



## Year 12 Literacy and Numeracy achievement standards: the Western Australian experience

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The purpose of this paper is to describe the establishment and implementation of Year 12 literacy and numeracy achievement standards in Western Australia. The process began with a report to the Western Australian Minister of Education and Indigenous Affairs in December 2012 and was fully implemented for the 2016 Year 12 cohort in Western Australian schools, and international schools approved to implement the Western Australian curriculum.

### Background to the establishment of Year 12 literacy and numeracy achievement standards

In 2012 the Western Australian Minister for Education and Indigenous Affairs established the Senior School Curriculum and Certification Committee, to review the Western Australian Certificate of Education (WACE). The review was in response to widespread concerns that were emerging in relation to senior secondary schooling in Western Australia. The report of this committee, *The Western Australian Certificate of Education 2015: Responding and adapting* (The Report) (Senior School Curriculum and Certification Committee, 2012), formed the basis of a set of reforms to the WACE announced by the Premier of Western Australia and the Minister for Education and Indigenous Affairs in January 2013.

The Report identified several concerns with the structure of the WACE at that time, including significant concerns regarding the standards of literacy and numeracy achieved by students who achieved a WACE. The Report indicated that there were widely held views that students receiving a WACE were poorly prepared for subsequent education pathways, particularly into vocational education and training (VET). Feedback from State training providers and employer groups indicated many students were not achieving levels of literacy and numeracy that would enable them to successfully transition to VET programs and to work. The Report emphasised, as a guiding principle for the reformed WACE, that 'after thirteen years of schooling, students should demonstrate a minimum level of literacy and numeracy'.

Significant concerns regarding literacy and numeracy levels among school students and the wider population have been raised nationally and in Western Australia over several years (e.g. Australian Bureau of Statistics, 2008 and 2012; Literacy and Numeracy Taskforce, 2006; Shomos and Forbes, 2014) and calls for action have become more strident in recent years (e.g. The Australian Industry Group, 2016; Goss and Sonnemann, 2016).

In order to address the widespread concerns regarding the levels of literacy and numeracy among school leavers the Report proposed that:

*Literacy and numeracy tests will be provided that students are required to complete to demonstrate achievement at or above a minimum standard in order to receive a WACE.*

- *The tests will be mapped to the Australian Core Skills Framework (ACSF). Achievement will be reported on a band scale with a minimum standard based on the skills regarded as essential for individuals to meet the demands of everyday life and work in a knowledge-based economy.*
- *During their senior secondary schooling, students will have multiple opportunities to demonstrate achievement at or above the minimum literacy and numeracy standards. Students will be able to repeat the tests at semester intervals.*

A key element of the design brief for the reformed WACE was that it must provide students, parents and the public with a clear statement of whether a student has met the minimum standards of literacy and numeracy required to enter training or the workplace.

## Development of policy in relation to the establishment of Year 12 literacy and numeracy achievement standards

During 2013, the Authority consulted widely with key stakeholders and embarked on the development of a literacy and numeracy test. Following analysis of results from a trial set of assessments, the Authority distributed to schools *Supplementary Information to the Report: The Western Australian Certificate of Education 2015 Responding and Adapting* (School Curriculum and Standards Authority, 2013) which identified the requirements for achieving the minimum standards of literacy and numeracy to achieve a WACE. This document:

- identified Level 3 of the *Australian Core Skills Framework (ACSF)* as the minimum standard for students to achieve a WACE
- provided that students who achieve Band 8 or higher in any component (reading, writing or numeracy) in Year 9 NAPLAN would be recognised as demonstrating the standard required for that component
- stipulated that students would be required to satisfy both the reading and writing components in order to demonstrate the WACE literacy standard
- established a requirement for students who had not prequalified through their Year 9 NAPLAN results to sit the Authority's Online Literacy and Numeracy Assessment (OLNA) in Semester 1, Year 10
- established a requirement that students not demonstrating the standard in Semester 1, Year 10 must sit the OLNA in Semester 2, Year 10, and, if required, Semester 1, Year 11. From then on students could choose when next to sit the assessment
- indicated that students with identified special needs may choose not to sit the assessment thereby becoming ineligible for a WACE but would receive a Western Australian Student Statement of Achievement (WASSA).

The Authority provides adjustments for students diagnosed with disability, impairment, illness or impediment.

Foundation courses in English and Mathematics, specifically designed to support students achieve the minimum standards in literacy and numeracy, were provided for students whose literacy and/or numeracy were well below the required standard.

