MONITORING THE EFFECTIVENESS OF THE FOUNDATION – YEAR 10 AUSTRALIAN CURRICULUM

2018

AC | Australian CURRICULUM

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1. EXECUTIVE SUMMARY

The Australian Curriculum, Assessment and Reporting Authority (ACARA) reports on stakeholder feedback on the implementation of the Australian Curriculum (AC). This report reflects the annual process of collecting and synthesising information that will inform future curriculum renewal. The report for the 2017–18 monitoring cycle is provided here.

Since 2009, the staged release of the three-dimensional AC has brought new opportunities and challenges to all who have an interest in school education in the 21st century. In 2016 the first generation of the national curriculum for students in Foundation – Year 10 was completed, labelled Version 8.3.

This fourth ACARA monitoring report continues the progression from curriculum development and publication to curriculum support, with ongoing publication of resources and advice materials. In addition, it continues a program of national and international research to inform future iterations of the AC.

The 2018 monitoring report contains feedback collected between 1 July 2017 and 30 June 2018. Responses were received from departmental, school and curriculum authorities in most Australian states and territories. Respondents were asked to place a particular emphasis on the implementation of the Australian Curriculum: Technologies (AC: T) and its alignment with the Information and Communication Technologies (ICT) capability, and how literacy and numeracy are addressed across the curriculum.

Feedback suggests broad satisfaction with the AC, including the Digital Technologies curriculum and ICT capability, and the place of, and emphasis on, literacy and numeracy. However, there is also a clear indication that further clarification, advice and support materials would benefit jurisdictions in their implementation of these elements of the curriculum.

Key issues and requests for advice arising from the 2018 monitoring process and responses are listed in the table below:

Issue/request	Response
Technologies and the ICT capability • curriculum coherence • language and terminology consistency • resources	Clarify the alignment between the AC: Technologies – Digital Technologies and the ICT capability, review the glossary for coherence across Technologies and ICT capability, expand resources for the Digital Technologies subject
Literacy and numeracy • clarification of purpose of capabilities v. progressions • resources	Provide advice on the alignments across literacy and numeracy in learning areas, capabilities and the national literacy and numeracy learning progressions; provide further resources to support understanding of the national literacy and numeracy learning progressions.

1. BACKGROUND

The *Shape of the Australian Curriculum* paper, first approved by the council of Commonwealth and state and territory education ministers in 2009, guides the development of the AC. This paper reflects the position adopted by ministers collectively in their 2008 Melbourne Declaration on Educational Goals for Young Australians. The most recent version of the *Shape of the Australian Curriculum* v4.0 was approved by the ACARA Board in late 2012, reflecting the evolving processes used in the development of the AC.

The process of curriculum development involves four interrelated phases: shaping, writing, implementation, and monitoring and evaluation.

Over a period of eight years, curriculum was developed in eight learning areas for Foundation – Year 10. In 2015, the Education Council endorsed what is now Version 8.3 of the AC, with the publication of the final subjects and framework in the Australian Curriculum: Languages (AC: L) in 2016.

Since 2012 and in addition to the Foundation – Year 10 curriculum, 15 senior secondary subjects have been endorsed as the agreed and as a common base for the development of, and inclusion in, state and territory curricula, according to their own processes and timelines.

Australia's federal system of government allocates responsibility for the delivery of school education to the states and territories. Therefore, all jurisdictions' curriculum and school authorities have determined the pace and nature of the implementation of the AC. Decisions are made in each jurisdiction in relation to changing any existing curricula, ensuring the readiness of teachers, schools and systems, making resources and other support available and engaging constructively with ACARA.

The annual monitoring process is described in the paper noted in 2013 by Education Council: *Monitoring and Evaluation of the Australian Curriculum*.

For the 2017–18 monitoring cycle, all states and territories were invited to provide specific feedback on the AC's Technologies curriculum and the ICT capability, and on literacy and numeracy across the curriculum. With the completion of the AC, states and territories are now in a position to reflect on the three-dimensional nature of the AC. For most stakeholders, this monitoring cycle continues a sustained period of curriculum stability with a focus on implementation.

The 2017–18 period was marked by the development of resources to support states and territories in their implementation of the curriculum, such as the national literacy and numeracy learning progressions (NLNLP), further student work samples and illustrations of practice.

2. METHODOLOGY

The 2018 *Monitoring the Effectiveness of the Foundation – Year 10 Australian Curriculum* report summarises feedback from states and territories that reflects the monitoring cycle of 1 July 2017 – 30 June 2018. The main sources of feedback are curriculum and school authorities.

ACARA's Chief Executive Officer, Mr Robert Randall, wrote to key stakeholders in May 2018 to invite participation in the monitoring process. Comment was requested on any aspect of the Foundation – Year 10 AC, but with a detailed consideration of the following two areas:

1. Technology in the curriculum

   a. Could you provide a high-level summary of the implementation of the ICT capability, and the two subjects of the Technologies F–10 curriculum?
   b. Could you comment on consistencies between the ICT general capability and the AC: Digital Technologies subject?

2. Literacy and numeracy demands across the curriculum. You may wish to refer to the relationships among:

   a. Literacy demands in learning areas
   b. Numeracy demands in learning areas
   c. Literacy general capability
   d. Numeracy general capability
   e. Literacy learning progression
   f. Numeracy learning progression.

Twenty-one submissions were received from departmental, curriculum and school authorities. The list is provided in appendix A.

An overview of implementation of the AC across all states and territories is provided on pp. 9–13.

3. RESPONSES TO THE PREVIOUS MONITORING REPORT ISSUES AND REQUESTS

a. Findings from the 2016–17 monitoring of the Australian Curriculum

The 2017 monitoring report noted the following key findings in relation to the focus questions on the implementation of the AC's cross-curriculum priorities and support for student diversity:

- The cross-curriculum priorities as one of the three dimensions of the AC are supported.
- While jurisdictions provide advice and support for the integration of the priorities in teaching and learning, there is some variability across schools and systems in implementation.
- Schools and teachers require more support and resources to assist their understanding of the priorities, in particular the Aboriginal and Torres Strait Islander Histories and Cultures priority.
- Systems and schools use the resources of the AC in relation to gifted and talented students, students for whom English is an additional language or dialect, and students with disability.
- Further resources, in particular illustrations of practice, would enhance understanding of and support for student diversity.

b. Responses

During the current monitoring period, the following responses to these findings were undertaken:

- Further Illustrations of practice in Aboriginal and Torres Strait Islander Histories and Cultures have been developed for publication on the AC website.
- Development commenced of new content elaborations and teacher background information in relation to the Australian Curriculum: Science (AC: S), aligned to the Aboriginal and Torres Strait Islander Histories and Cultures priority.
- Further illustrations of practice to enhance advice in relation to student diversity have been developed for publication on the AC website.
- Review and refinement of the AC website pages in relation to student diversity commenced.

4. OVERVIEW OF JURISDICTIONAL IMPLEMENTATION OF THE AUSTRALIAN CURRICULUM: 2017–18

Learning area	Australian Capital Territory	New South Wales	Northern Territory	South Australia	Tasmania	Victoria	Western Australia	Queensland
English	Implemented	K–10 English syllabus incorporates AC: English content and glossary; includes additional content	Implemented	Implemented	Implemented	Implemented (includes levels prior to Foundation)	Version 8.3 implemented in 2017	Implemented
Mathematics	Implemented	K–10 Mathematics syllabus incorporates AC: Mathematics content and glossary; includes additional content	Version 7.5 and 8.3 during 2016 and version 8.3 only in 2017	Implemented	Implemented	Implemented (more content than the AC, including algorithmic thinking and sets)	Version 8.3 implemented in 2017	Implemented
Science	Implemented	7–10 Science syllabus incorporates AC: Science content and glossary; K–6 Science and Technology syllabus incorporates AC: Science, Digital Technologies and Design and Technologies; syllabuses include additional content	Version 8.3 only from 2017	Implemented	Implemented	Implemented	Version 8.3 implemented in 2017	Implemented

Learning area	Australian Capital Territory	New South Wales	Northern Territory	South Australia	Tasmania	Victoria	Western Australia	Queensland
Humanities and Social Sciences	Implemented	K–10 History and Geography syllabuses incorporate AC: History and Geography content and glossary; commerce Years 7–10 elective course under review to incorporate AC: Economics and Business, and AC: Civics and Citizenship content; Mathematics K–10 syllabus includes financial concepts and skills; BSW Work Education Years 7–10 course under review to incorporate AC: Work Studies content; NSW incorporates civics and citizenship, and work and enterprise as learning across curriculum	Version 7.5 and 8.3 during 2016 and version 8.3 only in 2017	Implemented	Govt schools' implementation Version 8.3 by 2017 for primary HASS, History and Geography, Civics and Citizenship, and Economics and Business; IST schools' implementation Version 8.3 by 2018 for primary HASS, History and Geography, Civics and Citizenship, and Economics and Business	Implemented in 2017 (incorporates AC Version 7.5)	Implemented in 2017 (combines the four disciplines of HASS F–10 with single set of Humanities and social science skills)	Implemented
Health and Physical Education	Implemented in 2017	PDHPE K–10 syllabus incorporates AC: Health and Physical Education content and glossary; includes additional content	Version 8.3 only in 2017	Implemented	Implemented	Implemented in 2017	Implemented in 2017 (separate reporting of H and PE)	Implemented in 2017 in Catholic schools;

Learning area	Australian Capital Territory	New South Wales	Northern Territory	South Australia	Tasmania	Victoria	Western Australia	Queensland
								implementation by 2020 in DoE and ISQ schools
The Arts	Implemented	Creative Arts K–6 and Creative Arts 7–10 syllabuses continue to be used; draft K–6 Creative Arts syllabus incorporates AC: The Arts Years F–6; includes additional content	Implemented	Implemented	Govt schools implementing Version 8.3 by end of 2019 for secondary schools; primary schools commence implementation from 2019; IST schools implementing Version 8.3 at own pace	Implemented	Implemented	Implementation of Version 8.3 in DoE schools by end 2020; implementation in independent schools at their own pace
Technologies	Implemented in 2017; reporting in 2018	Technology 7–8 syllabus incorporates AC: 7–8 Digital Technologies and Design and Technologies content and glossary; K–6 Science and Technology syllabus incorporates AC: Science, Digital Technologies and Design and Technologies; draft	Version 8.3 implemented in 2017	Implemented	Version 8.3 implemented in 2016 (Catholic DT), Govt primary schools implementing in 2018, trialing implementing in secondary schools in 2019;	Implemented	Implemented	Implementation of Version 8.3 in DoE and Catholic schools by 2020; implementation in independent schools at own pace

Learning area	Australian Capital Territory	New South Wales	Northern Territory	South Australia	Tasmania	Victoria	Western Australia	Queensland
		Years 7–10 syllabuses under review for Agricultural Technology, Design and Technology, Food Technology, Graphics Technology, Industrial Technology, Marine and Aquaculture Technology and Textiles Technology will incorporate AC: Design and Technologies content; syllabuses include additional content; Year 7–10 Information and Software Technology under review and will incorporate AC: Digital Technologies content			IST schools implementing by 2020			
Languages	Implemented in 2017	Languages K–10 Framework published 2016; syllabuses developed for Chinese, Japanese, French, German, Indonesian, Italian, Korean, and Spanish incorporating AC: Languages content; draft syllabuses finalised in 2018 for Arabic, Modern	Implemented	Implemented	Govt schools' implementation from 2019; IST schools implementing at own pace	Implemented	Implemented from Year 3 2018, Year 4 2019 and by 2023 in Year 8.	Implemented in DoE and Catholic schools by 2020; implementing in independent schools at own pace

Learning area	Australian Capital Territory	New South Wales	Northern Territory	South Australia	Tasmania	Victoria	Western Australia	Queensland
		Greek, Turkish, Vietnamese incorporate AC Languages content; K–10 syllabus being developed for Hindi that incorporates AC Language content						
General capabilities	Implemented as part of learning areas	Learning across curriculum content, including cross-curriculum priorities, general capabilities and other areas identified as important learning for all students, is incorporated into learning area content, identified by icons	Implemented	Implemented	Govt schools implemented as part of learning areas; IST schools implemented	Modified and developed achievement standards for PSC, EU, ICU, CCT	Implemented as part of learning areas	Implemented as part of learning areas
Cross-curriculum priorities	Implemented as part of learning areas	Learning across curriculum content, including cross-curriculum priorities, general capabilities and other areas identified as important learning for all students, is incorporated into learning area content, identified by icons	Implemented as part of learning areas	Implemented as part of learning areas	Govt and IST schools implemented as part of learning areas	Implemented as part of learning areas	Implemented as part of learning areas	Implemented as part of learning areas

5.   THE USE OF THE AUSTRALIAN CURRICULUM (AC) WEBSITE 2017–18

a.   Overview

Analysis of the use of the AC website forms a part of the 2017–18 monitoring report. ACARA continues to be mindful of the importance of monitoring the website's usability and functionality, informed by Google Analytics.[1] The AC is delivered solely in electronic format.

A project to redevelop the AC website was completed during the 2016–17 monitoring period, incorporating stakeholder feedback on the site's usability and functionality from the 2015–16 monitoring report and user surveys. The new website, launched in 2017, is contemporary and flexible in design and usability, and incorporates a variety of navigation options.

Prior to mid-2017, the AC website was hosted by Education Services Australia. ACARA now hosts the AC website, incorporating a different structure. At the changeover on 12 July 2017, the former Google Analytics tracking code[2] was replaced. These changes have impacted the results delivered in this report. The new structure means that data cannot be extracted in the same manner to perform identical comparative analyses in a different reporting period.

Throughout this section of the monitoring report, representations of data are provided in graphs to allow information dissemination in pictorial form. It should be noted that the information provided does not represent 'like for like' data from different reporting periods due to the changes to web hosting and website structure. However, year comparisons have been included given broad similarities of the data analysis.

b.   Analysis of website usage

General demographics

For the 2017–18 monitoring period, over 1.3 million users accessed the AC website with almost 17 million pageviews. Over this period, the month of May 2018 registered the heaviest website traffic.

This analysis of website usage refers to Version 8.3, launched on 14 December 2016, following the inclusion of Australian Curriculum: Languages (Classical and Auslan).

Website usage

Usage by state/territory

State and territory website usage based on pageviews[3] is demonstrated in figure 1. In the 2017–18 reporting period, Queensland recorded higher usage than any other state or

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[1] Google Analytics is a web analytics tool to track and report website traffic

[2] Google Analytics tracking code for 2015–16 and 2016–17: UA-17486320-4; for 2017–18: UA-17486320-15

[3] Pageviews is a metric defined as the total number of pages viewed (Google Analytics, 2018)

territory, with over 5 million pageviews. South Australia followed with almost 2.9 million pageviews, New South Wales and Victoria with over 2.3 million, and Western Australia with almost 1.4 million pageviews. Tasmania recorded over 850,000 pageviews, the Australian Capital Territory over 680,000 and the Northern Territory almost 300,000 pageviews.

