

**National Assessment Program -
Civics and Citizenship Year 6 and Year 10
Technical Report
2007**

Nicole Wernert
Eveline Gebhardt
Wolfram Schulz

February 2009

Prepared 2009 by
The Australian Council for Educational Research Ltd
19 Prospect Hill Road, Camberwell, Victoria, 3124, Australia.

Copyright © 2009 Australian Council for Educational Research

The authors wish to acknowledge the expert contributions of Martin Murphy, Jennifer Hong, Suzanne Mellor, Julian Fraillon, Renee Chow and Alana Deery to this Technical Report, which took the form of developing text that was integrated into this document, and of reviewing and editing of sections of this report.

Contents

CHAPTER 1: INTRODUCTION	1
Project overview	1
National Assessment Program - Civics and Citizenship.....	1
Participants in the assessment.....	2
The assessment format.....	2
Reporting of the assessment results	2
Structure of the Technical Report.....	2
CHAPTER 2: ASSESSMENT DOMAIN AND INSTRUMENT DEVELOPMENT	4
Developing the assessment domain	4
Trend Items	4
Item development	4
The Field Trial	5
The final assessment instruments	5
The score guide.....	6
Student background survey.....	8
CHAPTER 3: SAMPLING AND WEIGHTING	10
Sampling	10
Weighting	15
CHAPTER 4: FIELD ADMINISTRATION AND DATA MANAGEMENT.....	18
Field administration.....	19
Data management	24
School reports	27
CHAPTER 5: SCALING PROCEDURES.....	28
The scaling model.....	28
Assessment of item fit	28
Differential item functioning by gender	28
Item calibration.....	28
Plausible values	29
Vertical and horizontal equating.....	29
Uncertainty in the link	32
CHAPTER 6: PROFICIENCY LEVELS AND THE PROFICIENT STANDARDS	34
Proficiency levels.....	34
Setting the standards.....	36
CHAPTER 7: REPORTING OF RESULTS.....	37
Estimation of sampling and measurement variance.....	37
Reporting of mean differences across States and Territories.....	38
Reporting of mean differences across subgroups other than States and Territories	39
Reporting of differences across cycles – 2004 to 2007	39
Other statistical analyses.....	40
REFERENCES.....	44
APPENDICES.....	46
Appendix A: Student Background Survey & Assessment of Civics and Citizenship Opportunities.....	47
Appendix B: Assessment Administration Form	51
Appendix C: Quality Monitor’s Report.....	53
Appendix D: Example School Reports and Explanatory Material	57
Appendix E: Item parameters and percentage correct for each year level.....	60
Appendix F: Student background variables used for conditioning.....	62
Appendix G: Civics and Citizenship Proficiency Levels	66
Appendix H: Percentiles of achievement on the Civics and Citizenship Literacy Scale.....	68

Tables

Table 1.1	Designed and achieved sample by State and Territory	2
Table 2.1	Cluster rotation for assessment booklets in NAP-C&C 2007.....	6
Table 3.1	Year 6 and Year 10 target population and planned samples by State and Territory...	11
Table 3.3	Year 6 breakdown of exclusions according to reason by State and Territory	13
Table 3.4	Year 10 breakdown of exclusions according to reason by State and Territory	13
Table 3.5	Year 6 numbers and percentages of participating schools by State and Territory.....	14
Table 3.6	Year 10 numbers and percentages of participating schools by State and Territory....	14
Table 3.7	Year 6 numbers and percentages of participating students by State and Territory....	15
Table 3.8	Year 10 numbers and percentages of participating students by State and Territory...	15
Table 4.1	Procedures for field administration.....	18
Table 4.2	The suggested timing of the assessment session.....	22
Table 4.3	Allocation of clusters for marking to the Sydney Team.....	23
Table 4.4	Allocation of clusters for marking to the Melbourne Team.....	23
Table 4.5	Data collected via the student background survey about opportunities and examples of citizenship participation by students.....	25
Table 4.6	Data collected via the student background survey about Year 10 student demographics	26
Table 4.7	The transformation rules used to derive variables used in the public report	27
Table 6.1	Proficiency level cut-points and percentage of Year 6 and Year 10 students in each level in 2007.....	35
Table 6.2	Percentages of Year 6 students at or above each proficiency level on the Civics and Citizenship Literacy Scale, by State and Territory.....	35
Table 6.3	Percentages of Year 10 students at or above each proficiency level on the Civics and Citizenship Literacy Scale, by State and Territory.....	36
Table 7.1	Independent variables included in the regression analysis (with coding and sample distribution).....	42
Table H.1	2004 and 2007 percentiles and range of the confidence interval around the mean on the Civics and Citizenship Literacy Scale for Year 6 students.	68
Table H.2	2004 and 2007 percentiles and range of the confidence interval around the mean on the Civics and Citizenship Literacy Scale for Year 10 students.	68

Figures

Figure 2.1	Example item and scoring guide	7
Figure 5.1	2007 NAP-CC Vertical Link Items for Years 6 and 10	30
Figure 5.2	2004 and 2007 NAP-CC Horizontal Link Items for Year 6.....	30
Figure 5.3	2004 and 2007 NAP-CC Horizontal Link Items for Year 10.....	31

National Assessment Program - Civics and Citizenship Year 6 and Year 10

TECHNICAL REPORT

2007

CHAPTER 1: INTRODUCTION

Project overview

In 1999, the State, Territory and Commonwealth Ministers of Education, meeting as the tenth Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA), agreed to the *National Goals for Schooling in the Twenty-first Century*. Subsequently, MCEETYA agreed to report on progress toward the achievement of the National Goals on a nationally-comparable basis, via the National Assessment Program. As part of the National Assessment Program, a three-yearly cycle of sample assessments in primary science, civics and citizenship and ICT was established.

The first cycle of the National Assessment Program – Civics and Citizenship was held in 2004 and provided the baseline against which future performance would be compared. The second cycle of the program was conducted in 2007 and was the first cycle where trends in performance were able to be examined. This report describes the procedures and processes involved in the conduct of the second cycle of the National Assessment Program – Civics and Citizenship.

National Assessment Program - Civics and Citizenship

The civics and citizenship assessment domain was developed for the assessment in consultation with curriculum experts from each jurisdiction and representatives of the Catholic and independent sectors. The assessment domain comprised the domain descriptors for the two Key Performance Measures (KPMs) and a professional elaboration.

Two Key Performance Measures were assessed:

KPM 1: Civics: Knowledge & Understanding of Civic Institutions & Processes

Knowledge of key concepts and understandings relating to civic institutions and processes in Australian democracy, government, law, national identity, diversity, cohesion and social justice.

KPM 2: Citizenship: Dispositions & Skills for Participation

Understandings related to the attitudes, values, dispositions, beliefs, and actions that underpin active democratic citizenship.

The assessment items were developed to map the entire assessment domain, using the domain descriptors. Both multiple choice and constructed response (open-ended) items were used in the assessment. In 2007, items from the 2004 assessment were included, as well as newly developed items. A detailed score guide was produced for the constructed response items which allowed for coding responses of different levels of complexity.

A student background survey was also given as part of the assessment. It included questions to provide an indication of the opportunities students had experienced in citizenship participation as well as relevant individual and family background information.

Participants in the assessment

Approximately 2 per cent of the national Year 6 and Year 10 student populations were sampled and assessed. Schools from all states and territories, and from the government, Catholic and independent sectors, participated. Data were gathered from 7059 Year 6 students from 352 schools and 5506 Year 10 students from 269 schools.

Table 1.1 shows the number of schools and students, by state and territory, in the final sample from which performance comparisons were reported.

Table 1.1 Designed and achieved sample by State and Territory

State / Territory	Year 6			Year 10		
	Designed school sample	Number and % ¹ of Schools in Final Sample	Number and % ² of Students in Final Sample	Designed school sample	Number and % ¹ of Schools in Final Sample	Number and % ² of Students in Final Sample
NSW	48	48 (100%)	1091 (94%)	40	40 (100%)	883 (90%)
VIC	48	48 (100%)	961 (92%)	38	38 (100%)	740 (88%)
QLD	47	47 (100%)	1071 (94%)	35	35 (100%)	759 (88%)
SA	49	49 (100%)	923 (91%)	35	35 (100%)	748 (85%)
WA	47	47 (100%)	1019 (93%)	35	35 (100%)	777 (88%)
TAS	49	48 (98%)	853 (92%)	32	32 (100%)	576 (83%)
NT	33	33 (100%)	546 (85%)	30	26 (93%)	395 (80%)
ACT	31	29 (100%)	595 (95%)	29	28 (100%)	628 (87%)
AUST.	352	349 (99.7%)	7059 (92%)	274	269 (99.6%)	5506 (87%)

¹ Percentage of eligible (non-excluded) schools in the final sample. Participating replacement schools are included - they constituted less than 3% of the participating schools in their jurisdiction and less than 1% overall.

² Percentage of participating eligible (non-excluded) students in the final sample.

The assessment format

The students' regular classroom teachers administered the assessment between 15 October and 2 November 2007. The assessment comprised a pencil-and-paper assessment with multiple-choice and open-ended items and a background survey. The assessment papers were allocated so that one student in each class completed one of seven different test booklets.

Students were allowed 60 minutes at Year 6 and 90 minutes at Year 10 to complete the pencil-and-paper assessments and 10-15 minutes for the student background survey.

Reporting of the assessment results

The results of the assessment were reported in the *National Assessment Program - Civics and Citizenship Years 6 and 10 Report 2007*. Mean scores and distributions of scores are shown at the national level and by State and Territory. The results are also described in terms of the understandings and skills that students demonstrated in the assessment, which are mapped against the civics and citizenship assessment domain.

Structure of the Technical Report

This report describes the technical aspects of the National Civics and Citizenship Sample Assessment and summarises the main activities involved in the data collection, the data collection instruments and the analysis and reporting of the data.

Chapter 2 summarises the development of the assessment domain and describes the process of item development and construction of the instruments.

Chapter 3 reviews the sample design and describes the sampling process. Chapter 3 also describes the weighting procedures that were implemented to derive population estimates.

Chapter 4 summarises the field administration and data management procedures, including quality control and the cleaning and coding of the data.

Chapter 5 describes the scaling procedures, including equating, item calibration, the creation of plausible values and the standardisation of student scores.

Chapter 6 examines the process of standards-setting and creation of Proficiency Levels used to describe student achievement.

Chapter 7 discusses the reporting of student results, including the procedures used to estimate sampling and measurement variance, and the calculation of the equating errors used in tests of significance for differences across cycles.

CHAPTER 2: ASSESSMENT DOMAIN AND INSTRUMENT DEVELOPMENT

Developing the assessment domain

The assessment domain was developed by ACER in 2002 from the Key Performance Measures recommended by Print and Hughes (2001). The content of the assessment domain was validated against existing curriculum documents, including those from the *Discovering Democracy* program. The draft assessment domain was then revised by the NAP-C&C Review Committee and ACER, with further refinements being made following the trial and upon the advice of several nominated area experts. The final version of the assessment domain was refined in February 2004.

Prior to the 2007 assessment, members of the NAP-C&C Review Committee were asked to review the assessment domain in light of any changes to their state or territory's curriculum in the area of civics and citizenship. A parallel review of the assessment domain was undertaken by ACER with reference to the National Statements of Learning for Civics and Citizenship (2006). No changes were made as a result of these reviews.

The assessment domain

The assessment domain comprised the domain descriptors for the two Key Performance Measures (KPMs) and a professional elaboration.

The definitions of the two Civics and Citizenship Key Performance Measures (KPMs) are the substance of the Civics and Citizenship Literacy Scale. The two Key Performance Measures are:

KPM 1: Civics: Knowledge & Understanding of Civic Institutions & Processes

Knowledge of key concepts and understandings relating to civic institutions and processes in Australian democracy, government, law, national identity, diversity, cohesion and social justice.

KPM 2: Citizenship: Dispositions & Skills for Participation

Understandings related to the attitudes, values, dispositions, beliefs, and actions that underpin active democratic citizenship.

The domain descriptors flesh out the KPM definitions. The professional elaboration is a further expansion of the domain descriptors which identifies key concepts and skills students are expected to be able to have attained by Year 6 or 10. Chapter 3 of the *National Assessment Program - Civics and Citizenship Years 6 and 10 Report 2007* provides more information.

Trend Items

The 2007 assessment instrument included a subset of secure (not released to the public) items from the 2004 assessment. These items enabled, through common item equating, the equating of the 2004 and 2007 scales in order to examine student performance over time. Fifty eight secure items were available for use in the 2007 assessment. Of these 58 items, one unit (containing three items) that was a vertical (Year 6-10) link unit in 2004 was used as a Year 6 only unit in 2007. This unit was therefore removed from the possible pool of horizontal link (trend) items. Of the final pool of 55 possible horizontal link (trend) items, 30 were actually used for the common item equating between the 2004 and 2007 assessments.

Item development

The new items for the 2007 assessment were developed by a team of ACER's expert test developers. The test development team first sourced and developed relevant, engaging and focused civics and citizenship stimulus materials that addressed the assessment domain. Items were developed that addressed the contents of the assessment domain using the civics and citizenship content and contexts contained in the stimulus materials. The items were constructed in units. A unit consists of one or more assessment items directly relating to a single theme or

stimulus. In its simplest form a unit is a single self-contained item, in its most complex form a unit is a piece of stimulus material with a set of assessment items directly related to it.

Developed items were then subjected to panelling. The panelling process consisted of a small group (between three and six) of expert test developers jointly reviewing material that one or more of them had developed, and then accepting, modifying or rejecting that material for further development.

A selection of items was also piloted to examine the viability of their use by administering the units to a small, convenient sample of students in schools. Piloting took place before panelling to collect information about how students could use their own life-experiences (within and out of school) to answer questions based largely on civic knowledge and how students could express reasoning on civic and citizenship issues using short extended response formats.

The coherence with and coverage of the assessment domain by the item set was closely monitored through the iterative item development process. Each assessment item was referenced to a single key domain listed in the assessment domain. As a consequence of this, units comprising more than one assessment item could (and frequently did) reference more than one key domain within and across Key Performance Measures (KPM1 and KPM2).

Item response types include: dual choice (True/False), multiple choice, closed and constructed. The number of score points allocated to items varies: dual and multiple choice items have a maximum score of one point. Closed and constructed response items are each allocated a maximum of between one and three score points.

Consultation with outside experts and stakeholders occurred throughout the item development, with draft and revised versions of the items shared with the Review Committee and PMRT, before and after trialling.

The Field Trial

A Field Trial was conducted in 74 schools in March 2007. The sample of schools was a representative random sample, drawn from all sectors from the three states of Victoria, New South Wales and Queensland. The response rate from sampled trial schools was 99 per cent, with a 92 per cent response rate for students.

The trial data were analysed in a systematic way to determine the degree to which the items measured the assessment domain. The Review Committee then reviewed the data from the trial testing.

The final assessment instruments

The main assessment was conducted using seven test forms at both Year 6 and Year 10, each booklet containing approximately 42 items at Year 6 and approximately 45 items at Year 10.

A fully balanced rotated booklet design was used to ensure coverage of the assessment domain and to ameliorate the potential effects of item position within the test booklets. The rotated design consisted of seven clusters of items for each year level (each cluster containing about 14 items at Year 6 and 15 items at Year 10). These seven clusters were rotated through the seven test booklets in such a way that:

1. Each cluster appears once in each position in a booklet (beginning, middle or last);
2. Each cluster appears once in a booklet with each other cluster; and
3. Each cluster appears in three booklets.

The rotated design is presented in Table 2.1.

Table 2.1 Cluster rotation for assessment booklets in NAP-C&C 2007

Booklet	Clusters		
Form 1	C1	C2	C4
Form 2	C2	C3	C5
Form 3	C3	C4	C6
Form 4	C4	C5	C7
Form 5	C5	C6	C1
Form 6	C6	C7	C2
Form 7	C7	C1	C3

Due to the similarity of two items, RF11 and RF21, this cluster design had to be modified so that when the two clusters containing these two items were placed in the same booklet, RF21 was removed from its home cluster and placed in another booklet with a cluster in a similar position in the rotation. Thus the rotation was ensured for these two items and they did not both appear in the same booklet.

As well as balancing the order and combinations of clusters across booklets each individual cluster was matched for reading load (length and difficulty), item type (closed constructed, short extended and dual and multiple choice items), number of items, use of graphic images, item balance between KPM1 and KPM 2 (using a predefined ratio of approximately 2:1 respectively) and by domain descriptors within each KPM. By matching each individual cluster for these characteristics it follows that each booklet can be considered as also matched and equivalent according to the same characteristics.

The score guide

Draft scoring guides for the items were developed in parallel with the items. They were then further developed during the Field Trial and the subsequent review of the items, which included consultation with the experts and stakeholders on the Review Committee and discussion with BEMU.

The scoring guide for each item includes a unique year level reference to the focus domain descriptor in the assessment domain relevant for that item.

The dual and multiple choice items and some of the closed constructed and short extended response items have a score value of 0 (incorrect) or 1 (correct).

Short extended response items can elicit responses with differing levels of complexity. The scoring guides for such items are developed to define and describe these meaningfully different levels. Empirical data from the Field Trial were used to confirm whether these semantic distinctions are indicative of actual differences in student achievement. In the cases where hierarchical differences described by the scoring guides were not evident in the Field Trial data these differences were removed from the scoring guide. Typically this would involve providing the same credit for responses that previously had been allocated different levels of credit (this is referred to as *collapsing categories*).

Each score point allocation in the scoring guide is accompanied by a text which describes and characterises the kind of response which would attract each score. These score points are then illustrated with actual student responses. The response characterising text combined with the response illustrations for each score point for each item constitute the Score Guide.

Following is an item from the main survey 2004 (that is also included as *Figure 4.3 (4iii): Question 4: 'Citizenship Pledge' unit* in the *National Assessment Program - Civics and Citizenship Years 6 and 10 Report 2004*) and the full scoring guide for this item. Key features of the scoring guide are:

- The reference to the relevant domain descriptor;
- The summary description of the key substantive property of the responses of each level;
- The detailed description of the properties of the responses of each level; and
- Sample student responses that illustrate the properties of the responses at each level.

Figure 2.1 Example item and scoring guide

CP0L4

Q One principle of democracy is that all people are entitled to hold their own opinions.

The Citizenship Pledge includes the line 'Whose democratic beliefs I share'.

Do you think it is right for the pledge to require people becoming Australian citizens to have democratic beliefs?

Yes OR No

Put a ✓ in one box and explain your answer.

