benchmarks is done using the data obtained from the NZQA website once national statistics become available. HoFs are provided with all the data that they require (as the analysis of data from both the website and the SMS is undertaken centrally) and they are required to interpret this information in order to respond to the set questions that are asked in the standard template provided for reporting to the BoT.

QUESTION TWO:

How are individual students / groups of students considered in your analysis?

CSS1

The late timeline for development of the spreadsheet used in 2006 meant that ethnicity / gender analysis has not been part of the 2006-7 reporting but this is planned for later in the year as we are going to revisit the spreadsheet and improve it. It should be noted, however, that ethnicity and gender analysis can be done at a lower level using the SMS used at present. The focussing questions also need to be reviewed for 2007 results, as the wording has proven to be insufficient to elicit consistent interpretation of responses from HoDs.

CSS2

Groups such as GATE, Maori, Pacifica and 'general risk' are identified and comparisons made with previous years. Goals are then subsequently set and reported upon.

CSS3

Each year level group is ranked by the number of credits earned. Comparison is then made between males, females, ethnicity etc. Ethnicity statistics are produced for Maori / Pacific Peoples and other significant ethnic groupings in our school. These statistics are reviewed by year level. Each set of group data is considered in terms of NCEA L1, L2 & L3 as well as literacy and numeracy components. Findings are then summarised and a report prepared for the SLT and Pacifica Committee. Additionally, the success rate of Maori students who were involved in the schools Mentoring Programme is analysed.

Each subject HoD is advised to analyse standards offered to the different year levels and a comparison of the success rates over the past 3 years is made.

CSS4

Maori and Pacifica students are targeted for specific analysis as well the students involved in the GATE Programme (picked by basket of data) and the students in the tail. A 'literacy through history' programme has also been designed.

The school has created a "credit monitoring form" for 'middle order students' with each student in this target group having regular interviews with the Principal and being mentored by past teachers (3 mentors with a caseload of 25 students to mentor). This

initiative is funded from operational grant and is based around a sports model for tracking purposes as this group is dealing with boys only.

The school library is open and supervised from 3.30 to 9.00 pm each night from October for the six week build up to NZQA external exams. This is supervised (as an "OK to study" message) by the deputy principals.

CSS5

Individual student's data is reviewed to recognise success with this success being measured personally as well as academically. Class groups, accelerated groups, significant ethnic populations, etc are all analysed specifically, however, we do not do Pacifica or Maori group comparisons as the number of those students enrolled does not provide statistically valid results as we have only a few of each.

CSS6

Our year 09 cohort undertakes PATs and banding is used to group students into similar ability groups. The school is heavily into the numeracy project (due to the initiative of the new HoF). PAT is used as the benchmarking tool whilst asTTle is used for the feed forward value in English and Maths.

The school is involved in the AtoL project, and a number of form groups are worked with (in core subjects excluding maths as the numeracy project is the focus here). The lessons learned from the AtoL project are distributed live throughout the campus. No measurable data from AtoL at this point as the project is still in its infancy on this campus.

A tracking system is in place on a subject and roopu basis at years 11-13. Each student has subject specific portfolios of assessment (envelopes with entered standards listed on front and completed assessments stored inside). Reassessment is undertaken based on the practicality of doing so with no predetermined limits on the number of reassessments. Horizontal form groups exist (5 form times per week) and assessment tracking takes place at this time. The roopu teacher undertakes both the tracking of attendance and assessment and undertakes mentoring in the form class as possible (25-30 students).

CSS7

HoFs have departmental goals and objectives that link directly to the school annual plan. Within this annual plan are targeted groups of students that are the focus of specific attention. Each Faculty has procedures and practices in place to help improve the achievement of these groups over time. Analysis is undertaken (predominantly via the SMS with some assistance from the NZQA website) in order to provide meaningful data to support the existence and attainment of the goals set.

QUESTION THREE:

Is analysis undertaken at various levels?

CSS1

Students are encouraged to complete a tracking sheet throughout the year and ensure that they sign off their results with classroom teachers. The centralised analysis spreadsheet allows for class by class analysis to highlight weak class performance and to identify potential teaching weaknesses and/or need for changes to assessments, standards or pedagogy.

