About the Progress and Consistency Tool

Introduction

This paper describes the Progress and Consistency Tool (PaCT) and how it works.

What is the Progress and Consistency Tool?

PaCT is an online tool designed to help teachers in English-medium schools make dependable summative judgments about the achievement of their students in reading, writing, and mathematics. PaCT uses the Learning Progression Frameworks (LPFs)[i] to structure the decision-making process.

Why have a Progress and Consistency Tool?

Standardised tests and assessment tasks have traditionally been used to create summative measures of achievement. PaCT takes a different approach by using teachers' judgments to determine the best estimate of student achievement. Unlike a test, which relies on a one-off sample of student behaviours over a subset of the curriculum, teachers observe students in authentic contexts, using a full range of competencies and over periods of time. This gives teacher **judgments** the potential to capture the kind of learning that is at the heart of the curriculum, rather than related proxies, such as achievement on a multiple-choice item.

Research indicates, however, that making teacher judgments, especially ones that can be compared across classrooms and year levels, is not always straightforward. Individual teachers can have different ways of combining information to reach a judgment, especially when the judgments involve categorising achievement into different levels. Human judgments can also be affected by biases that systematically inflate or deflate judgments or add "noise" to the judgments. These biases are often unconscious and involve doing things such as leaning on stereotypes about gender and ethnicity, considering only evidence that confirms a first impression, and focusing on work habits and surface features rather than more central aspects of the learning. Many of the biases that are introduced into judgments are the result of using quick, intuitive "rules of thumb" that work sometimes, but which can be based on faulty assumptions. There is plenty of evidence that even experts can be affected by these biases.

How does PaCT support teachers' judgments?

PaCT support teachers' judgments in three key ways.
1. PaCT bases the judgments on a rich and comprehensive view of reading, writing, and mathematics.

   PaCT uses the LPFs for reading, writing, and mathematics to structure the judgment process. Each LPF is divided into several aspects, with each aspect representing an important part or component of the area of learning. When teachers use PaCT they make judgments across

the LPF aspect by aspect, meaning that the overall judgment covers the breadth of the relevant learning domain.

2. PaCT uses the rich illustrations in the LPFs to anchor judgments.

    The LPFs use rich sets of illustrations (signposts) to represent different levels of achievement. These have been carefully constructed to describe the kinds of things that teachers routinely observe and respond to during authentic classroom interactions. The rich illustrations act as anchor points for the decision process by providing clear exemplars of what it means to achieve at different levels. These help teachers focus on what's central to the area of learning and recognise when their students have reached the levels described.

3. PaCT rests on a comprehensive research and development programme.

    The LPFs that underpin PaCT, and PaCT itself, were developed through a rigorous process involving several rounds of trials and statistical analysis. This means that the frameworks and decision-making process have been informed by data and that claims about the validity and reliability of the tool can be supported by evidence.

How does PaCT work?

When a teacher uses PaCT to assess a student, the teacher selects the set of illustrations that best fits what they have noticed and observed about the student for each of the aspects that make up the relevant LPF. PaCT scores each of these judgments and combines them into a total score. It then uses a mathematical model called the Rasch model to convert the total score to a range on a measurement scale to indicate the overall level of achievement.

Unlike raw scores, where an increase of one score point can indicate a different amount of change as scores get greater, the measurement scale is based on a unit that represents the same amount of change at all parts of the scale. The model transforms the raw total scores so that they are spaced along the measurement continuum to properly represent the relative differences in achievement indicated by different scores.

The PaCT scale is numbered from 0 to 1300. Higher numbers (scale scores) indicate that the student's level of achievement is located further up the scale.

The successful use of the Rasch model to construct a measurement scale means that there is strong statistical evidence that the separate aspects that make up each PaCT framework are working together to measure achievement on the same underlying collection of understandings and skills.

The PaCT range

A student's level of achievement is shown as a range on the PaCT scale rather than a fixed point. This helps to make users aware of the measurement error that is part of the result. We can be reasonably

confident that the student's "true" level of achievement is located somewhere within the range shown. When the range for two students overlaps, it indicates that there is not enough evidence to determine which student is achieving more highly than the other.

Turning PaCT scores into curriculum levels

As well as reporting a range on the PaCT scale, PaCT reports how a student is achieving in relation to the levels of the New Zealand Curriculum (NZC). PaCT determines this by comparing the midpoint of the student's PaCT range with expected scores associated with performance at each curriculum level. The expected scores were generated as part of a curriculum alignment exercise. During the exercise a group of subject-matter experts worked through a structured process to determine which scale scores were associated with working within each of curriculum levels 1 to 5 and above. The curriculum level reported for a student is the level of the NZC that the subject-matter experts determined was associated with the part of the PaCT scale where the student scored.

PaCT signals which curriculum level the student is currently **working within**. The student has met the expectations of a curriculum level when they score above the top boundary associated with that level and begin working within the curriculum level above.

What else can PaCT do?

PaCT stores and manages student information so that trends can be examined over time and reporting can be generated at a student, group, class, and school level. PaCT enables the tracking of a student's achievement and progress in reading, writing, and mathematics, from school entry to year 10, as they move within and between schools. When schools work together as part of a Kāhui Ako, they can agree to share aggregated reporting and use PaCT to support analyses carried out across the Kāhui Ako.

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[i] For more information on the Learning Progression Frameworks, see the related information pages on this website.