The number of pageviews recorded in a reporting period may be impacted by the implementation of local versions of the curriculum. Additionally, teachers may regularly refer to hard copy curriculum documents, and this will not be reflected in digital curriculum usage results as data cannot be collected.
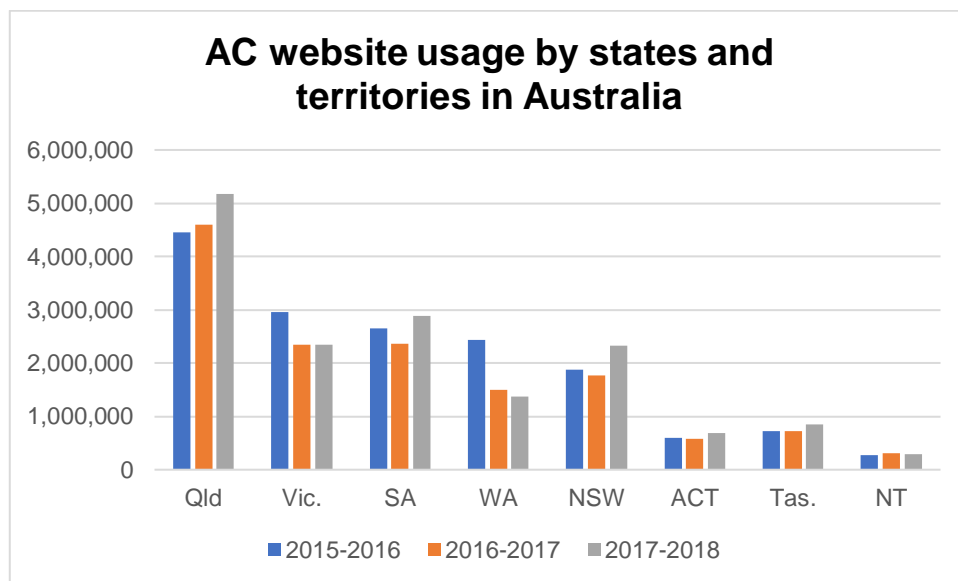

Figure 1. AC website usage by states and territories, based on pageviews, 2015–2018[4]

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[4] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

Figure 2 provides statistics for the population of each state and territory in Australia. This can be used to compare AC website usage by pageviews and population. Pageviews are lower when compared to population in states that are using their own website versions of the Australian Curriculum.
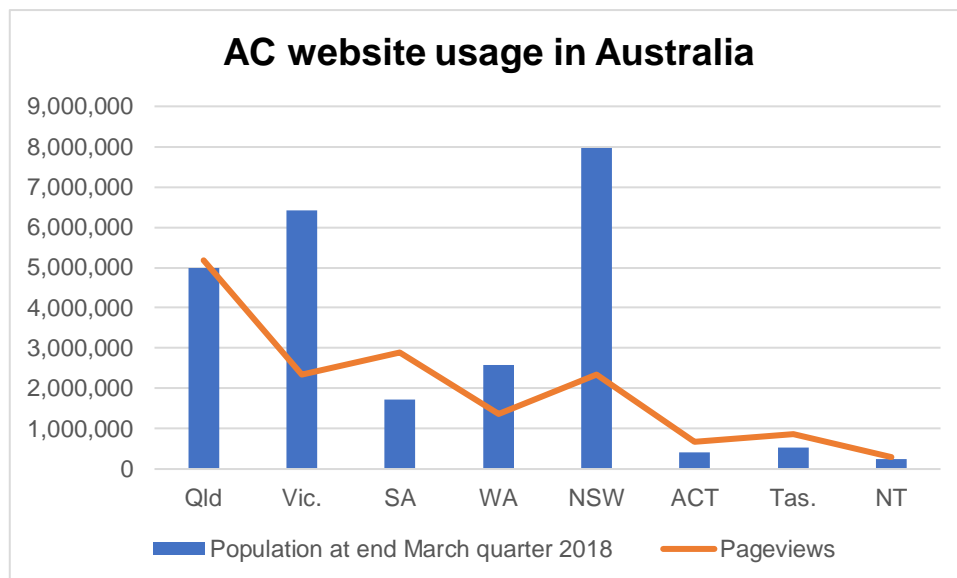

Figure 2. AC pageviews compared to Australian population by states and territories at the end of March 2018.[5] Based on and includes data supplied by the ABS

Internal advice regarding the ACARA website bounce rate[6] indicates that a rating of below 40 per cent is considered desirable. In all learning areas, during the 2017–18 reporting period, bounce rates ranged from 15.63 per cent to 26.83 per cent as demonstrated in figure 3. The lowest bounce rate was recorded on the 'Technologies' webpage for the 2017–18 monitoring period. Languages learning area registered the highest bounce rate, well within the desirable 'below 40 per cent' range. This indicates that website users can navigate the website to access engaging information.

Care needs to be taken when interpreting bounce rate data. Bounce rates measure single webpage sessions when there is no interaction with the webpage. A correlation appeared to exist between some webpages registering high bounce rates and webpages that included a large amount of text with an average viewing time of over three minutes. For example, 'Cross-curriculum priorities: Aboriginal and Torres Strait Island Histories and Cultures' pages logged a bounce rate of 68.51 per cent, 28.51 per cent over the recommended range. The webpage consisted of a large amount of text and the average time spent on the webpage was 3 minutes and 23 seconds. Similarly, the 'Student diversity: gifted and talented' webpage logged a bounce rate of 73.46 per cent, 33.46 per cent over the recommended

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[5] Australian Bureau of Statistics (2018). Retrieved from www.abs.gov.au/ausstats/abs@.nsf/0/D56C4A3E41586764CA2581A70015893E?Opendocument

[6] Bounce rate is the percentage of all sessions on a site where users view only one page, and trigger only one request to the Analytics server. There is no interaction with the webpage. (Google Analytics, 2018)

range. This webpage also contained a large amount of text and offered sub-menus containing more text, maintaining the identical link when opened. The average amount of time spent on the webpage was 3 minutes and 30 seconds, which aligned with the amount of reading time required. Moving forward, the amount of text on the webpage and the time required to read the text may need to be taken into account when bounce rates are considered.
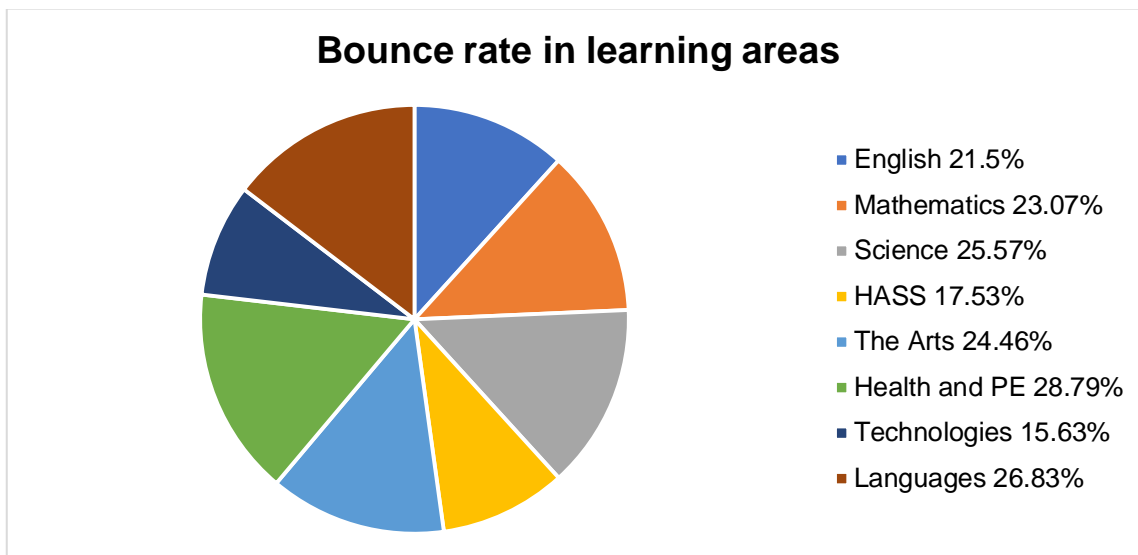
Figure 3. Bounce rate in learning areas' pages for the 2017–18 reporting period

Australian-based users represented the majority of visitors to the website, at 88.42 per cent. Of this total, when measured by sessions[7], the relative percentage for each state and territory is represented in figure 4.
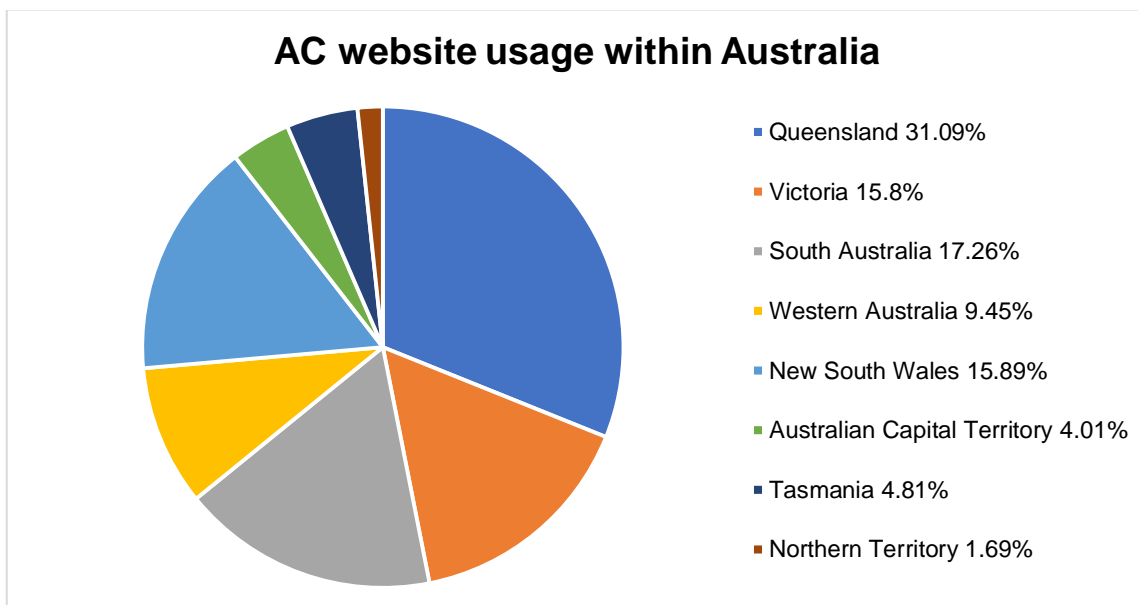
Figure 4. AC website usage within Australia, based on sessions, 2017–18

[7] A session is a period a user is active on a site. If a user is inactive for 30 minutes or more, then by default, a future activity is counted as a new session. If a user leaves the site and returns within 30 minutes, it is counted as part of the original session (Google Analytics, 2018)

Of all website users, 72.54 per cent identified as new visitors within the reporting period, and 30 per cent were aged between 25 and 34 years. The remaining 27.46 per cent of website users were returning visitors, and 32 per cent were in the same age bracket.

Access by non-Australian based users

In the 2017–18 reporting period, website users from locations outside Australia were dominated by the United States – mainly California and Florida. The United Kingdom was replaced by India in second position at 15 per cent and fell to third position at 14 per cent. There has been continued interest from the Asian region, as portrayed in figure 5.

Top non-Australian based users of AC

- United States 32%
- India 15%
- United Kingdom 14%
- Philippines 10%
- Indonesia 7%
- Malaysia 7%
- Canada 6%
- Singapore 9%
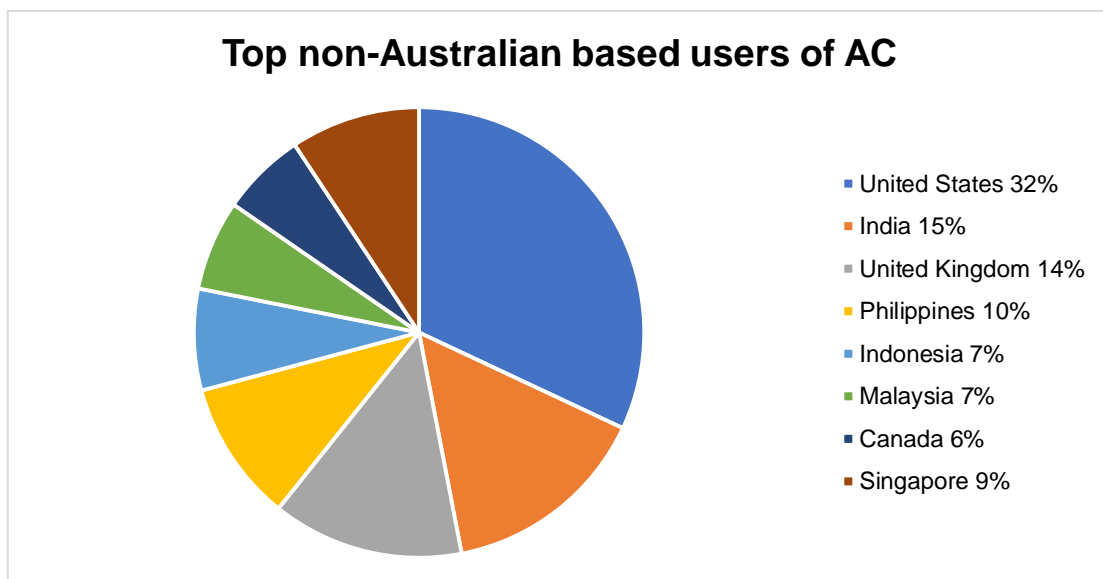
Figure 5. Top non-Australian, based users of AC website, based on sessions, 2017–18

Browser and device preference

As noted in the previous two monitoring reports, Google Chrome remains more popular than Safari, Explorer and Firefox. Microsoft Edge ranked fourth in the 2017–18 reporting period, nudging ahead of Firefox. Both Explorer and Firefox appear to have diminished in popularity since the 2015–16 reporting period.[8]

Sessions, rather than pageviews, have been used to measure browser and device use. The results are demonstrated in figures 6 and 7.

