

National Education Findings of Assess to Learn (AtoL) Report

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Introduction

This report describes the impact that the Ministry of Education's professional development Assess to Learn project has had on teachers, students and schools in New Zealand. The project has been evaluated against the key outcomes of the project, which are to:

- improve student learning and achievement
- shift teachers' knowledge and assessment practice
- develop coherence between assessment processes, practices and systems in classrooms and in schools so that they promote better learning
- demonstrate a culture of continuous school improvement.

The Assess to Learn project has been supporting professional development in schools since 2002. Evaluation has been ongoing since 2003 by national evaluators Dr Jenny Poskitt (Massey University) and Kerry Taylor (Education Group Limited). Evaluation for the period 2005 to 2007 showed that AtoL had met all of the key outcomes. There have been impressive gains in student learning and achievement, and teachers and schools report positive sustainable changes in teaching, learning and assessment processes, practices and systems. This report describes the literature review and the methodology used for the evaluation, and the findings for each of the key outcomes. The AtoL project continues to support professional learning in schools through three year contracts for 2008-2010.

The report has been written for a school and teacher audience.

Executive Summary

The New Zealand Ministry of Education is committed to providing professional learning opportunities through a range of national projects, one of which is the Assess to Learn Professional Development Project (AtoL). AtoL offers in-depth professional learning for teachers and school leaders throughout New Zealand in the use of assessment for learning principles.

In the contract period 2005 to 2007 AtoL was delivered across New Zealand by eight providers, including five colleges of education and three private providers. Each provider appointed a director for the project, supported by a team of facilitators. Although there have been some variations, the majority of participating schools responded to advertisements or invitations to be involved in the project and typically participated for two years. Some schools (approximately fifteen to twenty per cent) enrolled in AtoL as a result of an Education Review Office (ERO) recommendation. Approximately 200 schools were involved, covering a range of variables that included decile, school size, rural and urban location, state and integrated schools, contributing and full primary, intermediate and secondary schools. Primary schools formed the largest proportion of participating schools.

The focus of the project was on professional development of teachers in assessment towards four key outcomes which were to:

- improve student learning and achievement
- shift teachers' knowledge and assessment practice
- develop coherence between assessment processes, practices and systems in classrooms and in schools so that they promote better learning, and
- demonstrate a culture of continuous school improvement.

A summary of the key findings for each of these outcomes follows.

Key outcome 1

Students whose teachers had focused their professional learning on reading and writing showed achievement shifts that were greater than the national expectations predicted by Assessment Tools for Teaching and Learning (asTTle V4)¹. This was shown through the results of pre and post assessment using asTTle V4. Achievement shifts were typically at least twice those described in similar professional development interventions (for example, in William, Lee, Harrison and Black 2004).

Students became more confident in understanding what they were learning and why. They were able to articulate learning intentions and success criteria. In many classes, students were also becoming more aware of self and peer assessment.

¹ asTTle V4: Assessment Tools for Teaching and Learning, version four

Key outcome 2

Most teachers participating in AtoL focused their professional learning on:

- developing their skills in giving feedback and feed forward
- developing and co-constructing learning intentions and success criteria with students
- using student achievement information to adjust programmes
- encouraging students to use self and peer assessment
- using assessment tools such as the curriculum exemplars² and asTTle V4 effectively and using samples of student work as a basis for discussion.

Teachers gave targeted feedback to students. They relied less on praise alone and increased their emphasis on giving feedback that focused on the learning and next steps. Teachers became more focused on differentiating learning for individual students.

Key outcome 3

Schools often experienced improved recording and reporting systems, particularly in terms of consistency across teams or departments, and more coherent teacher philosophy and practice in assessment. By the end of 2007 most teachers were clearer and more precise about what they were teaching and regularly reflected with students about their learning and progress. Teacher feedback to students specified achievement related to criteria, next steps and why the learning was relevant and worthwhile. Teachers demonstrated clear links between planning, learning and formative assessment.

Key outcome 4

Studies of 38 schools in 2006 showed that eighty per cent of the schools were able to continue improvements after their involvement in AtoL had finished. Only five per cent of the schools had not been able to maintain development after completing the AtoL programme. Schools that continued to improve their practices in assessment demonstrated a variety of examples of how AtoL principles and strategies were incorporated into their ongoing work.

Overall, participating teachers were very clear about the value of their involvement in AtoL. Teachers appreciated the way in which facilitators worked to meet the needs of individual teachers and schools. The flexibility of approaches to the professional development allowed schools to move at a pace that best met the needs of each school. The combination of staff meetings, team meetings, classroom observation and one to one support, along with input from professional readings, ensured that schools were able to make significant shifts in teacher knowledge and confidence in the use of formative assessment practices.

² New Zealand Curriculum Exemplars: www.tki.org.nz/r/assessment/exemplars/

Literature Review

Professional learning

Reviews completed by researchers such as Timperley, Wilson, Barrar and Fung (2007) have greatly influenced the way in which professional learning contracts are delivered. Timperley et al (2007) suggest there are seven important elements to professional learning. These elements are:

- extended time for opportunities to learn
- external expertise
- teachers' engagement with the learning at some point (not necessarily from the beginning)
- challenges to the prevailing discourse
- participation in a learning community of practice
- consistency with wider trends in policy and research
- active school leadership.

No one element is sufficient on its own and they are all dependent on the prevailing culture and organisational structure of the school. For example, the way that release time is used is more important than the amount of release time for professional learning. Effective use of release time includes opportunities for teachers to:

- collaboratively share ideas and plan together with colleagues in a climate of trust and support
- team teach new approaches where possible
- follow up on opportunities to discuss lessons and samples of student work and to seek out resources (or experts) to support future strategies.

These opportunities enhance the seven elements of professional learning (Speck and Knipe, 2001; Hargreaves, Earl, Moore, and Manning, 2001). A combination of theory and support in implementing practical strategies is essential for effective professional development, because improving educators' knowledge and skills is a prerequisite to improved student performance (Speck and Knipe, 2001).

Timperley et al (2007) further identify the following key factors to consider for the content of professional learning opportunities:

- the integration of various aspects: theory, practice, pedagogical content knowledge, assessment and knowledge of how children learn
- clear links between teaching and learning and/or student-teacher relationships
- assessment used to focus teaching and enhance self-regulation
- sustainability.

It is critical that there is alignment between the content and the activities that teachers engage with in a successful professional learning opportunity. Teachers require a variety of activities to embed new learning and to develop an inquiry based approach. These activities may include:

- opportunities to listen to or view others who have greater expertise modelling new approaches in the classroom
- being observed and receiving feedback
- sharing strategies and resources
- being coached or mentored to implement new approaches

- discussing beliefs, ideas and theories of practice and the implications for teaching, learning and assessment
- engaging with professional readings and discussing these with colleagues.

(Timperley et al, 2007; Hargreaves et al, 2001).

Current models of AtoL in schools suggest that facilitators use an inquiry based approach to develop a professional learning programme within each school or within the department of a secondary school. Schools are supported to identify their needs and a professional learning programme is tailored to assist the school and the teachers achieve their goals.