Scoring Guide

DOMAIN DESCRIPTOR: 6.7 10.7

Full Credit

RECOGNISES APPARENT CONTRADICTION

Code 3: Answers YES and identifies that the common good (or social stability) is more important than an individual's rights in this case.

- YES: You can still believe what you want, but you can't change the political system.
- If they do not believe, there will be more chaos due to belief conflicts.

Partial Credit

Code 2: Answers YES OR NO and identifies that the pledge is symbolic rather than binding.

- YES: You say the pledge to commit to Australia, you don't have to believe all the words.
- NO: Even though it is only symbolic and you don't have to believe it, it is still stupid to make people say something that they don't believe.

FAILS TO RECOGNISE APPARENT CONTRADICTION

Code 1: Answers YES and identifies that people must accept the Australian way of life if they are going to be citizens.

- YES: Because Australia is Democratic, so people must understand and agree with it.
- Yes they need to respect what we believe.

OR

Code 1: Answers NO: Suggests that people should not be compelled to share democratic beliefs.

- NO: In a democracy people should be allowed to think what they want.

No Credit

- YES: Who cares what they want?
- NO: Because they don't have to if they don't want to.

Student background survey

A student background survey was included in order to provide context for the results of the cognitive assessment. The student background survey consisted of questions concerned with:

- participation in citizenship activities outside school;
- opportunities for participation in citizenship activities at school;

- actual participation in citizenship activities at school; and
- learning about governance at school.

Most of the questions had been used already in the 2004 student background survey. They were supplemented in 2007 with some additional questions:

- questions on actual participation in citizenship activities at school;
- a question about accessing the news via the internet;
- a question about discussing political and social issues with friends;
- a question about all students (not just student representatives) being able to contribute to decisions about what happens at school

In addition, the format of the questions about opportunities for participation in citizenship activities at school was revised slightly. These questions were developed and revised by ACER, and reviewed by BEMU, and trialled. Following trialling the questions were revised and finalised.

Information about individual and family background characteristics was also collected. The background variables were gender, age, Indigenous status, language background (country of birth and main language other than English spoken at home), socioeconomic background (parental education and parental occupation) and geographic location. The structure of these variables had been agreed upon by the PMRT as part of the National Assessment Program and follow the guidelines given in the *Data Implementation Manual for enrolments for the 2007 school year* (MCEETYA, 2006).

At Year 6 the student background information was collected centrally through schools and education systems via the Online Student Registration System (OSRS). See Chapter 4 for more information on the Online Student Registration System.

At Year 10, the background information collected directly from the students via questions in the student background survey.

A copy of the student background survey can be found in Appendix A.

CHAPTER 3: SAMPLING AND WEIGHTING

Sampling

The target populations for the study were Year 6 and Year 10 students enrolled in educational institutions across Australia.

The sample design of the National Assessment Program – Civics and Citizenship 2007 was a two-stage stratified cluster sample design, similar to that used by international assessments such as the Trends in International Mathematics and Science Study (TIMSS). The first stage consists of a sample of schools, stratified according to state, sector, geographic location, the SEIFA 'education and occupation' index and school size; the second stage consists of a sample of one classroom from the target year level in sampled schools. Samples were drawn separately for each year level.

The sampling frame

The national school sampling frame is a comprehensive list of all schools in Australia, developed by the Australian Council of Educational Research (ACER) by coordinating information from multiple sources, including the Australian Bureau of Statistics and the Commonwealth, State and Territory education departments.

School exclusions

For the specific purposes of this study, only schools containing Year 6 or Year 10 students were used. In addition, some schools were excluded from the possibility of being sampled. Schools excluded from the target population included non-mainstream schools (such as schools for students with intellectual disabilities or hospital schools), schools listed as having fewer than five students in the target year levels and very remote schools (except in the Northern Territory). These exclusions account for 1.63 per cent of the Year 6 student population and 0.99 per cent of the Year 10 student population.

The decision to include very remote schools in the Northern Territory sample for 2007 (this was not done in 2004) was made on the basis that very remote schools constitute 22 per cent of the Year 6 population and 11 per cent of the Year 10 population (in contrast to less than 1% of the population of Australia). Excluding the very remote schools from the Northern Territory target population could, therefore, have led to biased estimates of achievement in this jurisdiction. This variation does not have any impact on the estimates for Australia or the other states.

The designed sample

For both the Year 6 and Year 10 samples, sample sizes were determined that would provide accurate estimates of achievement outcomes for all states and territories. One change to the design compared to the previous (2004) administration of the NAP-C&C was the decision to sample one class per school rather than two. This reduction of sample size (to approximately half the sample size used in the previous survey) was expected to have a small impact on the precision of estimates. The expected 95 per cent confidence intervals were estimated in advance to be within approximately $\pm 0.15s$ to $\pm 0.2s$ for estimated means for the larger states. This expected loss of precision was accepted given the benefits in terms of the reduction in the burden on individual schools and in the overall costs of the survey. Confidence intervals of this magnitude require an *effective sample size* (i.e., the sample size of a simple random sample that would produce the same precision as the complex sample design) in the larger states of around 100-150 students. A smaller sample size was sufficient from the smaller states and territories because of the *finite population correction factor*, i.e. as the proportion of the total population surveyed becomes larger the precision of the sample increases for a given sample size.

The actual sample sizes required for each state and territory can be estimated by multiplying the desired effective sample size by the estimated *design effect* (*deff*) that reflects the effects of the complex sample design (Kish 1965, p. 162). In a complex, multi-stage sample such as the one selected for this study, the clustering of the sample results in a design effect that can be relatively large because students within clusters (classes within schools) tend to be more like each other on most characteristics than compared to other students in general.

Any within-school homogeneity reduces the effective sample size. This homogeneity can be measured with the intra-class correlation, ρ , which reflects the proportion of the total variance in a characteristic in the population that is accounted for by clusters (classes within schools). Knowing the size of ρ and the size of each cluster's sample size b , the design effect for an estimate of a mean or percentage for a given characteristic \bar{y} can be computed from:

$$deff(\bar{y}) = 1 + (b - 1)\rho$$

Survey data from the National Assessment Program – Civics and Citizenship 2004 were used to estimate the size of the intra-class correlation. The intra class correlations for a design with one classroom per school were estimated as 0.23 and 0.29 for Year 6 and Year 10 respectively. The average cluster sample size (taking into account student non-response) was estimated as 20 from the previous survey, leading to design effects of approximately 5.5 for Year 6 and 6.5 for Year 10. Target sample sizes were then calculated by multiplying the desired effective sample size by the estimated design effect. From the larger states, target sample sizes of around 900 Year 6 students and between 700 and 800 Year 10 students were decided upon.

Table 3.1 shows the population of schools and students (net of schools excluded from the target population) and the planned sample.

Table 3.1 Year 6 and Year 10 target population and planned samples by State and Territory

State	Year 6				Year 10			
	Population		Planned Sample		Population		Planned Sample	
	Schools	Students	Schools	Students	Schools	Students	Schools	Students
NSW	2098	87508	48	900	752	83997	40	780
VIC	1683	65705	48	900	523	60845	38	750
QLD	1146	54554	47	900	416	53089	35	700
SA	557	18832	49	900	185	19210	35	700
WA	703	27078	47	900	235	27809	35	700
TAS	209	6656	49	900	82	6494	32	600
NT	113	2891	33	560	38	2308	30	500
ACT	101	4511	31	600	34	4812	29	580
Australia	6610	267733	352	6560	2265	258564	274	5310

First sampling stage

The school sample was selected from all non-excluded schools in Australia which had students in Year 6 or Year 10. Stratification by state, sector and small schools was explicit, resulting in separate samples being drawn for each state by sector combination. Stratification by geographic location, the SEIFA 'education and occupation' index (a measure of socio-economic status based on the postal location of the school) and school size was implicit, resulting in the schools within each state being ordered by size (according to the number of students of the target year level) within a grouping by geographic location and the SEIFA index. The selection of schools was carried out using a systematic probability-proportional-to-size (PPS) method.

The number of students at the target year (the measure of size, or MOS) was accumulated from school to school and the running total was listed next to each school. The total cumulative MOS was a measure of the size of the population of sampling elements. Dividing this figure by the number of schools to be sampled gives the sampling interval.

The first school was sampled by choosing a random number between 1 and the sampling interval. The school, whose cumulative MOS contained the random number was the first sampled school. By adding the sampling interval to the random number, a second school was identified. This process of consistently adding the sampling interval to the previous selection number resulted in a PPS sample of the required size.

Replacement schools

As each school was selected, the next school in the sampling frame was designated as a replacement school for use should the sampled school not participate. The school previous to the sampled school was designated as the second replacement. It was used if neither the sampled school nor the first replacement participated. In some cases (such as secondary schools in the Northern Territory) there were not enough schools available for the replacement samples to be drawn. Because of the use of stratification, the replacement schools were generally similar (with respect to geographic location, socio-economic location and size) to the school for which they were a replacement.

After the school sample had already been drawn, a number of sampled schools were identified as meeting the criteria for exclusion. When this occurred, the sampled school and its replacements were removed from the sample and removed from the calculation of participation rates. There were no schools removed from the Year 6 sample and 1 school from the Year 10 sample. These exclusions account for less than 0.02 per cent of the student populations and therefore do not alter the exclusion rates reported earlier.

Second sampling stage

The second stage of sampling consisted of the selection of classrooms within sampled schools using a random sampling technique. In most cases, one intact class was sampled from each sampled school. Where only one class was available at the target year level, that class was automatically selected. Where more than one class existed, classes were sampled with equal probability of selection.

In some schools, smaller classes were combined to make a so-called "pseudo-class group" prior to sampling. For example, two multilevel classes with 13 and 15 Year 6 students respectively might be combined into a single pseudo class of 28 students. This helps to maximise the number of students selected per school (the sample design was based on 25 students per school before student non-response), and also to minimise the variation in sampling weights (see discussion below). Pseudo-classes were treated like other classes and had equal probabilities of selection during sampling.

It should be noted that, for this cycle of testing, some anomalies were found between MOS and the total number of students accounted for by the list of classes provided by schools. It is suspected that some schools may not have provided a complete list of classes for sampling and thus the selection of the classes for these schools may not have been completely random or have ensured complete coverage of the student population.

Student exclusions

Within the sampled classrooms, individual students were eligible to be exempted from the assessment on the basis of:

- **Functional Disability:** Student has a moderate to severe permanent physical disability such that he/she cannot perform in an assessment situation.
- **Intellectual Disability:** Student has a mental or emotional disability and is cognitively delayed such that he/she cannot perform in the assessment situation.
- **Limited Assessment Language Proficiency:** The student is unable to read or speak the language of the assessment and would be unable to overcome the language barrier in the assessment situation. Typically a student who has received less than one year of instruction in the language of the assessment would be excluded.

Tables 3.3 and 3.4 detail the numbers and percentages of students excluded from the National Assessment Program - Civics and Citizenship assessment, according to the reason given for their exclusion.

Table 3.3 Year 6 breakdown of exclusions according to reason by State and Territory

	Functional Disability	Intellectual Disability	Limited English Proficiency	Multiple Reasons	<i>Total</i>	<i>%</i>
NSW	2	4	3	0	9	0.8
VIC	1	6	4	0	11	1.0
QLD	2	15	2	0	19	1.6
SA	3	8	0	1	12	1.2
WA	1	10	3	0	14	1.3
TAS	0	15	5	0	20	2.1
NT	0	2	4	0	6	0.9
ACT	0	0	2	0	2	0.3
Australia	9	60	23	1	93	1.2

Table 3.4 Year 10 breakdown of exclusions according to reason by State and Territory

	Functional Disability	Intellectual Disability	Limited English Proficiency	Multiple Reasons	<i>Total</i>	<i>%</i>
NSW	0	1	3	0	4	0.4
VIC	2	4	2	0	8	0.9
QLD	0	4	6	0	10	1.1
SA	3	2	2	0	7	0.8
WA	0	1	1	0	2	0.2
TAS	3	5	5	0	13	1.8
NT	0	0	10	0	10	2.0
ACT	0	4	3	0	7	1.0
Australia	8	21	32	0	61	0.9

The number of student-level exclusions was 93 at Year 6 and 61 at Year 10. This brought the final exclusion rate (combining school and student exclusions) to 2.79 per cent at Year 6 and 1.94 per cent at Year 10.

Participation rates

The Year 6 Australian school participation rate was 99.4 per cent, excluding replacement schools. Including replacement schools, the school participation rate was 99.7 per cent. At Year 10, the Australian school participation rate was 99.3 per cent, excluding replacement schools. Including replacement schools, the school participation rate was 99.6 per cent. Tables 3.5 and 3.6 detail Year 6 and Year 10 school exclusions, refusals and participation information, including the final participation rate for the states and territories.

Table 3.5 Year 6 numbers and percentages of participating schools by State and Territory

	Sample	Excluded Schools	Not in Sample	Eligible Schools	Participating Schools - Sampled Schools	Participating Schools - Replacement Schools	Non - Participating Schools (Refusals)	Total Number of Participating Schools	School Participation Rate ¹
NSW	48	0	0	48	48	0	0	48	100%
VIC	48	0	0	48	48	0	0	48	100%
QLD	47	0	0	47	47	0	0	47	100%
SA	49	0	0	49	49	0	0	49	100%
WA	47	0	0	47	47	0	0	47	100%
TAS	49	0	0	49	47	1	1	48	98%
NT	33	0	0	33	33	0	0	33	100%
ACT	31	0	2	29	29	0	0	29	100%
AUST	352	0	2	350	348	1	1	349	100%

¹ Percentage of eligible (non-excluded) schools in the final sample. Participating replacement schools are included.

Table 3.6 Year 10 numbers and percentages of participating schools by State and Territory

	Sample	Excluded Schools	Not in Sample	Eligible Schools	Participating Schools - Sampled Schools	Participating Schools - Replacement Schools	Non - Participating Schools (Refusals)	Total Number of Participating Schools	School Participation Rate ¹
NSW	40	0	0	40	40	0	0	40	100%
VIC	38	0	0	38	38	0	0	38	100%
QLD	35	0	0	35	35	0	0	35	100%
SA	35	0	0	35	34	1	0	35	100%
WA	35	0	0	35	35	0	0	35	100%
TAS	32	0	0	32	32	0	0	32	100%
NT	30	0	3	27	26	0	1	26	96%
ACT	29	1	0	28	28	0	0	28	100%
AUST	274	1	3	270	268	1	1	269	100%

¹ Percentage of eligible (non-excluded) schools in the final sample. Participating replacement schools are included.

Approximately two per cent of the Year 6 and Year 10 student population were sampled and eligible for assessment. Of the eligible sampled students, 92 per cent of Year 6 students and 87 per cent of Year 10 students completed the assessment. Therefore, combining the school and student participation rates, the National Assessment Program – Civics and Citizenship 2007 achieved a participation rate of 92 per cent at Year 6 and 87 per cent at Year 10. Tables 3.7 and 3.8 show the Year 6 and Year 10 student exclusions, information on absentees and participation, as well as the final student and combined school and student participation rates for the states and territories.

Table 3.7 Year 6 numbers and percentages of participating students by State and Territory

	Number of sampled students in participating schools	Number of Exclusions	Number of Eligible students	Number of Absentees (including parental refusal ²)	Number of Participating students	Student Participation Rate ¹	Combined School and Student Participation Rate
NSW	1173	9	1164	73	1091	94%	94%
VIC	1050	11	1039	78	961	92%	92%
QLD	1161	19	1142	71	1071	94%	94%
SA	1024	12	1012	89	923	91%	91%
WA	1110	14	1096	77	1019	93%	93%
TAS	951	20	931	78	853	92%	90%
NT	647	6	641	95	546	85%	85%
ACT	631	2	629	34	595	95%	95%
Australia	7747	93	7654	595	7059	92%	92%

¹ Percentage of participating eligible (non-excluded) students in the final sample.

² Parental refusals make up 0.8% of absentees overall. State and territory rates range from 0%-2.3%.

Table 3.8 Year 10 numbers and percentages of participating students by State and Territory

	Number of sampled students in participating schools	Number of Exclusions	Number of Eligible students	Number of Absentees (including parental refusal ²)	Number of Participating students	Student Participation Rate ¹	Combined School and Student Participation Rate
NSW	990	4	986	103	883	90%	90%
VIC	849	8	841	101	740	88%	88%
QLD	876	10	866	107	759	88%	88%
SA	889	7	882	134	748	85%	85%
WA	883	2	881	104	777	88%	88%
TAS	709	13	696	120	576	83%	83%
NT	502	10	492	97	395	80%	77%
ACT	727	7	720	92	628	87%	87%
Australia	6425	61	6364	858	5506	87%	87%

¹ Percentage of participating eligible (non-excluded) students in the final sample.

² Parental refusals make up 0.7% of absentees overall. State and territory rates range from 0%-1.7%.

Weighting

While the multi-stage stratified cluster design provides a very economical and effective data collection process in a school environment, it results in differential probabilities of selection for the ultimate sampling elements, the students. Consequently, one student in the assessment does not necessarily represent the same number of students in the population as another, as would be the case with a simple random sampling approach. To account for differential probabilities of selection due to the design and to ensure proper survey estimates, a sampling weight was computed for each participating student. The ability to provide proper sampling weights was an essential characteristic of the sample design, since appropriate sampling weights were essential for the computation of accurate population estimates.

The overall sampling weight is the product of weights calculated at the three stages of sampling:

- the selection of the school at the first stage;
- the selection of the class or pseudo-class from the sampled schools at the second stage;
- and

- the selection of students within the sampled classes at the third stage.

The First Stage Weight

The first stage weight is the inverse of the probability of selection of the school, adjusted to account for school non-response.

The probability of selection of the school is equal to its Measure of Size (MOS) divided by the Sampling Interval (SINT) or 1 whichever is the lower. (A school with a MOS greater than SINT is a 'certain selection', and therefore has a probability of selection of 1. Some very large schools were selected with certainty into the sample.)

The sampling interval is calculated at the time of sampling, and for each explicit stratum it is equal to the cumulative measure of size of all schools in the stratum, divided by the number of schools to be sampled from that stratum. The measure of size for each school is the number of students recorded on the sampling frame at the relevant year level (Year 6 or Year 10).

This factor of the first stage weight is the inverse of this probability, i.e. SINT/MOS.

Following data collection, counts of the following categories of schools are made for each explicit stratum:

1. The number of schools that participated in the sample (N_p)
2. The number of schools that were sampled but should have been excluded (N_x)
3. The number of non-responding schools (N_n)

Note that $N_p + N_x + N_n$ equals the total number of sampled schools from the stratum.

