

Get over it: teaching effectively with NCEA

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NCEA was phased in over the three years 2002 to 2004 amid some controversy and criticism. Some of the criticism was due to the very newness of the qualification, and arose directly from teachers, students, parents, and employers being unfamiliar with it. However, some of the criticism was based on fundamental flaws in the new system that adversely affected education – criticism of the effect of NCEA on pedagogy.

In this presentation I explore some of these pedagogical criticisms and look at recent research that challenges the criticisms and suggests positive actions for teachers. Hence the title; it refers to getting over the criticisms and taking actions that move towards more effective teaching with NCEA.

I have organised the pedagogical criticisms of NCEA into four topics:

1. NCEA ‘dumbs down’ teaching.
2. NCEA is assessment driven and fragmented.
3. NCEA is over assessed and over stuffed.
4. NCEA is inconsistent and unfair.

Dumbed down

NCEA was modelled on a Scottish system of vocational qualifications and introduced the concept of competency based assessment to New Zealand secondary schools (Strachan, 2002). A central idea of this system was the notion of a simple pass/fail assessment based on competency.

NCEA was radical in two ways. One, it applied the competency based, pass/fail style of assessment to academic subjects and not just vocational qualifications. This led to the development of unit standards in traditional academic subjects such as Mathematics and English in which only pass or fail were possible. Two, it introduced the notion of endorsing competency based achievement with merit or excellence through the development of achievement standards. In many cases the unit standards and achievement standards covered the same subject material more or less in parallel, but with the unit standards sometimes providing a finer granulation of the subject and the achievement standards providing the possibility of merit or excellence.¹

One of the merits of this system is that students can receive recognition for those parts of a subject in which they are competent, even though they might not be able to achieve across all aspects of a subject. This reverses the pre-NCEA situation where the assessment system ensured that around fifty percent of school leavers left school with no formal qualifications.

On the other hand, there is a widely held belief that NCEA offers inadequate motivation and recognition of excellence – it leads to an attitude of ‘getting by’ instead of ‘doing my best’. (Hipkins, 2007; Meyer et al., 2006). This belief is based on two aspects of the system: the pass/fail system offers no reward for extra effort, and the existence of unit standards allows students to get credits without much effort in some cases after multiple attempts at the same standard. The perception is that NCEA is about cruising along picking up credits; it contains no incentive to achieve highly and requires almost no effort.

¹ The endorsements of merit and excellence originally applied to the individual achievement standards alone. A student will typically take something like five standards in a single subject and twenty or so standards altogether in a year to earn a National Certificate of Education Achievement. The achievement standards making up that Certificate were endorsed, but the Certificate itself was not. This was changed in 2007 as discussed below.

There has been a certain amount of research into the effect of the NCEA system on students who go on to university.

Hirst & Meacock (1999) took the opportunity to study the staged phase-in of modular assessments in the UK and found no significant difference between mathematics performance at university of students sitting traditional exams and students sitting modular assessments. Shulruf, Hattie, & Tumen (2008) have carried out research into how well NCEA can predict success at university and found it to be a good predictor, but, as Kerr (2008) points out, this does not actually tell us how well NCEA prepares students for university. James, Montelle, & Williams (2008) have studied New Zealand mathematics students at Canterbury University and found no negative impact from NCEA. They conclude "NCEA is a solid preparation for tertiary study [in mathematics]."

Despite this being a very small body of research we can say that where comments are made they tend to be positive about NCEA. University teachers are not complaining of receiving 'dumbed down' students. On the contrary there have been acknowledgements since as early as 2003 that NCEA is rigorous and challenging (Goh, 2005, p. 97).

Research has been conducted into the way NCEA motivates students, and the effect of their motivation on future success (Meyer et al., 2006 & 2009). A "high motivation orientation towards *Doing My Best*" was found to have a positive influence on academic achievement (2006, p. 2), while: "The findings also point to aspects of the NCEA that may have inadvertently served as incentives for students to do just enough to 'get by', such as limiting award of the end of the year certificate to 'pass/fail' options only." (2009, p. 290). Although individual standards were endorsed with merit or excellence, the National Certificate of Educational Achievement was awarded as either achieved or not achieved. Some students saw this as meaning there was no recognition for them having gained merit or excellence. This issue was addressed in 2007 with the addition of endorsements at certificate level ("Understanding NCEA," 2009) and this is expected to make a significant difference.