Formative assessment and professional development

Implementation

Black and Wiliam (2005) argue that talking about improving learning in classrooms is of high interest for teachers because it is central to their professional identities. Teachers want to be effective and to have a positive impact on student learning.

Our own review reported [24] studies, all of which showed that innovations which include strengthening the practice of formative assessment produced significant, and often substantial, learning gains. (Black and Wiliam, 2005, page 224)

However, their research literature investigation showed that the actual implementation of formative assessment was limited. Implementation required changes in:

- perception of the teacher's role
- students' beliefs about themselves as learners and the learning process
- the nature of the classroom dialogue (questions asked, responses given)
- feedback given in relation to goal levels and actual levels
- use of specific feedback to guide improvement.

This evaluation report shows how AtoL supported teachers to implement formative assessment.

Feedback

Those studies showing the highest effect sizes involved students receiving information feedback about a task and how to do it more effectively. Lower effect sizes were related to praise, rewards and punishment. (Hattie and Timperley, 2007, page 84)

Feedback is most effective when it:

- is task-oriented
- provides scaffolded responses to student errors, rather than simply indicating whether an answer is right or wrong
- provides indications of progress towards desired learning outcomes
- conveys the understanding that mistakes are a part of learning.

Current understanding suggests that assessment, learning and teaching are integral processes.

Self and peer assessment

One means of facilitating the integration of assessment, learning and teaching is through student self and peer assessment. In self-assessment students have to understand the criteria or standards that will be used to assess their learning, make judgements about their work in relation to the criteria and use feedback from the teacher to work out future action.

By assessing others' work, students have the opportunity to see different ways of tackling a task and during the feedback they need to analyse the strengths and weaknesses of the effort. This embeds a deeper understanding of the learning. (Middlewood, Parker and Beere, 2005, page 147.

The role of professional development

An OECD³ study (2005) argued the need to invest in ongoing professional development to enhance teachers' capacities with formative assessment by:

- formulating supportive educational policy
- developing exemplars and assessment tools (such as the Curriculum Exemplars and asTTle V4) to help teachers incorporate information gathered during the teaching process into their practice
- fostering innovation by encouraging peer support and cooperation with researchers to develop new formative assessment strategies.

Understanding change processes

There is a vast literature on the processes and management of change, discussion of which is outside the scope of this report. There are, however, some fundamental principles about the processes of change that are mentioned here because they are relevant to professional development.

Deep or meaningful change takes time, generally considerably longer than anticipated (Smith, Hofer, Gillespie, Solomon and Rowe, 2006). It takes time for people to become convinced of the need to change and of the value of changing, and to feel sufficiently safe to change.

Fullan (1990) argued that there was an "implementation dip" when teachers tried new ideas before they fully understood it or integrated the practice into their teaching and that such periods were ones of stress and anxiety for teachers.

³ OECD: Organisation for Economic Co-operation and Development

Senge, Kleiner, Roberts, Ross, Roth and Smith (1999) also argue that “learning, by definition, implies a willingness to be uncertain, and to figure things out as you go along” (page 250). Only in safety will people be willing to risk abandoning secure ways of doing things and learning new ways. A climate of trust and safety emerges when there are perceived opportunities for choice, openness and sharing of responsibility. Effective professional development needs a prevailing culture of trust, collegiality and risk-taking, all within a climate of support (Smith et al., 2006).

Change is not easy:

...individual teacher change sometimes leads to new challenges unless teachers and administrators work together to discuss consistency of goals and curriculum across the programme. (Smith et al., 2006, page 23)

Monitoring the effects of professional development on teachers and students

It is important to establish mechanisms for monitoring the effects of professional development on teachers and students for several reasons. First, as Senge et al (1999, page 47) point out, “People’s enthusiasm and willingness to commit themselves naturally increase when they realize personal results from a change initiative; this in turn reinforces their investment and leads to further learning.”

Secondly, continuous improvement in schools must involve an ongoing cycle of inquiry that looks at data and the professional development programme to determine if progress is being made. Inquiry into what is working or not working in the programme in a formative way encourages the process of ongoing feedback. Teachers who are supported to collect and analyse data in order to reflect on their practice are more likely to make improvements as they learn new skills and practice them in the classroom. Through the evaluation process, teachers learn to examine their teaching, reflect on practice, try new practices, and evaluate their results based on student achievement (Speck and Knipe, 2001, page 200). Thirdly, assurance is needed that the time and effort devoted to trying new ways of operating are resulting in improved outcomes for students.

Methodology

Quality teaching and assessment is at the heart of increased student engagement, learning and achievement. Therefore, the challenge in evaluation of professional development is to not only measure the impact of teacher learning on student achievement but to identify significant elements that enhance teaching practice.

Approach

Evaluation of the AtoL project occurred over three years, however, the 2007 data form the focus of this report. The evaluation was primarily formative although it provided some summative data to inform policy development in the Ministry of Education. A multi-method design, involving both qualitative and quantitative methods of data collection, was used. Triangulation of methods, data and people strengthened the reliability and validity of this study. The evaluators used a collaborative and responsive approach to ensure their work would be meaningful and formative. To achieve this, the evaluation was planned cooperatively with AtoL directors and the ministry, based on AtoL's key outcomes and a need to give project directors formative feedback. The evaluation also aimed to gain a national picture about the effectiveness of the AtoL project. An iterative process was used where the evaluators and the AtoL providers worked together to develop, refine and apply evaluation tools to gather meaningful data nationally.

Data consisted of:

- student achievement data collected from schools in term one 2007 and term four 2007. AsTTle V4⁴ data were collected only from schools that had sufficient knowledge and experience to use asTTle V4 effectively.
- data on teacher learning (classroom observations) collected by facilitators from new and continuing schools in term one and term four
- planning analysis collected by facilitators and sent to the evaluators at the end of the year
- responses to questionnaires developed for this evaluation. The questionnaires were sent independently from the national evaluators in May and November to principals, lead teachers and one other teacher in all participating schools.

Evaluation framework

The effectiveness of professional learning opportunities, according to Guskey (2002, 2005), can be identified through five levels of evaluation. These are:

1. participants' reactions to the experience
2. participants' learning
3. the organisation's support and change
4. participants' use of new knowledge and skills
5. student learning outcomes.

⁴ AsTTle V4: Assessment Tools for Teaching and Learning, version four

Table one summarizes the evaluation frame used throughout the evaluation of AtoL.

Table 1: Guskey’s levels of evaluation of professional development programmes

Level of evaluation	What is measured or assessed?	What questions are asked?	How is information gathered?
One Participants’ reactions	Initial satisfaction with experience	Did they like it? Was their time well spent? Was the facilitator knowledgeable? Did the material make sense? Will it be useful?	Questionnaires or surveys
Two Participants’ learning	New knowledge and skills of participants	Did participants acquire the intended knowledge and skills?	Simulations (scenarios) Demonstration Participants’ reflections
Three Organisation’s support and change	The organisation’s advocacy, support, accommodation, facilitation and recognition	Were sufficient resources made available? Were problems addressed quickly and efficiently? Was implementation advocated, facilitated and supported? What was the impact on the organisation? Did it affect organisational climate and procedures?	Minutes of follow up meetings Questionnaires Structured interviews School records
Four Participants’ use of new knowledge and skills	Degree and quality of implementation	Did participants effectively apply the new knowledge and skills?	Questionnaires Structured interviews Participants’ reflections Observations Video/audiotapes
Five Student learning outcomes	Student learning outcomes Student achievement Attitudes and dispositions	What was the impact on students? Did the professional learning affect students’ achievement? Are students more confident as learners? Is attendance improving? Are dropouts decreasing?	Student records School records Questionnaires Structured interviews

Adapted from Guskey (2005).