Examples of the second class (N_x) are:

- a sampled school that no longer existed
- a school that following sampling was discovered to have fitted one of the criteria for school level exclusion (eg very remote, very small), but which had not been removed from the frame prior to sampling.

In the case of a non-responding school (N_n), neither the originally sampled school nor its replacements participated.

Within each explicit stratum, an adjustment is made to account for school non-response. This non-response adjustment for a stratum is equal to:

$$(N_p + N_n) / N_p.$$

The first stage weight is the product of SINT/MOS and $(N_p + N_n) / N_p$.

$$W_1 = \text{SINT/MOS} * [(N_p + N_n) / N_p].$$

The Second Stage Weight

The second stage weight is the inverse of the probability of selection of the classes from the sampled school.

In some schools, smaller classes were combined to form a pseudo-class group prior to sampling. This was to maximise the potential yield, and also to reduce the variation in the weights allocated to students from different classes of the same school.

Classes (or pseudo classes) were then sampled with equal probability of selection. In most cases, one intact class was sampled from each sampled school.

The second stage weight was calculated as: C_t/C_s , where C_t is the total number of classes (or pseudo-classes) at the school, and C_s is the number of sampled classes. For most schools, C_s was equal to 1.

$$W2 = Ct/Cs$$

The Third Stage Weight

The first factor in the third stage weight is the inverse of the probability of selection of the student from the sampled class. As all students in the sampled class were automatically sampled, this factor is equal to 1.0 for all students.

Following data collection, counts of the following categories of students were made for each sampled class:

- The number of students from the sampled classroom that participated in the sample (S_p)
- The number of students from the sampled classroom that were exclusions (S_x)
- The number of students from the sampled classroom that did not participate (S_n)

Note that $S_p+S_x+S_n$ equals the total number of students from the sampled classroom.

The student level non response adjustment was calculated as $(S_p+S_n)/S_p$.

$$W3 = 1.0 * (S_p+S_n)/S_p$$

Overall Sampling Weight

The overall sampling weight is simply the product of the weights calculated at each of the three sampling stages:

$$FW = W1 * W2 * W3$$

The Fourth Stage Weight: Post-stratification weighting adjustment

The final stage in the weighting process was to compare the sum of the sample weights against known population totals, and adjust the weights to reflect the population totals where necessary. To account for any possible bias by subgroups such as State/Territory and sector, the sum of the sample weights differed from population totals across this dimension and so the post-stratification process was used to adjust the weights. Post-stratification involves adjustments to the final weights to control totals across two or more dimensions, for example the distribution of the school population by State/Territory and sector. Population control totals were obtained from ACER's sampling frame.

Following the three stages of weighting the data described above, the following variables were created;

- The sum of the final weights split by State/Territory and Sector ($\sum FW$)
- Total population estimate split by State/Territory and Sector (PE)
- Post-stratification State/Territory by Sector adjustment (PSAdj)

Post-stratification adjustment

The post-stratification adjustment was calculated as:

$$PSAdj = \sum FW / PE$$

Overall Final Sampling Weight with State/Territory and Sector Adjustment

The overall final sampling weight with State/Territory and sector adjustment (FW_{adj}) is simply the product of the final weight and the post-stratification adjustment:

$$FW_{adj} = FW * PSAdj$$

CHAPTER 4: FIELD ADMINISTRATION AND DATA MANAGEMENT

The administration of the assessment, from the first point of contacting schools after sampling through to the preparation of the data for analysis, contains a number of steps that were undertaken by the contractor and participating schools. These are listed in order in Table 4.1 and further described in this chapter.

Table 4.1 Procedures for field administration

Contractor Activity	School Activity
Contact sampled schools.	Nominate a School Contact Officer and complete the <i>Class Listing Form</i> .
Sample one class from the Class List.	
Notify schools of the selected class and provide them with the <i>School Contact Officer's Manual</i> and the <i>Assessment Administrator's Manual</i> .	
	Year 6: Complete the Online Student Registration (OSRS) process. Year 10: Complete the <i>Student Register</i> for the sampled classes.
	Complete the <i>Date Selection Form</i> .
	Make arrangements for the assessment: <ul style="list-style-type: none"> ▪ Appoint an Assessment Administrator ▪ Organise an assessment room ▪ Notify students and parents
Send the assessment materials to schools.	
Send National Quality Monitors to 5% of schools to observe the conduct of the assessment.	Conduct the assessment according to the <i>Assessment Administrator's Manual</i> .
	Record participation status on the <i>Student Participation Forms</i> ; complete the <i>Assessment Administration Form</i> .
	Return the assessment materials to the contractor.
Scanning	
Marking	
Data Cleaning	
Create and send <i>School Reports</i> to the schools.	

Field administration

Contact with schools

The field administration of the National Assessment Program - Civics and Citizenship required several approaches to the sampled schools to request or provide information:

- The initial approach to the principals of the sampled schools to inform them of their selection. This included a request to name a School Contact Officer, who would coordinate the assessment in the school, and to list of all of the Year 6 or Year 10 classes in the school along with the number of students in each class (using the *Class Listing Form*).
- If the sampled school was unable to take part (as confirmed by an education authority Liaison Officer), the replacement school had to be contacted.
- School Contact Officers were sent the *School Contact Officer's Manual* as well as notification of the randomly selected class for that school. Schools participating at Year 6 were requested to provide information about the students in the selected class via the Online Registration System (OSRS; see below). Schools participating at Year 10 were requested to send a list of all of the students in those classes (the *Student Register*). All schools were asked to provide the school's preferred dates for testing (on the *Date Selection Form*). A copy of the *Assessment Administrator's Manual* was also provided.
- The assessment materials were couriered to schools at least a week before the scheduled assessment date. The School Contact Officer was responsible for these while they were in the school and was also responsible for making sure ALL materials (whether completed or not) were returned through the prepaid courier service provided.
- The final contact with schools was to send them the results for the participating students and to thank them for their participation.

At each of the steps that required information to be sent *from* the schools, a definite timeframe was provided for the provision of this information. If the school did not respond in the designated timeframe, follow-up contact was made via fax, email and telephone.

In order to ensure the participation of sampled schools, Liaison Officers were appointed for each jurisdiction. The Liaison Officers were expected to facilitate communication between ACER and the schools selected in the sample from their respective jurisdiction. The Liaison Officers helped to achieve a high take-up rate for the assessment, which ensured valid and reliable data.

Information management

In order to track schools and students, different databases were constructed. The *sample database* identified the sampled schools and their matching replacement schools and also identified the participation status of each school. The *schools database* contained a record for each participating school and contained contact information as well as details about the School Contact Officer and participating classes. The *student database* contained student identification and participation information. The *achievement database* contained the final achievement and student background survey data.

In order to track information in these databases, a system of IDs was used. The *School ID* comprised information about cohort, state and sector as well as a unique school number. The *Student ID* included the School ID and also a student number (unique within each school).

Within-school procedures

The School Contact Officer

Participating schools were asked to appoint a School Contact Officer to coordinate the assessment within the school. The School Contact Officer's responsibilities were to:

- Liaise with ACER on any issues relating to the assessment;
- Provide ACER with student names (Year 10)/complete the OSRS process (Year 6) for the selected classes;
- Schedule the assessment and arrange a space for the session(s);
- Notify teachers, students, and parents about the assessment according to the school's policies;
- Select the Assessment Administrator(s);
- Receive and securely store the assessment materials;
- Check the *Student Participation Form* from ACER for errors;
- Assist the Assessment Administrator(s) as necessary;
- Check the completed assessment materials and forms;
- Arrange a follow-up session if needed; and
- Return the assessment materials.

Each School Contact Officer was provided with a manual (the *School Contact Officer's Manual*) that described in detail what was required as well as providing a checklist of tasks and blank versions of all of the required forms. Detailed instructions were also provided regarding the participation and exclusion of students with disabilities and students from non-English speaking backgrounds.

The Online Student Registration System

In 2004 Australian Education Ministers agreed to implement standard definitions for student background characteristics (detailed in the *Data Implementation Manual*), to collect student background information from parents and to supply the resulting information to testing agents so that it can be linked to students' test results.

The Online Student Registration System (OSRS) is an internet-based data collection site constructed in order to facilitate the provision of the student background information to the testing agent for the National Assessment Program (NAP). It enables education sectors to centrally upload student background information for the schools and students selected to participate in NAP. It also enables individual schools participating to upload background information for selected students from one or more classes and verify their participation.

In 2007 the collection of student background information from parents had only been implemented in primary schools, meaning that only schools participating at Year 6 in the NAP-C&C were able to utilise the OSRS.

Depending on the level of central control of student information by education departments, schools were either required to upload all of the student information themselves or simply verify the student details provided by the education department. This information was then downloaded by the contractor.

The information collected via the OSRS included: school name, year level, surname, first name, sex, date of birth, class name, country of birth, indigenous status, parents' school education, parents' non-school education, parents' occupation group, and student and parents' home language.

The Assessment Administrator

Each school was required to appoint an Assessment Administrator. In most cases this was the regular class teacher. This was done to minimise the disruption to the normal class environment.

The primary responsibility of the Assessment Administrator was to administer the National Assessment Program - Civics and Citizenship to the sampled class, according to the standardised administration procedures provided in the *Assessment Administrator's Manual*¹. The Assessment Administrator had also to complete the *Student Participation Form* (to record which students participated and which did not) and the *Assessment Administration Form* (to record the timing of the assessment and any problems or disturbances which occurred). The teachers were able to review the *Assessment Administrator's Manual* before the assessment date and raise any questions they had about the procedures with ACER or the State and Territory Liaison Officers responsible for the program. As a result, it was expected that standardised administration of the assessments would be achieved.

The Assessment Administrator was required to administer the National Assessment Program - Civics and Citizenship to the sampled class according to the standardised administration procedures provided in the *Assessment Administrator's Manual*, including a script which had to be followed.

The Assessment Administrator was expected to move around the room while the students were working to see that students were following directions and answering questions in the appropriate part of the Assessment Booklet. They were allowed to read questions to students but could not help the students with the interpretation of any of the questions or answer questions about the content of the assessment items.

Test administration

The timing of the assessment session was standardised. Year 6 students were expected to be given exactly 60 minutes to complete the assessment items while Year 10 student were given 90 minutes. The timing of the student background survey and breaks and administration were more flexible. To ensure that these rules were followed, the Assessment Administrator was required to write the timing of the sessions on the *Assessment Administration Form* (see Appendix B). Table 4.2 shows the suggested timing of the assessment session.

¹ A modified example of the assessment guidelines is provided in the *National Assessment Program – Civics and Citizenship 2007 Year 6 School Assessment* and *National Assessment Program – Civics and Citizenship 2007 Year 10 School Assessment*, available from <http://www.mceetya.edu.au/>.

Table 4.2 The suggested timing of the assessment session.

Session	Year 6	Year 10
Initial administration: reading the instructions, distributing the materials and completing the Student Participation Form	(approx) 5 minutes	(approx) 5 minutes
Part A: Student Background Survey	(approx) 10 minutes	(approx) 15 minutes
Break (students should not leave the assessment room)	(up to) 5 minutes	(up to) 5 minutes
Part B: Practice Questions	(approx) 10 minutes	(approx) 5 minutes
<i>Part B: Assessment Items</i>	<i>Exactly 60 minutes</i>	<i>Exactly 90 minutes</i>
Final administration: collecting the materials, completing the Assessment Administration Form (Sections 1, 2 and 3) and ending the session.	(approx) 3-5 minutes	(approx) 3-5 minutes

Quality control

Quality control was important to the National Assessment Program - Civics and Citizenship in order to minimise systematic error and bias. Strict procedures were set to do with test development (see Chapter 2), sampling (see Chapter 3), test administration, marking, data entry and cleaning and analysis (see Chapters 5 and 7). In addition to the procedures mentioned in other chapters, certain checks and controls were instituted to ensure that the administration within schools was standardised. These included:

- random sampling of classes undertaken by ACER rather than letting schools choose their own classes;
- providing detailed manuals;
- asking the Assessment Administrator to record student participation on the *Student Participation Form* (a check against the presence or absence of data);
- asking the Assessment Administrator to complete an *Assessment Administration Form* which recorded the timing of the assessment and any problems or disturbances which occurred; and
- asking the School Contact Officer to verify the information on the *Student Participation Form* and the *Assessment Administration Form*.

A quality-monitoring program was also implemented, to gauge the extent to which class teachers followed the administration procedures. This involved trained monitors observing the administration of the assessments in a random sample of 5 per cent of schools across the nation. Thirty-five of the 618 schools were observed. The Quality Monitors were required to fill in a report for each school they visited (see Appendix C). Their reports testify to a high degree of conformity by schools with the administration procedures.

Online marking procedures and marker training

In 2007, completed booklets were scanned and the responses to multiple- or dual-choice questions captured and translated into an electronic dataset, while the constructed response questions were cut and presented to markers through a computerised marking system.

Approximately half of the items were constructed response and, of these, most required a single answer or phrase that could be marked objectively. This necessitated the use of trained markers.

Scoring guides were prepared by the contractor and refined during the trial process. Three teams of experienced markers were employed and trained by the contractor. Most of the markers had been involved in marking for the 2007 trial or the 2004 assessment. Two of the teams were located in Sydney and one in Melbourne. Each team consisted of 12 - 14 markers and was lead by two team leaders.

Marking and marker training was conducted by cluster. The allocation of clusters to teams was designed to maximise the overlap of clusters containing the same items (i.e. Year 6 and Year 10 clusters containing the same vertical link items). Tables 4.3 and 4.4 show the allocations of clusters to the marker teams in Sydney and Melbourne.

Table 4.3 Allocation of clusters for marking to the Sydney Team

Training Order	Cluster	Items to be trained		Units to be trained	Total items to be marked		Total units to be marked
		CR	T/F		CR	T/F	
S1	M61	5	4	6	5	4	6
S2	MX6	8	-	4	9	-	4
S3	M63	4	-	1	5	-	2
S4	MX2	3	-	2	8	-	4
S5	M62	3	2	3	6	2	4
S6	MX3	5	-	3	7	-	5
S7	M64	5	-	3	7	-	4
S8	MX5	5	-	1	6	-	2
S9	MX7	5	-	3	6	4	5

Table 4.4 Allocation of clusters for marking to the Melbourne Team

Training Order	Cluster	Items to be trained		Units to be trained	Total items to be marked		Total units to be marked
		CR	T/F		CR	T/F	
M1	M65	6	6	4	6	6	4
M2	MX1	4	5	4	6	5	5
M3	M66	4	3	3	6	3	4
M4	MX4	4	-	4	7	-	5
M5	M67	4	2	3	5	2	4

As shown in Tables 4.3 and 4.4, the markers rotated between Year 6 and Year 10 clusters. This design was utilised so that markers were presented with both Year 6 and Year 10 student responses for link items. This meant that markers experienced the full range of student responses for each item, using the Score Guide in its entirety. This procedure resulted in a higher level of consistency of marking procedures across year levels.

Intense training was provided by the project manager and senior test developer as each cluster was introduced, referencing actual written responses from students in the test booklets. Initial training introduced markers to the assessment domain, to some basic tenets of marking open-ended items, and worked through key aspects/components of the Score Guide. Team discussions to clarify problematic issues were conducted, especially with regard to the consistent application of the score guide to student responses, and procedures were modified as required to obtain a high level of accuracy.

Throughout the marking process markers continued to compare their application of the score codes to individual student responses and sought consistency in their marking through consultation and

by moderation within each marking team. The two lead markers in each team undertook check marking and were thus constantly monitoring the reliability of the individual markers and the team as a whole. Over 10 per cent (13.3%) of all scripts (a script being a cluster completed by a single student) were double-marked by lead markers. Less than five per cent of the double-marked scripts required a code change. Throughout the whole marking process advice to individual markers and the whole team about clarification and alteration of marking approaches was provided, by the project manager and senior test developer and by the marking leaders. This advisory process was exercised with a view to improve reliability where it was required.

Data management

Scanning and data-entry procedures

There were three sources of data: the cognitive assessment data; the student background survey; and the student participation data (from the *Student Participation Forms*).

The cognitive assessment data were derived from the scanned responses to multiple- and dual-choice questions and the codes awarded to the constructed response questions by markers through the computerised marking system. The data from the student background survey were also captured by scanning (although demographics data for Year 6 students were obtained through OSRS). Student participation data were obtained via manual data-entry of the *Student Participation Forms*.

Data captured via scanning were submitted to a two-stage verification process. Firstly, any data not recognised by the system were submitted to manual screening by operators. Secondly, a percentage of all scanned data were submitted for verification by a Senior Operator.

In order to reduce the need for extensive data-cleaning the scanning software was constructed with forced validation of codes according to the codebook. That is, only codes applicable to the item would be allowed to be entered into the database.

Data cleaning

Following data entry, further data cleaning was undertaken to resolve any inconsistencies, such as:

- Inconsistencies between the student participation data and the achievement and background data. These include:
 - Achievement data were available for a student but the student was absent according to the student participation information.
 - A student completed a booklet according to the student participation data but no achievement data were available in the test.
 - Achievement data were available for students with Student IDs that should not be in the database.
- Inconsistencies between the marking key and expected response patterns.
- Inconsistencies within the background data, such as:
 - A student indicated that they, their father or mother had not been born in a country other than Australia but a verbatim response was given to 'please specify country'.
 - A student indicated that they, their father or mother did not speak a language other than English at home but a verbatim response was given to 'please specify language'.
 - Age data outside the expected range (10-13 for Year 6 and 14-17 for Year 10).
 - Missing information on gender, where gender could be imputed from the school (i.e. where single-sex) or name of the student.

Coding of the student background survey

The student background survey collected information about opportunities and examples of citizenship participation by students (see Table 4.5 for the data entry codes). In addition, at Year 10, demographic information was also collected via the student background survey (see Table 4.6). The demographic information was collected to allow for reporting of the achievement of groups of interest to policy makers and had been collected in a standardised form that conformed to guidelines produced by the PMRT². These guidelines also determined the way in which these data were prepared for analysis and reporting purposes.