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[8] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

Browser preference
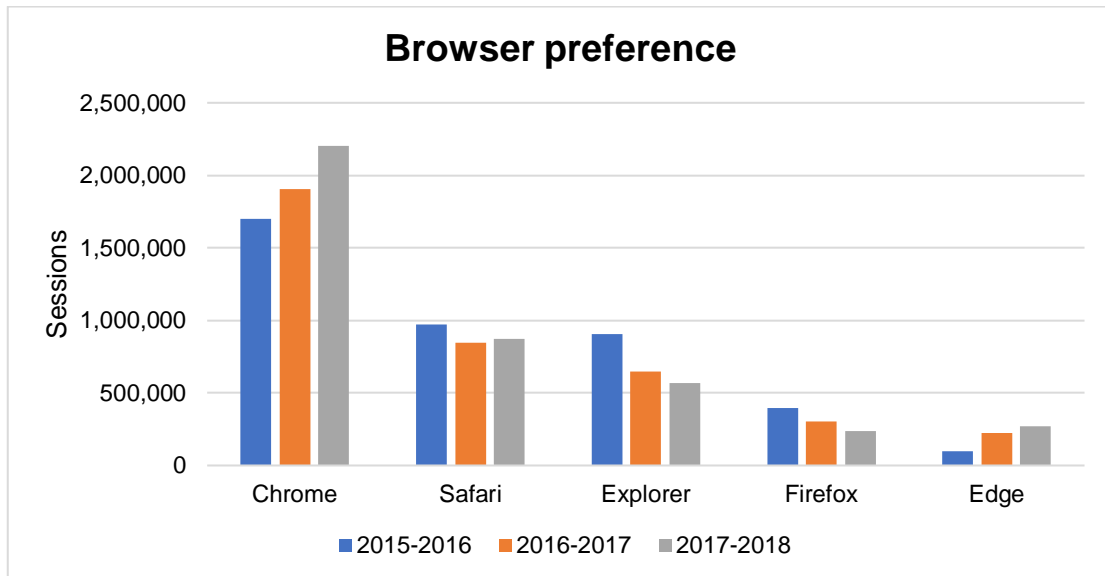
Figure 6. Browser preference to access AC, based on sessions, 2015–2018[9]

Desktop computers were the most popular device used to access the Australian Curriculum website in the 2017–18 monitoring period, as noted in figure 7.
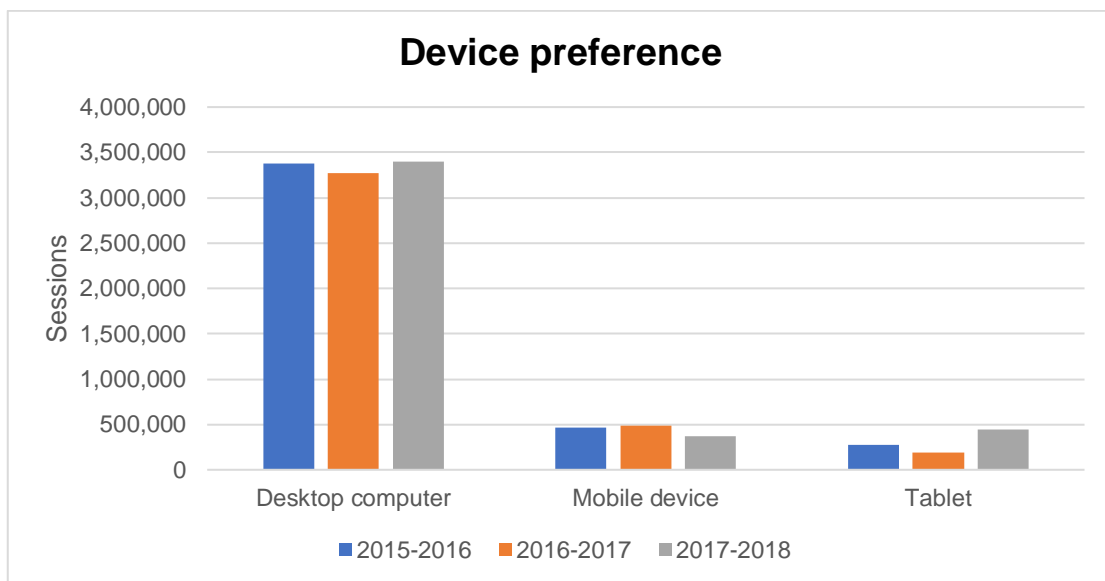
Device preference

Figure 7. Device preference, based on sessions, 2015–2018[10]

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[9] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

[10] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

Device preferences will continue to be monitored to ensure any changes or trends are considered in future website updates, so that accessibility is maintained across ACARA's broad range of users.

Learning areas

Overall, the learning area entry webpages attracted around 2.8 million pageviews in the 2017–18 reporting period. The 'Mathematics' learning area webpage attracted the most interest, as shown in figure 8. The average amount of time users spent on the 'Mathematics' learning area webpage was 1 minute and 16 seconds, with the 'English' learning area webpage recording an almost identical timeframe of 1 minute and 8 seconds.
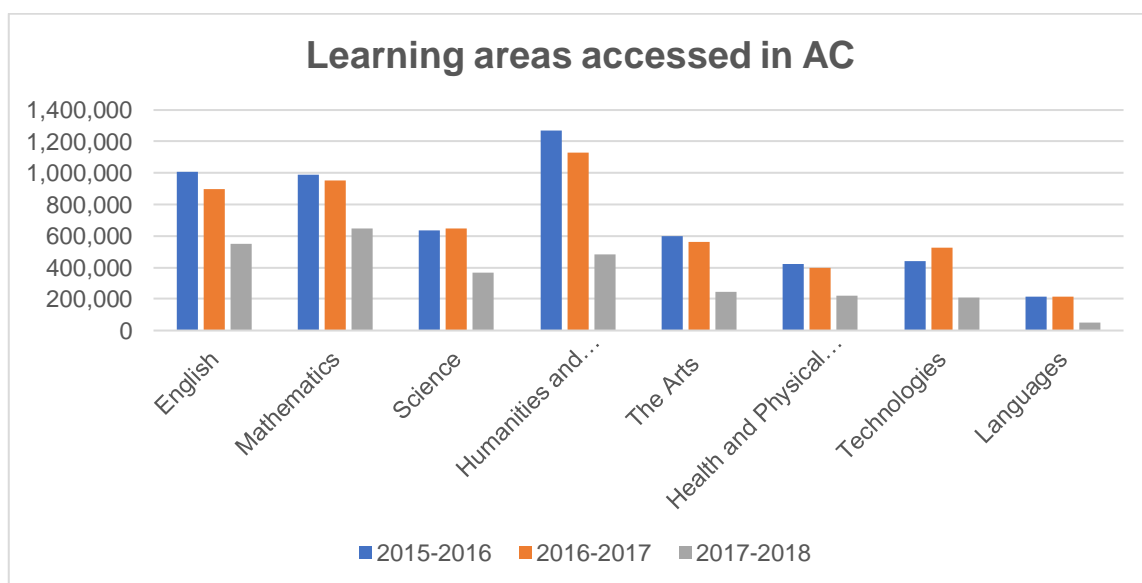
Figure 8. Learning areas accessed in AC, based on pageviews, 2015–2018[11]

Over the 2017–18 monitoring period, pageviews for 'Work samples portfolios' in all learning areas were monitored. The 'Work samples portfolios: overview' webpage received almost 70,000 pageviews. Technologies work samples portfolios were the most popular with 70,639 pageviews, followed by English with 46,974 and Mathematics with 19,103 pageviews.

Figure 9 below illustrates the top 80 results for the 2017–18 monitoring period. A total of 227,787 work samples portfolios were viewed within the top 80 results over the 2017–18 monitoring period. Languages did not rate in the top 80 results as work samples portfolios in only one language, Indonesian, were available in the reporting period, with more planned in the future.

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[11] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

Top 80 work samples portfolios by pageviews

- English 20.62%
- Mathematics 8.39%
- Science 3.89%
- Humanities and Social Sciences 6.50%
- The Arts 16.75%
- Technologies 31.01%
- Health and Physical Education 12.83%

Figure 9. Top 80 work samples portfolios by learning area, based on pageviews, 2017–18

Prior to 2017, work samples were rated 'below satisfactory', 'satisfactory' and 'above satisfactory'. The practice of providing 'below satisfactory' work samples ceased at the start of 2017. In the top 80 results of work samples portfolios pageviews in the 2017–18 monitoring period, 'below satisfactory' work samples portfolios did not rate. Any remaining 'below satisfactory' work samples portfolios will be removed from the AC website during 2019.

When the AC was first developed, work samples portfolios were presented in static form as pdf files. Work samples portfolios are now presented in html format. As the AC evolved, new learning areas and subjects were added, and file locations changed. In the original AC subjects of English, Mathematics, Science and Histories, statistics on the breakdown of pageviews, such as the number of pageviews at satisfactory or above satisfactory level in English, cannot be accessed. However, a breakdown is available for the newer learning areas and subjects, revealing some interesting data that are reported in the individual learning area sections of this monitoring report.

'Illustrations of practice' pages include background information about an illustration, school context, details about a school, and a video. Pageviews for 'Illustrations of practice' were measured in the 2017–18 monitoring period, as illustrated in figure 10. Aside from the 'Primary curriculum illustrations of practice' page, the most frequently accessed webpages were 'Aboriginal and Torres Strait Islander illustrations of practice' with over 12,500 pageviews, followed by 'Students with disability' with over 10,500 pageviews.

Top ten illustrations of practice by pageview
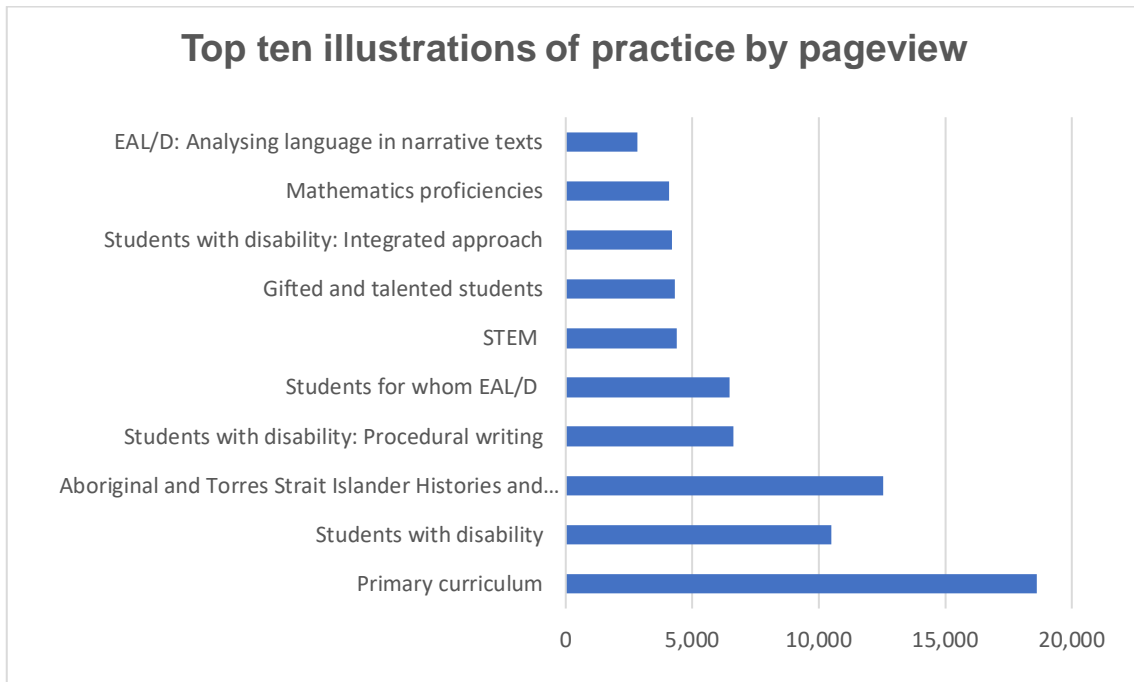
Figure 10. Top 10 illustrations of practice, based on pageviews, 2017–18

General capabilities

In the 2017–18 reporting period, almost 239,000 pageviews were recorded for the 'General capabilities: Overview' webpage. Aside from the 'Overview', the 'Literacy' webpage was the most accessed general capabilities webpage, with 125,853 pageviews. 'Critical and Creative Thinking' received 88,879 pageviews*;* 'Personal and Social Capability' received 76,613 pageviews; and 'Numeracy', 73,200 pageviews, as illustrated in figure 11 below.
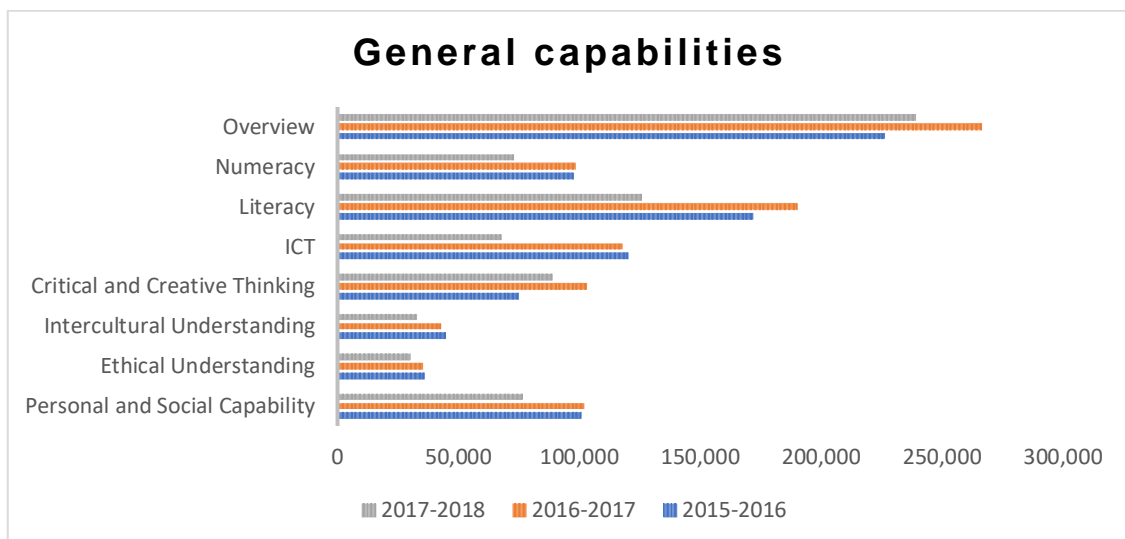
Figure 11. General capabilities webpages, based on pageviews, 2015–2018[12]

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[12] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports
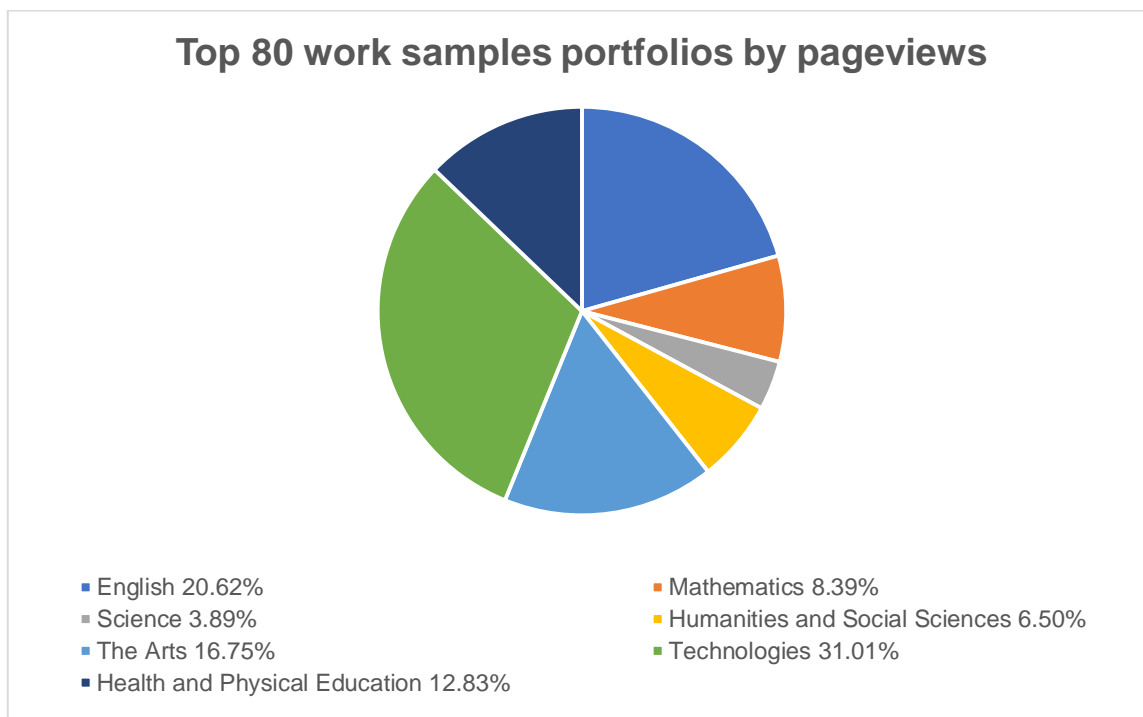
The amount of pageviews for general capabilities by states and territories indicated that Queensland was the heaviest user in the 2017–18 reporting period, with New South Wales and South Australia following, as portrayed in figure 12. Users from outside Australia have not been included in this graph.