Guskey’s model provided an appropriate framework for evaluating the effectiveness of the AtoL professional development project. It addressed the need to take into consideration the effectiveness of professional development for participants as well as its impact on student achievement and learning. Guskey’s model was used to inform the evaluation tools, criteria and analysis and interpretation of findings. A summary of the analysis of data from these tools forms the basis of this report. The evaluation tools included:

- national questionnaires (principals, lead teachers and classroom teachers)
- interviews (facilitators, teachers)
- classroom observation schedules (teachers and students) and associated matrices (see appendix)
- planning analysis
- student achievement data.

Key Findings

Programme delivery

The content, delivery and context (such as literacy, science) for assessment varied according to a specific school's needs, however, the following model was commonly used in the primary schools participating in the AtoL project.

- A provider holds an initial meeting with the principal (and possibly a school-based professional development team) to discuss the desired outcomes of the AtoL project.
- A facilitator (from the provider organisation) meets with the staff and together they construct a list of the features of effective quality assessment practice (including the purposeful use of assessment tools).
- The facilitator and teachers then negotiate an aspect of practice (as discussed) to trial in the classroom. The facilitator and the teachers together plan the strategies they will use for implementation, and the facilitator observes the implementation in the classroom.
- This is followed with further facilitator-led individual or group meetings to discuss feedback from the classroom observations.

At AtoL staff meetings, teachers typically engage in professional reading, sharing of practical ideas, trialling of resources (for example, the layouts that other schools have used for learning intentions and success criteria, or the use of assessment tools) and future planning.

In secondary schools, the most commonly used approach was at departmental level with changes occurring in particular classes within a year group. Key change agents were typically the heads of departments (HODs) and specific teachers within their departments. Secondary schools rarely attempted school-wide assessment changes within the two-year timeframe of an AtoL project. Reasons for this were at least in part attributed to:

- the timeframe
- the number of teachers involved (often 70 to 100 teachers compared to 3 to 20 in many primary schools)
- the complexity of interpreting consistent assessment practices across a range of speciality subject areas
- the demands of NCEA⁵ on teacher and student time.

These findings focus mostly on primary school data because although a considerable amount of data were collected at regional levels, there were gaps in some regions. This meant that meaningful interpretations were limited at a national level for secondary schools.

⁵ NCEA: National Certificate of Educational Achievement

Commentary

The model used is similar to that of Joyce and Showers (1995) which demonstrated the effectiveness of professional development practices that incorporated five elements:

- presentation of theory
- demonstration
- practice
- feedback
- follow-up coaching in classrooms.

In addition, when Hall and Scott (2007) investigated the professional development and learning of history teachers, they found that professional development was most meaningful and effective when the content of teacher learning was strongly linked to the curriculum students were learning. Given the current national focus on literacy and numeracy, most schools incorporate AtoL into a literacy or numeracy context.

Outcome 1. Shifts in student learning and achievement

Indicators for outcome 1

Students will:

- i. be clear about what they are learning and why, how they will achieve this, what the learning might look like and how well the learning has been achieved (self assessment)
- ii. self evaluate and self regulate their learning by reflecting on their current achievement and progress to determine their next learning goals.

Results

Although the concepts of learning and achievement are sometimes used interchangeably, there is an important distinction between the two terms. In simple terms, learning is the process or experience of gaining knowledge or skill. It can be likened to the journey towards a destination. For deep learning to occur, the learner needs to be aware of his or her learning, for example, by reflecting on the processes used, by questioning how the learning can be applied to other contexts, by having an openness to new ways of learning, and by considering the views of others and the ways in which their learning may need to be modified. Deep learning is ongoing and is integrated with assessment. By contrast, achievement refers more to the successful completion of something (especially by means of exertion, skill, practice or perseverance). It can be likened to arrival at a destination.

A simple numeracy example makes the distinction between the terms clear: achievement is when a child can correctly answer that $3+5=8$. Learning can be shown when the child is able to demonstrate or explain several strategies for finding the answer (including manipulating concrete materials in several ways, explaining verbally or in writing), and then use this knowledge in a variety of different contexts.

Students in classes where teachers had participated in the AtoL project became more confident in understanding what they were learning and why it was important. They were able to articulate learning intentions and success criteria. In many classes, students were also becoming more aware of self and peer assessment. Typical responses given by students when asked about their learning included:

- We are learning to write persuasively. You know how some reasons are stronger than others.
- If you try to persuade someone and you didn't have good reasons you wouldn't be convincing.
- We are learning how to take notes so that we can write an effective report for our class newsletter.

As well as determining the impact on student learning, the evaluators explored the impact on student achievement. AsTTle V4 achievement data were collected from a sample of schools at the beginning and end of each year. The data were analysed in order to determine the amount of shift and the effect size of the impact of the AtoL programme. Only students who were present for both tests were included in the final data set. Schools collected data in reading and writing. While it must be acknowledged that it is almost impossible to attribute student gains solely to one intervention, the results achieved provide evidence that AtoL does impact positively on student achievement.

In the following graphs and charts, national AsTTle V4 mean data and effect size using Cohen's d^6 were used to compare AtoL mean results with the expected differences in student achievement within a teaching environment without professional development intervention.

Effect size

In professional development interventions it is considered that an effect size (defined below) of between 0.3 (William, Lee, Harrison and Black, 2004) and 0.4 (Hattie, 1999) demonstrates changes beyond natural maturation or chance.

For the purpose of this evaluation the definition of "effect size" is an index that measures the strength of the association between one variable and another. These indices take different forms depending on the measure being used and are commonly reported where the main interest is in the difference between group means.

The effect size tool used in this report is Cohen's d , which measures the difference between means. In the case of AtoL, the effect size measured was the shift between beginning of year (BOY) and end of year (EOY) scores relative to the standard deviation. The theoretical distribution of the national asTTle V4 scale has a standard deviation of 100. Therefore the mean differences reported in the national asTTle V4 scores for reading and writing, when divided by 100, can be used to indicate Cohen's d effect size.

Interpretation of Cohen's d effect size scores:

- < 0.20 small effect
- ~ 0.50 medium effect
- > 0.80 large effect

"Shift" data, effect size (Cohen's d) and national asTTle V4 data are all used in this report to provide a more comprehensive basis for analysis and comparison of results than is feasible from using only one of these measures.