Table 4.5 Data collected via the student background survey about opportunities and examples of citizenship participation by students

Question	Format
Outside of school, how often do you... <ul style="list-style-type: none"> • read about current events in the newspaper? • watch the news on television? • listen to news on the radio? • use the internet to get news of current events? • talk about political or social issues with your family? • talk about political or social issues with your friends? • join in sport or music activities with others? • participate in environmental activities? • participate in community or volunteer work? 	Never or hardly ever (1) At least once a month (2) At least once a week (3) More than three times a week (4) Multiple or invalid response (8) Missing (9)
At my school, students ... <ul style="list-style-type: none"> • vote for class representatives. • are represented on Student Councils, Student Representative Councils (SRCs) or class/school parliament. (b) • who are representatives contribute to decision making. • can contribute, in ways different from (b), to decisions about what happens at school. • can help prepare a school paper or magazine. • can participate in peer support, 'buddy' or mentoring programs. • can participate in activities in the community. • can represented the school in activities outside of class (such as drama, sports, music and debating). 	Yes (1) No (2) Multiple or invalid response (8) Missing (9)
At my school, I... <ul style="list-style-type: none"> • have voted for class representatives. • have been elected on to a Student Council, Student Representative Councils (SRCs) or class/school parliament. • believe that as a SRC representative I have contributed to school decision making. • have contributed, in ways different from (b), to decisions about what happens at school. • have helped prepare a school paper or magazine. • have participated in peer support, 'buddy' or mentoring programs. • have participated in activities in the community. • have represented the school in activities outside of class (such as drama, sports, music and debating). 	Yes (1) No (2) Multiple or invalid response (8) Missing (9)
At school I have learned... <ul style="list-style-type: none"> • about the importance of voting in elections. • how to represent other students. • to understand people who have different ideas to me. • to work co-operatively with other students. • to be interested in how my school "works". • that I can contribute to solving "problems" at my school. 	Strongly disagree (1) Disagree (2) Agree (3) Strongly agree (4) Multiple or invalid response (8) Missing (9)

² *Data implementation manual for enrolments for the 2007 school year.* Available at: http://www.mceetya.edu.au/mceetya/data_implementation_manual_2007,11575.html

Table 4.6 Data collected via the student background survey about Year 10 student demographics

Question	Format
Permanent home address - Suburb	Free response
Permanent home address - State	Free response, 3 letters
Permanent home address - Postcode	Free response, 4 digits
Gender	Boy (1) Girl (2)
Age - Years	Free response, 2 digits
Age - Months	Free response, 2 digits
Indigenous status	No (i.e. not Indigenous) (1) Aboriginal (2) Torres Strait Islander (3) Both Aboriginal AND Torres Strait Islander (4)
Student Country of Birth	Australia (1) Other (2) - if Other specify
Language other than English at home (3 questions = Student/Mother/Father)	No, English only (1) Yes (2) - if Yes specify.
Parent's main job (2 questions = Mother/Father)	Free response
What parent does in their main job (2 questions = Mother/Father)	Free response
Parent's highest level of schooling (2 questions = Mother/Father)	Year 12 or equivalent (1) Year 11 or equivalent (2) Year 10 or equivalent (3) Year 9 or equivalent or below (4)
Parent's highest level of schooling (2 questions = Mother/Father)	Bachelor degree or above (1) Advanced diploma/diploma (2) Certificate I to IV (inc. trade cert.) (3) No non-school qualification (4)

Missing codes were:

- Not Administered (7)
- Multiple / invalid response (8, 88)
- Missing - Blank (9, 99)

Following data entry, the permanent home address of the Year 10 students was coded to the MCEETYA *Geographical Location Classification* using the *MCEETYA Geographical Location Index* (Jones, 2004) and the parental occupation data were coded (manually) to the four occupation groups required by the *Data Implementation Manual*, creating a single variable for mother's occupation and a single variable for father's occupation.

Variables were also derived for the purposes of reporting achievement outcomes. In most cases, these variables are variables required by MCEETYA and the transformations undertaken followed the guidelines in the *Data Implementation Manual*. Table 4.7 shows the derived variables and the transformation rules used to derive them. Due to large amounts of missing data, parental education was not included in the report.

Table 4.7 The transformation rules used to derive variables used in the public report

Variable	Transformation rule
Geolocation - School	Derived from MCEETYA Geographical Location Classification: Used the Zones rather than the subcategories.
Geolocation – Student (Year 10) only	Derived from MCEETYA Geographical Location Classification: Used the Zones rather than the subcategories.
Gender	Classified by response; missing data treated as missing unless the student was present at a single-sex school.
Age – Years	Year 6 = Age in Years and Months calculated from Date of Birth and Date of Testing. Year 10 = Verbatim response.
Indigenous	Coded as Indigenous if response was ‘yes’ to Aboriginal, OR Torres Strait Islander OR Both.
Country of Birth	Classified as ‘Australia’ or ‘Other’ according to response.
LBOTE	Coded as LBOTE if response was ‘yes’ to any of the Student, Mother or Father speaking a language at home. If any of the data were missing then the data from the other questions were used. If all of the data were missing then LBOTE was coded as missing.
Parental Occupation	The MCEETYA Occupation groups were used. Students, those doing home duties or volunteer work, the unemployed and the retired were all classified as ‘Not in paid work’. ‘Deceased’ was classified as ‘Not applicable’, and treated as ‘Missing’ Parental Occupation equalled the highest occupation group (of either parent). Where one parent had missing data or was classified as ‘Not in paid work’, the occupation group of the other parent was used. Where one parent had missing data and the other was classified as ‘Not in paid work’, Parental Occupation equalled ‘Not in paid work’. Only if parental occupation data for both parents were missing, would Parental Occupation be coded as ‘Missing’.

School reports

Following data entry and cleaning, reports of student performance were sent to each participating school. As each Year 6 and Year 10 student completed one of the seven different year-level test booklets, seven reports were prepared for each school - one for each booklet. The student reports provide information about each student’s achievement on the particular test booklet that they completed. These reports contained the following information:

- a description of the properties of a high quality response to each item,
- the maximum possible score for each item,
- the percentage of students in the school who achieved the maximum score for each item,
- the percentage of students in the National Assessment Program - Civics and Citizenship who achieved the maximum score on each item, and
- the achievement of each student on each item in the test booklet.

An example of a Year 6 and a Year 10 report (for one test booklet only), and the accompanying explanatory material can be found in Appendix D.

CHAPTER 5: SCALING PROCEDURES

The scaling model

Test items were scaled using IRT (Item Response Theory) scaling methodology. With the One-Parameter (Rasch) model (Rasch, 1960) for dichotomous items, the probability of selecting category 1 instead of 0 is modelled as

$$P_i(\theta) = \frac{\exp(\theta_n - \delta_i)}{1 + \exp(\theta_n - \delta_i)}$$

where $P_i(\theta)$ is the probability for person n to score 1 on item i , θ_n is the estimated ability of person n and δ_i the estimated location of item i on this dimension. For each item, item responses are modelled as a function of the latent trait θ_n .

In the case of items with more than two (k) categories (as for example with Likert-type items) this model can be generalised to the *Partial Credit Model* (Masters and Wright, 1997), which takes the form of

$$P_{x_i}(\theta) = \frac{\exp \sum_{k=0}^x (\theta_n - \delta_i + \tau_{ij})}{\sum_{h=0}^{m_i} \exp \sum_{k=0}^h (\theta_n - \delta_i + \tau_{ij})} \quad x_i = 0, 1, \dots, m_i$$

where $P_{x_i}(\theta)$ denotes the probability of person n to score x on item i , θ_n denotes the person's ability, the item parameter δ_i gives the location of the item on the latent continuum and τ_{ij} denotes an additional step parameter.

Assessment of item fit

Item fit was assessed using a range of item statistics. The weighted mean-square statistic (infit), which is a residual based fit statistic, was used as a global indicator of item fit. Weighted infit statistics were reviewed both for item and step parameters. The ACER Conquest, version 2.0 software (Wu, Adams, Wilson, & Haldane, 2007) was used for the estimation of item parameters and the analysis of item fit. In addition to this, Item Characteristic Curves (ICC) were generated for every item using Conquest. These provide a graphical representation of item fit across the range of student abilities for each item (including dichotomous and partial credit items). The functioning of the partial-credit scoring guides was further analysed by reviewing the proportion of responses in each response category and the correct ordering of mean abilities of students across response categories.

Differential item functioning by gender

The quality of the items was also explored by assessing differential item functioning (DIF) by gender. DIF occurs when groups of students with the same ability have different probabilities of responding correctly to an item. For example, if boys have a higher probability than girls with the same ability on an item, the item shows gender DIF. This is a violation of the model, which assumes that the probability is only a function of ability and not of any group membership. DIF results in the advantaging of one group over another group. The item in this example advantages boys.

Item calibration

Item parameters were obtained from calibration samples consisting of randomly selected sub-samples. For the calibration of student item parameters, sub-samples of 235 students per year level

were randomly selected from each state/territory sub-sample. This ensured that each state or territory was equally represented in the sample. The random selection was based on the student weights. The final calibration sample included data from 1,880 students per year level. Items were calibrated separately for Year 6 and Year 10.

Missing students responses that were likely to be due to problems with test length ("not reached items") were omitted from the calibration of item parameters but were treated as incorrect for the scaling of student responses. "Not reached items" were defined as all consecutive missing values starting from the end of the test except the first missing value of the missing series, which was coded as 'missing'.

Appendix E shows the item parameters with a response probability of 0.62 and their respective percentage correct for each year sample.

Plausible values

Plausible values methodology was used to generate estimates of students' civic knowledge. Using item parameters anchored at their estimated values from the calibration sample, plausible values are random draws from the marginal posterior of the latent distribution (Mislevy & Sheehan, 1987). Estimations are based on the conditional item response model and the population model, which includes the regression on background variables used for conditioning (see a detailed description in Adams, 2002). The ACER Conquest software was used for drawing plausible values.

Eighty-six student background variables were used for conditioning of Year 10 student scores and 77 were used for Year 6 student scores. Student abilities were estimated separately for states and territories. All background variables were used as direct conditioning variables. The conditioning variables are listed in Appendix F.

Vertical and horizontal equating

The 2007 test items consisted of both vertical and horizontal link items. To justify their use as link items, relative difficulties were compared across year levels and across assessments. Twenty-six vertical link items were selected to link the 2007 Year 6 and Year 10 tests. Eleven Year 6 and 26 Year 10 horizontal link items were chosen to link the two assessment cycles (30 horizontal link items in total). During the selection process, the average discrimination of the sets of link items was compared across year levels and assessments to ensure that the average psychometric properties of link items were stable across the assessment cycles. In addition, the average gender and state DIF were kept as similar as possible between the two year levels.

Figure 5.1 to 5.3 show the scatter plots of the vertical and horizontal item difficulties for the selected link items. In each plot, one dot represents a link item. The average difficulty of each set of link items was set to zero. The dotted line represents the identity line, which is the expected location on both scales. The solid lines form the 95% confidence interval around the expected values (for the horizontal link items a confidence interval of 99% was used). The ratio of the standard deviation is provided in the box located at the top left of the figures. A ratio of 1 suggests that the variation in difficulties are identical, which means that the difficulties of the set of link items do not cause differences in population variance.

Figure 5.1 2007 NAP-CC Vertical Link Items for Years 6 and 10

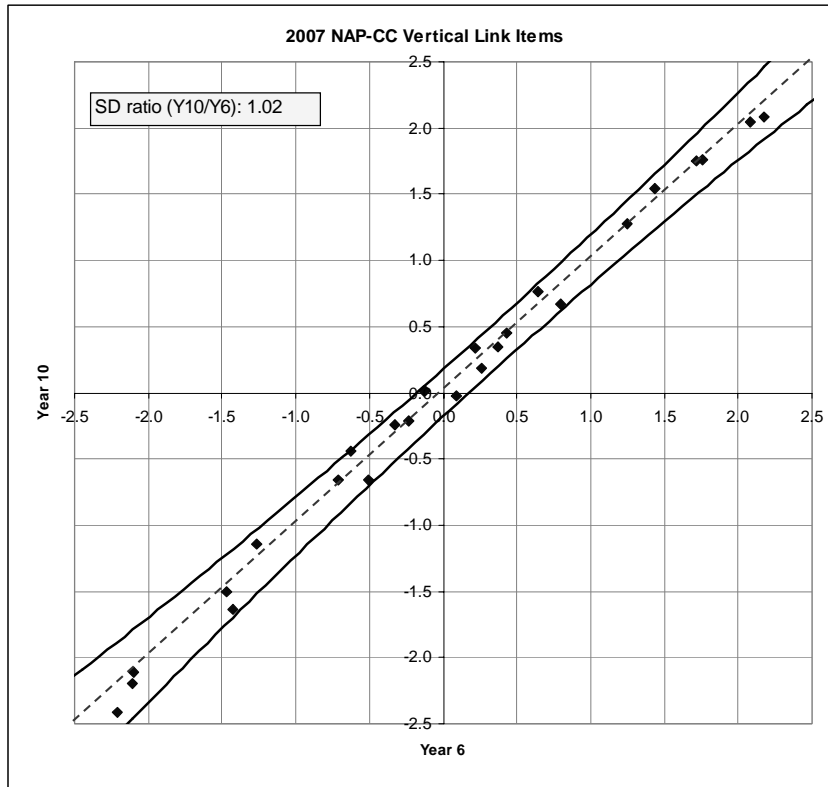


Figure 5.2 2004 and 2007 NAP-CC Horizontal Link Items for Year 6

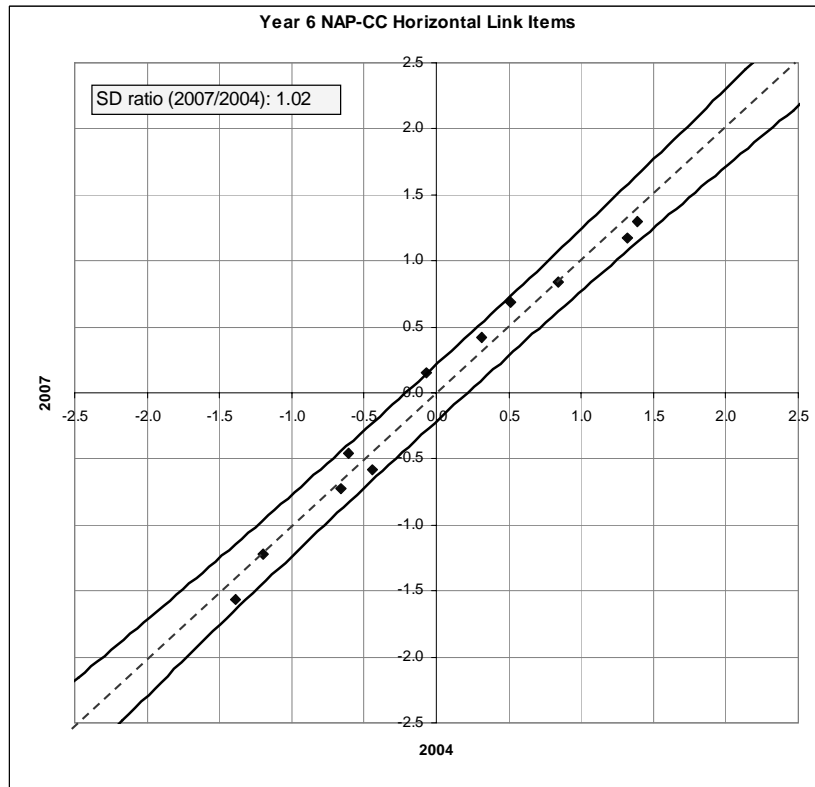
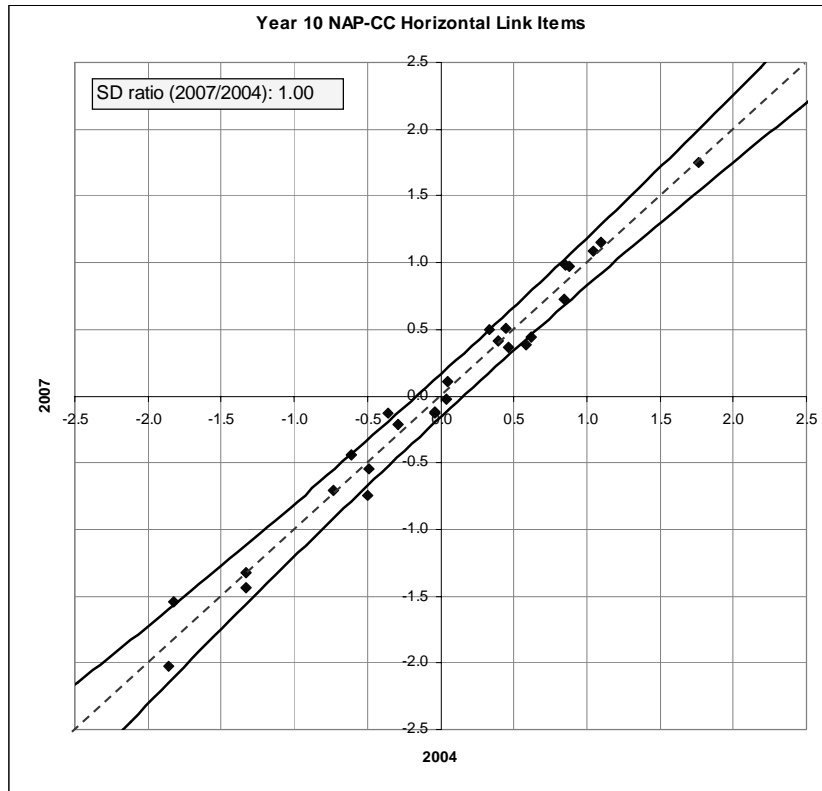


Figure 5.3 2004 and 2007 NAP-CC Horizontal Link Items for Year 10



In addition to comparing relative difficulty of link items, changes in gender DIF and DIF across states and territories were examined. The analysis of gender DIF has been described in a previous section. Differential item functioning across jurisdictions was estimated as follows: In a first step, items were calibrated separately for each jurisdiction. For each item and each cycle, the standard deviations of the difficulties were computed and compared across cycles. When selecting horizontal link items, it was ensured that link items had similar levels of gender and state DIF in both assessments.

After the selection of link items, several methods were evaluated to perform horizontal and vertical equating. The following method was used to estimate shifts for equating:

In 2004, the item parameters were calibrated using a joint data file with Year 6 and Year 10 responses. In 2007, it was decided to calibrate items separately for the two year levels, because the average slope of the Year 6 items was not equal to the average slope of the Year 10 items (the Rasch models assumes equal slopes across items and uses the average slope as the expected slope for each item). Because of this change in calibration method, an extra calibration step had to be undertaken to equate the 2007 estimates to the scale that was established in 2004.

First, the 2004 items were re-calibrated for Year 6 and Year 10 separately. Using these parameters and the parameters from 2007, the difference between the average difficulty of the horizontal link items was computed for each year level (-0.547 for the 11 horizontal links in Year 6 and -0.057 for the 28 horizontal links in Year 10). These shifts were applied to the students' ability estimates to equate the 2007 estimates to the two separate 2004 scales.