CSS2

Analysis is undertaken at class, department and school wide level, but no interdepartmental analysis is undertaken. Goals are set for each year and reported on to the Principal and the Board of Trustees. From 2008 it is intended that NCEA results will be used in conjunction with MiDYiS (entry point) data to allow for a measure of value added. Each department/subject sets a goal for each year and over 5-6 years each standard in a course will be reviewed/analysed to improve student achievement.

CSS3

Class results are imported into the school SMS and individual class statistics are generated. Results for each class are analysed for both US and AS. Individual class results in a subject are compared with overall school performance in the same standards.

Departmentally, HoDs are required to provide detailed analysis of their subject results using a template provided so that a consistent reporting pattern is available for the Principal and Board of Trustees. This template allows a breakdown of both AS and US and these are shown separately. No inter-departmental analysis is undertaken. School wide results are compared with similar decile schools/type of school and a comparison of US and AS is made and compared with national trends

CSS4

Class by class analysis is undertaken by the HoDs and data stays in house. Should the data identify any performance issues from a teacher point of view, these are directed to the Principal as soon as they arise. Statistics are compared teacher-to-teacher as well as teacher-to-national benchmarks.

Horizontal and vertical analysis with schools 'like ours' and own historical data is undertaken. No interdepartmental comparison of relevance is reported or tracked however, some anecdotal rivalry with regard to performance by house, etc exists. More in the spirit of good natured ribbing than data analysis.

CSS5

A lot of basic data that is the same for every department is provided centrally by a person specifically employed for the function, that way we can see what is happening between departments and between standards within departments. Often it is the comparison between standards and national results that can provide HoDs with the most illuminating data in terms of their responsibilities for curriculum delivery within their departments (for example, "*why has a department got wildly differing results in 2 standards that have the same basic national result?*")

Inter departmental comparison is done unofficially in that every member of staff has the data for every department, including SLT. HoDs sometimes look at how well students have done in their subject as opposed to other subjects but they choose to do that individually.

CSS6

Inter-class analysis is done using the school's SMS but remains in the faculty and stays 'in house'. Full analysis at all demarcation points (eg class, department/faculty, school wide). Additionally internal analysis is undertaken as the year progresses and as standards are completed. This analysis throughout the year is submitted to the Principal at given time periods.

CSS7

Analysis is undertaken at all levels of NQF and across every subject and ethnic group of significance. In addition to the standard results from the external examinations, we also prepare ongoing analysis at given yearly milestones to allow for course modification/alteration as the year progresses.

QUESTION FOUR:

What does the data show about actual student achievement?

CSS1

The way the data is constructed shows how many students achieved in each standard in each subject at each level for internally and externally assessed standards. The main points from the 2006-7 report were that our Level 1 results were lower than expected and that our students are taking slightly longer to get NCEA Level 1 (eg. achieving L1 in their Year 12 year). The results analysis undertaken by HoDs and collated by TALAG² shows that the two common barriers to success are absenteeism and lack of student engagement. The PBI³ initiative should hopefully address the former and we are investigating how to implement a differentiated learning programme to better meet the needs of individual students.

CSS2

Students achieve well above the national average and achieve at Merit and Excellence level much more than other local schools. Maori achievement is above the national average but below that of Pakeha students.

CSS3

A significant number of the school population take more than 1 year to complete any single NCEA Level. Subsequently, a large number of Year 12 students complete the requirements for both their NCEA Level 1 and NCEA Level 2 qualification in the second year of their qualification programme. This is particularly significant for Maori and Pacific peoples with the percentage achieving literacy at Level 1 being significantly lower than those achieving numeracy at Level 1 (possibly a reflection of the language background of our students).

CSS4

An upward sloping line of best fit is evident since the implementation of NCEA. Our school performs very well against national statistics and has achieved amazing results.

CSS5

It shows students who have not achieved well for whatever reason but as we also rely on value added data, it also provides data about individual students who have performed well in relation to their starting point.

² Teaching and Learning Advisory Group

³ Positive Behaviour Initiative

CSS6

Maori achievement at our school is far better than national statistics. The improvement from year to year is very dependant on cohort although the line of best fit is upward sloping (although 2006 year 13 cohort was slight glitch). Our Pacifica cohort is too small to analyse in any significant fashion. Boys tend to do better, relative to national statistics, but girls continue to do better than boys locally. We perform at the national average at most levels.