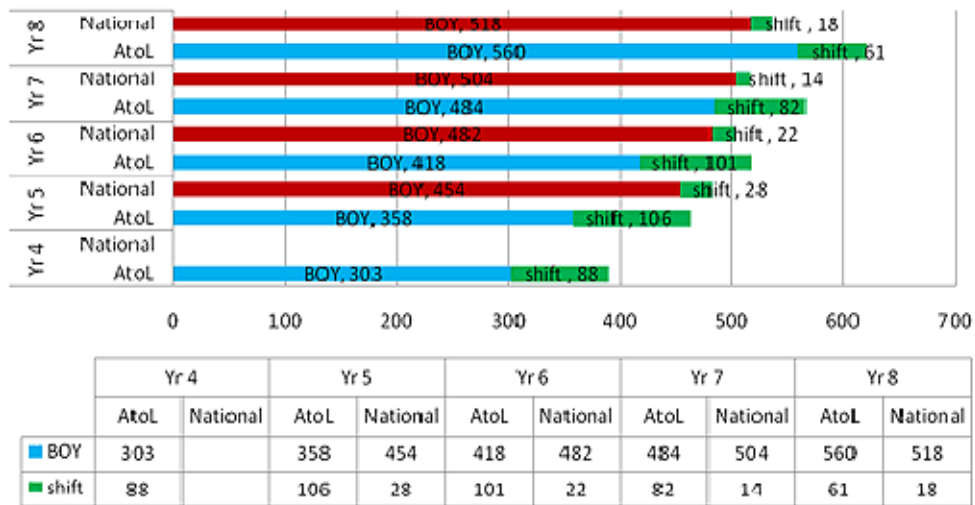
⁶ Cohen's d : a measure of effect size. It measures the difference between means relative to a standard deviation.

Writing

Most schools in their first year of AtoL focus on writing for developing formative assessment principles. They use both national curriculum exemplars and asTTle V4, but due to space restrictions, only asTTle V4 data are reported here.

Graph 1 compares the shift of the mean writing scores of AtoL students with national asTTle V4 shifts. The end of year (EOY) scores are the sum of the beginning of year (BOY) scores and the shift scores. The shift in the national data in each year represents the expected shift from the previous year.

Graph 1: AtoL and national primary writing shifts (years 4-8)

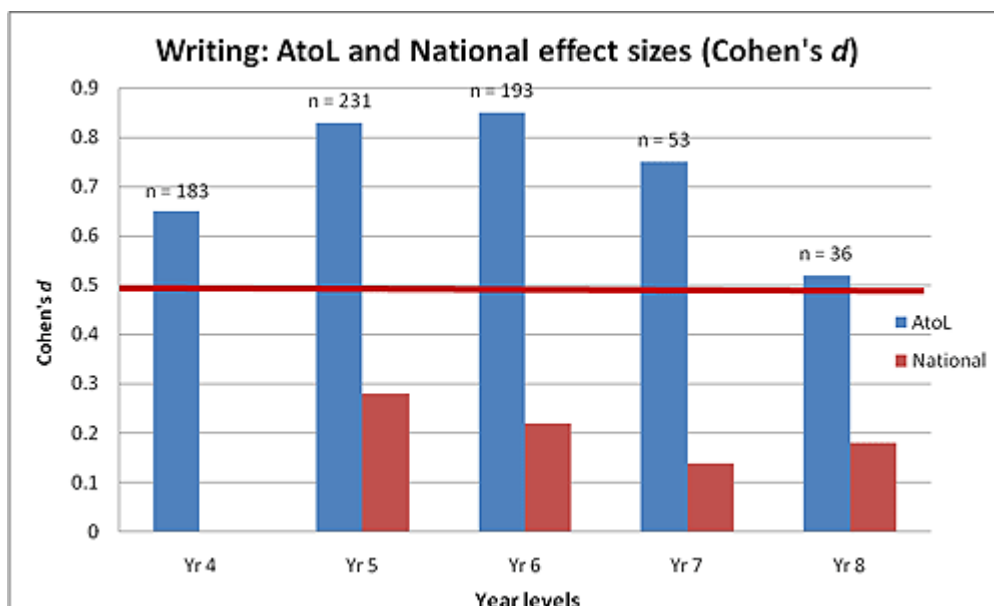


Commentary

In years 4-8, the mean shift in AtoL scores (blue line) is higher than the mean national shift (red line). In other words, data for each year group show greater shifts for schools involved in AtoL compared with the national data.

Graph 2 indicates the effect size of students in the AtoL project compared with the national AsTTle V4 norms. The line at Cohen's d 0.50 represents a medium effect.

Graph 2: AtoL and national primary writing effect sizes



Commentary

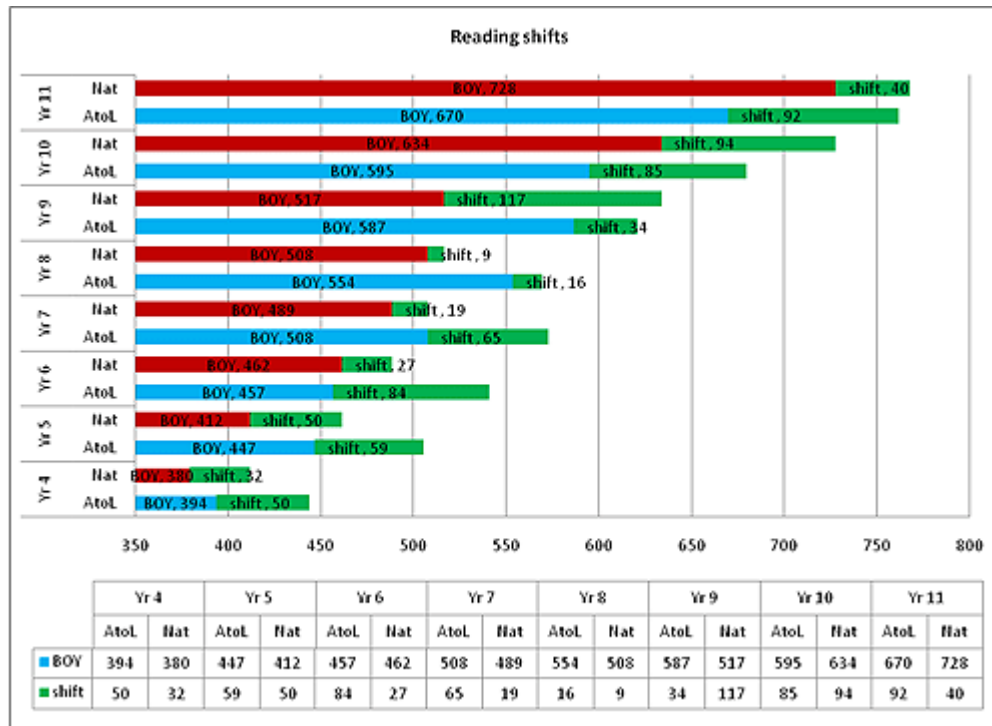
Graph 2 shows effect sizes for students from years 4-8. The effect sizes in AtoL are much greater than is evident nationally. This provides strong evidence that the AtoL results have a medium (year 8) to large effect (year 6) between beginning of year data (BOY) and end of year data (EOY).