Second, the two separate 2004 scales had to be transformed to the joint 2004 scale. For Year 6, the difference between the average of the 38 vertical link items from the official joint calibration and the re-calibrated items using responses from Year 6 students only was used as the second shift for Year 6 students (-0.189 of a logit). The corresponding shift for Year 10 students was 0.119. After applying these equating shifts, the same standardisation transformation was used as in 2004. Therefore, the total transformation for *Year 6 students* was

$$\theta_n^* = \left\{ (\theta_n - 0.547 - 0.189 - \bar{\theta}_{04}) / \sigma_{04} \right\} \cdot 100 + 400,$$

and for the *Year 10 students*

$$\theta_n^* = \left\{ (\theta_n - 0.057 + 0.119 - \bar{\theta}_{04}) / \sigma_{04} \right\} \cdot 100 + 400,$$

where θ_n^* is the transformed knowledge estimate for student n , θ_n is the original knowledge estimate for student n in logits, $\bar{\theta}_{04}$ is the mean ability in logits of the Year 6 students in 2004 (-0.6993) and σ_{04} the standard deviation in logits of the Year 6 students in 2004 (0.7702).

Uncertainty in the link

The transformation that equates the 2007 data with the 2004 data depends upon the change in difficulty of each of the individual link items and as a consequence the sample of link items that have been chosen will influence the choice of transformation. This means that the resulting transformation would be slightly different if an alternative set of link items had been chosen. The consequence is an uncertainty in the transformation due to the sampling of the link items, just as there is an uncertainty in values such as state or territory means due to the use of a sample of students.

The uncertainty that results from the link-item sampling is referred to as linking error and this error must be taken into account when making comparisons between the results from different data collections. Just as with the error that is introduced through the process of sampling students, the exact magnitude of this linking error cannot be determined. We can, however, estimate the likely range of magnitudes for this error and take this error into account when interpreting results. As with sampling errors, the likely range of magnitude for the errors is represented as a standard error.

Following a method proposed by Monseur and Berezner (2007), the estimation of the equating error for trend comparisons between the 2007 and the 2004 assessments was carried out as follows (see also OECD, 2009). Suppose we have a total of L score points in the link items in K units. Use i to index items in a unit and j to index units so that $\hat{\delta}_{ij}^y$ is the estimated difficulty of item i in unit j for year y , and let

$$c_{ij} = \hat{\delta}_{ij}^{2007} - \hat{\delta}_{ij}^{2004} \quad (1)$$

The size (total number of score points) of unit j is m_j so that:

$$\sum_{j=1}^K m_j = L \quad \text{and} \quad \bar{m} = \frac{1}{K} \sum_{j=1}^K m_j \quad (2)$$

Further let:

$$c_{\cdot j} = \frac{1}{m_j} \sum_{i=1}^{m_j} c_{ij}, \quad \text{and} \quad \bar{c} = \frac{1}{N} \sum_{i=1}^K \sum_{j=1}^{m_j} c_{ij} \quad (3)$$

and then the link error, taking into account the clustering is as follows:

$$error_{2004,2007} = \sqrt{\frac{\sum_{j=1}^K m_j^2 (c_{\cdot j} - \bar{c})^2}{K(K-1)\bar{m}^2}} = \frac{\sum_{j=1}^K m_j^2 (c_{\cdot j} - \bar{c})^2}{L^2} \frac{K}{K-1} \quad (4)$$

Apart from taking the number of link items into account, this method also accounts for partial credit items with a maximum score of more than one and the dependency between items within a unit.

CHAPTER 6: PROFICIENCY LEVELS AND THE PROFICIENT STANDARDS

Proficiency levels

One of the key objectives of the MCEETYA National Assessment Program is to monitor trends in civics and citizenship performance over time. One convenient and informative way of describing student performance over time is to reference the results to proficiency levels.

Students whose results are located within a particular level of proficiency are typically able to demonstrate the understandings and skills associated with that level, and also typically possess the understandings and skills defined as applying at lower proficiency levels.

Creating the proficiency levels

In creating the proficiency levels, a similar approach as for the OECD PISA study has been adopted. For PISA, a method was developed that ensured that the notion of 'being at a level' could be interpreted consistently and in line with the fact that the achievement scale is a continuum. This method ensured that there was some common understanding about what 'being at a level' meant and that the meaning of 'being at a level' was consistent across levels. Similar to the approach taken in the OECD PISA study (OECD, 2005, p.255) this method takes the following three variables into account:

- *the expected success of a student at a particular level on a test containing items at that level;*
- *the width of the levels in that scale; and*
- *the probability that a student in the middle of a level would correctly answer an item of average difficulty for that level.*

To achieve this for the National Assessment Program – Civics and Citizenship, the following two parameters for defining proficiency levels were adopted by the PMRT:

- setting the response probability for the analysis of data at $p = 0.62$; and
- setting the width of the proficiency levels at 1.00 logits.

Using these parameters based on the Year 6 proficient standard as the lower cut-point for proficiency level 2, the following inferences can be made about students' proficiency in relation to the proficiency levels:

- A student whose result places him/her at the lowest possible point of the proficiency level is likely to get 50 per cent correct on a test made up of items spread uniformly across the level, from the easiest to the most difficult.
- A student whose result places him/her at the lowest possible point of the proficiency level is likely to get 62 per cent correct on a test made up of items similar to the easiest items in the level.
- A student at the top of the proficiency level is likely to get 82 per cent correct on a test made up of items similar to the easiest items in the level.

Clearly, other solutions with different parameters defining the proficiency levels and alternative inferences about the likely percentage correct on tests could have been chosen. The approach used in the OECD PISA study, and adopted by PMRT, attempts to balance the notions of mastery and 'pass' in a way that is likely to be understood by the community.

Proficiency level cut-points

Five proficiency levels were identified for reporting student performances from the assessment. Table 6.1 identifies these levels by cut-point (in logits and scale score) and gives the percentage of students by year level.

Table 6.1 Proficiency level cut-points and percentage of Year 6 and Year 10 students in each level in 2007

Proficiency Level	Cut-points		Approximate Percentage of Students in each Proficiency Level, 2007	
	Logits	Scale Scores	Year 6	Year 10
Level 5	2.34	795	0	0.2
Level 4	1.34	665	0.3	6.9
Level 3	0.34	535	9.7	34.4
Level 2	-0.66	405	43.5	38.9
Level 1	-1.66	275	35.2	15.8
Below Level 1			11.3	3.8

Describing proficiency levels

To describe the proficiency levels, a combination of experts' knowledge of the skills required to answer each civics and citizenship item and information from the analysis of students' responses was utilised.

Appendix G, *Civics and Citizenship Proficiency Levels* provides the descriptions of the knowledge and skills required of students at each proficiency level. The descriptions reflect the skills assessed by the full range of civics and citizenship items, including both KPM 1 and KPM 2.

Distribution of students across proficiency levels

Tables 6.2 and 6.3 show the percentage of students in each of the jurisdictions at or above each proficiency level. They also show the 95 per cent confidence interval (CI) about the mean estimates for each proficiency level. This has been calculated using the formula:

$$95\% \text{ confidence interval} = 1.96 \times \text{standard error.}$$

Table 6.2 Percentages of Year 6 students at or above each proficiency level on the Civics and Citizenship Literacy Scale, Nationally and by State and Territory.

State or Territory	Proficiency Level									
	Level 1 or above		Level 2 or above		Level 3 or above		Level 4 or above		Level 5 or above	
	%	CI	%	CI	%	CI	%	CI	%	CI
NSW	93.5	2.4	64.2	6.3	13.9	3.0	0.5	0.6	--	--
VIC	92.1	2.5	58.6	5.5	10.4	2.4	0.1	0.3	--	--
QLD	83.0	3.8	41.2	5.9	6.4	2.6	0.1	0.3	--	--
SA	85.6	3.9	43.4	6.8	7.3	3.1	0.2	0.4	--	--
WA	82.0	3.4	39.6	4.3	4.4	2.1	0.1	0.2	--	--
TAS	84.8	4.4	52.5	6.9	11.7	4.7	0.4	0.8	--	--
NT	57.5	8.3	27.7	6.6	4.7	2.2	0.1	0.2	--	--
ACT	91.4	4.3	59.9	8.7	14.8	5.8	0.5	0.8	--	--
AUSTRALIA	88.7	1.3	53.4	2.8	9.9	1.2	0.3	0.2	--	--

Table 6.3 Percentages of Year 10 students at or above each proficiency level on the Civics and Citizenship Literacy Scale, Nationally and by State and Territory.

State or Territory	Proficiency Level									
	Level 1 or above		Level 2 or above		Level 3 or above		Level 4 or above		Level 5 or above	
	%	CI	%	CI	%	CI	%	CI	%	CI
NSW	97.0	2.9	84.6	5.0	52.2	5.1	12.6	3.8	0.4	0.5
VIC	95.6	3.3	78.9	5.9	39.6	4.8	5.2	1.7	0.2	0.4
QLD	96.9	2.1	77.7	5.4	30.4	5.0	2.8	1.6	--	--
SA	96.6	2.3	83.1	6.7	42.9	7.8	5.8	2.9	0.1	0.5
WA	94.2	4.1	75.1	7.2	33.4	6.9	3.6	1.7	--	--
TAS	93.8	3.2	73.9	5.2	37.8	5.8	6.2	3.4	0.3	0.5
NT	91.2	5.8	75.6	11.9	32.5	10.9	3.7	3.4	0.0	0.2
ACT	95.7	3.1	84.6	5.9	50.1	7.5	10.6	3.1	0.2	0.4
AUSTRALIA	96.2	1.4	80.4	2.8	41.5	2.6	7.1	1.4	0.2	0.2

Setting the standards

The process for setting standards in areas such as primary science, information and communications technologies, civics and citizenship and secondary (15-year-old) reading, mathematics and science was endorsed by the PMRT at its 6 March 2003 meeting and is described in the PMRT paper, *Setting National Standards*.

This process, referred to as the ‘empirical judgemental technique’, requires stakeholders to examine the test items and the results from the national assessments and agree on a proficient standard for the two year levels.

The standards for the National Assessment Program – Civics and Citizenship were set in March 2005, following the 2004 assessment. A description of this process is given in the *National Assessment Program – Civics and Citizenship 2004 Technical Report* (Wernert, Gebhardt, Murphy and Schulz, 2006).

The cut-point of the Year 6 Proficient Standard was located -0.66 logits on the 2004 scale. This defined the lower edge of Proficiency Level 2 in Table 6.1. The Year 10 Proficient Standard is located at the lower edge of Proficiency Level 3.

The Proficient Standards for Year 6 and Year 10 Civics and Citizenship Literacy were endorsed by the Key Performance Measures sub-group of the PMRT in 2005.

CHAPTER 7: REPORTING OF RESULTS

Estimation of sampling and measurement variance

Student samples were obtained through two-stage cluster sampling procedures: On the first stage schools were sampled from a sampling frame with a probability proportional to their size, on the second stage intact classrooms were randomly sampled within schools (see Chapter 3 on Sampling and Weighting). Cluster sampling techniques permit an efficient and economic data collection. However, these samples are not simple random samples and the usual formulae to obtain standard errors for population estimates are not appropriate.

Replication techniques provide tools to estimate the correct sampling variance on population estimates (Wolter, 1985; Gonzalez and Foy, 2000). For the National Assessment Program - Civics and Citizenship the jackknife repeated replication technique (JRR) was used to compute standard errors for population means, percentages and regression coefficients.

Generally, the JRR method for stratified samples requires the pairing of Primary Sampling Units (PSUs) - here: schools - into pseudo-strata. Assignment of schools to these so-called 'Sampling Zones' needs to be consistent with the sampling frame from which they were sampled. Sampling zones were constructed within explicit strata. In the case of an odd number of schools within an explicit stratum or the sampling frame, the remaining school was randomly divided into two halves and added to the schools in the final sampling zone to form pseudo-schools. 169 sampling zones were used for the Year 6 and 131 for the Year 10 data in 2007.

Within each of these strata, one school was randomly assigned a value of 2 whereas the other school received a value of 0. For each of the sampling zones so-called replicate weights were computed so that one of the paired schools had a contribution of zero and the other a double contribution whereas all other schools remained the same. This is achieved by simply multiplying student weights with the jackknife indicators once for each sampling zone. As a result, for each so-called jackknife replicate a weight is added to the data file where within one sampling zone at a time one PSU receives a double weight and the other a zero weight.

For each year level sample 169 replicate weights were computed regardless of the number of sampling zones, allowing for 338 schools (or pseudo-schools) per year level. In Year 10, which has less sampling zones, the remaining replicate weights were equal to the original sampling weight.

In order to compute the sampling variance for a statistic t , it is estimated once for the original sample S and then for each of the jackknife replicates. The JRR variance is computed using the formula

$$Var_{jrr}(t) = \sum_{h=1}^H [t(J_h) - t(S)]^2,$$

where H is the number of sampling zones, $t(S)$ the statistic t estimated for the population using the original sampling weights, $t(J_h)$ the same statistic estimated using the weights for the h^{th} jackknife replicate. The standard error for t is

$$\sigma(t) = \sqrt{Var_{jrr}(t)}$$

The computation of JRR variance can be obtained for any statistic. Standard statistical software does generally not include any procedures for replication techniques. For the National Assessment Program - Civics and Citizenship, SPSS macros were used to estimate JRR variance for means and percentages.

Population statistics on ‘Civics and Citizenship Literacy’ from the National Assessment Program - Civics and Citizenship data were always estimated using all five plausible values. If θ is ‘Civics and Citizenship Literacy’ and θ_i is the statistic of interest computed on one plausible value, then:

$$\theta = \frac{1}{M} \sum_{i=1}^M \theta_i, \text{ with } M \text{ being the number of plausible values.}$$

The sampling variance U is calculated as the average of the sampling variance for each plausible value U_i :

$$U = \frac{1}{M} \sum_{i=1}^M U_i$$

Using these five plausible values for data analysis allows also the estimation of the amount of error associated with the measurement of ‘Civics and Citizenship Literacy’ due to the lack of precision of the test. The measurement variance or imputation variance B_M was computed as:

$$B_M = \frac{1}{M-1} \sum_{i=1}^M (\theta_i - \theta)^2$$

Sampling variance and imputation variance were computed as:

$$V = U + \left(1 + \frac{1}{M}\right) B_m, \text{ with } U \text{ being the sampling variance.}$$

The final standard error is computed as

$$SE = \sqrt{V}.$$

Reporting of mean differences across States and Territories

The *National Assessment Program - Civics and Citizenship Years 6 and 10 Report 2007* included comparisons of assessment results across states and territories, that is, means of scales and percentages were compared in graphs and tables. Each population estimate was accompanied by its confidence interval. In addition, tests of significance for the difference between estimates were provided, in order to describe the probability that differences were just a result of sampling and measurement error.

The following types of significance tests were reported:

- For differences in population estimates between states and territories.
- For differences in population estimates between subgroups.

Multiple comparison charts allow the comparison of population estimates between one state or territory and other states or territories. The significance tests include an adjustment for multiple comparisons using a Dunn-Bonferroni adjustment. This was necessary as the probability of erroneously stating significant differences (the so-called Type I error) increases with the number of simultaneous comparisons.

If one wants to test the significance between two means at the .95 level, a critical value of 1.96 is used for the test statistics. Any value higher than the critical value indicates that there is a .95 probability that this difference is not the result of sampling error. Conversely, there is a .05 chance that a difference was found that does not exist. When several means are compared with each other at the same time, the probability of making a Type I error is the product of the probabilities for

each comparison. Thus, the chance to make such an error increases with the number of comparisons.

For multiple comparisons in the *National Assessment Program - Civics and Citizenship* study a so-called Dunn-Bonferroni adjustment was used that consisted of increasing the critical value for significance tests when multiple comparisons were made. For the multiple comparison charts, where each state or territory is compared against the other seven (that is, seven comparisons), the critical value used was 2.7.

Differences between state or territory means were considered significant when the test statistic t was greater than the critical value. t is calculated by dividing the difference by its standard error that is given by the formula:

$$SE_{dif_ij} = \sqrt{SE_i^2 + SE_j^2}$$

where SE_{dif_ij} is the standard error of the difference and SE_i and SE_j are the sampling standard errors of the compared states/territories i and j .

Reporting of mean differences across subgroups other than States and Territories

The formula for calculating the standard error provided above is only suitable when the sub-samples being compared are independent (see the *PISA 2003 Data Analysis Manual*, 2005, for more information). As subgroups other than state or territory are not independent samples, the difference between statistics for subgroups of interest and the standard error of the difference were derived using specialist software³ designed to automate the macros provided in the *PISA 2003 Data Analysis Manual* (2005). Differences between subgroups were considered significant when the test statistic t was greater than the critical value, 1.96. t was calculated by dividing the difference by its standard error.

Reporting of differences across cycles – 2004 to 2007

The *National Assessment Program - Civics and Citizenship Years 6 and 10 Report 2007* also included comparisons of assessment results across cycles. As the process of equating the tests across the cycles introduces some additional error into the calculation of any test statistic, an equating error term was added to the formula for the standard error of the difference (between cycle means, for example).

The value of the equating error between 2004 and 2007 is 4.31 units of the Civics and Citizenship Literacy scale for comparisons in Year 6 between the two assessments and 2.23 for Year 10. When testing the difference of a statistic between the two assessments, the standard error on the difference is computed as follows:

$$SE(\mu_{07} - \mu_{04}) = \sqrt{SE_{07}^2 + SE_{04}^2 + EqErr^2},$$

where μ can be any statistic in units on the Civics and Citizenship Literacy scale (mean, percentile, gender difference, but not percentages) and SE is the respective standard error of this statistic.

To report the significance of differences between percentages at or above proficient standards, the equating error for each year level could not directly be applied. Therefore, the following replication method was applied to estimate the equating error for percentages at proficient standards.

For each year level cut-point that defines the corresponding proficiency standard (405 for Year 6 and 535 for Year 10), a number of N replicate cut-points were generated by adding a random error

³ SPSS module and macros available from the *Public Data & Analysis* page of <https://mypisa.acer.edu.au/index.php>.

component with a mean of 0 and a standard deviation equal to the estimated equating error (4.31 for Year 6 and 2.23 for Year 10). Percentages of students at or above each replicate cut-point (ρ_n) were computed and an equating error for each year level was estimated as

$$EquErr(\rho) = \sqrt{\frac{(\rho_n - \rho_o)^2}{n}},$$

where ρ_o is the percentage of students at or above the (reported) proficient standard. The standard errors for the differences between percentages at or above proficient standards were calculated as:

$$SE(\rho_{07} - \rho_{04}) = \sqrt{SE(\rho)_{07}^2 + SE(\rho)_{04}^2 + EquErr(\rho)^2}$$

Other statistical analyses

Percentiles

Percentiles were presented in order to demonstrate the spread of scores around the mean. In most cases they were presented graphically, and presented the 5th, 10th, 25th, 75th, 90th and 95th percentiles. Appendix H presents, in tabular form, the scale scores that these percentiles represent, for Australia and all states and territories.

