The Progress and Consistency Tool (PaCT)
Good Practice Guide

July 2015
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New Zealand has developed its own distinctive model of assessment and evaluation. It is grounded in a strong belief in teachers’ professionalism with teachers having prime responsibility as the principal assessors of student learning. Assessment for learning is at the heart of the New Zealand system. The primary purpose of assessment is to accelerate students’ learning by using information to give feedback to students about their learning and to plan next learning goals with them.

Effective assessment for learning occurs when information is used well and informs teaching and learning. It is a cyclical process of continuous improvement with the student at the centre. It underpins the New Zealand Curriculum, which sets the direction for learning in English-medium schools, to ensure students gain the knowledge, skills and understanding they need to be confident, connected, and actively involved life-long learners.

National Standards are reference points for student progress and achievement within the New Zealand Curriculum. They describe what students need to know and be able to do in order to participate successfully in all learning areas of the curriculum in the first eight years at school. They encourage teachers to use a range of information to support judgments on student progress in reading, writing and mathematics and discuss that information with their colleagues.

To be effective, standards-referenced assessment must be valid (i.e. draw on a range of information) and teacher judgments consistent. The PaCT has been developed to support dependable (valid and consistent) teacher judgments of student achievement and progress.
Gathering information to make judgments

Introduction
The PaCT does not make judgments. Teachers make judgments. In order to make judgments, it is essential that teachers understand the knowledge, skills and rates of progress described in the New Zealand Curriculum, the Literacy Learning Progressions and the Number Framework.

Teacher judgments
Teacher judgments of progress and achievement involve combining current evidence and information from multiple sources, using a range of assessment approaches.

No single source of information can accurately summarise a student’s achievement or progress. A range of approaches is necessary in order to compile a comprehensive picture of the areas of progress, areas requiring attention, and what a student’s unique progress looks like.

Multiple sources of evidence in reading, writing and mathematics may be gathered in the following ways:
› Observing the process a student uses
› Conversing with the student to find out what they know, understand and can do
› Gathering results from formal assessment, including standardised tools.

Making judgments
All of this informs interim and end of year overall teacher judgments.
How does the PaCT help with overall judgments?

The frameworks
The PaCT frameworks break down mathematics, reading and writing into different aspects supported by richly detailed illustrations. The frameworks have been developed by curriculum experts using the New Zealand Curriculum, the National Standards, the Literacy Learning Progressions and the Number Framework.

The reading and writing frameworks are broken down into seven aspects of learning and the mathematics framework into eight.

Each aspect is broken into observable and distinct learning stages linked to sets of illustrations.

Reading
› Making sense of text: processing system
› Making sense of text: text structure
› Making sense of text: vocabulary knowledge
› Making sense of text: reading critically
› Reading to organise ideas and information for learning
› Acquiring and using information and ideas in informational texts
› Reading for literary experience

Writing
› Writing meaningful text: encoding
› Writing meaningful text: text features
› Writing meaningful text: vocabulary knowledge
› Using writing to think and organise learning
› Creating texts to communicate knowledge and understanding
› Creating text for literary purposes
› Creating texts to influence others

Mathematics
› Additive thinking
› Multiplicative thinking
› Patterns and relationships
› Using symbols and expressions to think mathematically
› Geometric thinking
› Measurement sense
› Statistical investigations
› Interpreting statistical and chance situations
Examples of illustrations from Set Four in Measurement Sense.

Using the PaCT to make judgments in mathematics

Making judgments in mathematics involves:
› Understanding the big mathematical and statistical ideas that provide a comprehensive picture in the eight aspects of mathematics.
› Collecting quality evidence from a range of sources including rich tasks.
› Mapping the evidence about students’ learning to the best fit set of illustrations.
› Considering independently and most of the time (as per the National Standards’ book).
› Making decisions on all eight aspects of the mathematics framework to make an overall teacher judgment.
› Using the interactive modules for mathematics on NZMaths for further information.

Suggested process
1. Draw together evidence from multiple sources to identify the knowledge, skills and understanding a student is using and applying.
2. Think about the student’s overall progress and achievement in relation to curriculum expectations.
3. Consider the sets of illustrations to determine a ‘best fit’ with knowledge about a student’s learning.
4. Enter decisions into the PaCT.
5. Reflect on the PaCT recommendations.
6. Confirm or review the PaCT recommendations.
Illustrations

Each set of illustrations has been developed to illustrate a big or important idea. The sets of illustrations have been carefully trialled to ensure the learning stages are distinct from the illustrations that precede or follow.