Reading

STAR and asTTle V4 were the main tools used for assessing progress in reading. In order to make comparisons between reading and writing, only asTTle V4 data are used to make comparisons with AtoL data.

Graph 3 shows the shift in the mean reading scores of students from the BOY (pretest) and compares it with the mean national shift from the previous year.

Graph 3: Reading shifts Years 4-11

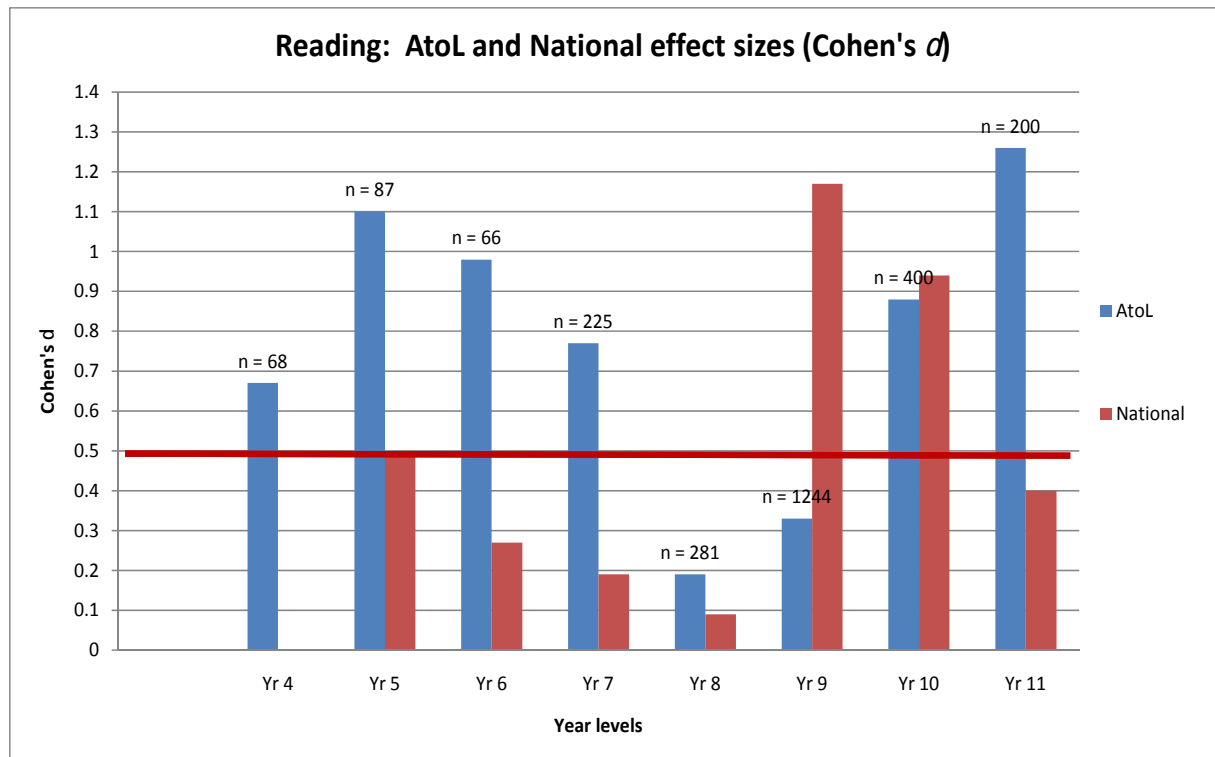


Comments

In Graph 3 we see that the AtoL shifts in years four to eight are above the national mean in terms of both 'shift' and EOY scores. The secondary patterns are not as clear cut. One factor is that the national shifts for year nine (117) and ten (94) are much greater than the average for other years. One school involved at year nine reportedly did not engage in the AtoL process as fully as intended and this helped bring down the overall shift. At year 11 the AtoL shift (92) is more than twice the national shift (40).

Graph 4 indicates the effect size of students in the AtoL project compared with the mean national asTTle V4 scores. The red line represents a Cohen's d of 0.50 which is a medium effect.

Graph 4: Reading: AtoL and national effect sizes (Cohen's d)



Commentary

Graph 4 demonstrates that Cohen's d in isolation does not tell the whole story. In this graph, the lowest Cohen's d score is 0.19 (shift = 16). However from Graph 3 we can see that for year 8, the mean beginning of the year AtoL score (554) is much higher than the beginning of the year national score (508) and by the end of the year, the AtoL score had shifted even higher. Graph 4 in isolation does not convey this impact. If one puts aside the high asTTle V4 Cohen's d scores for year 9 (117) and year 10 (94), the AtoL effect size scores for year 10 and year 11 are impressive.

Summary of findings for student achievement

These graphs indicate the very positive impact of AtoL on student achievement. Student achievement increased at a rate of up to twice that of the expected benchmarks for educational interventions of 0.3 (set by Hattie, 1999), 0.4 (set by Wiliam et al, 2004), and 0.5 (set by Cohen's d).

Outcome 2: Shifts in teacher knowledge and practice

Indicators for outcome 2

Teachers will:

- i. examine their assessment beliefs, knowledge and practices in order to better understand effective assessment for learning principles
- ii. select assessment tools to match the purpose of learning and use the resulting assessment information to inform and improve programmes and practices
- iii. construct with students what they are learning and why, how they will achieve this, what the learning might look like and how well the learning has been achieved (self assessment)
- iv. initiate classroom/student discussions about learning, assessment and progress
- v. use feedback, prompts and questioning to support learning.

Results

Teachers were observed by AtoL facilitators in term one and term four to determine shifts in their knowledge and practice. Facilitators worked with teachers to identify appropriate goals for their professional learning based on the outcomes of classroom observations. The observational data were analysed confidentially between facilitators and individual teachers, and anonymously by the national evaluators to determine the level of formative assessment practice observed in the classroom using a nationally developed matrix of indicators.

Most teachers focused their professional learning on:

- developing their skills in giving feedback and feed forward
- developing learning intentions and success criteria
- using student achievement information to adjust programmes
- encouraging students to self assess
- using assessment tools such as the Curriculum Exemplars and asTTle V4 effectively
- using samples of student work as a basis for discussion.

Teachers who responded to the national questionnaire frequently commented on improvements in their formative assessment practice through clarifying learning for students, using student's achievement information to inform planning and involving students in assessment. Classroom observation findings (in terms one and four) confirmed these comments of increased teacher and student use of formative assessment strategies. Initially teachers tended to tell students what they were learning but by term four most teachers were co-constructing with students what to learn and what the learning might look like.

By the end of 2007 most participating teachers were clearer and more precise about what they were teaching and regularly reflected with students about their learning and progress. Teacher feedback to students specified achievement related to criteria, next steps and why the learning was relevant and worthwhile. Teachers demonstrated clear links between collecting information about learning, planning, the intended learning, and the learning experiences, as indicated in these teacher comments.

