

# Assessing numeracy

## in the primary school



**The ANIPS PROJECT TEAM**  
**report on the ACT project**  
**aimed at improving numeracy**  
**outcomes through a whole-**  
**school approach to**  
**assessment.**

In the Australian Capital Territory (ACT) the *Assessing numeracy in primary schools* (ANIPS) project aimed to improve student numeracy outcomes through the development of a whole-school approach that links a comprehensive assessment regime with numeracy teaching and learning. Such an approach is becoming more necessary due to the expansion of forms of mathematical education which aim to produce flexible and confident thinkers, who can adapt their knowledge and skills to changing circumstances in order to reflect the needs of present day society.

This new focus in mathematics education requires different means of assessing its effects from those used to assess more traditional teaching of mathematics. For instance a written test assessing a student's ability to perform a given algorithm is an inadequate means of measuring the student's ability to grasp the requirements of a particular practical situation, extract the relevant information and use mathematical techniques, whether simple or sophisticated.

Teachers from ten ACT schools across the government, Catholic and independent sectors participated in action research through 2001 and 2002 while involved in the project. They focussed on manageable tasks in their own and others' classrooms.

The project examined how the results from a variety of assessment tools could be used to improve student numeracy outcomes. The researchers investigated:

- the relationship between population/system testing and school and classroom based assessment;
- the integration of teaching, learning and assessment; and
- the role and impact of professional learning teams and their effect on the development of whole school approaches to supporting improved student numeracy outcomes.

Classroom assessment practices were identified which complement system and/or school assessment procedures. Teaching approaches that make effective use of assessment to

support student learning, particularly for 'at risk' students were highlighted.

A variety of alternative modes of assessment — many of which were unfamiliar to teachers — were introduced during the course of the project. These included checklists, student journals, interviews, portfolios and work samples, observations, use of rubrics to assess problem-solving, and assessment of attitudes, in addition to widening the scope and formats of written tests.

## Impact of the project

Teachers were asked about their use of specific assessment approaches before and after the project. Using this information, it was clear that the project had a considerable effect in increasing the range of assessment approaches used by project teachers in their classrooms. This was apparent in relation to all assessment approaches but was particularly marked in the case of interviews, the use of open-ended tasks, problem solving using rubrics, and student journals.

At the end of the project, teachers reported much greater confidence and enjoyment in teaching mathematics, recognition of the importance of children explaining their thinking, seeing the importance of mental computation and the need for understanding the relevance of the mathematics for children. They reported using a greater variety of teaching activities, including open-ended activities, practical activities and games. They also reported increased discussion and sharing of mathematical understandings, with a greater focus on students conveying their thought processes. Teachers were more aware of targeting the understanding of individual children and of supporting the development of mental computation. Teachers reported that their students displayed greater confidence and enjoyment, positive attitude and willingness to have a go in mathematics. Students demonstrated a greater willingness to talk and confidence in explaining strategies.

Qualitative evidence also revealed that the project had an impact on whole-school attitudes, beliefs and practices. There was evidence of increased impetus to:

- engage in whole-school discussions and planning;
- rethink teaching and assessment approaches and practices; and
- share and compare approaches and practices with those of other schools across the government, catholic and independent systems.

## More information

A resource for teachers, *Assessable Moments in Numeracy*, including assessment support materials can be found at: <http://activated.decs.act.gov.au/assessablemoments>.

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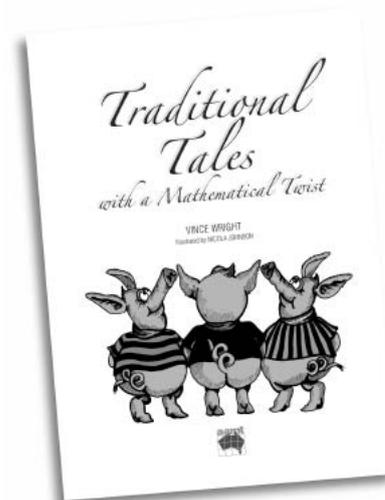
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