

Mapping NAPLAN Items against VELS Progression Points: Two Sides of the Same Coin?

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The National Assessment Program – Literacy and Numeracy [NAPLAN] testing of Australian students has been a topic of discussion and occasional unrest among school principals, teachers and parents alike. Putting aside issues such as the possible misuse of the results of such testing, the purpose of the work to be discussed was to determine how closely the NAPLAN tests correspond to the Victorian Essential Learning Standards [VELS]. The methodological problems that arose as a result of this attempt to match NAPLAN to VELS will be the focus of the presentation.

Background Information

NAPLAN testing commenced in 2008. As part of the program, students in Years 3, 5, 7 and 9 are simultaneously tested using national tests in Reading, Writing, Language Conventions (Spelling, Grammar and Punctuation) and Numeracy (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2010a). As explained by ACARA (2010b), the tests broadly reflect aspects of literacy and numeracy in all States and Territories. The types of test formats and questions are chosen so that they are familiar to teachers and students across Australia. The Victorian Curriculum and Assessment Authority [VCAA] (2010) affirms that “questions for NAPLAN tests are developed with reference to the nationally agreed Statements of Learning which reflect the core elements of the curriculum documents used in the different states and territories” (p. 2) and that “although the National Assessment Program Scale is not explicitly linked to the Victorian Essential Learning Standards (VELS), all NAPLAN questions are consistent with VELS” (p. 2).

Aims and Methodology

The aim of this project was to map the 2008 and 2009 NAPLAN tests against the VELS Progression Points to determine if the NAPLAN test results can be interpreted in a meaningful way with respect to the Victorian curriculum. In order to undertake this comparison, the individual points listed under each of the Progression Points and

individual NAPLAN questions were placed on a grid. The curriculum areas that had been assigned to each of the NAPLAN questions, as found in the Ministerial Council on Education, Employment, Training and Youth Affairs Reporting Guide NAPLAN (Victorian Curriculum and Assessment Authority, 2008; 2009a), were used to group the questions as belonging to the Numeration, Space, Measurement, Chance and Data or Structure [Algebra] strands. Printed copies of previous NAPLAN tests were utilised and both the written question and any illustrations corresponding to the question were studied and matched to a particular Progression Point. The procedure for the mapping was as follows:

- Curriculum area (as assigned by VCAA) written beside each question
- Questions belonging to a single strand identified (to be mapped consecutively)
- Each question (and any illustrations) studied and compared to all Progression Points
- Match each question to a Progression Point (if able to be done)
- Note down any questions that did not map

This was undertaken for 2008 and 2009 tests at each grade level. In order to increase reliability in the study, the entire procedure was repeated approximately a week later. The Progression Points assigned to each NAPLAN question on both trials were compared and when the assignment of a Progression Point matched for two trials, the item was considered to belong to that Progression Point. For overlap questions, those which were found on tests for different year levels, Progression Points assigned were also compared. If they matched, these questions were also considered to have mapped to VELs.

Results and Discussion

As can be seen in Table 1, the majority of questions on each of the NAPLAN tests could be mapped to VELs. Some tests, such as the Year 9 (calculator allowed) test, had a much larger number of questions that were not able to be mapped. Particular questions that either mapped differently on the two trials or were not able to be mapped into a particular progression point were identified. A group discussion was then arranged with a number of colleagues who had been provided with a number of Measurement, Chance and Data questions that could not be mapped successfully and a copy of the Progression Points in the VELs Measurement, Chance and Data strand. During the discussion, colleagues explained their reasoning for their Progression Point choices and, as a result of this discussion, a number of additional questions were eventually mapped. It is hoped that this presentation can serve as a continuation of this discussion.

Table 1
Percentage of NAPLAN questions mapped to VELs after two trials

	2008		2009	
	No. of items	% items mapped	No. of items	% items mapped
Year 3	35	83%	35	91%
Year 5	40	80%	40	78%
Year 7 (no calculator)	32	69%	32	71%
Year 7 (calculator allowed)	32	78%	32	94%
Year 9 (no calculator)	32	81%	31	87%
Year 9 (calculator allowed)	32	53%	31	68%

Several issues were identified with respect to the NAPLAN questions that did not immediately map onto VELs. In the group discussion, there was little agreement of where such questions went, with a variety of different responses from the participants. As some of the questions were not able to be mapped to a single Progression Point, but instead could potentially belong to more than one, it was decided that each question would be mapped to the Progression Point it most closely linked to (as agreed to by colleagues involved in the discussion). There were also some concerns with respect to Progression Points. As an example, at the Measurement, Chance and Data strand Progression Point 3, students should be able to make “comparison[s] of the likelihood of everyday events (for example, the chances of rain and snow).” Interestingly, students working at Progression Point 2.75 should be able to make “comparison[s] of the likelihood of everyday events and linking of events with statements about how likely they are to occur.” According to VELs, students working at a lower Progression Point are expected to be able to not only make comparisons of likelihood, but also to be able to link such events to statements about probability. Students at a higher Progression Point are simply expected to be able to make such comparisons. Further examples of contradictory Progression Point expectations were not observed in the initial mapping work, but a closer analysis of the Progression Points will take place once this initial mapping work has been completed.

The Year 5 NAPLAN question from 2008 shown in Figure 1 is one that was difficult to map onto VELs. According to the VCAA (2009b), NAPLAN Level 4 corresponds to Years 5 and 6. This item was initially mapped at the VELs Progression Point at Level 2.0 [i.e. for Years 1 and 2], “Recognition of symmetry, asymmetry, and congruence in these [familiar two-dimensional] shapes and objects.” Although it could be argued that the illustrations included in the question may not be considered ‘familiar’, Progression Point 2.0 was the only one that included anything about symmetry. This example demonstrates one of the difficulties faced in this project.

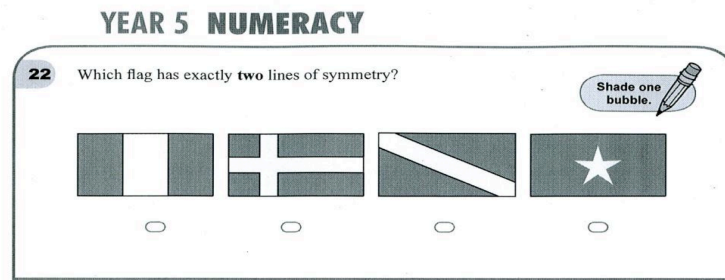


Figure 1: Year 5, 2008 NAPLAN question

The NAPLAN/VELS mapping will be undertaken again to determine whether additional items can be mapped. In addition, the questions from the 2010 NAPLAN tests will also be mapped against VELs using the same procedure. An invitation now exists for other researchers to offer their assistance and suggestions as to how this mapping could be done with other questions that do not immediately link to a particular VELs Progression Point.

References

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