Learning intentions are more specific and explicit in planning. More learning focused rather than task orientated activities. Less need for extrinsic rewards e.g. stickers, stamps, certificates. More conferencing and less marking. (Teacher, TQ, 2206)

Using assessment results more to change groupings according to student needs and planning programmes according to need. Greater focus on the purpose of a lesson. (Teacher, TQ, 8303)

I am explicit in my teaching and what we are learning. I use learning intentions and success criteria in my planning and teaching. The language I use with children is different. (Teacher, TQ, 3204)

I am able to focus on specific learning goals and feedback on that specifically also. (Teacher, TQ, 6101)

Teachers became much more targeted in the way in which they gave feedback to students. They relied less on praise alone and increased their emphasis on giving feedback that focused on the learning and next steps. Teachers became more focused on differentiating learning for individual students. In the words of one teacher:

*[I am] More focused on planning and teaching to need; listening to students.
[My] Questioning techniques more focused and effective. (Teacher, TQ, 2301)*

Teachers reported being more confident and knowledgeable about the use of assessment tools to inform their planning. Greater use of national curriculum exemplars and asTTle V4 was also evident. The use of assessment information to guide planning increased from ten per cent of teachers to a total of seventy eight per cent by the end of their second year in AtoL. After two years with the project, sixty seven percent of AtoL primary teachers fully included links between long and short term planning and developed learning intentions based on assessment information. Such connections between assessment and planning were not as strong for secondary teachers. In classroom observations, secondary teachers were highly effective in the use of formative assessment and feedback during the lesson and with students' written work, but this information did not appear to alter unit plans or departmental assessments. Current regional data suggest that for secondary teachers there is no flow-through from analysis of assessment data to future planning. This aspect is worthy of further investigation.

Whilst most teachers became more focused in the feedback they gave to students, some teachers needed more time to develop student skills in peer and self assessment.

The end-of-year national questionnaire asked teachers to reflect on the impact involvement in AtoL had on student learning in their classroom. Teachers commented on students:

- knowing what they were learning, why and how
- being more aware of and focused on (achieving) learning goals
- taking greater responsibility or ownership for their learning (such as choosing their learning goals and being able to articulate their next learning steps and success criteria)
- demonstrating increased motivation and engagement in learning
- collaborating with other students and engaging in self and peer assessment.

I think the children are taking more responsibility for their learning, using more metacognitive skills in the thinking process and have a better understanding of success criteria due to using exemplars and feedback/ feed forward. They actually know what quality looks like and where they are at and are aware of their next steps in learning. (Teacher, TQ, 5102)

More involvement choosing own learning steps, more aware of learning intentions and how to be successful, more eloquent at discussing own achievement, more on task behaviour. (Teacher, TQ, 2206)

Children demonstrate the ownership of their learning and have more input into it. They are much more motivated. (Teacher, TQ, 2204)

Students taking more responsibility with their learning/ improved self assess and peer assessment. Students think about their next learning step. (Teacher, TQ, 2203)

These trends of increased engagement and student learning were confirmed by analysis of teacher planning, classroom observations and student achievement data.

Outcome 3: Developing coherent school practices to promote better learning

Indicators for outcome 3

School leaders and teachers will ensure there is:

- I. effective strategic planning
- II. high quality assessment practice
- III. alignment of assessment, planning and recording / reporting
- IV. communication of progress and achievement with family / whanau and community
- V. a school curriculum that enables teachers to use assessment for learning and involve students in planning.

In order to determine the extent to which schools have developed coherence in their assessment practices, principals and lead teachers were asked a series of questions related to the school wide understanding and practices, through a questionnaire. Principals and lead teachers were asked whether they believed their school had achieved a common understanding of assessment purposes and priorities. Their views were validated through interview and facilitator data.

During the AtoL project, principals and teachers were also interviewed to determine the kinds of practices that supported schools to develop a school wide approach to formative assessment and which would provide a platform for maintaining the practices beyond the AtoL project.

The following themes emerged from the interviews:

During the professional development:

- The structure of the professional development programme focused on success. That is, the principal and senior management team were involved and convinced of the value of the principles and strategies of the programme. They were collaboratively involved in the planning and in a process that included meeting with the professional development team, staff meetings, modelling in classrooms and teachers trialling ideas in the classroom.
- Facilitators typically observed implementation in classrooms, meeting either individually or in teaching teams with teachers immediately after the observations in which feedback discussions occurred. This was especially important for aspects teachers needed to work on next.
- Needs analysis, action planning and professional input by a facilitator occurred throughout the process. The process was supported by classroom observations, feedback and professional discussions where action plans were reviewed and revised. A balance was struck regarding the use of professional readings and practical strategies.
- There was evidence of a building momentum and motivation for teachers and students to continue working towards changes in teacher learning and practice with the resulting impact this has on student learning.
- Agreed processes and practices were documented to enhance consistency of practice throughout the school and the inclusion of new staff into the development.

- A few schools said that they had developed reporting and communication systems with parents in order to more meaningfully report and improve student progress and achievement.
- Principals and senior management teams applied pressure through the school-wide performance appraisal system for teachers to apply the AtoL principles and strategies into their classroom practice. This was done in order to have consistent practice across the school (for primary schools) or throughout a department (for secondary schools). The aim was to secure maximum teacher engagement in the professional development. Several principals commented on the significant shifts that were able to be made as new teachers joined the school or department staff.

Outcome 4: Demonstrate a culture of continuous school improvement

Sustaining professional development is a challenge for schools. There is unrelenting pressure for change in schools. Factors such as staff turnover and the large number of professional development opportunities available, create pressure on schools to participate or miss out on opportunities that arise.

In 2006, the evaluation was extended to include a case study of 38 schools to ascertain whether AtoL practices were being sustained. These schools had completed their involvement in AtoL professional development between one and five years previously.

Of the schools in that study:

- eighty per cent continued to refine their assessment systems without the support of a facilitator
- five per cent had been unable to continue development after formal completion of the AtoL contract
- fifteen per cent maintained the (AtoL) systems and approaches but did not demonstrate ongoing improvement.

The following features were present in schools that were continuing to improve their practices in assessment.

- Key elements and principles of AtoL were incorporated into teachers' personal professional plans and into the performance appraisal system (for example, teachers stated that they expected to continue incorporating AtoL elements; there was evidence of teachers using learning intentions and success criteria; teachers were incorporating specific feedback or goal setting into their planning and classroom programmes).
- Goal-setting (and related specific criteria) were incorporated into lessons and students' written work.
- Schools set up buddy systems so that any teachers new to the school could be paired with an existing teacher. The two teachers could then work together to explain, model, observe and provide feedback about AtoL.
- A folder of the AtoL professional development structure and content was developed and shared with new staff to provide a background and rationale for using AtoL in the school.
- The facilitator developed an effective working relationship with the principal and collaboratively worked with the principal (and or senior management or lead teacher team) to plan professional development.
- Schools held periodic staff meetings where the focus was on AtoL and sharing of teacher practice for continued development. This was particularly successful when it took the form of a 'walk-around meeting' in which the whole staff walked around each classroom as the teachers briefly showed and explained aspects they had incorporated into the classroom programme. This process acknowledged ongoing efforts of staff and enabled them to share ideas and strategies as well as develop consistent practice in the school.
- Schools communicated periodically with the facilitator or 'cluster' schools who were involved in the AtoL project to maintain their focus and to share new ideas.
- Schools translated AtoL into other curriculum areas. Many schools began with written language but have since incorporated learning intentions and success criteria into other areas such as maths and topic work.