My conclusion is that NCEA does not dumb down our education system, but there are things we can do to "get over" the risk of encouraging students to do just enough to get by:

- Recognise that NCEA is as rigorous and challenging as other assessment systems.
- Develop a culture of excellence and focus students on doing their best.
- Give formative assessment feedback in more detailed terms than achieved, merit, and excellence, allowing smaller improvements to be identified and valued. Do this for unit standards as well as achievement standards.
- Identify students who develop the strategy of just getting by (e.g. students who try to identify merit and excellence material so that they can ignore it) and take action to move them towards doing their best.
- Use the scholarship examination from early on, as early as year 12, to motivate top students.

It is not necessary to delineate achievement, merit, and excellence questions when teaching a topic; instead it is possible to focus on mastery of the concepts and to direct students towards the highest level of understanding that they can attain. It is only necessary to break the topic down into achievement, merit, and excellence levels when in immediate preparation for the exam. For example, when a student asks (at the commencement of a new topic) "What is an example of an achieved-level question in this topic?" the answer might be "We will come to that when we prepare for the exam. Right now we are learning about (topic) and trying to understand it as well as we can."

Assessment-driven and fragmented

In a 2006 survey of New Zealand secondary schools most teachers agreed (80 percent) that assessment is driving the curriculum now. This is true even at Years 9 and 10: "it is now common practice for Year 10 students, and in some cases Year 9 students, to be assessed with tasks that have an NCEA format so that they are familiar with what to expect." (Hipkins, 2007, pp. 20-21). The assessments are organised into standards that subdivide the subjects, and these subdivisions form the basis of teacher planning in many schools. This is what Hipkins and Vaughan describe as "fragmentation of subject areas into discrete 'units' of learning." (2002, p. 5).

The process of teaching to the assessment and fragmenting the subject according to the assessment system was warned about when NCEA was first introduced:

An associated concern was the view that the use of unit standards to assess student learning based on the New Zealand curriculum would contradict some of the principles underpinning the new curriculum through, for example, promoting an atomistic approach towards teaching and learning. This would occur if teachers equated unit standards to units of learning or topics to be taught, with the risk that by focusing on what was to be assessed for qualifications credit teachers would not capture the full breadth of the curriculum in their teaching and learning programmes. (Philips, 2003, p. 294)

Ironically, it appears that this is just what has happened. More than once have I heard a comment to the effect of "I know we should not teach to the assessment, but that is what we have to do," from a practising teacher.

I believe that this process is related to the introduction of criteria-based, modular assessments. These make it easier for students to know exactly what they must do for each assessment, and therefore easier for teachers to train them in what they must do. It therefore creates a pull towards assessment-centred teaching and learning. A less predictable, wider ranging examination cannot so easily be prepared for by rote.

Is this a sensible argument for returning to vague criteria and whole-subject exams?

Tighter criteria result in increased fairness, and mean that we know better what the assessment measures. Modular assessment allows schools the freedom to custom build courses to suit their students. These are benefits that should not be given up to correct an error of pedagogy. Instead it is important to uncouple assessment and subjects and move towards learning-centred teaching and learning. As Rawlins notes, "Achievement and Unit Standards are units of assessment, not units of learning." (2008, p. 113).

Getting over the pull towards assessment-centred teaching and learning requires a paradigm shift, and a certain amount of bravery:

- Design courses to meet curriculum needs and then choose NCEA Standards to assess them. Such courses can be taught in a holistic manner as befits the subject, with assessment as verification of success and not an end in itself. Courses might even be assessed by standards from different subject domains, or a single standard might be used to assess more than one course.²
- Schools can use a combination of internally created assessments, and NCEA internals and externals. This allows schools to teach and assess aspects of the curriculum that are not covered by NCEA assessments. For example, if a school teaches observational astronomy as part of Physics it might give students a *Such-and-such High School Certificate of Achievement in Observational Astronomy* as well as the NCEA credits that students obtain from the rest of the Physics course. Students can achieve NCEA with only 80 or 60 credits³ so there is room for 'unofficial' assessments and certificates without jeopardising the ability of a student to obtain NCEA.
- Make it clear to students that there are purposes for learning other than gaining qualifications (Hipkins, 2007, p. 30).