General capabilities by states and territories

■ Queensland	■ New South Wales
■ South Australia	■ Victoria
■ Western Australia	■ Tasmania
■ Australian Capital Territory	■ Northern Territory

Values: 61,402 · 40,920 · 40,213 · 31,080 · 12,873 · 11,028 · 7532 · 5106
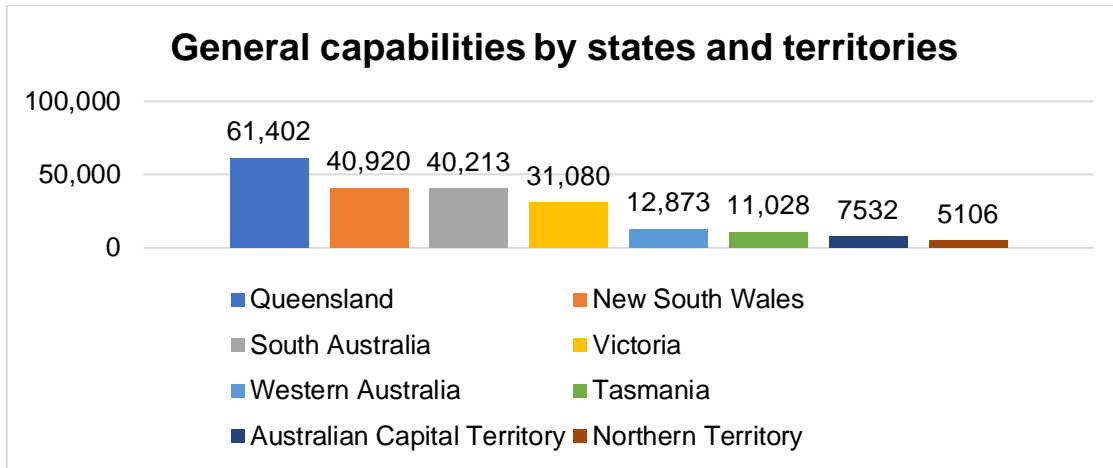
Figure 12. General capabilities by states and territories, based on pageviews, 2017–18

Cross-curriculum priorities

Interest in cross-curriculum priorities continued during the 2017–18 monitoring period, with the 'Overview' webpage registering almost 67,000 pageviews. Visits to the 'Aboriginal and Torres Strait Islander Histories and Cultures' priority webpage reported the most pageviews at almost 74,000, aligning with the strong interest in illustrations of practice, as previously stated. The Sustainability cross-curriculum priority recorded 50,000 pageviews in the 2017–18 monitoring period, as demonstrated in figure 13.

Cross-curriculum priorities

Categories: Overview; Aboriginal and Torres Strait Islander Histories and Cultures; Asia and Australia's Engagement with Asia; Sustainability

■ 2017-2018   ■ 2016-2017   ■ 2015-2016
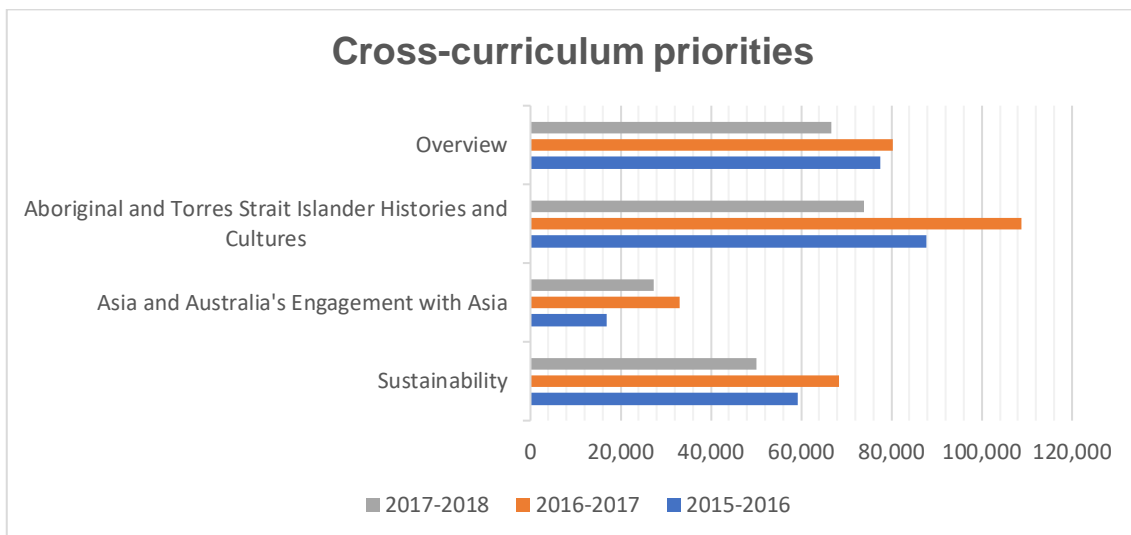
Figure 13. Cross-curriculum priorities, based on pageviews, 2015–2018[13]

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[13] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

Student diversity

The student diversity 'Overview' page attracted 58,742 visitors during the 2017–18 monitoring period. Three student diversity pages are portrayed in figure 14. Of the three, 'Students with disability' was the most popular, with over 76,500 pageviews in 2017–18, reflecting the strong interest in the aligned illustrations of practice. 'EAL/D (English as an additional language or dialect)' registered over 60,000 pageviews and 'Gifted and talented' registered over 40,000 pageviews.
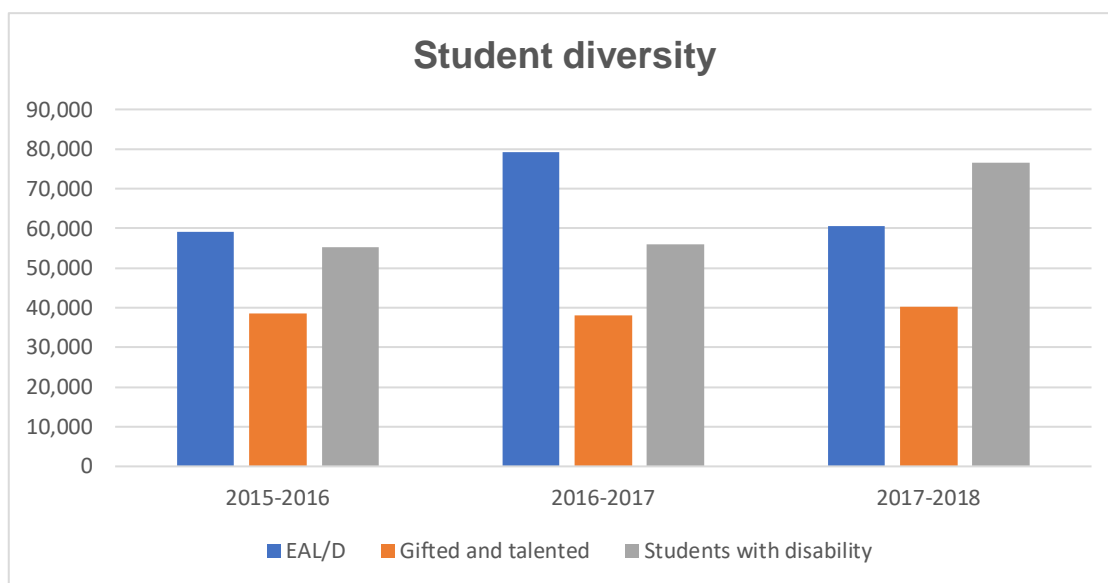
Figure 14. Student diversity webpages, based on pageviews, 2015–2018[14]

Primary Matters publication

In the 2017–18 monitoring period, 'Primary Matters' webpages recorded 21,164 pageviews. During this reporting period, Primary Matters subscribers were directed to the ACARA website for newsletter content.[15]

Google Analytics logged the following data over the monitoring period:

Issue 13 in March 2018 recorded over 19,000 pageviews, a significant improvement in readership compared with issue 12 in October 2017 at 1,325 pageviews and issue 11 in May 2017 at 545 pageviews. Issue 14, the June 2018 publication, measured 164 pageviews,

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[14] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

[15] From June 2018, subscribers are directed to the Australian Curriculum website for newsletter content

as shown in figure 15. The statistics for issue 14 are incomplete due to the timing of publication and the end of the monitoring period.

The popularity of issue 13 can be partly attributed to interest in the content provided and the fact that it was the first publication for 2018. Articles included information about the new Literacy and Numeracy learning progressions, an update on the Digital Technologies in Focus project and stories about how three schools implemented AC: DT.
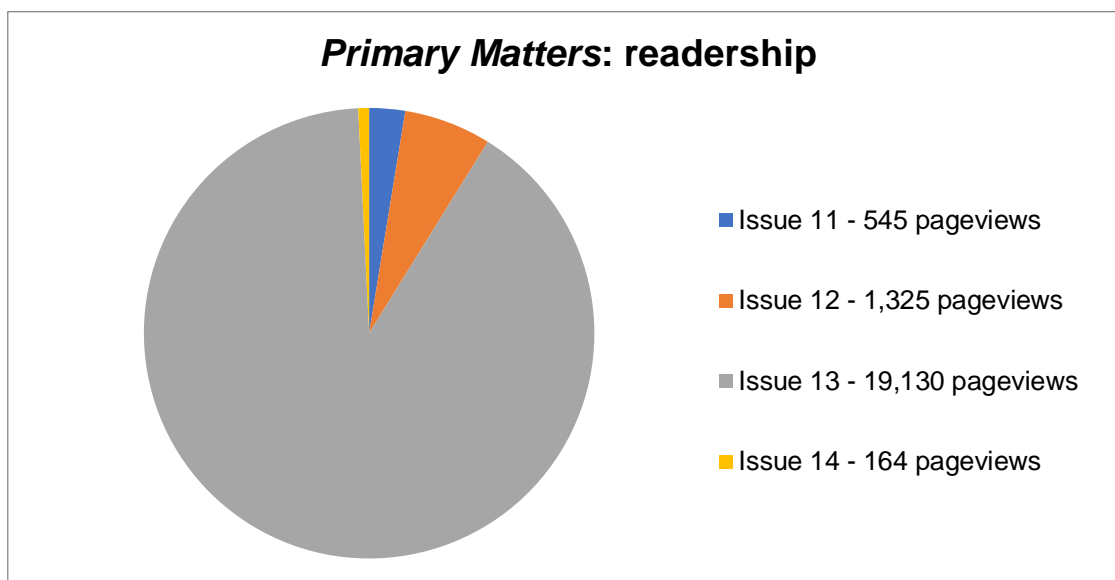
Figure 15. Readership of Primary Matters, based on pageviews, 2017–18

During the 2017–18 monitoring period, Primary Matters was emailed to subscribers using an email marketing service. The email marketing service provider changed within the reporting period. Issues 12 and 13 were distributed using MailChimp and in June 2018, issue 14 was sent using Campaign Monitor.

According to Mail Chimp analytics provided by ACARA Communications, for issue 12, October 2017, there were 70 subscribers, 69 successful deliveries, and 35 subscribers opened the campaign email. This issue was not 'liked' on Facebook and there were no unsubscribers. For issue 13, March 2018, there were 72 subscribers, 72 successful deliveries, and 42 subscribers opened the campaign email. This issue was not 'liked' on Facebook and there was one unsubscriber.

Campaign Monitor analytics indicate that for issue 14, 28 June 2018, there were 64 subscribers, 62 successful deliveries, and 33 subscribers opened the campaign email. Statistics for Facebook were not provided and there were no unsubscribers.

It is important to note that some readers may have accessed Primary Matters directly from the Australian Curriculum website without becoming subscribers. The 'Resources/Publications' tab allows navigation to Primary Matters and takes the reader to the latest issue. From this webpage, readers have an option to choose three of the most recent issues or archived issues dating back to issue 1, April 2014.

The most popular search term for Primary Matters issue 11 in May 2017 was *moderation* with 15 searches. Other search terms over the reporting period included *inquiry, progressions, 2020, renewable energy, STEAM, coding, drones* and *universal design*.

The average time spent on Primary Matters issue 13 in March 2018 was 52 seconds, and the bounce rate was just over the optimal range at 46 per cent.

Summary

Since its inception, the AC website has kept pace with technological changes to support user needs by providing access to the curriculum, information and resources. The 2017–18 monitoring report analysis has been impacted by changes to the website host, website structure and curriculum content.

These changes have delivered a functional website that is current, relevant and receptive to the addition of new curriculum content within its navigational structure. While these changes have improved the website, the Australian Government Department of Education and Training (AGDET) provided some general comments as to how the presentation and functionality of the AC website could be further improved.

In Australia, the greatest number of pageviews for the AC website was recorded in Queensland. This aligned with the fact that Queensland has the largest population of all the states and territories that have adopted the AC without local adaptation. The Northern Territory recorded the lowest number of pageviews, consistent with the lowest population of all the states and territories in Australia.