Regression Analysis

A multiple regression analysis was undertaken in order to explain variance in performance on the Civics and Citizenship Literacy Scale, using a multiple regression model. It was conducted in two stages. The first stage regressed student achievement on student background characteristics alone. The second stage regressed student achievement on student participation in civics and citizenship activities in addition to the student background characteristics from the first stage. Due to missing data for Year 6 students the regression analysis was only conducted for Year 10 students.

The selected background variables were:

- Age (centred around the mean age)
- Gender (with girls coded as 0 and boys as 1).
- Country of birth (Australia or other, with Australian-born coded as 0 and other as 1)
- Indigenous status (with non-indigenous coded as 0 and Indigenous as 1)
- Language background other than English (with speakers of English coded as 0 and others as 1).
- Parental occupation⁴. Because parental occupation was coded in one of five groups it was represented as a set of dummy variables (coded as 0 or 1 to reflect whether the parental occupation was in that group). These five parental occupation groups were (1) senior managers and professionals, (2) other managers and associate professionals, (3) trades people and skilled office, sales and service staff, (4) unskilled labourers, office, sales and service staff, (5) not in paid work in last 12 months. Most students are in the second category, which is therefore chosen as the reference group. The first four groups are compared to the second group in the block.
- Geographic location of the school. This was also represented as a set of dummy variables (coded as 0 or 1 to reflect whether the school was located in a regional or remote area). Metropolitan location was the reference category and the results reported are relative to students in a metropolitan location.

⁴ The measure of parent occupation was as provided by students for one parent or the higher-coded occupation in cases where data regarding two parents was supplied.

The selected variables about participation in civics and citizenship activities were:

- Six variables about participation in activities outside of school. Each of the variables was coded on a four point ordinal scale, reflecting frequency (0='never or hardly ever'; 1='at least once a month'; 2='at least once a week'; 3='more than three times a week'). The variables were:
 - reading about current events in the newspaper,
 - watching the news on television,
 - listening to the news on the radio,
 - using the internet to get news of current events,
 - talking about political and social issues with family, and
 - talking about political and social issues with friends.
- Three variables about participation in school governance activities. The variables 'yes' or 'no' questions and therefore were coded simply as 0, 1 with 1 indicating participation. The variables were:
 - I have voted for class representatives
 - I have been elected on to a Student Council, Student Representative Council (SRC) or class/school parliament
 - I have contributed, in ways different from (b), to decisions about what happens at school.

Students with one missing value on at least one of the variables were excluded, which resulted in excluding seven per cent of the students. Table 7.1 gives the distribution of these variables for the included students and the codes given to the categories.

The regression coefficients, standard error of the coefficients and the change in R-square attributed to each variable were presented in Chapters 4 and 5 of the *National Assessment Program - Civics and Citizenship Years 6 & 10 Report* (MCEETYA, 2008). The regression coefficients for each variable were calculated from the full model for each stage, with all variables for that stage entered into the model.

In order to address what the contribution of each predictor in the model is, different linear regressions were computed each leaving one predictor variable out of a model. The difference in variance explanation for the full model and the model without a certain factor shows the unique contribution this factor has made to explain variance. The joint variance can be computed as the part of the explained variance which is not uniquely accounted for by any of the factors.

In order to derive unbiased estimates of the standard errors for the regression coefficients, the full model was analysed using specialist software⁵ designed to automate the procedures for regression analysis described in the *PISA 2003 Data Analysis Manual* (2005).

⁵ SPSS module and macros available from the *Public Data & Analysis* page of <https://mypisa.acer.edu.au/index.php>.

Table 7.1 Independent variables included in the regression analysis (with coding and sample distribution)

VARIABLE	Mean	Range			
Age	0 (=15.8 yrs)	-2.84 (13 yrs) – 3.33 (19.2 yrs)			
		Percentage Distribution According to Code			
	Codes	0	1	2	3
Gender	0=Female 1=Male	50.3	49.7	-	-
Country of Birth	0=Australia 1=Not Australia	89.5	10.5	-	-
Indigenous Status	0=Not Indigenous 1=Indigenous	96.0	4.0	-	-
Language spoken at home	0=English only 1=LOTE	80.2	19.8	-	-
Parental Occupation: Senior managers & professionals*	0=Not in Group 1 1=In Group 1	76.9	23.1	-	-
Parental Occupation: Tradespeople, skilled office, sales and service staff*	0=Not in Group 2 1=In Group 2	76.0	24.0	-	-
Parental Occupation: Unskilled labourers, office, sales and service staff*	0=Not in Group 3 1=In Group 3	85.9	14.1	-	-
Parental Occupation: Not in paid work in last 12 months*	0=Not in Group 4 1=In Group 4	99.1	0.9	-	-
Geographic Location of the School: Provincial location**	0=Not provincial 1=Provincial	73.3	26.7	-	-
Geographic Location of the School: Remote location**	0=Not remote 1=Remote	96.6	3.4	-	-
Participation in C&C Activities Outside of School: reading about current events in the newspaper	0=Never or hardly ever 1=At least once a month 2=At least once a week 3=More than 3 times a week	19.3	24.2	39.4	17.1
Participation in C&C Activities Outside of School: watching the news on television	0=Never or hardly ever 1=At least once a month 2=At least once a week 3=More than 3 times a week	6.0	10.3	34.5	49.3
Participation in C&C Activities Outside of School: listening to news on the radio	0=Never or hardly ever 1=At least once a month 2=At least once a week 3=More than 3 times a week	24.6	16.8	29.5	29.1
Participation in C&C Activities Outside of School: using the internet to get news of current events	0=Never or hardly ever 1=At least once a month 2=At least once a week 3=More than 3 times a week	46.3	24.0	17.8	11.9
Participation in C&C Activities Outside of School: talking about political or social issues with your family	0=Never or hardly ever 1=At least once a month 2=At least once a week 3=More than 3 times a week	35.8	29.9	24.0	10.2
Participation in C&C Activities Outside of School: talking about political or social issues with your friends	0=Never or hardly ever 1=At least once a month 2=At least once a week 3=More than 3 times a week	52.9	25.2	16.5	5.4
Participation in School Governance Activities: I have voted for class representatives	0=No 1=Yes	34.5	65.5	-	-
Participation in School Governance Activities: I have been elected onto a SRC	0=No 1=Yes	80.3	19.7	-	-
Participation in School Governance Activities: I have contributed to decisions about what happens at school	0=No 1=Yes	63.6	36.4	-	-

* The reference group for parental occupation is 'other managers and associate professionals', constituting 37.9% of the Year 10 student population.

** The reference group for geographic location is 'metropolitan', constituting 69.9% of the Year 10 student population.

Correlations

Analyses were conducted to investigate associations between variables measuring student participation in different civics and citizenship-related activities. The Pearson product-moment correlation coefficient, r , was used as the measure of correlation.

Factor Analysis

All factor analyses reported were exploratory factor analyses conducted with *Mplus* 4.1 (Muthén & Muthén, 1998-2007). Exploratory factor analysis (EFA) was used to determine how many latent variables (factors) are needed to explain the correlations found between a set of observed variables. As the observed variables were all categorical, the WLS estimator was used. Identification of the number of factors utilised a number of methods: eigenvalues > 1 ; the scree test; and tests of model fit, such as chi-square and root mean square error of approximation (RMSEA). The rotational method used was *promax*, an oblique rotation.

REFERENCES

- Adams, R.J., & Wu, M. L. (2002). *PISA 2000 Technical Report*. Paris: OECD.
- Statements of Learning for Civics and Citizenship*. (2006). Melbourne: Curriculum Corporation.
- Data implementation manual for enrolments for the 2007 school year*. (2006). Performance Measurement and Reporting Taskforce: Ministerial Council on Education, Employment, Training and Youth Affairs.
- Gonzalez, E.J. and Foy, P. (2000). Estimation of Sampling Variance. In: M.O. Martin, K.D. Gregory and S.E. Semler (Eds.). *TIMSS 1999 Technical report*. Chestnut Hill, MA: Boston College.
- Jones, R. (2004). *Geolocation Questions and Coding Index*. Performance and Reporting Taskforce: Ministerial Council on Education, Employment, Training and Youth Affairs
- Kish, L. (1965). *Survey Sampling*. New York: John Wiley & Sons.
- Masters G. N. (1988). Measurement Models for Ordered Response categories. In: Langeheine R. & Rost, J. (Eds). *Latent Trait and Latent Class Models* (pp 11-29). New York: Plenum Press.
- Masters, G. N. and Wright, B. D. (1997). The Partial Credit Model. In: van der Linden, W. J. and Hambleton, R. K. (Eds.). *Handbook of Modern Item Response Theory* (pp. 101–122). New York/Berlin/Heidelberg: Springer.
- MCEETYA. (2006). *National Assessment Program - Civics and Citizenship Years 6 and 10 Report 2004*. Melbourne: MCEETYA.
- MCEETYA. (2009). *National Assessment Program - Civics and Citizenship Years 6 and 10 Report 2007*. Melbourne: MCEETYA.
- Mislevy, R. J. and Sheehan, K. M. (1987). Marginal estimation procedures. In A. E. Beaton (Ed.), *The NAEP 1983-1984 technical report* (pp. 293-360). Princeton, NJ: Educational Testing Service.
- Monseur, C. and Berezner, A. (2007). The Computation of Equating Errors in International Surveys in Education. *Journal of Applied Measurement*, 8(3), 323-335.
- Muthén, L. K., & Muthén, B. O. (1998-2007). *Mplus User's Guide* (4th ed.). Los Angeles, CA: Muthén & Muthén.
- OECD. (2005). *PISA 2003 Technical Report*. Paris: OECD.
- OECD. (2009). *PISA 2006 Technical Report*. Paris: OECD.

- Print, M. & Hughes, J. (2001). *Key Performance Measures in Civics and Citizenship Education*. Commissioned report to the National Education Performance Monitoring Taskforce.
- Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests*. Copenhagen: Nielsen and Lydiche.
- Wernert, N., Gebhardt, E., Murphy, M., & Schulz, W. (2006). *National Assessment Program - Civics and Citizenship Years 6 and 10 Technical Report 2004*. Melbourne: ACER.
- Wolter, K.M. (1985). *Introduction to Variance Estimation*. New York: Springer-Verlag.
- Wu, M. L., Adams, R. J., Wilson, M. R., and Haldane, S.A. (2007). *ACERConQuest Version 2: Generalised item response modelling software* [computer program]. Camberwell: Australian Council for Educational Research.

APPENDICES

APPENDIX A: STUDENT BACKGROUND SURVEY & ASSESSMENT OF CIVICS AND CITIZENSHIP OPPORTUNITIES

STUDENT BACKGROUND SURVEY AND ASSESSMENT OF CIVICS AND CITIZENSHIP OPPORTUNITIES

In this section you will find questions about you and your family; what you do outside school; and your experience of school.

Please read each question carefully and answer as accurately as you can. You may ask for help if you do not understand something or are not sure how to answer a question.

If you make a mistake when answering a question, erase your error and make the correction, either by colouring in the correct bubble or writing the correct answer on the line.

In this section, there are no 'right' or 'wrong' answers. Your answers should be the ones that you decide are best for you.

Questions 1 to 12 were asked of Year 10 students only. This information was obtained for Year 6 students using the Online Student Registration System (OSRS).

Q1 Where do you live?

Please write the place name, State/Territory (eg NT) and postcode of your **permanent home address** (ie the last line of your home address).

(If you are boarding away from home, please think of your **permanent home address**.)

(If you have a PO Box, please think of your **home** rather than the PO Box address.)

 (Suburb name) (State/Territory) (Postcode)

Q2 Are you a boy or a girl? boy girl

Q3 How old are you? years months

Q4 Are you of Aboriginal or Torres Strait Islander origin?

(Please colour in **only one bubble**.)

- No
 Yes, Aboriginal
 Yes, Torres Strait Islander
 Yes, both Aboriginal and Torres Strait Islander

Q5 In which country were you born?

Australia Other, please specify country: _____

Q6 Do you or your parents/guardians speak a language other than English at home?

(Please colour in **only one bubble** for each person.)

	a) You	b) Your mother/ female guardian	c) Your father/ male guardian
No, English only	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yes, please specify language: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 What is your mother's/female guardian's main job? (eg school teacher, cleaner, sales assistant)

If she is not working now, please tell us her last main job.

Please write in the job title: _____

Q8 What does your mother/female guardian do in her main job? (eg teaches school students, cleans offices, sells things)

If she is not working now, please tell us what she did in her last main job.

Please use a sentence to describe the kind of work she does or did in that job:

Q9 What is your father's/male guardian's main job? (eg school teacher, cleaner, sales assistant)

If he is not working now, please tell us his last main job.

Please write in the job title: _____

Q10 What does your father/male guardian do in his main job? (eg teaches school students, cleans offices, sells things)

If he is not working now, please tell us what he did in his last main job.

Please use a sentence to describe the kind of work he does or did in that job:

Q11 What is the **highest** year of primary or secondary schooling your parents/guardians have completed? (Please colour in **only one bubble** for each person.)

	Your mother/female guardian	Your father/male guardian
a) Year 12 or equivalent	<input type="radio"/>	<input type="radio"/>
b) Year 11 or equivalent	<input type="radio"/>	<input type="radio"/>
c) Year 10 or equivalent	<input type="radio"/>	<input type="radio"/>
d) Year 9 or equivalent or below	<input type="radio"/>	<input type="radio"/>

Q12 What is the level of the **highest** qualification your parents/guardians have completed? (Please colour in **only one bubble** for each person.)

	Your mother/female guardian	Your father/male guardian
a) Bachelor degree or above	<input type="radio"/>	<input type="radio"/>
b) Advanced diploma/diploma	<input type="radio"/>	<input type="radio"/>
c) Certificate I to IV (inc. trade cert.)	<input type="radio"/>	<input type="radio"/>
d) No non-school qualification	<input type="radio"/>	<input type="radio"/>

Q13 Outside of school, how often do you ... (Please colour in **only one bubble** for each activity)

	Never or hardly ever	At least once a month	At least once a week	More than three times a week
a) read about current events in the newspaper?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) watch the news on television?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) listen to news on the radio?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) use the internet to get news of current events?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e) talk about political or social issues with your family?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f) talk about political or social issues with your friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g) participate in sport or music activities with others? Please tell us what you do as part of these activities: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h) participate in environmental activities? Please tell us what you do as part of these activities: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i) participate in community or volunteer work? Please tell us what you do in this work: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 At this school, students ...

	Yes	No
a) vote for class representatives.	<input type="radio"/>	<input type="radio"/>
b) i) are represented on Student Councils, Student Representative Councils (SRCs) or class/school parliament.	<input type="radio"/>	<input type="radio"/>
ii) who are representatives contribute to decision making.	<input type="radio"/>	<input type="radio"/>
c) can contribute, in ways different from (b), to decisions about what happens at school.	<input type="radio"/>	<input type="radio"/>
d) can help prepare a school paper or magazine.	<input type="radio"/>	<input type="radio"/>
e) can participate in peer support, 'buddy' or mentoring programs.	<input type="radio"/>	<input type="radio"/>
f) can participate in activities in the community.	<input type="radio"/>	<input type="radio"/>
g) can represent the school in activities outside of class (such as drama, sport, music and debating).	<input type="radio"/>	<input type="radio"/>

Q15 At this school, I ...
(If your school does not have these activities, please colour in the bubble for 'No'.)

	Yes	No
a) have voted for class representatives.	<input type="checkbox"/>	<input type="checkbox"/>
b) i) have been elected on to a Student Council, Student Representative Council (SRC) or class/school parliament.	<input type="checkbox"/>	<input type="checkbox"/>
ii) believe that as a SRC representative I have contributed to school decision making.	<input type="checkbox"/>	<input type="checkbox"/>
c) have contributed, in ways different from (b), to decisions about what happens at school.	<input type="checkbox"/>	<input type="checkbox"/>
d) have helped prepare a school paper or magazine.	<input type="checkbox"/>	<input type="checkbox"/>
e) have participated in peer support, 'buddy' or mentoring programs.	<input type="checkbox"/>	<input type="checkbox"/>
f) have participated in activities in the community.	<input type="checkbox"/>	<input type="checkbox"/>
g) have represented the school in activities outside of class (such as drama, sport, music and debating).	<input type="checkbox"/>	<input type="checkbox"/>

Q16 At my school I have learned ...
*(Please colour in **only one bubble** for each statement)*

	Strongly disagree	Disagree	Agree	Strongly agree
a) about the importance of voting in elections.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) how to represent other students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) to understand people who have different ideas to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) to work co-operatively with other students.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) to be interested in how my school 'works'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) that I can contribute to solving 'problems' at my school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This is the end of Part A.
Please do NOT turn the page until told to do so.

Section 4

Assessment Booklet Format and Content

Were there any problems with the Assessment Booklets (e.g. errors or omissions, unclear directions, confusing format, too long, too hard, boring, tiring etc.)?

No / Yes Specify...

Were there any problems with specific test items?

No / Yes Specify... (include booklet number and item number):

BOOK # ITEM # PROBLEM

BOOK #	ITEM #	PROBLEM
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please note other comments that you think would help improve the assessment:

THANK YOU VERY MUCH

Please sign to acknowledge that you have checked the Assessment Booklets, Student Participation Form and Assessment Administration Form and all is complete and in order.

Assessment Administrator:

School Contact Officer:

Name: _____

Signature: _____

This form is to be returned with the assessment materials.

APPENDIX C: QUALITY MONITOR'S REPORT

QUALITY MONITOR REPORT			
Quality Monitor			
School Name			
Year Level		Class Name	
School Contact Officer			
Assessment Administrator			
Date of Assessment			

(1) Timing

Please record the start and finish times of the various sections of the assessment in the table below.

Section (timing)	Start	Finish
Instructions (approx. 5 minutes)		
Part A (approx. 10-15 minutes)		
Break (approx. 5 minutes)		
Practice Questions (approx. 5 - 10 minutes)		
Part B (Y6 = 60 min. / Y10 = 90 min.)		