CSS7

Achievement levels are above that of our decile rating and our Maori and Pacifica students perform well above the national average for Maori and Pacifica students. We do have areas that require some targeted intervention but overall, NCEA and the NQF suits the needs of our client base very well indeed.

QUESTION FIVE:

How are results compared with external reference points?

CSS1

Using decile 3 NZQA data and our own internal data we compared the results of those students who gained credits for their assessments. What this meant is that we were able to comment on the level to which our students are achieving as a comparison to the level which is attained across the country in similar schools. What has been interesting in some instances (eg. languages such as French and Japanese) is that our school offers on average 75% of the nation's cohort sitting achievements standards from decile 3 schools. Other decile 3 schools either do not offer languages or opt for unit standards, something we have considered but are not looking at seriously at the moment. The NZQA data also allows us to compare our results at a national level. This can be interesting for departments that are not represented highly at decile 3 schools.

CSS2

We look at national literacy and numeracy rates at level 1, UE, NCEA levels 1-3 and scholarship comparisons with the national average. We also attempt to compare with local schools and same decile schools. We do tend to look predominantly inward at progress made and trends over recent years.

CSS3

GATE students' results are compared with benchmark indicators (eg. PAT/asTTle results). YELLIS⁴ was used in previous years to compare predicted success with actual success.

CSS4

Our results are compared with NQF national statistics, with 09 and 10 data benchmarked in terms of PAT and asTTle benchmarks.

CSS5

We compared standard by standard comparison to national results and a comparison is made to national results overall, e.g. subject school, number of excellences over per student, percentage of students achieving certificates, literacy etc.

⁴ The Yellis project measures relative pupil progress from the beginning of Year 11 to the end of Year 11.

CSS6

Our results are compared with NQF national statistics, with 09 and 10 data benchmarked in terms of PAT and asTTle benchmarks.

CSS7

Our results are compared with NQF national statistics, with 09 and 10 data benchmarked in terms of PAT and asTTle indicators.

QUESTION SIX:

How is this analysis used to improve student learning?

CSS1

It is still early to say how this has impacted on student learning, but it has helped us target areas of success and weakness. The analysis has helped us on two main levels. If looked at in conjunction with higher level thinking skills then we are able to view when our students are performing at a basic recall level or at a higher level of thinking. This provides a focus for specific topics requiring an increased amount of training in thinking skills and problem solving.

We have discovered that our success rate is significantly higher in internal assessment than external assessment. This reinforces our thinking, that the students prepare well for assessment with guided instruction, but their individual exam preparation is poor and they are not attaining a deep level of understanding in the topic initially. Something which we need to address if we are to improve their learning. Looking at areas of weakness allows us to focus ourselves into departmental goals early in the year, with the intention of making at least some impact by the end of the same year.

The formation of TALAG⁵ this year has meant we are able to span across all faculties / departments in our search for improved learning outcomes. All reports to the BoT have been synthesised and common comments (positive and negative) have been collated into a set of issues to be addressed. We will be looking at one or two of these issues per term and making recommendations to SMT and BoT as a result of meetings held.

CSS2

Goals are set each year per subject area and course as previous years data is used to feed forward into course design.

CSS3

Where success levels are low in a particular standard, this is replaced by a more appropriate standard. The balance between AS and US is adjusted where appropriate and the differences between class results in the same subject area are analysed. If one class has performed better than others, discussions are held among the teachers to determine what factors have caused the particular class to perform better or which approaches need to be modified. Groups of students who require more assistance (e.g. those who have not achieved literacy for UE from Year 12), are identified and offered special assistance.

⁵ Teaching and Learning Advisory Group

CSS4

Data is used to feed into the professional development programme and the school strategic goals. Literacy is a key focus and most professional development goals include identification of increasing student understanding in particular standards.

CSS5

HoDs can decide upon curriculum delivery issues on the basis of evidence the analysis provides and resources can be targeted to departments with specific and identified needs on the basis of evidence.

CSS6

Roopu groups from Y11-13 are used as a vehicle to mentor students and track achievement. Course alterations are made as year's progress and any alterations to course often result in change at junior levels to feed into senior programmes later.