For example, there are eight sets of illustrations for additive thinking. The stages of progress and achievement are as follows:

Set one: illustrates students who know some number names and parts of the number-word sequence, and may instantly recognise small quantities.

Set two: illustrates students who use one-to-one correspondence, knowledge of the number-word sequence, cardinality and ordinality as they count sets of objects.

Set three: illustrates students who count all of the objects to solve simple addition or subtraction problems. They do this with real objects or by imagining the objects.

Set four: illustrates students who solve problems involving the addition or subtraction of single digit numbers by counting on or back from the larger number. The language of the problem guides the student to the operation of addition or subtraction.

Set five: illustrates students who partition single-digit numbers to form ‘tidy numbers’ or use known addition facts to ten to solve problems. The language of the problem guides the student to the operation of addition or subtraction.

Set six: illustrates students who solve problems involving two and three digit numbers, in which the mathematical operation is transparent in the wording, by applying a strategy from a limited rehearsed repertoire. The strategies are most likely to involve place-value partitioning, or compensation when the number is close to a tidy number.

Set seven: illustrates students who respond flexibly to addition and subtraction problems involving whole numbers and simple decimals by applying and explaining a range of strategies, including the use of inverse operations, as they seek the most efficient method.

Set eight: illustrates students who demonstrate flexibility, a strong number sense and an ability to carry out multiple steps as they estimate and solve complex problems that involve adding and subtracting whole numbers, decimals, fractions and integers.

A teacher makes a judgment for a student on each of the aspects by choosing the set of illustrations they judge best fit the student’s current skills and understanding. It is important to take note of the annotations in the illustrations.

It is rare that a teacher will find a student has a perfect fit with all the illustrations for a learning stage. To make sure a set of illustrations is best fit it is important to view the sets of illustrations in adjacent sets to see if they are a better fit. Then teachers use their professional judgment and choose the set that is closest to what the student knows and can do at this point in time.

The tool captures best fit judgments on all aspects of a framework and recommends an overall judgment.

Help with dilemma

The psychometric calibration – the engine of the tool – will help teachers with the dilemma that many face when making their judgments. Right now, teachers have to figure out for themselves how much weight to give to particular aspects of reading, writing or mathematics as they make an overall judgment and it’s hard to work out how this balance might change as a child’s learning progresses over time. The tool will translate a series of judgments into a PaCT score range. This will be linked to a recommended overall judgment that they can then confirm or review. We expect teachers will find this very useful.

Which students?

Teachers need to decide if they use the PaCT to make judgments on all students or on some. It may help teachers to think about a class of students and whether they naturally group or cluster (see illustration on page 9), then identify the set of illustrations that is best fit for that group or cluster.
Making judgments in the PaCT efficiently

1. Think about your programme in relation to the aspect. Which set reflects the concepts/skills/strategies you have taught? (Most single level classrooms will only span 2-3 sets)

2. Think about your students. Can you rank them from the least able in relation to the aspect? As you do, your students will naturally cluster. Which sets are best fit for each of the clusters of students?

Measurement sense

1. In our recent measurement unit I introduced metre rulers and litres and most of the class used them appropriately. I did some focused teaching on how to measure length using a number of different non-standard lengths with a small group. This means that the third or fourth sets are likely to be the best fit for my students.

2. The majority of my class are able to use metres and litres for measuring so the fourth set is best fit for them. Two children were particularly confident but the fourth set is still best fit for them. The third set is the best fit for the small group who had additional teaching. I have one student with special education needs and the first set is the best fit for him.
How will this help teachers and schools?

Teachers make judgments on student progress and achievement, moment by moment, day by day in their teaching interactions with students. The PaCT will give teachers confidence that their interim and end of year judgments for National Standards are consistent and dependable.

Teachers can use the PaCT to consider progress and achievement at various times of the year (out of the interim and end of year cycles) to build a clear and consistent understanding of student progress and achievement.

The PaCT illustrations help to give teachers confidence that their judgments, based on professional knowledge and a range of classroom activities, are valid.

The PaCT online tool helps overcome the difficulties in making overall judgments for students who achieve highly in one aspect of mathematics, reading or writing but not so highly in others.

Because teachers will be basing their judgments on the same sets of frameworks and illustrations they, and their colleagues, will have more confidence that their judgments are consistent and dependable.

The frameworks give teachers a common tool for moderation discussions with each other, within and between schools.

The PaCT also helps teachers give specific and constructive feedback to students and parents.