(2) Administration: Part A and B

(a) Was the script followed according to the manual? No Yes
Go 2b **Go to 2c**

(b) If changes were made, were they... Minor Major

(c) If the instructions regarding timing of the assessment session were **not** followed, were they.... Minor Major

(d) Did the variation to the script or the timing instructions affect the performance of students?
 No Yes *If Yes, please comment*

(5) Location for the Assessment

(a) Did the location of the Assessment Session meet the requirements set out in the School Contact Officer’s Manual (Section 2.6)?

No Yes *If No, please comment*

(6) Assistance given

The Assessment Administrator is instructed not to answer any questions about the content of the assessment items (Part B). They must not provide any specific information, answers, or instructions about any assessment item. They are, however, allowed to read a question to a student and the Assessment Administrator may answer questions about what students are to do and how they are to record their answers and follow general instructions.

(a) In your opinion, did the Assessment Administrator address students’ questions appropriately?

No Yes *If No, please comment*

(b) Was any extra assistance given to any students with special needs?

No Yes *If Yes, please comment*

(7) Student Behaviour

	No Students	Some Students	Most Students
a) How many students talked to other students before the end of the assessment session?	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}	<input type="checkbox"/> _{3.}
b) How many students made noise or moved around, causing disruption to other students?	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}	<input type="checkbox"/> _{3.}
c) How many students read books after they had finished the assessment, before the end of the session?	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}	<input type="checkbox"/> _{3.}
d) How many students became restless towards the end of the session?	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}	<input type="checkbox"/> _{3.}

(8) Disruptions

Did any of the following affect the assessment session?	No	Yes
a) Announcements over the loud speaker	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}
b) Alarms	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}
c) Class changeover in the school	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}
d) Other students not participating in the assessment session	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}
e) Students or teachers visiting the assessment room	<input type="checkbox"/> _{1.}	<input type="checkbox"/> _{2.}

(9) Follow-up Session

(a) Was attendance less than 85% of the eligible students (i.e. non-excluded) listed on the Student Participation and therefore a Follow-up Session is required?

No Yes *If Yes, please go on to 9b.*

(b) In your opinion, is the Follow-up Session likely to be held by the school?

No Yes *If No, please comment*

Other Comments

Please note other comments that you think would help improve the assessment:

THANK YOU VERY MUCH

APPENDIX D: EXAMPLE SCHOOL REPORTS AND EXPLANATORY MATERIAL

Explanatory Material



Ministerial Council on Education,
Employment, Training and Youth Affairs



Civics and Citizenship National Sample Assessment

Interpreting the Student Reports

Each Year 6 and Year 10 student completed one of the four different year-level test forms. The student reports provide information about each student's achievement on the particular test form that they completed.

Each test form report includes the following information:

1. The school name.
2. The Year level and number of the test form described by the report.
3. The question number as it appeared on the test form.
4. A unique item code used to reference each question.
5. A description of the properties of a high quality response to the item.
6. The maximum possible score for each item.
7. The percentage of students in the school who achieved the maximum score for each item.
8. The percentage of students in the National Assessment who achieved the maximum score on each item.
9. The name of each student who completed that test form and whose result is being reported.
10. A key for the different student response types.
11. The achievement of each student on each item on the form.

Below is part of a sample report form with some key information explained.

71% of students at the school achieved the maximum score on this item on this Form.

89% of students in the National Assessment achieved the maximum score on this item on this Form.

This student achieved the maximum score for this item.

School Name		Year # Form #		Item Code	Item Descriptor	Item Max Score	% maximum score (your school)	% maximum score (National Assessment)	Boyle	M	J	Bone	B	Beaver	T	Burges	A	
1	GGOL1	Recognises a responsibility of the Governor General.			1	88	89	a										
2	UPOL1	Explains why a democratic government may act against the wishes of the electorate.			1	65	84	a										
3	ECOL1	Identifies a complaint of the Australian free settlers about their governance.			1	83	90	a										
4	CPOL1	Identifies freedom of religion as manifested in the Australian citizenship pledge.			1	71	84	a						n				
5	CPOL2	Identifies that some shared values exist within Australian society.			2	89	89	a										
6	CPOL3	Recognises that Australian citizens have both freedoms and responsibilities.			1	84	80	a										
7	CPOL4	Explains the principle of the precedence of the common good over individual rights in Australia's democracy.			3	90	89	a						1	2			
8	WWOX1	Recognises the symbolism of a specific political protest.			1	84	88	a										
9	WWOX2	Explains how protestors may feel justified in a democracy in willingly violating the as a protest.			2	89	74	a										

This student attempted and achieved a score of 0 for this item.

This student achieved a score of 1 out of the maximum 3 for this item.

This student achieved a score of 2 out of the maximum 3 for this item.

This student did not attempt this item.

Example Year 6 Report

Capital Primary School

Year 6 Form 1

- Max Score Achieved - Other Score Achieved - 0 Score Achieved
 - Not Answered - Absent

Q. No	Item Code	Item Descriptor	Item Max Score	% maximum score (year school)	% maximum score (National Assessment)	Student 1	Student 5	Student 9	Student 13	Student 17
1	ECOL1	Identifies a complaint of the Australian free settlers about their governance.	1	50	31	a				
2	PDOL1	Explains a benefit of differences of opinion within a democracy.	2	25	11	a	n		1	
3	HBO61	Infers cultural inclusivity represented by a government's actions.	2	25	25	a	n		1	
4	HBO62	Recognises the difficulty of balancing inclusivity and unmanageable precedent.	2	0	1	a	n	1		
5-9	REO61-5	Identifies some legal responsibilities of Australian citizens.	2	50	79	a	1			1
10	FNO61	Recognises the division of governmental responsibilities in a federation.	1	50	50	a				
11	FLO1	States the meaning of the Union Jack as a symbol on the Australian national flag.	3	25	8	a			2	1
11	FLO2	States the meaning of the Southern Cross as a symbol on the Australian national flag.	1	50	28	a				
11	FLO3	States the meaning of the Federation Star as a symbol on the Australian national flag.	1	50	44	a				
12	FLO4	Infers a reason for the government inviting citizens to design a national flag.	1	25	31	a	n			
13	FLO5	States the meaning of the black colour as a symbol on the Australian Aboriginal flag.	1	50	38	a				
13	FLO6	States the meaning of the red colour as a symbol on the Australian Aboriginal flag.	1	75	63	a				
14	FLO7	Generalises about the symbolism of burning a national flag in protest.	2	0	16	a	n	1	1	
15	FLO8	Recognises a reason why people may object to flag burning in protest.	1	50	72	a				
16	SEO61	Explains a difference between rules and laws in a familiar school context.	2	25	45	a	n		1	1
17	SEO62	Recognises the social value of rules in a familiar school context.	1	50	44	a	n			
18	UPOL1	Explains why a democratic government may act against the wishes of the electorate.	1	25	32	a	n			
19	CPOL1	Identifies freedom of religion as manifested in the Australian citizenship pledge.	1	75	67	a				
20	CPOL2	Identifies that some shared values exist within Australian society.	2	0	9	a		1	1	
21	CPOL3	Recognises that Australian citizens have both freedoms and responsibilities.	1	50	66	a				
22	CPOL4	Explains the principle of the precedence of the common good over individual rights in Australia's democracy.	3	0	1	a	n	2	1	1
23	BAO61	Infers the motivation behind a public protest.	1	50	33	a				
24	BAO62	States two feasible ways of supporting a change in the law.	2	0	15	a		1	1	
25	BAO63	Explains, in a simple context, how community standards may affect the law.	1	25	13	a	n			n
26	CCO61	Identifies two democratic features of an electoral process.	2	25	34	a			1	1
27	CCO62	Identifies two undemocratic features of an electoral process.	2	25	24	a			1	1
28	GGOL1	Recognises a responsibility of the Governor General.	1	25	6	a			n	
29-32	LWO61-4	Identifies some features of Australian laws.	2	25	83	a			n	1
33	AIOL1	Identifies the historical event remembered on Australia day.	1	25	15	a	n		n	
34	AIOL2	Explains the significance for some that the British colonisation of Australia was without treaty.	2	0	3	a	n	1	n	
35	MPO61	Recognises the process required for election to Australian parliament.	1	75	62	a			n	
36	NEO61	Recognises the minimum frequency of Australian Federal elections.	1	50	68	a			n	
37	ICOL1	Explains how understanding civic process can support civic participation.	2	0	7	a	n	1	n	

Example Year 10 Report

Capital Secondary School

Year 10 Form 1

- Max Score Achieved 1 - Other Score Achieved - 0 Score Achieved
 n - Not Answered a - Absent

Q. No	Item Code	Item Descriptor	Item Max Score	% maximum score (your school)	% maximum score (National)	Student 1	Student 5	Student 9	Student 13	Student 17
1	GGOL1	Recognises a responsibility of the Governor General.	1	25	23			a		
2	UPOL1	Explains why a democratic government may act against the wishes of the electorate.	1	50	36			a		
3	ECOL1	Identifies a complaint of the Australian free settlers about their governance.	1	50	51			a		
4	CPOL1	Identifies freedom of religion as manifested in the Australian citizenship pledge.	1	100	87			a		
5	CPOL2	Identifies that some shared values exist within Australian society.	2	50	31	1		a		1
6	CPOL3	Recognises that Australian citizens have both freedoms and responsibilities.	1	100	79			a		
7	CPOL4	Explains the principle of the precedence of the common good over individual rights in Australia's democracy.	3	0	2		2	a	1	1
8	WVOX1	Recognises the symbolism of a specific political protest.	1	75	58			a		
9	WVOX2	Explains how protestors may feel justified in a democracy in willingly breaking the as a protest.	2	25	26	n		a	1	1
10	WVOX3	Explains why deliberately breaking the law as part of a protest might be considered unacceptable in a democracy.	2	25	21			a	1	1
11	CVOL1	Identifies and explains a principle that supports compulsory voting in Australia.	2	0	7	1	1	a	1	1
12	CVOL2	Identifies and explains a principle for opposing compulsory voting.	2	50	43	1		a		1
13	CVOL3	Explains the importance of the secret ballot to the electoral process.	2	25	27			a	1	1
14	FDOX1	Recognises a point of dispute between State and Federal governments.	1	50	60			a		
15	FDOX2	Identifies a constitutional issue requiring resolution by the High Court.	1	50	47			a		
16	FDOX3	Analyses the reasons why a High Court decision may be close.	2	0	3		1	a		
17	FDOX4	Analyses how voters prioritise issues differently at State and Federal elections.	1	25	24	n		a		
18	ICOL1	Explains how understanding civic process can support civic participation.	2	25	18			a	1	1
19	UNOX1	Analyses reasons refugees may have for seeking safe refuge in another country.	2	25	7			a	1	1
20	UNOX2	Recognises that the UNHCR advocates due process for refugees' claims.	1	50	46			a		
21	UNOX3	Recognises a method of persuasion available to the UNHCR.	1	75	75			a		
22	PDOL1	Explains a benefit of differences of opinion within a democracy.	2	25	23			a	1	1
23	IQOX1	Recognises the potential for difference between justice and law.	1	50	46			a		
24	IQOX2	Recognises the value of collective social responsibility.	1	75	59			a		
25	IQOX3	Analyses the tension between critical citizenship and law abidance.	3	0	4		2	a	1	1
26	IFOX1	Infers a government attitude to Indigenous Australians from information about franchise.	3	25	12	1		a	2	1
27	IFOX2	Analyses how a change in government policy may reflect a change in attitude to Indigenous Australians.	2	50	31			a		1
28	IFOX3	Explains how governments may change laws to ensure State and Federal consistency.	3	0	8		2	a	1	1
29	IFOX4	Analyses governments' reasons for changing franchise.	2	25	17			a	1	1
30	IFOX5	Uses complex reasons with evidence to support a contention.	2	25	21			a	1	1
31	FLOL1	States the meaning of the Union Jack as a symbol on the Australian national flag.	3	25	21	1		a	2	1
31	FLOL2	States the meaning of the Southern Cross as a symbol on the Australian national flag.	1	50	43			a		
31	FLOL3	States the meaning of the Federation Star as a symbol on the Australian national flag.	1	50	55			a		
32	FLOL4	Infers a reason for the government inviting citizens to design a national flag.	1	50	52			a		
33	FLOL5	States the meaning of the black colour as a symbol on the Australian Aboriginal flag.	1	50	40			a		
33	FLOL6	States the meaning of the red colour as a symbol on the Australian Aboriginal flag.	1	75	71			a		
34	FLOL7	Generalises about the symbolism of burning a national flag in protest.	2	50	32			a		1
35	FLOL8	Recognises a reason why people may object to flag burning in protest.	1	75	82			a		
36	WEOX1	Recognises the responsibility of protestors to respect the rights of others.	1	50	51			a		
37	WEOX2	Recognises that respecting others is a commonly stated Australian value.	1	75	82			a		
38	WEOX3	Recognises one way in which participation in protest can enhance the common good.	1	50	50			a		
39	MBOX1	Recognises the importance of fair reporting by the media.	1	50	52			a		
40	RFAX1	Recognises that the Australian constitution can only be changed through referendum.	1	50	53			a		
41	AIOL1	Identifies the historical event remembered on Australia day.	1	50	22	n		a		
42	AIOL2	Explains the significance for some that the British colonisation of Australia was without treaty.	2	25	7	n		a	1	1

APPENDIX E: ITEM PARAMETERS AND PERCENTAGE CORRECT FOR EACH YEAR LEVEL

	Item	Year 6		Year 10	
		Difficulty (RP=0.62)	% correct	Difficulty (RP=0.62)	% correct
1	AC21_X07			1.382	34.50
2	AN11_X07			-0.254	68.92
3	AP21_L07	-2.091	84.88	-2.335	93.88
4	AY21_L07	0.240	39.63	0.203	59.52
5	AY22_607	-0.551	58.07		
6	AZ11_X04			0.624	47.73
7	AZ12_L07	1.733	20.68	1.619	31.80
8	BO21_L07	-0.104	50.51	-0.115	68.06
9	BO22_L07	-0.213	53.03	-0.344	68.96
10	BO23_X07			1.763	28.72
11	BO24_L07	2.193	11.19	1.951	24.86
12	BO25_L07	1.779	14.53	1.624	27.12
13	CA21_607	-1.180	71.21		
14	CC21_607	-2.312	89.31		
15	CD22_607	0.875	30.39		
16	CD23_607	1.785	9.42		
17	CG11_604	-1.592	76.06		
18	CV11_L04	1.270	24.24	1.139	41.78
19	CV12_X07			0.497	51.81
20	CV13_X07			0.250	58.49
21	DM21_X07			1.930	26.38
22	FB21_X07			-0.260	66.27
23	FD11_X04			0.043	60.46
24	FD12_X04			0.635	51.46
25	FD13_X04			2.503	18.41
26	FD14_X04			1.907	27.10
27	FG21_L07	-2.188	85.93	-2.550	94.09
28	FI11_X04			1.195	37.06
29	FL14_L04	0.815	29.64	0.540	49.22
30	FL17_L04	0.660	37.36	0.628	51.01
31	FL18_L07	-1.404	76.54	-1.766	88.44
32	FM21_607	-0.145	50.37		
33	FM22_607	1.125	26.81		
34	FN11_607	-0.576	59.09		
35	FO11_L04	-1.245	70.38	-1.274	82.49
36	FO12_X07			-0.201	66.76
37	FO13_L04	-0.607	60.36	-0.573	70.92
38	FO14_L04	-0.485	58.00	-0.793	75.78
39	GC21_X07			-0.740	77.79
40	GD21_607	0.430	43.21		
41	GP26_X07			0.916	42.91
42	HS21_607	0.031	45.21		
43	HW21_X07			-0.062	58.65
44	IC11_L07	1.457	16.66	1.408	32.70
45	IF11_X04			1.163	37.47
46	IF12_X04			0.728	47.53
47	IF13_X04			1.477	27.87
48	IF14_X07			1.063	39.94
49	IF15_X04			1.256	38.40
50	IJ21_L07	-0.313	50.70	-0.374	70.77
51	IJ22_X07			0.566	49.35
52	IQ12_X04			0.310	56.21
53	IQ13_X04			1.722	30.74
54	IR21_X07			-0.689	76.38
55	IT11_X07			1.126	42.38
56	IT12_X04			1.738	35.99
57	IT13_X04			1.839	20.68
58	LG21_X07			-1.274	83.13
59	LG22_607	-0.815	65.77		
60	LP21_607	1.181	26.12		
61	LP22_607	-1.703	79.86		
62	LW15_604	1.146	22.65		

	Item	Year 6		Year 10	
		Difficulty (RP=0.62)	% correct	Difficulty (RP=0.62)	% correct
63	LW16_607	-0.591	60.31		
64	MI21_X07			0.571	53.13
65	NW11_607	0.472	37.78		
66	NW12_607	0.529	41.23		
67	NW13_607	0.616	38.81		
68	OI21_607	-1.221	72.29		
69	OI22_L07	2.101	8.85	1.912	23.35
70	OL21_607	-2.750	93.78		
71	OM21_X07			0.802	47.99
72	OM22_X07			0.177	59.41
73	OM23_X07			0.219	62.49
74	PD11_X07			1.932	23.63
75	PG21_X07			0.087	59.43
76	PG22_X07			0.918	43.38
77	PP21_607	0.579	34.93		
78	PP22_607	-2.804	91.36		
79	PS21_X07			0.822	39.40
80	PT21_L07	-2.079	88.06	-2.245	92.06
81	PT22_L07	0.452	37.57	0.315	56.02
82	PT23_L07	0.108	44.12	-0.157	65.07
83	PT24_X07			0.490	51.43
84	RC21_X07			-0.513	73.01
85	RC22_X07			0.869	45.42
86	RC23_X07			-0.262	68.19
87	RC24_X07			1.012	41.68
88	RC25_X07			-0.224	70.55
89	RF11_L04	0.392	39.42	0.209	63.67
90	RF21_X07			0.206	60.52
91	RII7_604	0.124	46.36		
92	RO21_X07			-0.400	71.64
93	RQ21_X07			2.016	23.12
94	RR21_X07			-0.735	75.59
95	RR22_607	-1.141	70.41		
96	RR23_L07	-0.693	63.45	-0.790	74.02
97	RS11_607	0.577	35.12		
98	RU25_607	-1.646	82.46		
99	SB21_607	-1.687	78.84		
100	SB22_L07	-1.453	76.11	-1.636	86.16
101	SC11_L07	0.279	39.24	0.051	66.09
102	SC12_L07	-0.115	48.38	-0.120	63.12
103	SC13_607	0.896	33.70		
104	SC14_607	1.329	19.46		
105	SE11_604	-0.751	63.00		
106	SH21_607	0.468	41.34		
107	SR21_607	0.822	23.86		
108	SR22_607	-0.227	49.65		
109	SR23_607	0.726	31.53		
110	TR11_X04			-0.689	74.01
111	VA21_607	-2.560	91.70		
112	VM21_607	-2.547	90.05		
113	VO22_607	0.285	39.72		
114	WB21_X07			0.613	49.29
115	WB22_X07			-1.052	81.35
116	WB23_X07			-0.016	61.99
117	WP12_X04			0.865	45.46
118	WP13_X04			1.255	33.40
119	WW11_X04			0.005	61.58
120	WW12_X04			1.120	36.59
121	WW13_X07			0.637	49.37
122	YD21_X07			1.029	41.43
123	YD22_X07			1.246	35.80