As Rawlins says: "NCEA is an assessment system designed to support teaching and learning. The decisions of what and how to teach are essentially school decisions—with guidance from the New Zealand Curriculum." (2008, p. 115).

² "Just as whole courses might be assessed by standards from different subject domains, there is potential to assess any one task with several internally assessed standards, again likely to be drawn from different domains. Some research tasks (say in economics, geography, or a science subject) could be used to assess an aspect of statistics, for example, and almost certainly could assess expository writing. In this case the assessment load on individual teachers remains the same, but students would experience less assessment events overall, and arguably more time would be freed up for teaching and learning." (Hipkins, 2007, p. 25)

³ 80 credits at Level 1, 60 credits at Levels 2 and 3.

Over-assessed and over-stuffed

Over assessment has been identified as a major problem (Hipkins, 2007; Rawlins, 2008). New Zealand students typically have high-stakes assessments in each of their final three years of high school (more than their counterparts in countries like Australia and the UK (Strachan, 2002, p. 251)). Assessments, practice assessments, and internal assessments pepper the school year and eat into the time available for teaching and learning. In addition, setting, marking and moderating both internals and externals take up a significant amount of teacher preparation time.

Some schools fit as many standards into the school year as possible and students are encouraged to take as many credits as they can. This results in students achieving much more than the 80 or 60 credits needed in a year for NCEA. Not only does this mean a lot of assessment, but it can mean rushing through a lot of topics without time to do justice to them.

Few, if any schools have been brave enough to limit the number of credits students can take, or to reduce the number of years in which students sit NCEA, and there is reluctance to take such actions (Hipkins, 2007, pp. ii, 27, 59)⁴. Frequent assessments are often used as a kind of rolling backstop. For example, students might sit the unit standard before sitting the achievement standard so that at least they have something if they fail the achievement standard. Students usually gain Level 2 NCEA so that at least they have something should they fail Level 3 NCEA. There is an impeccable logic to this, but it does nothing to reduce the number of assessments.

A careful balance between the need for a backstop and the need to reduce the number of assessments needs to be found.

One option for reducing the number of assessments while retaining a backstop is to place the backstop assessment after the higher level assessment, not before. For example, students might sit the unit standard (the backstop) only if they fail the achievement standard. As a more extreme example, students might not sit NCEA Level 1 unless they fail NCEA Level 2.

It is worth noticing that when schools use the International Baccalaureate or the Cambridge International Examinations they often accept the idea of having no external examination in Year 12, although some students find this scary because there is no backstop.

Some strategies for getting over the problem of too much assessment are:

- Minimise time spent on assessments.
- Avoid use of backstop assessments with students that do not need them.
- Where possible place backstop assessments after the assessment they are intended to protect, instead of before it.
- Limit the number of credits students can take in a year.
- Consider using NCEA only in a student's final year of school – students sitting high-stakes, external examinations only once in their high school careers.

⁴ "Designing NCEA awards for all three levels of senior secondary schooling has been contentious. On the one hand, it offers the possibility of accessible assessment to students who may aspire to go no further than Level 1 or 2 before moving into other work or study pathways. This supports the aim of flexibility in learning and assessment. On the other hand, many students arguably do not need Level 1 qualifications, or even Level 2, if they have their sights set on university study. There has been debate about whether one whole level should be removed, and which level this should be, but with no apparent consensus view, no nationwide change has been made. However, since there is no "time served" regulation that insists students gain a qualification at one level before moving to the next, schools need not wait for change to be officially decided, at least in theory. Nevertheless, Figure 8 indicates a widespread lack of support for taking such measures unilaterally in individual schools." (p. 27)

Inconsistent and unfair

NCEA examinations have what I call 'brittleness.' Results can be affected by a single question, irrespective of performance on the rest of the questions. This means the examinations are 'easily broken' or 'brittle.' Students perceive this as being unfair, and it does have several disadvantages.