The benefits of the PaCT over time

Teachers will be able to track students’ and class progress; use the data to inform teaching programmes; and use it to guide decisions about how to improve students’ learning.

School leaders will have dependable information on progress in their school and areas where extra support might be needed.

Boards of Trustees will be better able to track progress towards their school’s goals and targets and plan for the school’s future.
Moderating judgments

Moderation
› Promotes confidence in teacher judgments, across classes and across levels
› Involves professional discussions about evidence of student learning
› Establishes a shared understanding of what progress and achievement looks like
› Helps teachers confirm or adjust judgments
› Fosters dependability, comparability and fairness of judgments.

How does the PaCT help with this?
The PaCT aspect frameworks give teachers a common tool for moderation discussions with colleagues. Moderation discussions are central to the tool’s potential. In professional discussions about teaching, learning and achievement, the PaCT may be used as a prompt and a guide.

The PaCT captures judgments on aspects of a framework and recommends an overall judgment.

Teachers then use their professional judgment to confirm or review the reading, writing or mathematics overall judgment that the PaCT recommends for each student.

Dealing with surprises
Teachers are responsible for making the overall teacher judgment for a student.
› If the PaCT score does not seem to represent what is known about the student’s achievement, then it is advisable to revisit the sets of illustrations to ensure that the correct selection and therefore judgment within an aspect has been made.
› If the judgment still does not match expectations, invite several colleagues to moderate the judgment with you.
› If the PaCT score sits midway the teacher makes a decision on one standard or another.
Moderating a PaCT mathematics judgment

For example: A teacher decides the PaCT judgment for a student does not seem to represent what they know about the student’s achievement. In collaboration with colleagues, the sets of illustrations are revisited to discuss and compare the same student evidence to confirm the best fit set of illustrations.

School leaders use the PaCT to make consistent judgments in mathematics

For example: A school leader is concerned about the consistency of teacher judgments across the school. The school leadership team decide to use the PaCT to support the consistency of judgments and improve leaders’ and teachers’ confidence in their own and others’ judgments.

Teacher discussion

Teacher A: I am wondering about the judgment I made on the multiplicative aspect. The evidence shows the use of an algorithm as the only strategy Manu uses to solve complex problems involving decimals and percentages. I chose set seven but now I’m not sure - what do you think?

Teacher B: Does Manu use any other strategies to solve problems like these?

Teacher A: No. When the problems get more complex, Manu relies on his knowledge of an algorithm, however he understands place value and his basic facts knowledge is strong.

Teacher B: Set seven illustrations show and describe students selecting from a range of strategies depending on the numbers in the problem. Do you still think that set seven is a best fit for Manu?

Teacher A: Well upon reflection, Manu is really only using one strategy to solve more complex problems... he is relying on one way. I need to change my judgment to set six as the best fit set of illustrations.

Evidence

› Observations of the student completing rich mathematical tasks
› A learning conversation
› Examples of students solving problems using a range of strategies
› Teacher anecdotal notes

School story

In June, the principal asked all teachers to make an interim judgment to determine whether their students were on-track to meet the National Standards by the end of the year. Some teachers had judged over 80% of their class as “on-track” to meet their year-level standard, whilst others had made judgments that only 25% of their students were “on-track” to meet the standard for their year-level. This rang alarm bells, so the leadership team held syndicate meetings where teachers brought evidence from three students to compare against the aspect framework. Together they discussed the judgments they had made. This gave teachers a rich basis on which to confirm or adjust their decisions and gave clarity on the range of evidence they needed to use to support making their judgments, in relation to the National Standards year-level expectations.
Information for teaching, learning and planning

**Dependable information is important**

- Students need good feedback and feed forward so they can plan their own learning goals.
- Parents need dependable information so they can support their child’s learning.
- A child’s next teacher needs to be confident about the information they are receiving about a student’s progress and achievement.
- School leadership teams need dependable information to inform their self-review and planning.
- Trustees need dependable information to make resourcing decisions.

**How does the PaCT help with this?**

The PaCT enables dependable judgments that inform decision-making for teaching and learning.

**Teachers can use the PaCT data to:**

- Inquire into the impact of their teaching for improved student outcomes.
- Clarify judgments.
- Discuss strengths and future learning with students, parents, family and whānau.

**School leaders can use the PaCT data to:**

- Obtain a clear picture of student progress and achievement.
- Disaggregate according to year, ethnicity and gender and by aspect.
- Notice and respond to patterns and trends.
- Inquire into the impact of teaching as part of the self-review process.
- Plan for professional learning and development, interventions, resource allocation, in order to accelerate progress.
- Report to Board of Trustees, parents and whānau.