Of the eight AC learning areas, the 'Mathematics' entry webpage registered the most visits in the 2017–18 reporting period, with over 650,000 pageviews. 'English' and 'Humanities and Social Sciences' pages followed, with 581,000 and 481,000 pageviews respectively.

All the AC website learning areas entry webpages performed within the recommended ACARA bounce rate of below 40 per cent, which indicated that readers were engaging with the content. The bounce rate for the 'Cross-curriculum priorities' entry webpage was within the recommended range; the 'General capabilities' entry webpage was slightly over the recommended range, and the 'Student diversity' entry webpage was over the maximum range at 50 per cent.

The 'General capabilities: Overview' webpage captured a large audience, with almost 239,000 pageviews, followed by the 'General capabilities: Literacy' webpage. It is interesting to note that Queensland registered the largest amount of 'General capabilities' pageviews at 61,402, followed by NSW, which houses a separate, local curriculum website, at almost 41,000 pageviews.

'Student diversity' attracted 58,742 pageviews to the 'Overview' webpage and even more visitors to the popular 'Students with disability' webpage with 76,557 pageviews, reflecting the strong interest recorded in the aligned illustrations of practice. Of the three student diversity webpages analysed, 'Gifted and talented' accounted for about half this number of pageviews and 'EAL/D' sat between the two.

'Cross-curriculum priorities' webpages logged almost 67,000 'Overview' pageviews. The 'Aboriginal and Torres Strait Islander Histories and Cultures' priority page surpassed the 'Overview' webpage with almost 74,000 pageviews and recorded well over double the pageviews of 'Asia and Australia's Engagement with Asia'.

'Work samples portfolios' pages achieved over 70,000 'Overview' pageviews throughout the 2017–18 monitoring period. 'Technologies' registered the most visits with over 70,600 pageviews, indicating strong user interest. The popularity of 'Work samples portfolios' webpages supports the plan to replace all pdf format work samples documents with new html format work samples in 2019. An additional plan for next year is to remove all work samples portfolios rated 'below satisfactory' from the AC website and discontinue posting work samples in this category. This decision is supported by the finding that 'below satisfactory' work samples did not register in the top 80 pageview results for 'Work samples portfolios' pageviews in the monitoring period.

Of all the illustrations of practice provided on the AC website, 'Illustrations of practice: primary curriculum' was the most accessed webpage with 18,635 pageviews, followed by 'Aboriginal and Torres Strait Island histories and cultures' and 'Students with disability'.

The Primary Matters publication recorded some strong results in pageviews alongside the relocation of the website and changes to email subscription delivery services. Readers accessed the digital newsletter by subscription or visited the website directly to read current or archived issues. 'Just in time' and relevant news stories, which aligned with new curriculum material, were popular, as noted with issue 13. This issue registered the strongest readership in the monitoring period and included articles about the new Literacy and Numeracy learning progressions and Digital Technologies.

Over the 2017–18 monitoring period, the most popular web browser was Google Chrome, in line with the leading global market share web browser results, according to Statista.[16] Desktop computers logged as the preferred device in accessing the AC website at almost 3.4 million sessions, followed by tablets at 444,000 and mobile devices at 371,000 sessions.

A Google Analytics review of each learning area on the Australian Curriculum website can be found in the following section under the heading 'Data analysis: Google Analytics'.

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[16] Statista: The statistics portal (2018). Retrieved from www.statista.com/statistics/268299/most-popular-internet-browsers/

AUSTRALIAN CURRICULUM, ASSESSMENT AND REPORTING AUTHORITY

6.   STAKEHOLDER FEEDBACK

a.   Submissions

Twenty-one submissions were received from state and territory education authorities. The list is provided in appendix A.

b.   Key issues: Technologies and ICT capability

Jurisdictional feedback in the 2017–18 monitoring period focused on technologies, literacy and numeracy. State and territory education authorities were asked to reflect on key questions around consistencies between the ICT capability and the Digital Technologies curriculum, and provide a summary of the implementation of the ICT capability and the two subjects of the Technologies F–10 learning area. The feedback regarding the implementation of the AC: T and the ICT capability indicated that all states and territories are either implementing the Technologies curriculum or will be in 2019. The discussion below is a summary of comments from state and territory education authorities related to the requested questions.

ICT capability and Australian Curriculum: Technologies implementation

There was positive feedback about the importance of the Technologies learning area and the ICT capability in the Australian Curriculum. Catholic Education South Australia (CESA) indicated that the ICT capability and the Digital Technologies subject provide a consistent message regarding the use, consumption and creation of technologies.

The Victorian Curriculum Assessment and Reporting Authority (VCAA) stated, "There is considerable research that identifies the importance of the teaching of literacy, numeracy and ICT in the context of the different curriculum areas. It is both appropriate and necessary that the requirements be embedded in the curriculum areas". The Queensland Catholic Education Commission (QCEC) acknowledged that the ICT capability continuum provides a comprehensive coverage of ICT expectations, but it should be regularly reviewed to ensure that it reflects students' increasingly sophisticated digital skills. The QCEC also noted that while there is a natural synergy between the ICT capability and the Digital Technologies subject, it is important that teachers understand that the general capabilities are developed across all areas of the curriculum.

The QCEC and the Association of Independent Schools of South Australia (AISSA) both noted that the extent of implementation of the ICT capability varies considerably among schools with the major challenges being of teacher capability and the time required for collaboration to inform coherent implementation.

Similar themes emerged in the feedback about the alignments between the Digital Technologies subject and the ICT capability: teacher understanding of the difference between the subject and the capability, and the accessibility of the Digital Technologies language for some teachers.

The Queensland Department of Education (QDoE) and the Queensland Curriculum and Assessment Authority (QCAA) suggested that future versions of the AC include more explicit

references to the ICT capability, including a greater number of elaborations that show the application of the ICT capability, more evidence in the content descriptions for F–2, and more explicit referencing in learning area achievement standards.

In relation to Digital Technologies, the QDoE and the QCAA suggested that the consistency of content and skills levels between the content descriptions of the Digital Technologies subject and the elements of the ICT capability could be enhanced. Feedback from teachers in the AISSA submission, on the other hand, indicated that Digital Technologies and the ICT capability 'complement one another well' and are 'well linked' with a 'high degree of correlation'.

Independent Schools Queensland (ISQ) and the Tasmanian Catholic Education Commission (TCEC) indicated that there continues to be confusion about the difference between the ICT capability and the subject of Digital Technologies. The Department of Education Tasmania (Tas DoE) also noted this confusion but suggested that this reflects inconsistencies in everyday use of terminology related to ICT.

The Association of Independent Schools of New South Wales (AISNSW) suggested that the AC may benefit from additional resources that clarify the similarities and differences between the ICT capability and Digital Technologies.

The Digital Technologies Hub was acknowledged by a number of respondents as a valuable resource. CESA commented, "The resources on the Digital Technologies Hub are of great value to our teachers and their understanding of the similarities and difference between the ICT capability and Digital Technologies", and the AGDET reported that between the launch of the Digital Technologies Hub in 2016 and August 2018, there were over 197,000 unique users accessing the resources.

For those states that have been implementing the AC: DT for a longer period, for example, South Australia, it is encouraging that the familiarity of teachers with the subject is improving their understanding of the differences between ICT capability and the Digital Technologies subject. AISSA noted that as teachers and school leaders grow in their understanding of the Digital Technologies subject content, they begin to fully realise the differences between the capability and the discipline. Additionally, AISSA noted, "When teachers become more confident and competent in their knowledge of the Digital Technologies discipline, their new depth of knowledge is transferrable, and they become more adventurous and capable users of ICT and embed the AC: ICT general capability into their pedagogical practice more often and in more skillful and varied ways".

Parallels between the ICT capability and Digital Technologies, particularly the data/information and file management (systems), were noted by the Association of Independent Schools of Western Australia (AISWA).

The ISQ and AISSA commented that the jargon and technical language of the Digital Technologies curriculum are challenging. AISSA and AISWA also indicated that there has been confusion among teachers between the generic term 'digital technologies' and the subject 'Digital Technologies'.

The New South Wales Education Standards Authority (NESA) raised a concern about the perceived inconsistent use of language in AC learning area advice material when referring to

'information and communication technologies (ICT)' versus 'digital technologies', "In NSW syllabuses it is generally accepted amongst Technology educators that ICT refers to users of computing technologies while digital technologies refers to developers of digital solutions". In response, it should be noted that in the AC the generic term 'digital technologies' is used throughout the curriculum, for example, "ICT capability involves students learning to make the most of the digital technologies available to them, adapting to new ways of doing things as technologies evolve and limiting the risks to themselves and others in a digital environment".

The QCAA noted, "Many schools use the Digital Technologies subject as a major vehicle for implementing the ICT capability or addressing components of it. Teachers of Technologies state they feel an increased responsibility to support non-Technologies learning area staff in professional learning and classroom use of applications".

Feedback received with specific reference to the Technologies curriculum is also included in the Technologies section of this report.

c.   Key issues: literacy and numeracy

Literacy

Jurisdictional feedback in the 2017–18 monitoring period focused on technologies, literacy and numeracy. Jurisdictions were asked to comment on the literacy and numeracy demands across the curriculum and the role and relationship between the NLNLP and the Literacy and Numeracy general capabilities.

A number of jurisdictions made very similar comments in relation to literacy underpinning learning in all areas of the curriculum and that ensuring students are equipped with the skills to meet the literacy demands of the curriculum is a priority in their schools:

The SA Department for Education noted that teacher expertise in addressing the literacy demands of the curriculum was crucial, it outlined an extensive range of strategies they implemented, which supported students' literacy development.

The South Australian Certificate of Education Board of South Australia (SASEBSA) supported the SA emphasis on literacy by outlining the literacy requirements included in the awarding of the South Australian Certificate of Education (SACE).

TCEC commented that while teachers recognised literacy was fundamental to learning area success, there remained some lack of teacher skill in this area.

AISWA noted that while the AC informs teachers about literacy in learning areas, it does not provide advice about the responsibility for teaching literacy in the learning areas, specifically whether this responsibility should be largely shouldered by English teachers or devolved to learning area teachers.

The AISNSW also recognised that literacy should be addressed in the learning areas but suggested that ACARA might develop additional resources for literacy in the learning areas as time constraints impacted on teachers' facility to address these demands.

The QCEC submitted that the literacy demands of learning areas and subjects became increasingly challenging as students moved through years of schooling. Students with poor literacy are increasingly disadvantaged as learning area assessments include progressively more significant literacy demands. It was also noted that while primary school teachers were often more skilled at identifying literacy development across learning areas, it was in the secondary school environment that learning and related assessment tasks challenged students with poor literacy skills.

The Tas DoE expanded on this commentary by adding the fact that secondary students are taught by a number of different teachers, which creates an extra layer of complexity in meeting individual students' literacy needs.

The QDoE recognised the importance of embedding literacy into the leaning areas and outlined a number of resources and programs that Queensland state schools access to support students' literacy development.

NESA pointed to their identification of literacy in the learning areas through a 'tagging' system in syllabuses as evidence of NSW's position that literacy learning is embedded in all curriculum areas.

The VCAA described its commitment to supporting literacy development in learning areas by outlining its literacy and numeracy initiative that includes a suite of resources and professional development opportunities.

The national Literacy learning progression

Some jurisdictions, including the QCEC and the AGDET, aligned their comments about the national literacy learning progression (NLLP) to the recommendation of *Through growth to achievement: Report of the review to achieve educational excellence in Australian schools* (Gonski, 2018) that curriculum be redesigned as progressions.

Jurisdictions commented on a number of aspects of the NLLP. Those that commented on advantages offered by the Literacy progression described its capacity to assist teachers to accurately identify students' literacy needs and to track and monitor their literacy development. TCEC, the SA Department for Education and AISSA were among the sectors that supported this view.

The potential for using the NLLP as a formative assessment tool was noted by AISSA, while AISWA and Tas DoE saw it having potential as a reporting tool. NESA saw the progressions as "strengthening teacher knowledge and facilitating a shared understanding of literacy development" and also noted that a particular strength of the progressions was that current research and teacher trialling had been part of their development. The AISNSW and Tas DoE also acknowledged the input of literacy experts into the development of the NLLP and suggested the progressions could be strengthened by a review, which gathered empirical as well as further expert consideration.

The need for additional resourcing to support the progressions, particularly professional learning, was raised by AISSA and the QDoE.

The NLLP is presented on the AC website as a resource to support the curriculum. This message was seen as important by the VCAA and Tas DoE. The VCAA has used the NLLP to develop a collection of teacher support materials to "deepen teacher understanding of sequential literacy learning", noting that the progression "provided a detailed description of student learning … designed to help teachers develop targeted teaching and learning programs".

The QDoE and the QCAA felt that the learning area advice accompanying the NLLP was too limited and delivered a "confusing message about best practice in literacy teaching" and was incomplete as not all learning areas were included. The QCAA also felt that the learning area advice did not extend to assisting teachers to plan for the literacy demands of their learning area. While acknowledging that the NLLP "provided helpful information to schools", they also voiced some concerns about the progressions, including that they did not support students with disability operating below Foundation level and that the structure and language of the NLLP were too complex for teachers. Along with the SA Department for Education, they requested that ACARA provide advice about the relationship among the AC: English, the literacy progression and the Literacy general capability. The QCAA suggested that alignment of the NLLP to the AC: English was incorrect and that there needed to be a formal process for suggesting amendments to the progressions.

In contrast, TCEC described the NLLP as "an excellent step in supporting schools and teachers to identify the needs of students" and reported that as a result of trialling of the writing element in some primary schools "feedback was extremely positive", while AISWA had found the NLLP most useful for teachers in remote Aboriginal schools because of its fine grained detail and its structure not being grade-related. AISWA noted too that there needed to be advice about the relationship between the NLLP and the EAL/D progression. While acknowledging that many schools had not yet engaged with the NLLP, AISSA noted that early implementers found the NLLP a useful planning framework for learning area specialists but that professional learning and additional support were needed.

The Western Australian Schools Curriculum and Standards Authority (SCSA) and AISSA noted that the NLLP is a relatively new resource, which they are still reviewing and considering how it might be used in their schools.

Literacy general capability

Feedback related specifically to the Literacy general capability focused on the use of the Literacy continuum and the NLLP.

Feedback from AISSA, the SA Department for Education and the QCEC supported the use of the Literacy general capability to reinforce literacy skills across learning areas and as a framework for planning for, and supporting, learners with diverse needs. AISSA also commented that the Literacy continuum provided guidance in relation to the development of early literacy skills that are not captured in the NLLP, which was an important consideration regarding equity and inclusivity for all students.