- Schools followed AtoL with another professional development project that built on the same principles. For example, many of the schools moved into the Ministry of Education's Information and Communication Technologies (ICT) contract and found the continuity beneficial in terms of the focus on effective learning and teaching strategies.
- Schools involved parents in the assessment and learning process by fully informing them about student learning and achievement. This was often done by the students themselves, for example, in three-way conferences. Parents were also able to view samples of student work regularly and to assist students with goal setting.

Conclusions

Timing, pace and depth of change are dependent on receptivity to change as well as recognition of situational factors. In most of the schools where AtoL was evaluated, the flexibility of the AtoL project and the way in which it could be adapted to particular school conditions meant that AtoL could be used to accommodate varying human needs. This was seen as an important factor in the continuation of the project. For example, many of the schools the evaluators visited experienced staff changes, yet the majority of schools continued and renewed at least some AtoL practices in their schools. Sustaining development was difficult however when the principal, lead teacher or a critical proportion of the staff left the school, particularly where there were poorly developed systems or documentation.

Involvement in AtoL resulted in significant shifts in learning and achievement for the majority of students, and shifts in professional learning and pedagogical practice for most teachers involved. Schools experienced improved recording and reporting systems, particularly in terms of consistency across teams or departments, and more coherent teacher philosophy and practice in assessment. Further investigation and information is needed about the more complex processes involved with formative assessment and related professional learning in secondary schools. As with all effective professional development programmes, continual cycles of data analysis and reflection identify features in need of attention and enable continuous improvement for the participating community of teachers, students and facilitators.

Assess to Learn Evaluation: References

- Black, P. and Wiliam, D. (2005). Changing teaching through formative assessment: research and practice. The King's-Medway-Oxfordshire formative assessment project. (Pages 223-237) *In Formative assessment: improving learning in secondary classrooms*. Centre for Educational Research and Innovation. Paris: OECD Publication
- Fullan, M.G. (1990). Staff development, innovation and institutional development. In B. Joyce (Ed.), *Changing school culture through staff development* (Pages 3-25). Alexandria, VA: Association for Supervision and Curriculum Development
- Guskey, R.T. (2002). Does it make a difference? Evaluating professional development. *Educational Leadership*, 59 (6),45-51.
- Guskey, R.T. (2005). Taking a second look at accountability. *In National staff development Council*. Vol 26. No 1: Winter 2005.
- Hall, T., and Scott, R. (2007). Closing the gap between professors and teachers: "uncoverage" as a model of professional development for history teachers. *History Teacher*. 40(2), 257-263.
- Hargreaves, A., Earl, L., Moore, S., and Manning, S. (2001). *Learning to change: teaching beyond subjects and standards*. San Francisco: Jossey-Bass.
- Hattie, J. (1999). Influences on student learning. Inaugural lecture: Professor of Education, Auckland University. 2 August.
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*. 77 (1), 81-112
- Joyce, B., and Showers, B. (1995). *Student achievement through staff development* (2nd ed.). White Plains, NY: Longman.
- Middlewood, D., Parker, R., and Beere, J. (2005). *Creating a learning school*. London: Paul Chapman Publishing.
- Organisation for Economic and Community Development. (2005). *Formative assessment: improving learning in secondary classrooms*. Paris: OECD Publishing.
- Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G., and Smith, B. (1999). The dance of change. *The challenges of sustaining momentum in learning organisations*. New York: Doubleday.
- Smith, C., Hofer, J., Gillespie, M., Solomon, M., and Rowe, K. (2006). How teachers change: a study of professional development in adult education. In P. Villa, *Teacher change and development* (page 11-155). New York: Nova Science Publishers, Inc.
- Speck, M., and Knipe, C. (2001). *Why can't we get it right? Professional development in our schools*. Thousand Oaks, California: Corwin Press, Inc.
- Timperley, H., Wilson, A., Barrar, H., and Fung, I. (2007). *Teacher professional learning and development. Best Evidence Synthesis Iteration*. Wellington, New Zealand: Ministry of Education.
- William, D., Lee, C., Harrison, C., and Black, P. (2004). Teachers developing assessment for learning: impact on student achievement. *Assessment in Education: Principles, Policy and Practice*, 11 (1), 49 —65.

Assess to Learn Evaluation: Appendix

The following matrices were used as one of the tools for evaluating the Assess to Learn project. There are charts (matrices) for the first three of the four key outcomes of AtoL. The matrices below have been developed collaboratively with AtoL teams. They are 'a work in progress' and are revisited each year of the project to refine and amend.

They are used in collaboration between a facilitator and a teacher. Teachers identify where their practice is in relation to the matrix and select areas they would like to strengthen.

Outcome 1: Improve student learning and achievement			
Non-aware <i>Not conscious of effective practice</i>	Aware <i>Aware of and attempting effective practice</i>	Internalised <i>Consciously putting into practice</i>	Integrated <i>Unconsciously applying new practice</i>
Students may be able to explain what they are doing but have limited knowledge of what the intended learning may be	Students may identify some of the intended learning	Students are able to articulate what they are learning and the purpose of learning	Students are able to articulate what they are learning and the purpose of learning and can transfer this across other learning situations
Students have no understanding of criteria and how to improve their learning	Students with teacher support are beginning to use some strategies to improve their learning	Students are able to use appropriate strategies for learning and have some understanding of next steps in learning	Students use strategies for learning and implement the next learning step
Students do not use examples, models or set criteria to help them with their learning	Students are beginning to select and use features from models and criteria to relate to their own learning	Students are able to explain how models and negotiated criteria are related to their learning	Students can explain how the features of their work relate to the criteria using models of quality work and are able to maximise learning by developing further criteria
Students don't know the criteria for achievement and rely on the teacher feedback to find out how well they have achieved	Students rely on teacher support, judgement and feedback in relation to the criteria to improve their learning	Students are thinking about their learning and progress in relation to the criteria	Students reflect on their current learning in relation to the criteria to develop their own learning strategies and set goals and determine the next step
Students' reflection is based on their perception of what the teacher wants. Goal setting is mechanical and often task or behaviour related (rather than learning)	Students with teacher support are beginning to reflect on and use assessment practices to improve their learning. Generalised links between goals and learning are being made.	Students can identify what they have done well and what they need to work on. Goals are beginning to relate specifically to learning	Students are reflective about their own and others' learning and can negotiate and set specific and focused goals to improve their learning