**Boards of Trustees can use the PaCT reports to:**

- Inform governance decisions.

**Analysis of the PaCT data**

An important first step when analysing the PaCT data is posing questions of the data that may provide useful answers or possible new lines of inquiry.

**Analysis of the individual data**

- What do the results show?
- Are there any surprises?
- What progress has occurred since the last PaCT judgment was made?
- Is the rate of progress sufficient?
- What limitations are there on the results?

Teachers are responsible for making the final judgment for a student. If the PaCT judgment does not seem to represent what is known about the student’s achievement then it is advisable to revisit the sets of illustrations to ensure that the correct selection and therefore judgment within an aspect has been made. If the judgment still does not match expectation, then invite several colleagues to moderate the judgment with you.

**At the class and school level**

- What do the results show?
- How significant are any apparent patterns or trends?
- Analysing for gender? Ethnicity? Year levels or cohorts of students?
- Is the rate of progress sufficient for all students, especially those students in priority groups?
- Is the data conclusive, a trend, or a possibility?
- Can we act on it?
Interpreting the data

After analysis of the data, the knowledge and insights gained will need to be clarified and prioritised.

For the student

The PaCT produces individual student reports designed for teachers to consider an individual student’s progress and achievement in reading, writing and mathematics.

Student judgment reports:
› Show aspect judgments for an individual student and the overall PaCT range. The report gives an idea of a student’s strengths and indicates which aspects could provide a learning focus.

Student progress report:
› Over time the student progress report will provide a consistent measure of a student’s progress through years 1 to 8 in reading, writing and mathematics.

The National Standards levels are mapped to the PaCT scale enabling teachers, students, parents, family and whānau to see where a student’s learning is at in relation to the standards.

Graphs are generated using the PaCT range and show the progress within a standard.

For the class

The PaCT produces two types of class and group reports: the class progress report and the class aspect report.
› The class PaCT ranges report shows the PaCT ranges for a class/group of students. This will give an indication of the distribution of achievement within a class or group for reading, writing and mathematics. To see further detail about an individual student’s result, you can hover the cursor over the number and this will bring the student’s name and range on screen.
› The class aspect report shows the distribution of students at each of the different learning stages for each aspect across reading, writing or mathematics. Each bubble represents a set of illustrations with the number of students at that stage.

For the school

The PaCT supports schools reporting systems and processes reflecting the characteristics of effective assessment from the New Zealand Curriculum.

Leaders will need to consider:
› How to incorporate the PaCT data into existing practices.
› Inquiring into the data.
› Identifying the achievement challenges exposed by the data and making evidence-based decisions about next steps.
› New practices around the PaCT data.
› Clear process to follow when the PaCT judgment is unexpected.
› Revisiting teacher judgments after school-wide moderation.
Interpreting the data (cont)

For teaching and learning at the group and class level

› Are there areas that have been highlighted as areas for learning focus?
› Who are the students who are not making expected progress?
› Which students are making accelerated progress?
› What other approaches can be used to raise achievement for all?

For teacher practice

› Was there other evidence that needed to be gathered to improve the quality of the judgments?
› Are there students for whom teaching needs to be further differentiated? (After viewing and analysing group aspect and class reports)

For teaching and learning at the whole school level

› What might leaders need to consider and action as a result of identifying specific areas of learning focus across a syndicate or school-wide?

Progress within the PaCT

› Progress within the PaCT is described as an upward movement on the PaCT scale score.
› Expected progress within the PaCT is described as a year’s growth from the previous end of year judgment.
› Accelerated progress within the PaCT is described as the learner’s progress showing:
  - A noticeably faster, upward movement than might otherwise have been expected by the trend of their own past learning;
  - Faster movement than classmates progressing at expected rates.

Summary

The PaCT supports school reporting systems and processes reflecting the characteristics of effective assessment from the New Zealand Curriculum.

The PaCT provides:

› A selection of reports with school, class or student settings filtered by groups, year level, gender or ethnicity e.g. the class aspect judgment report.
› Dependable information for reporting progress and achievement.
› Dependable data for school leaders, boards of trustees, whānau and the community to inform decisions about the next steps to accelerate learning.
› Dependable information to strengthen teaching and learning by helping teachers to give specific and constructive feedback to students and parents.