CSS7

Data is used to feed into the professional development programme and the school's strategic goals, in addition to the content of courses. The balance between AS and US (and of the number of credits) is adjusted where appropriate. Groups of students who require more assistance (e.g. those who have not achieved literacy for UE from Year 12), are identified and offered special assistance. Student learning needs and pathway requirements are also constantly reviewed through the year.

QUESTION SEVEN:

How is this analysis used to improve teaching/pedagogy?

CSS1

We have been able to analyse individual teacher performance within their classes. This has been helpful in identifying teacher strengths and weaknesses on both the subject and topic level. This enables us to target weaknesses and use staff strengths to share ideas across the department. It has also aided in the analysis of how successfully we teach topics. We are now able to observe our performance relative to the nation. An example of this being useful is the understanding that some topics are difficult for students across the country and that although we could be doing better and the results are not great, we are still close the average for the similar schools which helps put our results back into perspective. TALAG will also be looking at professional development needs of staff and aim to answer the question “where is our money best put?”. While there will always be subject specific needs for professional development, we can also look at whole staff objectives (eg. differentiated learning).

CSS2

The material gathered in response to question six (above) is viewed in light of areas requiring attention and modifications to the teaching programme/pedagogy are made to allow improvement. Additionally, staff within departments discuss strategies to implement any suggested modifications.

CSS3

Subject classes who share common standards often have a group which has performed at a higher success level. The teacher of that particular class/group will often share their approach/methodology with the rest of the team.

CSS4

No full staff meetings are held in the area of pedagogy, but we have started a voluntary set of ‘wine and pedagogy’ evenings run each term. These evenings pose data based questions like ‘how can we improve attendance through classroom practice’ and staff co-construct responses and approaches around these trigger questions.

CSS5

As an example of how analysis is used to improve teaching, the answer in question three (above) enables the HoD to compare the pedagogy/resources in the delivery of two

differing standards and this could result in a change in approach to an area of the curriculum, for a department that does not appear to be performing the evidence could result in a department wide review.

CSS6

Professional development needs are identified from statistics and the intention is to up skill as required. A significant amount of professional development time is used up on developing an answer to the question “what is a great (school) classroom”?

CSS7

Meaningful data about specific topics and the successes students enjoy in them are available and this data can guide professional development and help to identify strengths and weaknesses within a department and on the staff as a whole. HoDs are able to target areas of need and address PD issues through the budget process well in advance.

QUESTION EIGHT:

How is this analysis used to improve teaching programmes/course content?

CSS1

As mentioned previously, noting the improved performance in internal assessments has reinforced why our alternative courses are constructed using unit standards. This provides many of our students with an improved chance of success. We have also been able to view performance in individual standards across all classes, indicating success or failure which is largely independent of teacher competence. Using this we can then monitor whether the standard is suitable and consider alternatives if not. TALAG has reviewed suggestions for changes to courses in departments. Results indicate clearly where students are achieving/underachieving and this has led to refinements to processes and courses offered such that students are exposed to assessment that is both relevant, engaging and allows them to succeed.

CSS2

Analysis is used to work toward achieving the goals set (past rates, etc). This analysis will help in decision about delivery of content, timing of delivery whereby such factors are altered / enhanced to try and improve overall student achievement.

CSS3

After analysing results, a subject will often divide their cohort into three different strands to cater for the ability of the group(s) concerned. Where a standard (e.g. research) in a particular subject has been found to be difficult for students to achieve over a number of years, another standard will be used to replace it. Students at risk of not achieving the literacy component required for UE, are given individual assistance. Students at risk because of lack of success in NCEA are identified and placed in the Mentoring Programme.

CSS4

A wide variety of programmes are offered to meet the needs of our students, particularly in Maths and English. We have adopted a multi-pathway approach and diversity of courses. GATEWAY is used to its full advantage to assist us in the delivery of varied programmes.

CSS5

By carefully analysing the results in different standards departments can give better feedback to NZQA on assessments, content or the cognitive load of different standards.

CSS6

The analysis of data has led to a constant culture of review and improvement of content and/or delivery of content in each department.