The AISNSW and Tas DoE queried the relationship between the Literacy general capability continuum and the NLLP, and highlighted concerns that there was a lack of clarity as to the purpose and role of each. The AISNSW specifically highlighted that there was ambiguous

advice regarding the use and purpose of the Literacy general capability and the NLLP. The advice on the AC website stipulates that the Literacy general capability describes what can be expected of students at particular years of schooling and that the progressions are not organised by year levels or stages of schooling. The concern was raised that as the NLLP was mapped to the English learning area year level curriculum, this advice was contradictory and confusing. Tas DoE suggested that the Literacy general capability continuum be replaced by the NLLP.

AISWA and the QCEC provided feedback related to the functionality of the 'tagging' of the literacy capability on the elaborations in learning areas, and that they would like the tags to link to the relevant year level sub-element content on the capability continuum.

Numeracy

Jurisdictional feedback highlighted a lack of clarity of advice in relation to numeracy across the curriculum. The QCEC requested a stronger alignment between the AC: Mathematics (AC: M) and other learning areas to ensure that the underpinning numeracy demands are addressed in the AC: M prior to being required in other learning areas.

A consistent message was that the teaching of numeracy resides within the Mathematics learning area. The SA Department for Education commented on the difference between the expectations in the AC: M and the general capability numeracy. The SCSA commented that, as they commented in relation to literacy, the numeracy demands for each learning area are encapsulated within the general capability of numeracy but are not assessed unless they are identified within the core content of the Western Australian curriculum.

The national Numeracy learning progression

There were specific issues raised concerning the NNLP. The AISNSW suggested that the NNLP may benefit from including the proficiency strands, particularly in mathematical problem-solving and reasoning, along with reference to communication. This submission also suggested that the diversity of students and their access to learning needed to be better recognised in the language of the progression. An example provided was the use of language in the indicators stating that students 'say' or 'write' numbers, which may limit accessibility. A suggestion was to replace this terminology with language such as students 'produce numbers', which allows for some diversity of access.

AISSA conducted a survey within their jurisdiction, and findings suggested that 52 per cent of respondents had had partial engagement with the NNLP. Those who had engaged with the progression reported using it in conjunction with the general capability numeracy continuum to adjust the AC: M for learners with diverse needs.

AISWA commented that the NNLP will cause confusion for teachers, particularly in the sub-strand of Number, as it fails to align sufficiently with the AC: M. This was echoed by the QCAA that felt there were inconsistencies in the alignment of the NNLP and the AC: M. AISWA reported too that the document is not 'teacher friendly' due to the inclusion of new language descriptions such as 'element' and 'levels'. The format of the documents also restricts the ability of teachers to follow the progression of learning and this submission

suggested the progression lends itself to a checklist implementation rather than a learning sequence.

The need for integrity between the AC: M and NNLP was noted with criticism that mathematical content not included in the AC: M is present in the NNLP. AISWA described the NNLP as a map or developmental trajectory of mathematics content within the AC: M and as such should be renamed as a Mathematics learning progression rather than a numeracy progression. This view was supported by comments from the QDoE concerning the NLNLPs being written in language that was unsuitable for classroom teachers and questioning the close alignment to the mathematics curriculum rather than other learning areas. This submission also commented on learning area advice being limited and not consistent with the message that numeracy is a cross-curricula responsibility. The QCAA also registered concerns in relation to the learning area advice, that it was not provided for all subjects and that the progression was only aligned to the AC: M.

Tas DoE expressed that there had been an initial concern that the implementation of the NNLP would increase the workload on classroom teachers if they were expected to monitor individual students' progress against it, without the development of an assessment tool. However, this submission also reported that Tasmanian teachers had found the NNLP useful in building teacher knowledge and understanding for supporting their students' learning in mathematics and across the curriculum.

The AISNSW suggested that "adjustments could be made to the NNLP to cater for students with diverse needs" and AISWA believed that "the National Numeracy Learning Progression (NNLP) will cause confusion for teachers". On the other hand, both Tas DoE and TCEC provided feedback that the NNLP has allowed teachers to better differentiate their instruction of mathematical content by supporting teachers to identify the learning needs of their students.

Numeracy general capability

Jurisdictional feedback related to the Numeracy general capability focused on the purpose and use of the numeracy continuum and issues related to the relationship between the numeracy capability and the NNLP.

Feedback received from the QCEC and AISSA stated that the Numeracy general capability was useful when creating numeracy plans for students with additional learning needs. Additionally, the QCEC suggested improvements could be made to draw out the numeracy demands of each learning area in a more explicit way. The SA Department for Education commented that when used in conjunction with the Critical and Creative Thinking capability, the Numeracy capability enabled teachers to provide greater challenge to students' levels of thinking. However, the Numeracy capability was not considered as in-depth as the Literacy capability.

The AISNSW and Tas DoE repeated the concerns raised regarding to the relationship between the general capability continuum and the progressions, again highlighting concerns that there was a lack of clarity as to the purpose and role of each.

Additionally, the QCEC felt that the advice provided on the 'Numeracy general capability: Overview' page was confusing and identified the prioritising of learning areas in relation to numeracy demands as inconsistent with best practice.

d.   Feedback from stakeholder groups

ACARA holds regular meetings with key stakeholder groups. These groups provide expert advice and/or jurisdictional perspectives to the ACARA executive (F–12 Curriculum Reference Group, Aboriginal and Torres Strait Islander Advisory Group) or share experiences, collaborate on and support the Australian Curriculum implementation (Curriculum Directors Group, Students with Disability Advisory Group). Over the course of this monitoring period, these stakeholders have provided regular feedback through designated meetings on the implementation of the AC, with the following issues and requests emerging from meetings in the 2017–18 monitoring period:

The strong view expressed by these representative groups is support for a period of curriculum stability to allow time for sectors, systems, schools and teachers to reflect on all three dimensions of the AC and develop programs for their effective implementation. Jurisdictions and sectors have developed timelines appropriate to their needs so that implementation has varied across states and territories. This has been particularly necessary as elements of the curriculum, both publication and implementation, have been phased in over the period of 2009 – 2016.

However, having voiced this desire for stability, representative groups have also provided feedback over the monitoring period on aspects of the AC that might be refined as evidence is collected for future iterations of the curriculum.

AC architecture and the AC website. Feedback has suggested that:

- There is a need for a common framework for the architecture within and across learning areas.
- There needs to be a more intuitive way of seeing connections between curriculum and resources.
- Some resources are hard to find.
- Downloadable resources are helpful for schools and teachers.

Achievement standards. The AC achievement standards are seen as a tool for national consistency for planning and teacher professional judgement of student learning. Stakeholders report that they provide a starting point for program and unit design. The ability for teachers to find commonality across learning areas and subjects in the standards is supported.

Suggestions to improve the design of the achievement standards have included:

- Some attention should be given to further coherence across achievement standards in years and bands of years, as well as across learning areas and subjects.
- There needs to be coherence of language, particularly the indicative terms, to represent developmental sequences of learning across years and learning areas.
- The alignment between content and achievement needs to be clearer.

- There should be opportunities for greater interactivity on the AC website such as hyperlinks between standards and related content.
- Further advice should be provided in relation to standards expressed as bands of years to clarify how achievement can be effectively reported.

Advice and support materials. Despite the differences in responsibilities for the development, as opposed to the implementation, of the AC, stakeholders continue to request further advice and support in relation to aspects of implementation such as:

- more explicit advice in relation to integrating the three dimensions of the AC, in particular, the general capabilities and learning areas and their assessment
- more explicit integration of the Aboriginal and Torres Strait Islander Histories and Cultures priority in line with the Science project in development
- examples of best practice in teaching and learning programs, specifically different models of assessment for the diversity of students
- provision of quality materials for teacher professional learning.

Resources. A recurring theme at meetings has been the opportunity for sharing of resources that are developed by sectors and/or jurisdictions to support the implementation of the AC in some formal way, and a request that ACARA be a clearing house to enable materials and resources to be available for broad use.

e.   Learning areas

English

The Australian Curriculum: English (AC: E) was endorsed by the Education Council in December 2010. The Foundation – Year 10 AC: E is organised into three interrelated content strands: Language (knowing about the English language), Literature (understanding, appreciating, responding to, analysing and creating literary texts) and Literacy (expanding the repertoire of English usage). The senior secondary curriculum for English includes four subjects: English, English as an Additional Language or Dialect, Essential English, and Literature. The common feature across all year levels and courses is the development of students' knowledge, understanding and skills in listening, speaking, reading, viewing and writing Standard Australian English.

Supporting the curriculum are student work samples that enhance teachers' understanding of the content and the achievement standards. During the 2017–18 monitoring period, work commenced in F–10 English to review and enhance the current portfolio of work samples. The NLLP was also published in January 2018 as a resource to support the AC: E.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period focused on technologies, literacy and numeracy. Jurisdictional feedback about the AC: E was linked to the commentary about literacy and there was no additional feedback directly and specifically related to the AC: E.

Enquiries

Throughout the 2017–18 monitoring period, there was a steady stream of enquiries from curriculum managers and advisors in jurisdictions, teachers and school leaders. The majority of enquiries concerned the NLLP. The purpose and possible uses of the progression, its relationship to the AC: E and implementation processes were the main areas of interest. A limited number of calls and emails also offered suggestions and feedback on the content and structure of the progressions. As well, there were requests for additional resources, most particularly work samples, to support the progressions.

Other teacher enquiries concerned interpreting the English curriculum achievement standards to gauge student progress and supporting students who were experiencing difficulties in English.

Parental enquiries mainly concerned issues with English and literacy related to individual students or particular school approaches to English. Some parents enquired about texts their children were studying or ways they might be able to support their children's reading and writing development. A small number of enquiries were received from community members concerning either the content of the English curriculum or the emphases in the curriculum; for example, the amount of detail about spelling skills or the study of forms and features of poetry.

Data analysis: Google Analytics

During the monitoring period, the total pageviews for the English learning area entry webpage on the AC website numbered almost 552,000.

The greatest number of users was from Queensland, followed by South Australia, Victoria, New South Wales, Western Australia, Tasmania, the Australian Capital Territory and the Northern Territory.

Over the reporting period, the total number of pageviews for the 'National literacy learning progressions' was almost 324,000. In the top 10 results for pageviews in literacy learning progressions, 'National literacy learning progression' recorded 100,875 pageviews; 'National literacy learning progression: writing' received 56,670 pageviews; 'Reading and viewing', 54,440 pageviews; and 'Speaking and listening', 34,670 pageviews.

There were 27,875 pageviews for English pdf documents over the reporting period, with Queensland taking a strong lead at 11,205 pdf pageviews, followed by South Australia at 4,095 pdf pageviews. Outside Australia, England registered 118 pdf pageviews, followed by Madrid, Spain, with 51.

English work samples portfolios registered 46,974 pageviews over the monitoring period. Of these, over 25,000 pageviews were returning visitors and over 19,000 pageviews were new visitors. Work samples portfolios for English are currently available in pdf file format only. In 2019, these files will be replaced with new work samples portfolios in html format.

The average time[17] spent on the English learning area entry webpage was just over 1 minute, and the bounce rate was well within the desirable range at 21.5 per cent.

Media and issues for consideration

Media interest in the English and literacy fields was dominated by the National Assessment Program – Literacy and Numeracy (NAPLAN) literacy tests with the first phase of the transition to online adaptive testing widely reported *(The Conversation, 2GB Sydney, The Drum, ABC Radio*, August 2017). Different aspects of the move to online testing were reported, including possible issues with technology, the mainly favourable reactions from students involved in the trials of the online tests and some, such as Adelaide's *InDaily*, providing information about the purpose of the online tests (*InDaily*, 2 August 2017).

The ten-year anniversary of NAPLAN tests was another key theme in the media. *The Canberra Times* noted that after 10 years of NAPLAN data provided valuable information (Steele, *Canberra Times*, 4 August 2017), while other sources focused on the continuing issue of a lack of improvement in the writing domain (*Brisbane Times, Echo Daily*, August 2017). The annual release of the NAPLAN National Report (Australian Curriculum, Assessment and Reporting Authority 2017, *NAPLAN Achievement in Reading, Writing, Language Conventions and Numeracy: National Report for 2017,* ACARA, Sydney) was also extensively reported. Many articles restricted themselves to reporting the results, noting that in most aspects of literacy there was no statistically significant difference in achievement in any domain or year level (*The Conversation, The Educator*, August 2017). Some media reported on localised results; for example, the Adelaide *Advertiser* (1 August 2017) described South Australian results as 'dismal', while the *Gold Coast Bulletin* noted the strong performance of some independent schools (Robbemond, *Gold Coast Bulletin*, 8 August 2017).

A number of media outlets commented on the release of the Progress in International Reading Literacy Study (PIRLS) in December 2017. Experts from academics to teachers were quoted in the media with the common message that Australian Year 4 students should be ranked higher than the 14th position they achieved in world-wide rankings. *The Conversation* acknowledged that PIRLS revealed some improvements in average scores, however it also noted, "Australia still has the second largest proportion of children below the international intermediate benchmark for reading among English-speaking countries". (Law, *The Conversation*, 3 September 2017). Dr Jennifer Buckingham's article described the Australian PIRLS result as "a poor outcome compared to other countries, including England, Canada, and the United States" (Buckingham, *The Conversation,* 2017).

Many experts, including Associate Professor Alyson Simpson from the University of Sydney, emphasised the importance of students mastering early reading skills as a basis to success in their school studies (in O'Neill, *Sydney University News*, 05 December 2017). Dr Buckingham also emphasised the need for early intervention to improve reading results, noting that recent improvements in Year 3 NAPLAN reading scores followed from "a strong

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[17] Average amount of time users spend viewing a specified page or screen, or set of pages or screens (Google Analytics, 2018).

focus on early reading since NAPLAN was introduced in 2008" (Buckingham, *The Conversation,* 2017).

Associated articles warned about the long-term consequences of poor literacy rates, while some highlighted the poor progress of particular groups of Australian students. "While the average score for Australian students increased between PIRLS 2011 and 2016, the average score for students with an Aboriginal or Torres Strait Islander background did not change significantly over the same period …The achievement gap between Australian students attending metropolitan and remote schools has narrowed from 70 points in 2011 to 21 points in 2016. Most of this narrowing is a result of substantial improvement in the achievement of students from remote schools" (Thomson, S. et al. *ACER*, 5 December 2017). Continuing differential results by gender were discussed in *The Financial Review*, "boys continued to lag behind girls, proportionately to the previous survey, with 85 per cent of girls scoring at or above the intermediate benchmark compared to 77 per cent of boys" (Bolton, *The Financial Review,* 5 December 2017).

There was extensive media reporting of the release of 'Through growth to achievement: Report of the review to achieve educational excellence in Australian schools' authored by David Gonski and his review panel (Gonski, 2018). Most media supported the Australian Government's reported intention to adopt the recommendations (*ABC News,* 2 May 2018). *The Financial Review* reported on the possible changes to the way teachers viewed assessments and feedback about progress to students, including the limitations of the current NAPLAN tests and the improvements that could be made with a move to learning progressions.