## Development and structure of the Online Literacy and Numeracy Assessment (OLNA)

In developing the OLNA, test domains were constructed from measurement scales described in the nationally endorsed ACSF. The ACSF was chosen as an appropriate standards framework as it has the potential to be used in formative and summative assessment and has found application in several states. Test specifications were developed to ensure that testing of literacy and numeracy aligned with level three of the ACSF.

A comprehensive qualitative analysis was undertaken to establish the relationship between the OLNA standards and the NAPLAN scales. This analysis provided adequate justification that students who achieved NAPLAN Band 8 or higher would be considered as having demonstrated the ACSF Level 3 standard. A subsequent common person study was conducted to further validate the alignment of the OLNA scales to the NAPLAN scales.

The standard-setting trial process is described in some detail in Chapter 3 of the *Technical Report to the Western Australian School Curriculum and Standards Authority (SCSA) on the History, Design and Development of the Online Literacy and Numeracy Assessment (OLNA)* (OLNA Technical Report) (Tognolini and Taylor, 2016).

The OLNA Technical Report reviews the psychometric properties of the OLNA reading, numeracy and writing assessments, describes the strategies establishing scales and equating assessments over time, and describes how the standard setting procedures for reading, numeracy and writing were aligned to the ACSF. Specifically, the Report concluded that the OLNA had sound psychometric properties and supported the Authority's position that the minimum standard on the OLNA scales occurs within NAPLAN Band 7, justifying the policy decision to prequalify students who have achieved Band 8 or higher for Year 9 NAPLAN in the reading, numeracy and writing components.

## Application of the OLN, its use as a diagnostic tool and feedback to schools

The OLN was first provided formally to Year 10 Western Australian students in Semester 1, 2014. It has been offered every semester, in March and September, each year since.

Following each assessment period, the Authority provides schools with diagnostic information for teachers to help their students achieve the minimum standards. In terms of reporting, the assessment is designed to certify the level of performance in Literacy (Reading and Writing) and Numeracy against five performance categories:

Performance category	Descriptor
Did not sit	Students who did not sit the test or assessment result not available
Category 1	Students who have not demonstrated the minimum standard and may require interventions; it is recommended that these students consider enrolling in Foundation courses
Category 2	Students who have not yet demonstrated the minimum standard
Category 3	Students who have demonstrated the minimum standard through OLN
Pre-qualified	Students who have demonstrated the minimum standard through NAPLAN by achieving Band 8 or higher in Year 9 NAPLAN

The Authority provides schools with an individual student report for each student who has demonstrated a Category 1 or Category 2 performance.

For students who are in Category 2 for reading and numeracy, the report lists the 10 easiest skills the student did not demonstrate on the test; in writing, the report lists the three criteria in which the student had the lowest scores.

For students who are in Category 1 for reading and numeracy the report lists the 20 easiest skills the student did not demonstrate on the test; for writing, the report lists the five criteria in which the student had the lowest scores.

Some schools download the individual report for distribution to students and parents. Many schools use these individual reports to tailor remediation programs for students and to target the skills that require further development.

## Growth in literacy and numeracy achievement in the first cohort from Year 9 (2013) to Year 12 (2016)

The tables below indicate the numbers and percentages of 2016 Year 12 students who:

- (i) prequalified on the basis of their Year 9 NAPLAN results and
- (ii) qualified in a subsequent ONLA assessment in Years 10, 11 or 12.

Two tables are presented; the first includes all students who were registered with schools as Year 12 students in 2016 (includes students on notices of arrangement, students in CARE schools and education support centres, and students enrolled in engagement programs), and the second includes only those full-time students who were registered with schools and were eligible for a WACE (i.e. they had completed the required number of units and either four Year 12 ATAR courses or a Certificate II or higher).

**Table 1: Year 12 registered students** who achieved the literacy and numeracy standard (excluding international students)

Population 30 441	Pre-qualified (number)	Pre-qualified (%)	Achieved through OLNA (number)	Achieved through OLNA (%)	Achieved the standard (total number)	Achieved the standard (%)
Reading	13 236	43.5	12 974	42.6	26 210	86.1
Writing	11 158	36.7	14 678	48.2	25 836	84.9
Numeracy	13 123	43.1	12 166	40.0	25 289	83.1
All components	7 002	23.0	17 083	56.1	24 085	79.1

**Table 2: Year 12 full-time WACE eligible students** who achieved the literacy and numeracy standard (excluding international students)