CSS7

Courses are reviewed and analysed at the end of each year with the external results, but can also be analysed (in terms of internally assessed standards) as the year progresses to allow for some proactive intervention in the design/delivery of content, thus allowing for timely and meaningful change.

QUESTION NINE:

What has this process added to the education received by students at the school?

CSS1

Long term the added benefits could be significant as we are able to target resources to areas of weakness. What we have now is more accurate information about what is actually happening and are able to track that over a period of time. We can use the information to prioritise areas of weakness to target and focus resources on addressing specific issues. As we look at making assessment as relevant as possible to all students, it is anticipated that students will become increasingly informed about the assessments they are doing. More teacher – student dialogue / conferences will need to take place in classes to ensure that students are taking standards they want to do

CSS2

In theory, this has enhanced the education they receive. A higher quality, more thoughtfully constructed content is delivered. Staff are better prepared and have better, evidence driven, planning.

CSS3

Numeracy success both at Level 1 and UE has improved greatly over the past few years. Level 1 Literacy success for Maori students shows these students achieving at a higher percentage level than other students. The number of ESOL students achieving Literacy (both Level 1 and UE) has improved.

CSS4

Flexibility of NCEA has allowed for an increase in student pathways, multi levelling⁶, advancement and enrichment. Students are now more closely monitored in terms of literacy and numeracy to ensure this requirement is met for level 1 NCEA and UE.

CSS5

Hopefully more evidence based and thoughtful review of programmes offered by departments and discussion about pedagogy.

CSS6

We have become more focussed on practical pathways rather than a focus on UE. We have a 30% transient population that is mostly professional transience due to short term

⁶ Multi-leveling is the term used to refer to students studying NQF standards at a level either greater or lesser than would be expected of them by their year level at school. For example a year 10 student may be taking Level 1 NCEA standards, or a year 12 student a mixture of Level 1-3 standards.

business placements and our school has the attraction of no uniform costs. We have also found that students who are disengaged elsewhere can find themselves arriving here and enjoying success not found elsewhere.

CSS7

Flexibility of NCEA has allowed for an increase in student pathways, multi levelling⁷, advancement and enrichment. Students are now more closely monitored in terms of literacy and numeracy to ensure this requirement is met for level 1 NCEA and UE.

⁷ Multi-leveling is the term used to refer to students studying NQF standards at a level either greater or lesser than would be expected of them by their year level at school. For example a year 10 student may be taking Level 1 NCEA standards, or a year 12 student a mixture of Level 1-3 standards.

QUESTION TEN:

How well does the school use the opportunities given through the NQF to develop its philosophy and approach to maximise achievement?

CSS1

The school is making every effort to ensure that decisions made, and goals set are based on real data and all relevant NQF information. One indication for that was the requirement of all HoDs to report using an established spreadsheet file, which integrated our school performance with data available from the NZQA website.

HoDs have access to the statistics area of the website that allows them to see, early in term 1, their results for the previous year. The board report submitted in term 1 allows SMT and the BoT to see the analysis of these results which can then be used to inform strategy and policy.

CSS2

This area is developing. Different courses have developed over time to cater for the different needs of students. Many courses now use a combination of AS and US. It will be interesting to see how this alters with the introduction of endorsements for certificates.

CSS3

An increasing number of students are electing to choose options such as ASDAN at different levels. Partnership with the local tertiary provider has resulted in students gaining credits in Industry related fields and Gateway is another area in which students have gained success through non traditional⁸ subjects.

CSS4

National Certificates tend to happen by osmosis here, awareness of what could be gained is done in earnest but course content is planned then certificates are coincidental to that.. NCEA meets the needs of students and is flexible and rewarding for students. Scholarship has provided the challenges required and the new proposals (certificate endorsements) are move in right direction.

CSS5

Teaching and learning for excellence has been a college goal now since NCEA was first posited. It has resulted in a great deal of discussion over the issues of assessment/pedagogy/content/expectations of students. HoDs and teaching staff have

⁸ Non traditional is described as falling outside of the base scope of accreditation by NZQA.

shared ideas of what this means in their subject and so all staff have been exposed to open forums and variety in the pedagogy as it applies to lots of subjects thus widening the range of experiences and ideas.