Along with a restructuring of the curriculum, the need for students to receive a strong grounding in literacy and numeracy was supported in a number of articles (Savage, *The Conversation*, 1 May 2018, *National Nine News*, 30 April, Hewitt, *The Financial Review*, 30 April 2018). Peter Hutton, founder of the Future Schools Alliance, strongly supported learning progressions as a replacement for year-based curricula and also commented on the report's findings about subject choices for students, stating that other than literacy and numeracy there is no reason for compulsory subjects (Hutton, *The Guardian*, 3 May 2018). The then Education Minister, the Hon Simon Birmingham, said the panel spelt out the necessity to prioritise literacy and numeracy skills, particularly in the early years, as they formed the 'building blocks' of the curriculum, but did not suggest that the current compulsory status of some learning areas, including English, should be changed.

The proposed Year 1 Phonics Screening Check received mixed coverage in the media. *The Australian* reported there had been varied responses from state and territory education ministers, with NSW and Tasmania offering the strongest support (Urban, *The Australian*, 7 December 2017). *The Sydney Morning Herald* reported that teachers were aware that phonics was a key early reading skill but that singling it out for specific national assessment was unnecessary. Quoting Professor Robyn Ewing from the University of Sydney, the article advocated a more balanced approach to teaching and assessing early reading skills. (Singhal, *The Sydney Morning Herald*, 12 February 2018). *The Educator* garnered similar comments from Denyse Richards (Ballantyne, *The Educator*, 26 April 2018) who voiced concerns about the test 'narrowing the focus' of literacy instruction. Mr Birmingham's press release affirmed his support for the check, "The evidence is clear that early phonics and

numeracy checks can help to boost outcomes for Australian students … I look forward to discussions with my state and territory colleagues and education authorities across the country about how trials and implementation [of the screening check] can be rolled out" (Birmingham, *Sky News Australia*, 29 April 2018).

The release of the Grattan Institute's research into literacy and numeracy performance, based on NAPLAN data, caught the attention of the media, especially some of the data describing Indigenous literacy levels. While the report highlighted some improvements, such as growth in Year 9 reading scores in Victoria, South Australia and Tasmania, in general it concluded '[NAPLAN]) results show Indigenous school students are well behind their non-Indigenous peers, with Year 9 students being 3–4 years behind in both urban and remote settings' (Goss, The Grattan Institute, 08 February 2018).

Media took various angles on this, with some suggesting strategies to support improvements in Indigenous literacy, such as Dr Anita Heiss from the University of Canberra who stated, "NAPLAN results released last year show that Indigenous children are sliding further behind their non-Indigenous counterparts" and that "the gulf was alarming because there was an intrinsic link between being literate and getting the best out of life". She believed that better outcomes could be achieved if Indigenous students had access to reading materials that reflected their own culture (Heiss, UC Media and Communications, 18 September 2017). Although the Northern Territory remains the jurisdiction with poorest performance in every educational metric and age group, this year the Territory's remote Aboriginal students achieved a boost in results in reading, spelling and numeracy. Chief Executive of Department of Education, Vicki Baylis, said the results were promising but there is room for improvement (Bayliss, *NITV*, 14 December 2017).

Mathematics

The Australian Curriculum: Mathematics (AC: M) Foundation – Year 10 was endorsed by the Education Council in December 2010. Mathematics is organised into three interrelated content strands (Number and Algebra, Measurement and Geometry, and Statistics and Probability), combined with four proficiency strands (Understanding, Fluency, Problem-solving, and Reasoning). The Number and Algebra strand focuses on building number sense and the ability to think algebraically in order to solve problems in authentic contexts. The Measurement and Geometry strand focuses on analysing and solving a wide range of geometrical problems, building students' spatial awareness. The Probability and Statistics strand focuses on acquiring systematic strategies based on the statistical investigation process for answering statistical questions and predicting probable outcomes. These three strands, when taught through the use of the proficiencies, provide the mathematical knowledge and skills that form the basis of the four senior secondary subjects.

There are four senior secondary subjects: Essential Mathematics, General Mathematics, Mathematical Methods, and Specialist Mathematics. These subjects are differentiated to provide pathways that meet the different learning needs of senior secondary students. Essential Mathematics provides students with the mathematical knowledge, skills and understanding to solve problems in real contexts stemming from a range of vocational, personal and community settings. General Mathematics develops the procedural skills and conceptual understandings associated with aspects of discrete mathematics that is used in

an applied sense to solve authentic problems in context. Mathematical Methods develops the skills and concepts of calculus and statistical analysis that form a valuable mathematical foundation for future university STEM pathways. Specialist Mathematics provides opportunities, beyond those presented in Mathematical Methods, to develop rigorous mathematical arguments and proofs, and to use mathematical models more extensively.

During the 2017–18 monitoring period, work was commenced in F–10 Mathematics to review and enhance the current portfolio of work samples. The NNLP was also published in January 2018 as a resource to support the AC: M.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period focused on technologies, literacy and numeracy. This section includes commentary not already included in section 7c) Key issues: Literacy and numeracy.

Within the AC: M, the use of digital technologies is encouraged and advocated in the content descriptors and elaborations with explicit reference to their appropriate use. The numeracy demands of the AC are supported by the AC: M, the Numeracy general capability and the NNLP, which was released in January 2018.

The SCSA reported that the ICT capability, as with the other general capabilities, is addressed within all curriculum areas including Mathematics, where applicable. In Western Australia, ICT is only assessed within learning areas if the core curriculum content explicitly requires the use of ICT. In Mathematics, ICT capabilities allow students to choose the appropriate digital technology by which to complete tasks and to become effective users of ICT (SCSA).

The SA Department for Education's submission outlined three STEM projects in which they are currently participating as part of their STEM Learning Strategy 2017–2020. The Department's 2017–2020 strategy highlights the important role that technology plays in the South Australian education system and details the need for improved teacher capacity within the STEM disciplines and the integration among science, technology, engineering and mathematics. The SACE BSA is currently in a review cycle with all subjects of the SACE program under renewal, including Mathematics. The general capabilities are being integrated into all subject areas including ICT Capability, Literacy and Numeracy (SACE). In feedback received from the Queensland Department of Education, it was suggested that the AC: M documents provide more explicit mention of ICT capabilities within the content elaborations and achievement standards.

In responding to the question of numeracy demands across the curriculum, the AISNSW commented that ACARA needs to clearly define the relevant AC mathematical content that may be taught effectively in other learning areas. The QCEC proposed that there be an alignment between the AC: M and some AC learning areas with regard to the development of prior mathematical skills and concepts required within these disciplines. They noted that in the case of Geography, for example, students are required to perform numerical tasks without the necessary prior mathematical knowledge.

The SA Department for Education highlighted the existence of clear differences between the numeracy expectations of the AC and the AC: M with reference made to the general capability of Numeracy. This response included comment that South Australian mathematics teachers found the general capability learning continua for Numeracy, and Critical and Creative Thinking useful for the teaching of mathematics as these capabilities supported them in providing greater challenge to students' levels of thinking within the context of Mathematics. The Victorian jurisdictions stressed that numeracy is explicitly taught within the discipline of Mathematics and then reinforced and exemplified in other learning areas (Catholic Education Commission of Victoria (CECV), Independent Schools Victoria (ISV), and the VCAA).

Enquiries

During the monitoring period, enquires received were predominantly concerned with the interpretation of the AC: M content descriptions and achievement standards, as well as some general queries concerning financial literacy and the teaching of analogue time measurement. Clarification of the language used in curriculum documentation was sought, prompting some additional definitions being added to the AC: M glossary.

The NLNLP generated a number of enquiries such as the release date of the learning area advice for The Arts, website navigation queries and whether there is intent for ACARA to provide additional support materials for teachers using the progressions, such as diagnostic tools and other forms of formative assessment.

Several assessment and reporting enquiries were received concerning grading and reporting of students' achievement in Mathematics. As this is not an ACARA area of responsibility, these enquires were referred to the appropriate state authorities for clarification.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total number of pageviews for the Mathematics learning area entry webpage on the AC website was 650,000.

The total number of pageviews for national numeracy learning progressions (NNLP) was 161,069. In the top 10 results for pageviews, the 'National numeracy learning progression' page recorded 51,140 pageviews, the 'National numeracy learning progression: Number sense and algebra' received 66,498 pageviews, and the 'Measurement and geometry' received 6,975 pageviews. The 'Statistics and probability' ranked outside the top 10 pageviews.

There were 24,941 pageviews of Mathematics pdf documents over the reporting period, with Queensland having the most with 8,897 pdf pageviews, followed by South Australia with 4,213 pdf pageviews. The Northern Territory registered the fewest pdf pageviews at 539. Outside Australia, the most pdf pageviews were from England at 110, followed by Bangkok, Thailand, with 76.

Mathematics work samples portfolios totalled 19,103 pageviews. Of these, approximately 57 per cent were returning visitors and 43 per cent were new visitors. Work samples

portfolios for Mathematics are currently available in pdf file format only. In 2019, these files will be replaced with new work samples portfolios in html format.

The average time spent on the 'Mathematics' entry webpage was 1 minute and 16 seconds, and the bounce rate was well within the desirable range at 23 per cent.

Media and issues for consideration

During the 2017–18 monitoring period, the interest in mathematics education has grown as a result of several reports being released, initiatives being implemented, and the profile of NSW Mathematics teacher Eddie Woo.

Key discussions and common issues raised in relation to mathematics across the nation have included improving student numeracy, declining senior student participation in advanced mathematics, the need for 21st century learning, Science, Technology, Engineering and Mathematics (STEM) education initiatives, and digital literacy in mathematics.

Decluttering the curriculum was supported by many in the media, citing the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMMS) results, which indicated a significant decline in Australia's international ranking in mathematics, as evidence (*Sydney Morning Herald, The Australian, The Guardian, Courier Mail*, April/May/June 2018). Michael Roberts, a panelist on the Gonski 2.0 review panel, was quoted as saying that "Science, Geography and history should not be taught until Year 4, when students have strong foundations in number and reading" (Baker, *Sydney Morning Herald*, 20 May 2018).

On its release in April, 'Through growth to achievement: Report of the review to achieve educational excellence in Australian schools' (Gonski, 2018) dominated media discussions. There was significant debate in April and May, with some specific reference to the areas of mathematics and numeracy (*Sydney Morning Herald*, *ABC Radio*, *The Financial Review,* April 2018). The review's findings ignited comment around the pedagogies teachers should employ to best achieve the required learning outcomes in mathematics with opposing views expressed along the continuum of traditional teacher-centred approaches aimed at the mastery of mathematical content, to student-centred learning aimed at equipping students for living in the 21st century (*The Australian*, *Nine News*, *The Weekly Review*, 30 April 2018).

The issue of out-of-field teachers teaching STEM subjects was highlighted as a possible reason for the decline in participation numbers for advanced STEM subjects and Australia's performance on international assessments in mathematics (*The Financial Review*, 29 April; Reid, *The Educator*, 3 May 2018). In July, there was increased media interest around the under-supply of qualified mathematics teachers and the issue of out-of-field teachers teaching secondary Mathematics due to a speech by the then Minister for Education, the Hon Simon Birmingham, presented at the Australian Science Teachers Association on 8 July (*The Educator, The Australian, Sydney Morning Herald,* July 2018). The minister was quoted as saying, "It's unacceptable that secondary school students are taught science or maths subjects by people without specialist skills in science and maths … every high school should have access to specialist teachers to teach specialist science and maths subjects. And we should strive to achieve this within the next five to 10 years" (Hennessey, *The Daily*

Telegraph, 08 July 2018). The 2016 ACER Policy Insights: Out-of-field teaching in Australian Secondary Schools claimed that up to 38 per cent of teachers teaching Mathematics in Years 7–10 had not completed any tertiary studies at a second year level or any teaching methodology.

A media release by the Chief Scientist entitled 'Expanding STEM options for all Australian students' announced the launch of the STARportal, a national database for accessing STEM activities (OCS, August 2017). The Office of the Chief Scientist also released DATASHEET 2: Science and Maths in Australian Secondary Schools (December 2017) that identified a number of issues currently impacting on mathematics and science education in Australian schools. These included disengagement, declining international performance and the continued gap in performance outcomes between students from varying socio-economic demographical backgrounds. Some statistics highlighted in the report indicated that only 1 in 10 students are completing advanced mathematics in Year 12, only 13 per cent of Year 8 students like mathematics, and approximately 20 per cent of secondary teachers are teaching mathematics out of field. In July 2018, the Office also produced an occasional paper 'Improving the mathematics performance of Australia's students' (OCS, July 2018), which captured the attention of media when it suggested NAPLAN data analysis as a means to improving mathematical performance. The report also suggested a shift in focus from performance to mastery in citing findings from a collaborative study conducted by the OCS and a consortium of universities led by UTAS, which identified 619 Australian schools that had demonstrated 'outstanding improvement' in their NAPLAN numeracy scores. In 'NAPLAN unlocks key to mathematics', Urban reported, "Schools can turn around students' maths results within two years by adopting highly effective approaches identified through extensive analysis of NAPLAN data, the research paper, released by Dr Finkel's office yesterday" (Urban, *The Australian*, 20 July 2018).

Australia Day 2018 also celebrated mathematics education with the honouring of Cherrybrook Technology High School's Mathematics teacher, Eddie Woo, with the award of Australia's Local Hero for 2018 (Machado, *The Daily Telegraph*, January 2018). This led to many positive media articles about the importance of learning mathematics and the impact great teachers can have on students' love of mathematics. Eddie's Wootube video channel has over 100,000 subscribers and more than 8 million views (*ABC News*, January 2018). Eddie Woo has featured on magazine covers and has been quoted on issues such as mathematics anxiety (*Teacher*, February 2018) to inequity in mathematics education (Carey, *News.com.au*, June 2018). The June launch of Woo's new television show, *Teenage Boss* (*ABC ME*, June 2018), has also drawn some media attention about financial literacy.

The importance of explicitly teaching financial literacy in schools was a theme that emerged in some media (*The Adelaide Advertiser*, June 2018), together with associated articles about an inherent lack of financial literacy amongst adolescents. A national survey of parents of adolescent children reported that 43 per cent of participants believed that their children had not learnt sufficient money management in school, with a push for it to become more significant in school curricula (*The Educator Australia*, *Finder.com.au*, June/July 2018).

Science

The Australian Curriculum: Science (AC: S) Foundation – Year 10 was endorsed by the Education Council in December 2010. The Science learning area is organised into three interrelated content strands: Science Understanding, Science Inquiry Skills, and Science as a Human Endeavour. These strands indicate the science knowledge and skills that are to be taught as well as inform the achievement standards at each year level. The Science Understanding strand is further subdivided into four sub-strands corresponding to the four disciplines of Biological, Chemical, Physical, and Earth and Space Sciences.