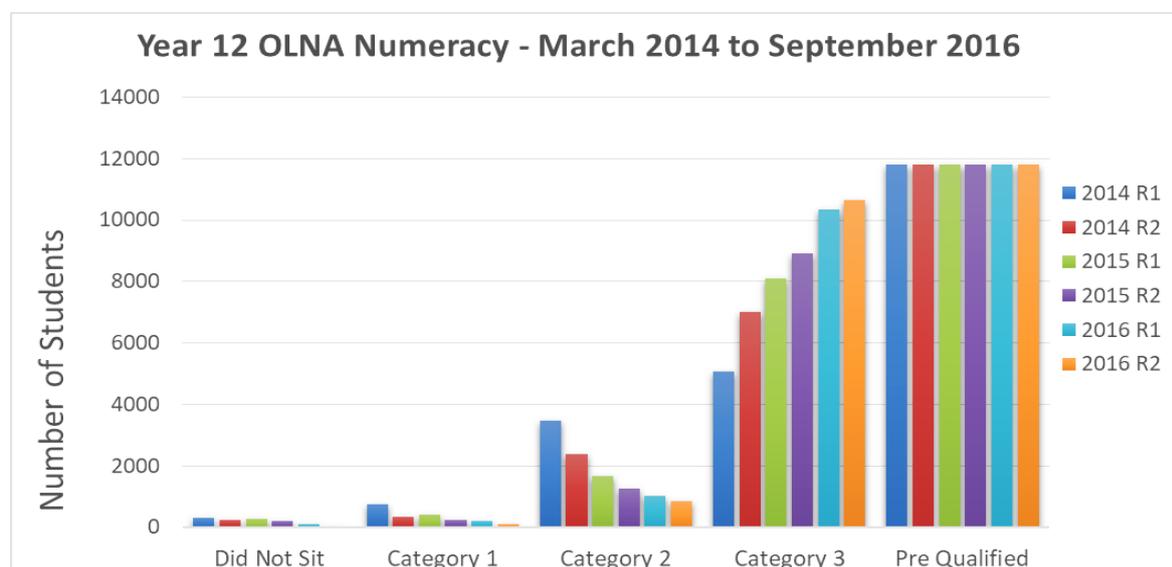
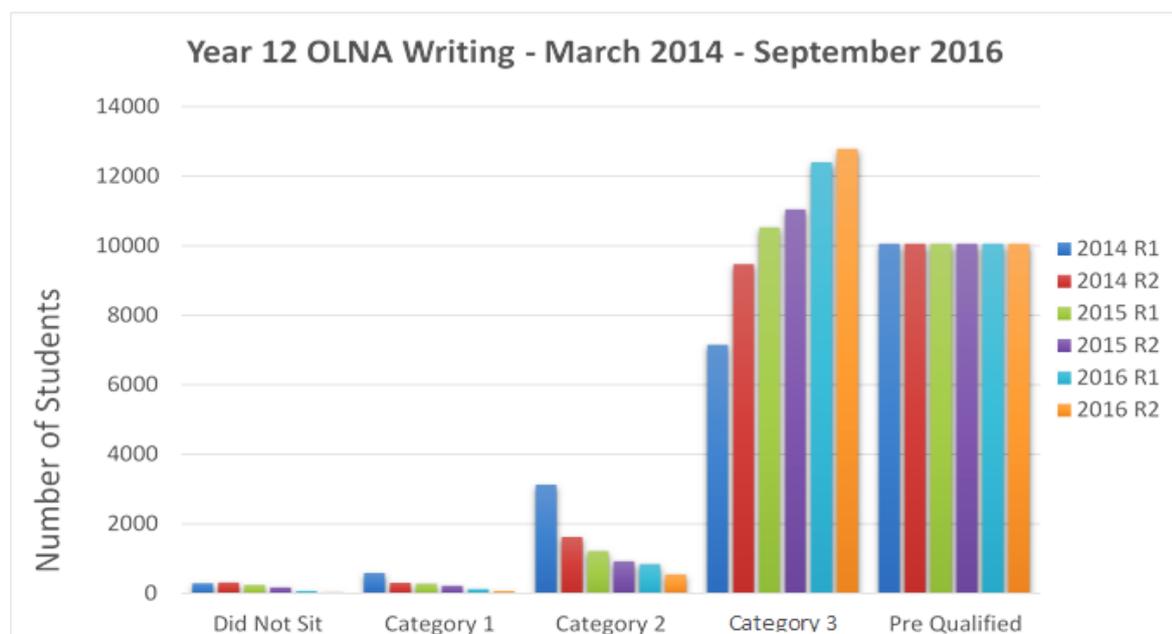
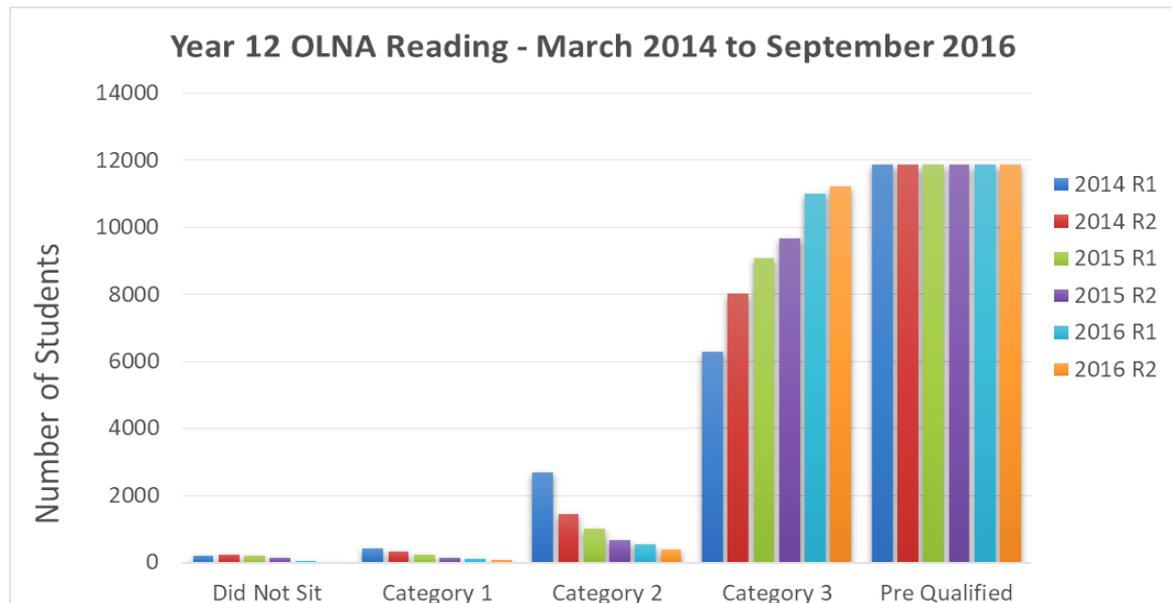
Population 23 360	Pre-qualified (number)	Pre-qualified (%)	Achieved through OLNA (number)	Achieved through OLNA (%)	Achieved the standard (total number)	Achieved the standard (%)
Reading	11 760	50.4	11 088	47.5	22 848	97.9
Writing	10 020	43.0	12 668	54.3	22 688	97.3
Numeracy	11 831	50.7	10 536	45.2	22 367	95.9
All components	6 556	28.1	15 339	65.8	21 895	93.9