Outcome 2: Shift teacher's assessment knowledge and practice				
Indicators	<i>Non-aware</i> <i>Not conscious of effective practice</i>	<i>Aware</i> <i>Aware of and attempting effective practice</i>	<i>Internalised</i> <i>Consciously putting into practice</i>	<i>Integrated</i> <i>Unconsciously applying new practice</i>
Teachers construct with students what they are learning and why (learning intentions)	Teacher presents task or learning to students. Teachers tend to describe their intentions for learning in terms of what is to be done. Teacher planning is focused on topic planning	Teacher endeavours to distinguish intentions for learning from learning activities and provide reasons to students for this learning Teacher planning is based on global view of student needs	Teacher distinguishes what is being learnt and the reasons why it is relevant, worthwhile and timely. Teacher planning links to current student achievement	Teacher and students co-construct, what is to be learnt (specific, explicit learning intentions) and establishes connections with the students to determine relevance of the learning. Teacher planning clearly connects to the goals for learning, current student achievement and is responsive to students developing needs.
Teachers construct with students how they will achieve this (criteria for achieving and task or activity, match to learning, help-seeking strategies)	Teacher differentiation between what is being learnt and how it is to be learnt is unclear Both teacher and students tend to describe their intentions for learning in terms of what is to be done.	Teacher links task to the learning (With some criteria provided – maybe task criteria)	The teacher ensures learning is apparent in the task and strategies for achieving these may be provided (Criteria for success and/or exemplars are provided or developed and used by students to enhance their learning)	The teacher co-constructs criteria for achieving the learning with students. Task or activity is closely matched to learning, negotiation and support of 'help seeking' strategies with students
Teachers construct with students what the learning might look like	Criteria, models, exemplars may be absent or unclear.	Criteria, models, exemplars may be provided to students.	Criteria, models, exemplars are developed and used with students to enhance their learning.	Criteria, models, exemplars identified by teachers and students as models of expected learning
Teachers construct with students how well the learning has been achieved (self assessment, improvement, next steps)	The teacher makes evaluative judgements about student work (no criteria used or referred to). Teacher judgements are the basis of students' views about their learning. There may be reliance on external rewards such as awards, marks, stickers, stamps.	The teacher endeavours to make less evaluative judgements about student work and to use some criteria. Less reliance on extrinsic rewards.	The teacher provides opportunities for self and peer assessment and identifies next steps for learning.	The teacher encourages students to evaluate the quality of learning as lesson proceeds. The teacher uses self assessment information to inform next steps.

Outcome 2 cont...: Shift teacher's assessment knowledge and practice

<p>Teachers initiate classroom or student discussions about learning, assessment and progress.</p>	<p>Teacher's reflection and discussion focuses on student engagement with the task and/or enjoyment rather than learning.</p>	<p>Teacher initiates discussions with students on learning and/or assessment perhaps using prompts such as such as reflective self-assessment forms.</p>	<p>Teacher regularly reflects with the students about their learning and progress based on high quality assessments. Teacher involves students in reflecting on their own learning needs by introducing reflective strategies into the programme and expects students to contribute to what they need to learn next.</p>	<p>Teacher routinely reflects and discusses student learning, assessment and progress using effective strategies learned in the everyday programme. The teacher provides an environment that promotes discussions between students about learning, assessment and progress.</p>
<p>Teachers use feedback, prompts and questioning to support student learning.</p>	<p>Teacher feedback is non specific and mainly evaluative. Prompts are not connected to learning intentions.</p> <p>Questioning mainly closed with predetermined answers. Questioning inhibits depth of thinking. No wait time.</p>	<p>Teacher endeavours to give feedback related to intentions and criteria.</p> <p>Questions related to criteria Some wait time for student reflection provided</p>	<p>Teacher feedback is co-constructed and specifies achievement related to criteria and next steps. Prompts relate to learning intentions and criteria.</p> <p>Questions relate to learning intentions and criteria, use a combination of open and closed questioning and require some depth of thinking.</p>	<p>Teacher feedback co-constructed with students, motivates towards next learning steps and is related to learning intentions and criteria.</p> <p>Questions are deliberate and include a range of prompts that target identified purposes including open ended, challenging and invitational questions that allow students time to reflect or share thoughts, opinions or further questions</p>

Outcome 3: Develop coherence between assessment processes, practices and systems				
Indicators	<i>Non-aware</i> <i>Not conscious of effective practice</i>	<i>Aware</i> <i>Aware of and attempting effective practice</i>	<i>Internalised</i> <i>Consciously putting into practice</i>	<i>Integrated</i> <i>Unconsciously putting into practice</i>
Effective strategic planning	School beliefs and vision are evident in the plan but seldom referred to. Strategic planning is done without use of existing data or input from staff or community.	School beliefs and vision are articulated but not evidenced through the goals nor well understood by teachers. Strategic plan is developed from general community questionnaire or feedback. May be built around assumptions about students' needs	School beliefs and vision are inherent in the strategic plan. The strategic plan is developed through consultation with stakeholders, and guides and informs school decisions. Students' data informs development of strategic goals.	School beliefs and vision are shared, explicit and evident. All the stakeholders can articulate them and they drive all ongoing decisions. Staff all know and support strategic plan The strategic plan is informed by evidence and is an integral part of the school's operation. There is coherence between the school's strategic plan and annual planning.
High quality assessment practice	Teachers' assessments are difficult to compare and generally not used for purposes of planning or improvement of teaching.	The quality of assessment in the school is increasingly valid and reliable due to the introduction of quality tools and moderation processes. Some assessment data are used for forward planning.	Teachers use moderated achievement data to make valid and reliable decisions about student achievement relative to nationally moderated standards. Decisions about planning and school wide targets are informed by data.	Teachers use high quality assessment information to improve teaching and learning. This includes identifying and responding to: <ul style="list-style-type: none"> • needs of individual students • patterns and trends to help in planning classroom programmes • school wide analysis to determine teacher PD needs.
Alignment of assessment, planning, recording and reporting systems	Systems consist of unlinked components This may mean classroom assessments are not useful for school-wide review and vice versa. Assessment may not be part of planning.	Some links are evident among assessment, planning, recording, reporting and review systems. There may be some reluctance to change traditional practice to make systems more purposeful.	Clear links are evident among assessment, planning, recording, reporting and review systems. The purpose of each component is clear.	Assessment, planning, recording, reporting and review systems are coherent, effective and efficient and are valued by the school community.

Outcome 3 cont.: Develop coherence between assessment processes, practices and systems				
Communicating progress and achievement with family, whanau and community	Key stakeholders are not informed about assessment and reporting practices.	Key stakeholders have opportunities to learn about and comment on assessment and reporting practices.	Key stakeholders are informed and consulted about assessment and reporting practices and value and trust the information provided.	Key stakeholders are fully consulted on assessment and reporting practices and value and trust the information which enables them to participate in their children's learning.
School curriculum enables teachers to use assessment for learning and involve students in planning	School curriculum not based on an agreed set of learning goals. It may restrict teachers to predetermined topics or it may offer no guidance on learning goals and approaches.	Some school curriculum goals are clear and teachers may be expected to plan for student needs in these areas but school curriculum plans or requirements may hamper afl and student involvement.	Main school curriculum goals and some teaching approaches are agreed. Teachers enabled to use afl and involve students in planning in most curriculum areas	The school's curriculum is based on valued and lasting learning goals and approaches. Teachers are enabled to plan to meet identified student needs and involve students in planning.