CSS6

NQF and qualifications (e.g. National Certificate in Employment Skills) happen by osmosis, not planned and delivered but are available.

CSS7

This areas tends to happen by osmosis as the primary focus is on NCEA Levels 1-3 and the scholarship opportunities that are available to students. Other NQF qualifications tend to happen, rather than be a focus of any specific intervention or structured plan.

QUESTION ELEVEN:

What vehicle is used to report NZQA data to the Board of Trustees.

CSS1

The HoD's report is prepared in term 1 ready for presentation to the Board. This report is based on a specially designed spreadsheet template. This sheet was created in order to provide a consistent platform based on actual data for HoDs to interpret and report these findings to the board. In addition to the spreadsheet there are also a series of questions recommended by NZQA that HoDs and staff ask from their results by way of interpretation. These questions are completed for each level of each subject in the NQF and provide a base for discussion.

CSS2

Evaluative statements are made by each department/subject area. A template is provided and reports statistics sets goals and reports on the goals from previous years.

CSS3

HoD Annual Reports are prepared from a standard template. A printed summary of all the school statistics is also provided to the BoT and an analysis is made of special areas as/when relevant (e.g. Maori and Pacific Peoples).

CSS4

A template is used by departments for BoT reports and is presented by Principal.

CSS5

The BoT receive a presentation on the comparison of our school with both national results and other individual schools. The presentation includes the value added results each year.

CSS6

Faculty reports and standard templates are used to report to the BoT.

CSS7

Faculty reports and standard templates are used to report to the BoT.

CONCLUSIONS

CSQ One

How does <The Case Study High School> currently analyse NCEA/NQF assessment data?

It is evident that schools behave in very similar ways in the way data is analysed. In essence, the NZQA provided .csv or results file⁹ is downloaded at the beginning of the year and results are either entered into the SMS or a spreadsheet created and manipulated (or a combination of the two). Each department within a school then analyses their own data using a combination of SMS and NZQA website analysis to produce a report for the Principal and BoT.

This statement is typically analysed in terms of N, A, M, E per subject/year level, is then compared to previous year's analysis (to provide some longitude) and with other benchmarks such as decile and school type. Again, it is common for the HoD/F to be reporting via the use of a common template and standard set of guiding questions. These guiding questions tend to focus on national comparisons, moderation feedback and the measurement of performance in relation to any specific goals set by the department.

Many schools are beginning to rely heavily on the NZQA provided statistics to benchmark nationally, whilst utilising the analysis functionality of their own SMS to provide a look at performance and achievement at the subject, class and teacher level.

CSQ Two

How are individual students / groups of students considered in your analysis?

The case study schools all seem to behave in a remarkably similar manner. Groups of special interest that appeared in all of the case study schools include;

- Maori
- Pacifica
- GATE
- Moderate needs

In addition to these groups, schools appear to fully analyse based on gender, ethnicity and all NCEA levels. All schools appear to measure these results against a standard set of benchmarks (being external data provided by NZQA) and goals set internally regarding student success and pass rates for given standards.

⁹ NZQA release results to schools via a secure website. This usually comprises of a .txt file that SMS packages can import and subsequently analyse. Additionally a range of other .csv (spreadsheet) files are made available by NZQA for download and manipulation by the schools

CSQ Three

Is analysis undertaken at various levels?

Again a comforting commonality is evident and schools appear to undertake analysis at class, department and school wide level. From the schools in the case study, I was unable to find any evidence of interdepartmental analysis and comparison. In some cases it was commented that such an analysis would produce information of little or no meaning. Schools use NQF analysis data to set school wide and departmental achievement goals for each academic year, and these goals and measures of them are reported to the Principal and the Board of Trustees.

Departmental analysis includes class results and in all cases, this introspective analysis is prepared using the schools SMS. This analysis results in individual class statistics being generated for each class and is inclusive of both US and AS. Individual class results in a subject are compared with overall school performance in the same standards, where appropriate. In nearly all cases, despite the class level analysis being reported to the Principal, the data remained largely 'in house'¹⁰

CSQ Four

What does the data show about actual student achievement?

Each of the case study schools above have been able to create real meaning from the analysis they have undertaken. In each case they have been able to create lines of best fit, identify patterns of attainment, identify areas requiring need or celebration and create courses, programmes, interventions or ways of celebrating the academic progress of students.