1. It magnifies the effect of an error, making mistakes potentially costly. Students must focus on avoiding mistakes and this makes it difficult to teach that mistakes are something we learn from.
2. The focus on avoiding mistakes also heightens the student's need to prepare for the assessment, rather than learn the subject. You must make sure that you know about, and can avoid, all of the potentially fatal mistakes.
3. Not all work that a student does correctly in an examination counts towards their grade. This means that it is nearly impossible to determine how much time to spend on a question in an exam because it is not possible to know whether or not it will affect your grade.

The concept of replacement evidence was introduced in 2007 to address the problem of brittleness. Replacement evidence allows merit questions correctly answered to count towards achievement where insufficient achievement questions have been answered, and excellence questions correctly answered to count towards merit where insufficient merit questions have been answered. This has been a significant improvement and the examinations have become less brittle.

Endorsements are a crude form of feedback. They do not allow for the distinction to be made between achievement by just meeting the criteria, which might mean getting 2/3 of the questions correct, and achievement by getting 100% of the questions correct. They do not allow for distinguishing between earning merit without answering any excellence questions, and earning merit missing but a single excellence question. Students see this lack of detail as unfair and often express a desire for more graduated results (Meyer et al., 2006, p. 70; "NCEA vs Cambridge exams. Close Up.," 2007). Some teachers have begun to use plus and minus with achieved, merit, and excellence when giving school-based formative assessment, so that a student might get 'merit plus' or 'excellence minus' as a grade. Another option adopted by some teachers is to use 'strong achieved', 'strong merit', and 'strong excellence' as intermediate grades. Inclusion of intermediate grades in official results would give more graduated results.

One of the purposes of introducing NCEA was to enable internal assessment to be a part of the assessment process. That introduces a great challenge: internal assessment of an external standard requires careful moderation if it is to be fair. Problems of erratic moderation have arisen. Better moderation might be achieved if two or three moderators were used instead of just one, but this would be a further increase in workload.

Problems have also arisen in setting the examinations to an appropriate level of difficulty. This was never an issue with a norm-referenced system as scaling was used to adjust the results to 'fit' the population. It is a difficulty with a criteria-referenced system, and changes were made in 2007 that allow marking criteria to be tweaked to achieve alignment with a Profile of Expected Performance (PEP). In other words, population norms are used to calibrate the criteria in any one examination.

Fairness between different subjects is also an issue. Popular perception is that the same number of credits can be earned more easily in some subjects than others.

Getting over the problems of inconsistency and unfairness is not something that can be addressed by changing pedagogical methods in the classroom. Changes need to be made to the design of the assessment itself. Possible changes that could be beneficial are:

- Further reduction in brittleness by use of chunking, for example, instead of requiring 2 correct out of 3 questions over several sets of 3 questions, simply require 8 out of 12.
- Add intermediate endorsements such as plus, minus, or strong.
- Increase the number of moderators looking at each marker.

The state of the play

A study of 60 teachers of Year 13 from 2004-2006 (Stewart, Gray, & Pilcher, 2007) showed the following key patterns of change:

1. Teachers are becoming more confident, relaxed, and flexible in their assessment and are embracing new assessment strategies.
2. Assessment is getting fairer.
3. There is increased teacher collaboration.
4. There is a shift from assessment-driven towards learning-driven teaching.
5. The strategic student is emerging.⁵

A national survey of secondary schools in 2006 showed high levels of support for NCEA, with very little support for a return to the old system or for another radical change (Hipkins, 2007, pp. i-ii).

NCEA was introduced rather quickly and we are seeing our education system recover from the shock.

Conclusion

As teachers we are “getting over” NCEA, making it our own, and moving towards more effective teaching with NCEA.

Some of the pedagogical criticisms of NCEA can be further addressed if we:

- Maintain high expectations and counteract the ‘just getting by’ attitude.
- Uncouple assessment and subjects.
- Minimise the number of assessments and the time spent on assessment.

⁵ The strategic student is one who knows how many credits are required to meet their goals and what is required for each assessment. A strategic student selects courses and chooses where to put their effort accordingly. (Stewart et al., 2007, pp. 124-125).

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