The PaCT relies on teachers’ judgments – the decisions are always in the teachers’ hands.
Using the PaCT

These are some of the outcomes your school may be seeking from using the PaCT after a self review of your assessment for learning and reporting systems and practices.

We have clear purposes for collecting data

We will use the PaCT to identify areas of the curriculum that are taught well, and areas we can focus on as part of building our self review processes.

› Clearly demonstrates/shows/describes a learning pathway.
› Teachers can see progression/learning trajectory.
› The Pact supports teachers to make judgments as to whether students are ‘on track’ with respect to Reading/Writing/Mathematics in the first 8 years of schooling.
› Accurate picture of student achievement across the school in relation to the National Standards.

We will use the PaCT to improve our understanding of the National Standards as signposts across the breadth of the curriculum.

› The frameworks reflect the emphases of the National Standards.
› They clearly define and describe progress from years 1-8.
› Support teachers to make judgments that cover the breadth of Reading/Writing/Mathematics.

We will use the PaCT to inform and improve our annual cycle of assessment.

› Set reporting cycles for the year/timeframe for collecting evidence.
Our data is dependable (valid and reliable)

We will use the PaCT to better understand what assessment data we need, the tools we will need to use and how to use them (formal and informal).

- Increased understanding of the intent and the emphasis of the National Standards.
- Some of the illustrations in the PaCT include information from assessment tools that are commonly used in NZ classrooms.
- Encourages teachers to consider a range of evidence about what a student knows and can do.
- The illustrations may remind teachers of important ideas in the curriculum that require additional focus.

We want to explore how the PaCT will assist us to actively involve students in self and peer-assessment.

- Teachers can use the PaCT to provide students with specific feedback on their progress and achievement.
- Students can see their own progress and achievement.
- Students can see what progress looks like (this helps them to identify next steps and set learning goals).

We want to include the PaCT in our moderation practices in Reading, Writing and Mathematics so that they are more are effective and efficient and targeted.

- Carefully constructed assessment framework provides a common starting point.
- Focussed at the aspect level - more defined.
- Can use evidence from the PaCT to guide moderation conversation.
- Common tool helps to moderate how teachers interpret a student’s performance.

We want to use the PaCT as a form of external reference point for our moderation of Reading, Writing and Mathematics and in the longer term share that with other schools in our community.

- The PaCT will support teachers to achieve national consistency in reporting progress and achievement.

We use our data to review student progress and the success of our teaching

We will use the PaCT as part of a better system to track the progress of individual students over time and year on year.

We will use the PaCT to track the progress of our target students over time.

We will use the PaCT to analyse patterns of progress for groups and cohorts.

- PaCT provides progress data for a variety of student groups and cohorts such as individual students, target students, year groups, ethnicity and gender.
- Schools can apply filters to the data; for example schools may want to view progress of all year 8 boys in reading or the progress of a group of year 5 Maori girls in writing.
- This allows schools to identify and analyse trends and patterns of progress across a number of different groups and cohorts.
- Identify and target support at particular students, groups and cohorts.
We use our data to report on students’ progress and achievement

We will use the PaCT as part of our regular feedback about students’ successful learning to students and their families.

› Reporting cycle ensures information is regularly provided.
› Reports provide a clear visual picture of progress so parents and students can see and understand how they are doing and what they can do about their progress.
› Ensures the achievement information shared with students and their families is dependable.
› Teachers can be confident about the feedback they provide.

We will use the PaCT to help identify a focus for next learning goals with students and their families.

› PaCT provides a progression pathway so teachers can see what the next ‘progression’ step looks like and can share this with students and their families.
› PaCT identifies areas where parents can help support their children at home to achieve their next learning step.

We analyse our data in relation to our priority goals

Our teachers will use the PaCT data diagnostically as part of their review of the impact of their actions.

› The PaCT provides a fine grained scale that details even very small shifts in achievement, so teachers can clearly see whether their actions have had or are having an effect on student progress.

As a school, we use the PaCT data as part of the data we collect to review the progress we are making to inform our decisions about teaching programmes and practice.

› The PaCT provides student data at an aspect level enabling teachers to identify specific aspects where students may need extra teaching support.
› PaCT provides dependable data to inform decisions about teaching, learning and professional development.

As a school, we use the PaCT data as part of the data we use to decide on targets and allocate resources.

› Helps to clearly identify specific subjects and/or students to target. This will allow for more effective allocation of the support to identified areas/students.
› Use data to set clearly defined targets for school charters. Can monitor and track progress over time to see whether targets are being achieved.
Lifting aspiration and raising educational achievement for every New Zealander