The data indicates that for the WACE-eligible students the percentage of students demonstrating the standard increased from:

- 50.4% to 97.9% in reading
- 43.0% to 97.3% in writing
- 50.7% to 95.9% in numeracy
- 28.1% to 93.9% in all three components.

The steady improvement in the percentages of eligible students achieving the standards over the 2014–16 period is clearly evident in Figure 1. This improvement is due to the sustained efforts of schools and their teachers across the State who have embraced the importance of students developing satisfactory levels of literacy and numeracy as part of the WACE.

**Figure 1: Improvement in literacy and numeracy achievement for the 2016 Year 12 cohort from 2013 to 2016**



## Shifts in pedagogical approaches in schools and some brief case histories (specific schools)

We consider that the introduction of the WACE literacy and numeracy standards has led to significant changes in practice in Western Australia. The three brief case histories below are of schools which have demonstrated extraordinary improvements in student achievement of the literacy and numeracy standards over the 2013–16 period.

Eastern Goldfields College is a large regional public high school located in Kalgoorlie and has a relatively challenging student profile. With a 2016 Year 12 cohort of 203 students, the College is one of the largest senior secondary schools in Western Australia. The achievement of these 203 students of the literacy and numeracy standards is shown in Table 3.

**Table 3:** Year 12 Eastern Goldfields College students who achieved the literacy and numeracy standard (excluding international students)

Population 203	Pre-qualified (number)	Pre-qualified (%)	Achieved through OLNA (number)	Achieved through OLNA (%)	Achieved the standard (total number)	Achieved the standard (%)
Reading	49	24.1	125	61.6	174	85.7
Writing	51	25.1	120	59.1	171	84.2
Numeracy	50	24.6	112	55.2	162	79.8

This remarkable record of success was the result of a carefully planned effort to improve the literacy and numeracy skills of the school's students. The College used the individual feedback the Authority provided as a result of each sit of the OLNA assessments to develop individual programs to support students. Staff, including the deputy principals and principal, worked with students who voluntarily attended after-school classes focused on improving their reading, writing and numeracy skills.

The Principal, Dan McCormack, said that 'the introduction of OLNA has turned a spotlight on literacy and numeracy and although not all students have demonstrated the required standard most students have continued to improve their results over the 2014–16 period.'

Balga Senior High School is a metropolitan public high school with a culturally diverse student population from over 40 nationalities. English is an additional language for many of the students who attend Balga. The school has demonstrated an extraordinary improvement in the achievement of the literacy and numeracy standards of its 88 2016 Year 12 students. This is shown in Table 4.

**Table 4:** Year 12 Balga Senior High School students who achieved the literacy and numeracy standard (excluding international students)

Population 88	Pre-qualified (number)	Pre-qualified (%)	Achieved through OLNA (number)	Achieved through OLNA (%)	Achieved the standard (total number)	Achieved the standard (%)
Reading	3	3.4	37	42.0	40	45.5
Writing	0	0.0	37	42.0	37	42.0
Numeracy	2	2.3	30	34.1	32	36.4

Students worked in ability groups on individual learning programs. The school offered OLNA support tutoring and materials during lunch times, after school twice a week and on at least three days in the holiday breaks. Through targeted literacy and numeracy interventions, and the support of their teachers, support staff, mentoring organisations and outside volunteers, a significant group of this cohort demonstrated the required literacy and numeracy standards by the end of 2016. School Principal, Geoff Harris, stated that ‘OLNA, for the very diverse group of students we have at Balga SHS, 62% with less than four years English speaking and 26% of Aboriginal culture, is now regarded highly by students as the skill benchmark they need to achieve for future career steps. To that end, we have had 19 ex-Year 12 students return in 2017 to repeat OLNA.’

Alta-1 College is a CARE school that provides an alternative education program for young people between the ages of 12 and 19 years who have been marginalised by mainstream education. Many of the students in Alta-1 College have struggled to engage with mainstream schooling and may have refused to attend school or have had disrupted learning pathways.

The Alta-1 program enables young people who are not suited to mainstream schooling to complete secondary education. Delivered within a supportive and individually focused context, the Alta-1 program incorporates a mix of both school and TAFE-equivalent components. The College provides relational and flexible curriculum that focuses on social, emotional and psychological issues whilst working towards regaining an academic pathway, with the intention of supporting students to achieve secondary school graduation.

The achievement of the literacy and numeracy standards by the 43 students who completed Year 12 in 2016 is shown in Table 5.

**Table 5:** Year 12 Alta-1 College students who achieved the literacy and numeracy standard

Population 43	Pre-qualified (number)	Pre-qualified (%)	Achieved through OLNA (number)	Achieved through OLNA (%)	Achieved the standard (total number)	Achieved the standard (%)
Reading	5	11.6	33	76.7	38	88.4
Writing	6	14.0	34	79.1	40	93.0
Numeracy	3	7.0	30	70.0	33	76.7

The Alta-1 Principal, Dave Stevens, stated that ‘the College has two clearly stated targets, social and emotional change and academic change. Whilst the College works hard to grow the academic skills of its students, it spends as much time exploring the development of students’ emotional tools and skills. The success of the College’s holistic approach can be seen in the improvement in the students’ OLNA results.’

## Conclusion

The reforms to the WACE announced in early 2013 were fully implemented for the first cohort of Year 12 students in 2016. These reforms were designed to improve standards of student achievement generally and to ensure that students were better prepared for subsequent educational pathways, whether in higher education or vocational education and training. An important aspect of the reforms was that students were required to demonstrate levels of literacy (reading and writing) and numeracy at, or above, Level 3 of the Australian Core Skills Framework. Our experience indicates that schools, teachers and students have responded in a very positive way to this challenge. The data provided in this paper indicates the very significant growth in this student cohort’s levels of literacy and numeracy from 2013 to 2016. The examples of practices in three schools are illustrative of the way in which many Western Australian schools have worked to improve their students’ literacy and numeracy skills.

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