CSQ Five

How are results compared with external reference points?

The pattern here is very similar across the case study schools. All have reported that comparisons are made to the national

- literacy and numeracy rates at level 1,
- UE requirements
- attainment rates for NCEA levels 1-3
- Scholarship attainment rates.

¹⁰ 'In house' in this instance refers to within the department

All schools also attempt to compare with local schools and schools of a similar decile and/or size. We do tend to look predominantly inward at progress made and trends over recent years. Some schools add in additional measures including MiDYIS and YELLIS to attempt to determine value added. In addition, the use of asTTle and PAT information is used in some areas as a means of tracking value added.

CSQ Six

How is this analysis used to improve student learning?

Again the evidence gathered details very similar practice at all the schools surveyed. Schools note that the analysis that they undertake helps them to target areas of success and weakness. This in turn provides a focus for specific topics requiring an increased amount of training in thinking skills and problem solving. In addition to this, where success levels are low in a particular standard, they can be replaced by a more appropriate standard or the method of delivery adjusted.

Analysis is used to set goals each year (be that globally, departmentally or at the subject/class level) and previous year's data is used to feed forward into course design when it becomes available. Data is used to feed into the professional development programme for staff and school strategic goals.

CSQ Seven

How is this analysis used to improve teaching/pedagogy?

Schools have been able to analyse individual teacher performance within classes. And subsequently been able to identify teacher strengths and weaknesses from a subject and topic level. Weaknesses in delivery and course design can be isolated and rectified and staff/schools have been able to identify strengths to share ideas across the department.

Schools have continued to explore strategies to implement change based on the evidence that the data bring up. Schools have found that for a department that does not appear to be performing the evidence could result in a department wide review and targeted interventions being implemented.

One statement that needs to be made here (although it may not be evident in the raw data detailed above) is that in answering this question, there was a tangible increase in energy levels from respondents. This area is one that appears to have seen the greatest increase

in activity and genuine excitement and passion as a result of the analysis that is now being undertaken in an NQF environment.

CSQ Eight

How is this analysis used to improve teaching programmes/course content?

Schools have enjoyed the sense of justification and/or assurance about course design and programmes/pathways that have been structured around past pieces of data analysis. Clear indicators of success and failure have enabled fine tuning to the advantage of all students in the schools surveyed.

Analysis has helped in the decision making process about delivery of content, timing of delivery whereby such factors are altered / enhanced to try and improve overall student achievement. Additionally, groups of students can be identified and individual attention afforded them to ensure significant qualification milestones can be overcome as the year progresses, which is a significantly different model that could be employed in a pre-NQF environment. Schools have also been able to utilise data as a meaningful compliment to other non NQF programmes (e.g. Gateway).

CSQ Nine

What has this process added to the education received by students at the school?

The key theme that was evident in all schools studied was the obvious flexibility offered by NCEA that has allowed for an increase in student pathways, multi levelling, advancement and enrichment. Long term this includes the ability to target resources to areas of weakness, whilst exploiting areas of high performance in an effort to share these experiences with other departments in the school. Information is now more accurate in terms of what is actually happening and in schools and this information can be used to prioritise areas of weakness to target and focus resources on addressing specific issues. Schools studied agree that NCEA and the flexibility and depth of analysis it provides has led to a higher quality, more thoughtfully constructed set of course/programmes, staff are better prepared and have better, evidence driven, planning.

Additionally, most schools have evidence that student achievement is improving with all reporting numeracy increases both at Level 1 and UE.

CSQ Ten

How well does the school use the opportunities given through the NQF to develop its philosophy and approach to maximise achievement?

Schools appear to be making extensive effort to ensure that decisions made, and goals set are based on real data and all relevant NQF information. Courses and pathways on offer have expanded and have developed over time to cater for the different needs of students with many courses now using a combination of AS and US. Students enjoying success through non traditional subjects are becoming more numerous as NCEA meets the needs of students and is flexible and rewarding for them. Scholarship appears to have provided the challenges required for those academically strong and staff have been exposed to a variety of courses, programmes and conversations that have resulted in changed pedagogy and a widening in the range of experiences and ideas.