APPENDIX F: STUDENT BACKGROUND VARIABLES USED FOR CONDITIONING

Variable	Label	Coding	Used in Year Level
SEIFA	SEIFA Index of Disadvantage	1000 = 1st Quintile 0100 = 2nd Quintile 0010 = 3rd Quintile 0001 = 4th Quintile 0000 = 5th Quintile	6/10
GEOLOCATION	MCEETYA Schools Geographic Location	0000000 = 1.1 State Capitals 1000000 = 1.2 Major Urban Centers 0100000 = 2.1.1 Provincial City (50,000+) & Darwin 0010000 = 2.1.2 Provincial City (25,000-49,000) 0001000 = 2.2.1 Inner Provincial Areas 0000100 = 2.2.2 Outer Provincial Areas 0000010 = 3.1 Remote Areas 0000001 = 3.2 Very Remote Areas	6/10
SECTOR	School Sector	10 = Catholic 00 = Government 01 = Independent	6/10
GEOHOME	MCEETYA Geolocation for Student Home	00000000 = 1.1 State Capitals 10000000 = 1.2 Major Urban Centers 01000000 = 2.1.1 Provincial City (50,000+) & Darwin 00100000 = 2.1.2 Provincial City (25,000-49,000) 00010000 = 2.2.1 Inner Provincial Areas 00001000 = 2.2.2 Outer Provincial Areas 00000100 = 3.1 Remote Areas 00000010 = 3.2 Very Remote Areas 00000000 = Missing	10
GENDER	Sex	0 = Male 1 = Female	6/10
AGE	Age	Age in months (missing replaced with mean of year level)	6/10
AGEM	Age - missing	0 = Not missing 1 = Missing	6/10
ATSI	Aboriginal or Torres Strait Islander	0 = No (or missing) 1 = Yes	6/10
ATSIM	Aboriginal or Torres Strait Islander - missing	0 = Not missing 1 = Missing	6/10
COB	Student Born in Australia	0 = Yes (or missing) 1 = No	6/10
COBM	Student Born in Australia - missing	0 = Not missing 1 = Missing	6/10
LBOTE	LOTE spoken at home	0 = No (or missing) 1 = Yes	6/10
LBOTEM	LOTE spoken at home - missing	0 = Not missing 1 = Missing	6/10
MLBOTE	LOTE spoken at home (Mother)	0 = No (or missing) 1 = Yes	10
MLBOTEM	LOTE spoken at home (Mother) - missing	0 = Not missing 1 = Missing	10
FLBOTE	LOTE spoken at home (Father)	0 = No (or missing) 1 = Yes	10
FLBOTEM	LOTE spoken at home (Father) - missing	0 = Not missing 1 = Missing	10
POCC	Parental Occupation Group	10000 = Senior Managers and Professionals 01000 = Other Managers and Associate Professionals 00100 = Tradespeople & skilled office, sales and service staff 00010 = Unskilled labourers, office, sales and service staff 00001 = Not in paid work in last 12 months 00000 = Not stated or unknown	6
MOCC	Mother's Occupation Group	10000 = Senior Managers and Professionals 01000 = Other Managers and Associate Professionals 00100 = Tradespeople & skilled office, sales and service staff 00000 = Unskilled labourers, office, sales and service staff 00010 = Not in paid work in last 12 months 00001 = Not stated or unknown	10
FOCC	Father's Occupation Group	10000 = Senior Managers and Professionals 00000 = Other Managers and Associate Professionals 01000 = Tradespeople & skilled office, sales and service staff 00100 = Unskilled labourers, office, sales and service staff	10

Variable	Label	Coding	Used in Year Level
		00010 = Not in paid work in last 12 months 00001 = Not stated or unknown	
PARED	Highest Level of Parental Education	1000000 = Year 9 or equivalent or below 0100000 = Year 10 or equivalent 0010000 = Year 11 or equivalent 0001000 = Year 12 or equivalent 0000100 = Certificate 1 to 4 (inc trade cert) 0000010 = Advanced Diploma/Diploma 0000001 = Bachelor degree or above 0000000 = Not stated or unknown	6
MSE	Mother's School Education	1000 = Year 9 or equivalent or below 0100 = Year 10 or equivalent 0010 = Year 11 or equivalent 0000 = Year 12 or equivalent 0001 = Not stated or unknown	10
FSE	Father's School Education	1000 = Year 9 or equivalent or below 0100 = Year 10 or equivalent 0010 = Year 11 or equivalent 0000 = Year 12 or equivalent 0001 = Not stated or unknown	10
MNSE	Mother's Non-School Education	1000 = Certificate 1 to 4 (inc trade cert) 0100 = Advanced Diploma/Diploma 0010 = Bachelor degree or above 0000 = No non-school qualification 0001 = Not stated or unknown	10
FMNSE	Father's Non-School Education	0000 = Certificate 1 to 4 (inc trade cert) 1000 = Advanced Diploma/Diploma 0100 = Bachelor degree or above 0010 = No non-school qualification 0001 = Not stated or unknown	10
S1a	Newspaper	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10
S1aM	Newspaper - missing	0 = Not missing 1 = Missing	6/10
S1b	Television news	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10
S1bM	Television news - missing	0 = Not missing 1 = Missing	6/10
S1c	Radio news	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10
S1cM	Radio news - missing	0 = Not missing 1 = Missing	6/10
S1d	Internet news	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10
S1dM	Internet news - missing	0 = Not missing 1 = Missing	6/10
S1e	Talk family	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10
S1eM	Talk family - missing	0 = Not missing 1 = Missing	6/10
S1f	Talk friends	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10
S1fM	Talk friends - missing	0 = Not missing 1 = Missing	6/10
S1g	Sport/music activities	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10

Variable	Label	Coding	Used in Year Level
S1gM	Sport/music activities - missing	0 = Not missing 1 = Missing	6/10
S1h	Environmental activities	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10
S1hM	Environmental activities - missing	0 = Not missing 1 = Missing	6/10
S1i	Community/volunteer work	0 = Never or hardly ever (or missing) 1 = At least once a month 2 = At least once a week 3 = More than three times a week	6/10
S1iM	Community/volunteer work - missing	0 = Not missing 1 = Missing	6/10
S2a	Students vote class representative (School)	0 = No (or missing) 1 = Yes	6/10
S2aM	Students vote class representative - missing (School)	0 = Not missing 1 = Missing	6/10
S2b_i	Student councils (School)	0 = No (or missing) 1 = Yes	6/10
S2b_iM	Student councils - missing (School)	0 = Not missing 1 = Missing	6/10
S2b_ii	Decision making (School)	0 = No (or missing) 1 = Yes	6/10
S2b_iiM	Decision making - missing (School)	0 = Not missing 1 = Missing	6/10
S2c	Contribute to decisions (School)	0 = No (or missing) 1 = Yes	6/10
S2cM	Contribute to decisions - missing (School)	0 = Not missing 1 = Missing	6/10
S2d	School paper (School)	0 = No (or missing) 1 = Yes	6/10
S2dM	School paper - missing (School)	0 = Not missing 1 = Missing	6/10
S2e	Peer support (School)	0 = No (or missing) 1 = Yes	6/10
S2eM	Peer support - missing (School)	0 = Not missing 1 = Missing	6/10
S2f	Activities in community (School)	0 = No (or missing) 1 = Yes	6/10
S2fM	Activities in community - missing (School)	0 = Not missing 1 = Missing	6/10
S2g	Activities outside of class (School)	0 = No (or missing) 1 = Yes	6/10
S2gM	Activities outside of class - missing (School)	0 = Not missing 1 = Missing	6/10
S3a	Students vote class representative (Myself)	0 = No (or missing) 1 = Yes	6/10
S3aM	Students vote class representative - missing (Myself)	0 = Not missing 1 = Missing	6/10
S3b_i	Student councils (Myself)	0 = No (or missing) 1 = Yes	6/10
S3b_iM	Student councils - missing (Myself)	0 = Not missing 1 = Missing	6/10
S3b_ii	Decision making (Myself)	0 = No (or missing) 1 = Yes	6/10
S3b_iiM	Decision making - missing (Myself)	0 = Not missing 1 = Missing	6/10
S3c	Contribute to decisions (Myself)	0 = No (or missing) 1 = Yes	6/10
S3cM	Contribute to decisions - missing (Myself)	0 = Not missing 1 = Missing	6/10
S3d	School paper (Myself)	0 = No (or missing) 1 = Yes	6/10
S3dM	School paper - missing (Myself)	0 = Not missing 1 = Missing	6/10
S3e	Peer support (Myself)	0 = No (or missing)	6/10

Variable	Label	Coding	Used in Year Level
		1 = Yes	
S3eM	Peer support - missing (Myself)	0 = Not missing 1 = Missing	6/10
S3f	Activities in community (Myself)	0 = No (or missing) 1 = Yes	6/10
S3fM	Activities in community - missing (Myself)	0 = Not missing 1 = Missing	6/10
S3g	Activities outside of class (Myself)	0 = No (or missing) 1 = Yes	6/10
S3gM	Activities outside of class - missing (Myself)	0 = Not missing 1 = Missing	6/10
S4a	Importance of voting	0 = Strongly disagree (or missing) 1 = Disagree 2 = Agree 3 = Strongly agree	6/10
S4aM	Importance of voting - missing	0 = Not missing 1 = Missing	6/10
S4b	Represent other students	0 = Strongly disagree (or missing) 1 = Disagree 2 = Agree 3 = Strongly agree	6/10
S4bM	Represent other students - missing	0 = Not missing 1 = Missing	6/10
S4c	Understand people with different ideas	0 = Strongly disagree (or missing) 1 = Disagree 2 = Agree 3 = Strongly agree	6/10
S4cM	Understand people with different ideas - missing	0 = Not missing 1 = Missing	6/10
S4d	Work co-operatively	0 = Strongly disagree (or missing) 1 = Disagree 2 = Agree 3 = Strongly agree	6/10
S4dM	Work co-operatively - missing	0 = Not missing 1 = Missing	6/10
S4e	Interested in how school works	0 = Strongly disagree (or missing) 1 = Disagree 2 = Agree 3 = Strongly agree	6/10
S4eM	Interested in how school works - missing	0 = Not missing 1 = Missing	6/10
S4f	Contribute to solving problems	0 = Strongly disagree (or missing) 1 = Disagree 2 = Agree 3 = Strongly agree	6/10
S4fM	Contribute to solving problems - missing	0 = Not missing 1 = Missing	6/10
Schmn	School mean performance		6/10

APPENDIX G: CIVICS AND CITIZENSHIP PROFICIENCY LEVELS

Proficiency Level	Selected Item Response Descriptors
<p>Level 5 Students working at Level 5 demonstrate accurate civic knowledge of all elements of the Assessment Domain. Using field-specific terminology, and weighing up alternative views, they provide precise and detailed interpretative responses to items involving very complex Civics and Citizenship concepts and also to underlying principles or issues.</p>	<ul style="list-style-type: none"> • Identifies and explains a principle that supports compulsory voting in Australia • Recognises how government department websites can help people be informed, active citizens • Analyses reasons why a High Court decision might be close • Explains how needing a double majority for constitutional change supports stability • Explains the significance of Anzac Day • Analyses the capacity of the internet to communicate independent political opinion. • Analyses the tension between critical citizenship and abiding by the law
<p>Level 4 Students working at Level 4 consistently demonstrate accurate responses to multiple choice items on the full range of complex key Civics and Citizenship concepts or issues. They provide precise and detailed interpretative responses, using appropriate conceptually-specific language, in their constructed responses. They consistently mesh knowledge and understanding from both Key Performance Measures</p>	<ul style="list-style-type: none"> • Identifies and explains a principle that supports compulsory voting in Australia • Identifies how students learn about democracy by participating in a representative body • Explains a purpose for school participatory programs in the broader community • Explains a social benefit of consultative decision-making • Analyses why a cultural program gained formal recognition • Analyses an image of multiple identities • Identifies a reason against compulsion in a school rule • Recognises the correct definition of the Australian constitution • Identifies that successful dialogue depends on the willingness of both parties to engage
<p>Level 3 Students working at Level 3 demonstrate relatively precise and detailed factual responses to complex key Civics and Citizenship concepts or issues in multiple choice items. In responding to open-ended items they use field-specific language with some fluency and reveal some interpretation of information.</p>	<ul style="list-style-type: none"> • Analyses the common good as a motivation for becoming a whistleblower • Identifies and explains a principle for opposing compulsory voting • Identifies that signing a petition shows support for a cause • Explains the importance of the secret ballot to the electoral process • Recognises some key functions and features of the parliament • Recognises the main role of lobby and pressure groups in a democracy • Identifies that community representation taps local knowledge • Recognises responsibility for implementing a UN Convention rests with signatory countries • Identifies the value of participatory decision making processes • Identifies the importance in democracies for citizens to engage with issues
<p>Level 2 Students working at Level 2 demonstrate accurate factual responses to relatively simple Civics and Citizenship concepts or issues in responding to multiple choice items and show limited interpretation or reasoning in their responses to open-ended items They interpret and reason within defined limits across both Key Performance Measures</p>	<ul style="list-style-type: none"> • Recognises that a vote on a proposed change to the constitution is a referendum • Recognises a benefit to the government of having an Ombudsman's Office • Recognises a benefit of having different political parties in Australia • Recognises that legislation can support people reporting misconduct to governments • Identifies a principle for opposing compulsory voting • Recognises that people need to be aware of rules before the rules can be fairly enforced • Recognises the sovereign right of nations to self-governance • Recognises the role of the Federal Budget • Identifies a change in Australia's national identity leading to changes in the national anthem • Recognises that respecting the right of others to hold differing opinions is a democratic principle • Recognises the division of governmental responsibilities in a federation

Level 1

Students working at Level 1 demonstrate a literal or generalised understanding of simple Civics and Citizenship concepts. Their cognition in responses to multiple choice items is generally limited to civics institutions and processes. In the few open-ended items they use vague or limited terminology and offer no interpretation.

- Identifies a benefit to Australia of providing overseas aid
- Identifies a reason for not becoming a whistleblower
- Recognises the purposes of a set of school rules
- Recognises one benefit of information about government services being available online
- Matches the titles of leaders to the three levels of government
- Describes how a representative in a school body can effect change
- Recognises that 'secret ballot' contributes to democracy by reducing pressure on voters

Below Level 1

Students working at below Level 1 are able to locate and identify a single basic element of civic knowledge in an assessment task with a multiple choice format.

- Recognises that in 'secret ballot' voting papers are placed in a sealed ballot box
 - Recognises the location of the Parliament of Australia
 - Recognises voting is a democratic process
 - Recognises Australian citizens become eligible to vote in Federal elections at 18 years of age
 - Recognises who must obey the law in Australia
-

APPENDIX H: PERCENTILES OF ACHIEVEMENT ON THE CIVICS AND CITIZENSHIP LITERACY SCALE

Table H.1 2004 and 2007 percentiles and range of the confidence interval around the mean on the Civics and Citizenship Literacy Scale for Year 6 students.

Percentile		95	90	75	Mean +95% CI	Mean	Mean -95% CI	25	10	5	Mean	95% CI	
Year 6	AUST	2004	558	525	470	407	400	393	334	270	229	400	6.7
		2007	565	534	479	411	405	400	339	266	220	405	5.5
	NSW	2004	576	546	491	434	418	402	350	286	241	418	15.4
		2007	581	553	499	443	432	421	373	306	259	432	11.0
	ACT	2004	574	543	494	434	423	411	361	290	243	423	11.3
		2007	584	558	499	446	425	405	357	288	246	425	20.5
	VIC	2004	561	531	482	428	417	405	357	294	257	417	10.9
		2007	564	536	489	429	418	408	356	292	247	418	10.1
	TAS	2004	551	519	466	408	393	377	327	256	210	393	15.1
		2007	580	546	481	419	401	383	323	242	201	401	17.7
	SA	2004	534	505	453	398	381	364	315	248	208	381	16.6
		2007	554	518	454	400	385	369	318	248	198	385	15.1
	QLD	2004	516	487	437	384	371	357	310	250	212	371	13.2
		2007	546	512	453	390	376	363	306	239	194	376	13.5
	WA	2004	532	497	439	385	371	358	305	242	203	371	13.2
		2007	529	498	445	380	369	358	305	229	181	369	10.9
	NT	2004	534	506	448	388	371	353	299	227	187	371	17.1
		2007	533	489	418	299	266	233	145	-46	-131	266	32.8

Table H.2 2004 and 2007 percentiles and range of the confidence interval around the mean on the Civics and Citizenship Literacy Scale for Year 10 students.

Percentile		95	90	75	Mean +95% CI	Mean	Mean -95% CI	25	10	5	Mean	95% CI	
Year 10	AUST	2004	664	631	575	503	496	489	428	345	289	496	7.0
		2007	681	646	585	510	502	493	429	345	295	502	8.6
	NSW	2004	679	648	594	532	521	511	457	381	337	521	10.6
		2007	714	679	618	546	529	512	456	361	311	529	17.0
	ACT	2004	687	654	595	540	518	496	452	370	305	518	21.5
		2007	703	669	608	543	523	504	458	358	285	523	19.6
	SA	2004	624	597	546	482	465	448	401	307	242	465	16.2
		2007	673	639	581	528	505	481	443	358	304	505	23.4
	VIC	2004	665	634	577	513	494	474	424	338	284	494	19.0
		2007	665	634	577	511	494	477	424	337	288	494	17.1
	TAS	2004	658	624	569	506	489	472	421	334	279	489	16.6
		2007	674	636	575	501	485	469	400	310	258	485	16.0
	QLD	2004	635	602	549	487	469	451	400	318	259	469	17.6
		2007	641	610	554	495	481	467	415	341	298	481	13.9
	WA	2004	653	620	567	504	486	468	420	334	270	486	17.5
		2007	651	617	558	500	478	455	405	320	262	478	22.6
	NT	2004	668	635	570	524	490	457	420	345	285	490	33.2
		2007	649	619	553	502	464	426	408	288	165	464	38.1