CSQ Eleven

What vehicle is used to report NZQA data to the Board of Trustees?

This area of the review was almost exactly the same in each school studied. In general HoDs prepare a report in term 1 ready for presentation to the Board of Trustees. To compliment the raw data as obtained via a combination of NZQA website (for national statistics and benchmarks) and the schools SMS (for internal class by class, subject by subject analysis), HoDs generally respond via a standard template format where a series of questions stimulate interpretation of the data analysis. These questions are completed for each level of each subject in the NQF and provide a base for discussion.

SUMMARY NOTE and ACKNOWLEDGEMENTS

In summary it appears that schools use a combination of the functionality of the SMS and the data available on the website to generate data of meaning. This data is then actively utilised to guide, improve and alter NQF courses and schools surveyed have been experiencing improvements in achievement over the life span of NCEA thus far.

Of the schools surveyed, the SMS systems used were KAMAR, IES and MUSAC with a couple using spreadsheets to provide analysis at a more detailed level, but this detail tended to be very specific to the school and not the sort of feedback that would be too beneficial as a generic template.

Schools are also beginning to allocate resources (in time and money) in the area of data analysis and of the 7 schools surveyed, 3 had recently created part time positions (mostly filled by former senior or middle managers) that focussed on data analysis and the support of HoD in preparing and interpreting NQF data for the Board. These roles had begun to evolve into research into best practice and best evidence and appear to be becoming nurseries for future school initiatives ad programmes.

I would like to thank those staff who willingly gave of their time in providing feedback to the survey questions. I very much enjoyed the chance to visit the schools that I did and continue to be encouraged by the quality of young people that wander the campuses in our charge. The teams of people that I spoke with are enthusiastic about their schools, dedicated, loyal and continue to genuinely care. As a result of the rich data that is now available through analysis of NQF results, I believe students are experiencing much better outcomes for them, in courses that are designed to meet their needs.

I must thank my wife, Vanessa, for her patience as I gathered the data and prepared the report, and her support in taking care of things whilst my mind was buried in data.

My thanks also goes to the National Association of Assistant and Deputy Principals for their support and generosity in the provision of this scholarship, and in particular to the Scholarship sub-committee for their support through the application and research period.

Should you wish to contact me to discuss any aspect of this report, you are most welcome to do so. I can be contacted at vaughanc@papatoetoehigh.school.nz

GLOSSARY of ABBREVIATIONS

AS	Achievement Standard
asTTle	Assessment Tool for Teaching and Learning (MoE and University of Auckland joint project)
AtoL	Assess to Learn
BOT	Board of Trustees
CSQ	Case Study Question
CSS	Case Study School
ERO	Education Review Office
ESOL	English for Speakers of Other Languages
GATE	Gifted and Talented Education
HoD/F	Head of Department/Faculty
LMS	Learning Management System (virtual learning environment)
MidYIS	Middle Years Information System
NCEA	National Certificate in Educational Achievement
NQF	National Qualifications Framework
NZQA	New Zealand Qualifications Authority
PAT	Progressive Achievement Test (administered by NZCER)
PN	Principal's Nominee (school based NZQA liaison)
SLT	Senior Leadership Team (as for SMT)
SMS	Student Management System (student database)
SMT	Senior Management Team (as for SLT)
UE	University Entrance
US	Unit Standard
YELLIS	Year Eleven Information System

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NCEA/NQF Data Analysis in a Secondary School Context

Case Study School _____ School # _____
SMS used _____

1. How does <The Case Study High School> currently analyse NCEA/NQF assessment data?
2. How are individual students / groups of students considered in your analysis?
3. Is analysis undertaken at various levels?
 - Class
 - Department/Faculty
 - Inter- Department/Faculty
 - School wide
4. What does the data show about actual student achievement?
5. How are results compared with external reference points?
6. How is this analysis used to improve student learning?
7. How is this analysis used to improve teaching/pedagogy?
8. How is this analysis used to improve teaching programmes/course content?
9. What has this process added to the education received by students at the school?
10. How well does the school use the opportunities given through the NQF to develop its philosophy and approach to maximise achievement?
11. What vehicle is used to report NZQA data to the Board of Trustees.