The senior secondary curriculum consists of four subjects; Biology, Chemistry, Earth and Environmental Science, and Physics. The senior secondary Science subjects build on student learning developed in the AC: Foundation – Year 10 Science curriculum and incorporate the same three interrelated content strands.

Supporting the curriculum are student work samples that enhance teachers' understanding of the content descriptions and achievement standards. During the 2017–18 monitoring period work commenced in F–10 Science to review and enhance the current portfolio of work samples. Work also continued on the development of new content elaborations to support the Aboriginal and Torres Strait Islander Histories and Cultures cross-curriculum priority.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period was requested on the areas of technologies, literacy and numeracy. Only jurisdictional responses specifically mentioning the learning area Science are discussed in this section.

With respect to the numeracy demands in the AC: S, the SA Department for Education noted the difference between the expectations of the numeracy general capability, the Mathematics curriculum, and content in the AC: S in the area of measurement. It was pointed out that demonstrating understanding of the physical science content in Year 5, students require an understanding of rates and scale which are not introduced in the AC: M or in the numeracy learning continuum until later years/levels. The SA Department for Education also reported on recent evidence indicating that professional learning to support middle years Science teachers in identifying and explicitly addressing the literacy demands in Science is successful in improving student engagement, understanding and outcomes.

The AISNSW suggested that the AC could more clearly outline where mathematical content and skills could be developed in other learning areas. Linking learning opportunities in the Data content descriptions of the AC: M to the AC: S was given as an example. It was emphasised that this approach would be particularly beneficial for the primary year levels. With respect to Literacy it was suggested that teacher engagement with the AC could be enhanced by clearly identifying the Literacy general capability throughout all learning areas. Using the learning area Science as an example, it was recommended that the AC website should provide the ability to search the curriculum for the Literacy general capability as well as link to strategies to develop the capability.

The QCEC's response included a section on general comments about the F–10 AC that identified some misalignments between the learning areas of HASS and Science. As an example, it states that in Year 5 AC: HASS the content covers the impact of bushfires or floods and how people can respond (ACHASSK114), while the corresponding science content related to extreme weather events is not covered in the AC: S until Year 6 (ACSSU096).

The QCAA pointed to some inconsistencies between numeracy expectations in the learning areas and the content in the AC: M using AC: S as an example. While Mathematics students in Year 4 are expected to construct data displays from given or collected data, Science students at the same year level use provided tables and column graphs to organise data and identify patterns. With respect to the technologies subjects, which are expected to be fully implemented in Queensland by 2020, the QCAA reported that schools are currently at various stages of implementation. Many schools emphasise the importance of STEM education and are using the learning area of Science as an integrating device which provides a focus to engage with the fundamental design, system and computational thinking processes in the technologies subjects.

Enquiries

The number of enquiries from teachers requesting assistance with the interpretation of content descriptions and achievement standards or the location of specific information on the website has declined over the course of this and previous monitoring periods. Limited enquiries were made by teachers in the 2017–18 monitoring period. This may be attributed to the fact that in most jurisdictions the AC: S has been implemented for some years and teachers have become increasingly comfortable with its use and application.

Some enquiries were made by university researchers regarding the historical development of the AC and by commercial enterprises requesting assistance with locating specific information for the preparation of educational materials. For example, assistance was provided to a researcher at Curtin University regarding changes that occurred in the tagging of curriculum content against the cross-curriculum priority on Sustainability since the first publication of the AC, and to Queensland Urban Utilities with locating curriculum content relating to water, waste water and waste treatment. General advice was also given to an educational resource company regarding the use of the achievement standards and content elaborations for optimal alignment of teaching materials.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total number of pageviews for the Science learning area entry webpage on the AC website numbered 365,000.

Science scope and sequence pdf documents reported 17,861 pageviews over the monitoring period.

The Science work samples portfolios webpage registered 8,856 pageviews. Of these, over 5,000 pageviews were returning visitors and over 3,000 pageviews were new visitors. Work samples portfolios for Science are currently available in pdf file format only. In 2019, these files will be replaced with new work samples portfolios in html format.

The average time spent on the Science learning area entry webpage was 58 seconds, and the bounce rate was well within the desirable range at 25.57 per cent.

Media and issues for consideration

During the 2017–18 monitoring period, the media focus in science education principally centred on concerns about the level of student engagement with Science, Technology, Engineering and Mathematics (STEM) subjects, and the timing and development of STEM-related skills. These concerns have been linked to Australia's stagnating or declining performance in international comparative assessment studies such as the Trends in International Mathematics and Science Study (TIMSS) and the Programme for International Student Assessment (PISA) (Tytler, Education Matters, 22 June 2018). These concerns were also highlighted by Andreas Schleicher's comments regarding the decline in PISA performance, particularly, of the top Australian students (Balogh, The Australian, 27 September 2017).

Tytler's article explores some of the challenges of STEM education in Australia, listing the lack of teacher confidence and competence, and the lack of time devoted to the teaching of Science in the primary years as possible explanations for declining student engagement and performance. The article also emphasises the importance of Science as a key learning area for developing critical reasoning, questioning and problem-solving capabilities.

Several articles reported on an increased focus on Science and STEM education in the early years of schooling. The Commonwealth Government's Early Learning STEM Australia (ELSA) pilot project (Australian Government press-release, Public Now, 3 September 2017), promoted the introduction of STEM practices as part of preschool programs. Other articles reported on the trialled introduction of STEM-related topics such as atomic-molecular theory as early as mid-primary school (Haeusler, *The Adelaide Advertiser*, 13 February 2018).

The lack of teacher expertise in STEM subjects continues to be identified as a major challenge to advancing STEM education by authors writing in the fields of business as well as education (Baldassarre, *Startup Daily*, 2 November 2017; Timms, Moyle, Weldon and Mitchell, ACER Policy Insights, May 2018). Lowering barriers to STEM professionals entering the teaching profession has been suggested as a possible solution (Varadharajan, *Business Daily*, 28 November 2017).

In a similar context, some articles reported on a call by the Chief Scientist, Dr Alan Finkel, for governments and industry to work together to encourage primary and secondary students to engage more in STEM subjects by focusing on real-world problems (Bolton, *The Financial Review*, 23 April 2018). These articles also made reference to the suggestion that the ATAR system of calculating university entrance scores was discouraging students from participating in higher level Science and Mathematics subjects at Years 11 and 12 (Koziol, *The Sydney Morning Herald*, 21 April 2018).

Western Australia has commissioned an advisory panel of industry experts, researchers and educators to develop a state STEM strategy. The panel is chaired by Professor Peter Klinken who, in 2015, as Western Australia's Chief Scientist, advocated that Mathematics and Science should be compulsory subjects in Years 11 and 12 (Tognini, *The West Australian*, 11 August 2017). A similar opinion was voiced by David van Gogh, leader of the

Australian technology and risk advisory firm Amstelveen, on ABC Radio Australia (6 February 2018). Van Gogh also advocated for a stronger emphasis on teaching mathematics as the crucial component of successful STEM education.

Researchers at the Australian Council for Educational Research (ACER) linked the declining interest in STEM subjects among students to 'Australia's unbalanced and fragmented STEM curriculum' (Timms, Moyle, Weldon and Mitchell, ACER Policy Insights, May 2018). The authors called for a more integrated approach to teaching the STEM disciplines. ACER *Teacher Magazine* (Earp, 28 March 2018) reported on a plan by an independent girls' school in NSW to implement such an approach starting at Year 7. The school intends to focus on a closer integration of Science and Mathematics in the curriculum and will involve team teaching of specialist teachers from both learning areas.

In his Balmoral Lecture at Queenwood School for Girls in northern Sydney, NSW Education Minister Rob Stokes criticised the current over-emphasis on STEM education and warned of the negative consequences of devaluing the importance of The Arts and Humanities subjects (Smith, *The Sydney Morning Herald*, 21 March 2018). The article cited Smith's advocacy for true multidisciplinary education that also recognises the value of 21st century skills. In a similar context, *The Examiner* (Stone, 15 March 2018) reported on Tasmania's increasing focus on integrating the learning areas of Science, Technology, Engineering, Arts, and Mathematics (STEAM) and its potential of fostering creative as well as critical thinking skills. The article pointed to the possible benefits for Tasmanian students in the 2021 PISA assessment, which is planned to include a major focus on creative thinking.

Several media publications reported on the successful integration of Aboriginal and Torres Strait Islander histories and cultures with the learning area of Science in the AC. An SBS television broadcast (16 August 2017) reported on work that CSIRO was carrying out with students in Western Desert remote communities as part of the Science Pathways for Indigenous Communities program. This program aims to use on-country projects as contexts to link traditional ecological knowledge to the science content in the AC. Wiluna, the school that won the CSIRO's 2017 Indigenous STEM Award, is a participant in the program and its 'two-way' science curriculum has been hailed by the principal as a powerful motivator for student engagement and as a means of strengthening connections between the school and the broader community (Trevino, *Education HQ*, 25 June 2018). *SBS* (Morelli, 9 November 2017) also reported on an innovative and successful STEM learning project in regional Western Australia aiming to engage more Aboriginal girls in STEM subjects.

Humanities and Social Sciences

The Australian Curriculum: Humanities and Social Sciences (AC: HASS) Foundation – Year 10 was endorsed by the Education Council in September 2015. The learning area comprises multiple subjects. In the Foundation – Year 10 curriculum, these are: F–6/7 Humanities and Social Sciences (HASS), 7–10 History, 7–10 Geography, 7–10 Economics and Business, and 7–10 Civics and Citizenship. F–6/7 HASS comprises four sub-strands: History and Geography (each of which commence in Foundation), Civics and Citizenship (which commences in Year 3) and Economics and Business (which commences in Year 5).

The senior secondary curriculum also comprises multiple subjects: Ancient History, Geography, and Modern History. Ancient History and Modern History were endorsed by the Education Council in December 2012, and Geography in July 2013.

During the monitoring period, the 'Resources' portal of the AC website was updated to include work samples to illustrate the achievement standards for each year level for 7–10 Civics and Citizenship, and 7–10 Economics and Business. Work also continued in F–6/7 HASS to review and enhance the current portfolio of work samples.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period was requested on the areas of technologies, literacy and numeracy. In supplying detailed responses to these aspects of the AC, little direct mention was made of the Humanities and Social Sciences. The exceptions were statements by the NSW Education Standards Authority in relation to current revisions of local Human Society and Its Environment (HSIE) syllabus documents that will include 'appropriate and relevant AC content'; feedback on the lack of alignment of content across some learning areas by the QCEC using Year 5 HASS (ACHASSK114) and Year 6 Science (ACSUU096) as an example; reference by the QCAA to the inquiry approach of HASS as a model for integrating technologies; and brief statements regarding the integration of information technology, literacy and numeracy skills across all year levels in HASS (QCEC, VCAA and QDoE).

Enquiries

During the 2017–18 monitoring period, responses and support in relation to the AC: HASS were provided to a range of individuals and educational organisations from Australia and overseas. Many Australian enquires were associated with the structure of the curriculum in HASS, in particular the sequencing of content and choices of topics within depth studies. Other enquiries sought clarification of content or support in accessing the NLNLP advice. A number of comments were received from individuals acknowledging the quality and usefulness of the illustrations of practice of the Aboriginal and Torres Strait Islander Histories and Cultures cross-curriculum priority in HASS.

Regular support was provided to an overseas researcher in the area of civics and citizenship education.

Periodic briefings and updates on the HASS curriculum were provided to organisations and institutions such as the Australian Taxation Office, the Australian Securities and Investments Commissions and the Commonwealth Bank.

Also during the monitoring period, a range of schools and jurisdictions were provided with support and advice regarding the AC: HASS. Workshops and presentations were conducted in government and independent schools in New South Wales and the Australian Capital Territory as part of the collation of representative work samples that demonstrate the HASS achievement standards, engagement with civic institutions and a project supporting the integration of the Critical and Creative Thinking general capability.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total number of pageviews for the HASS learning area entry webpage on the AC website was almost 491,000. Within the HASS subject areas, the number of pageviews for HASS F–6/7 was almost 284,000, History Years 7–10 received 114,849 pageviews, followed by Geography Years 7–10 at almost 80,000 pageviews.

On par with English, there were 27,435 pageviews of HASS pdf documents over the monitoring period. This included 15,743 pdf pageviews for HASS F–6/7; 4,498 pdf pageviews for F–10 HASS Key ideas: Subject sub-strand illustrations; 3,317 for History; 2,251 for Geography; 1,626 for Economics and Business; and 1,187 pdf pageviews for Civics and Citizenship. Of the HASS F–6/7 pdf pageviews, 6,538 were from Queensland; outside Australia, Bali, Indonesia, registered the most pdf pageviews at 34.

HASS work samples portfolios registered a total of 18,778 pageviews over the period. This included 10,105 pageviews of pdf format work samples portfolios files. Of these, over 7,000 pageviews were returning visitors and approximately 3,000 pageviews were new visitors.

Work samples portfolios for HASS are currently available in pdf file format for Foundation–Year 6/7 and Years 7–10 History, and in html format for Geography, Economics and Business, and Civics and Citizenship. In 2019, all pdf file format work samples will be replaced with new work samples portfolios in html format.

In HASS: Geography, there were 7,204 *work samples portfolios.* The most popular pageviews included 1,275 for Year 7 at satisfactory level, and 1,238 for Year 8 at above satisfactory level.

In HASS: Economics and Business, limited numbers of Year 9 work samples portfolios at the satisfactory and above satisfactory levels could be accessed during the monitoring period. Years 7, 8, 10 and additional Year 9 work samples portfolios became available in July 2018, just after the close of this reporting period.

HASS: Civics and Citizenship recorded 1,250 pageviews for Years 7, 8, 9 and 10 at satisfactory and above satisfactory levels. The highest number of pageviews was recorded for Year 7 at satisfactory level with 302 pageviews, followed by Year 8 at satisfactory level with 273 pageviews.

The average time spent on the HASS learning area entry webpage was just over 1 minute, and the bounce rate was well within the desirable range at 17.5 per cent.

Media and issues for consideration

Throughout the 2017–18 monitoring period, several issues in relation to HASS received recurring media attention. The most prominent, as it was in 2016–17, was in relation to consumer and financial literacy, with a range of print articles again reporting on the decline in performance of Australian students in the 2015 PISA financial literacy assessment, and individuals and groups calling for students to be taught the complexity of superannuation systems, mortgages and personal financial management. Many reports promoted the use of resources and programs to support the AC developed by the Australian Taxation Office and the Australian Securities and Investment Commission. Little mention or acknowledgement

was made of the resources, including units of work and interactive activities for all year levels, available for Consumer and Financial Literacy via ACARA's Curriculum Connections resource portal.

Examples of such articles included: 'Financial literacy program gets funding boost' (Reid, *The Educator*, 20 July 2017); 'Students get money savvy in classroom' (Constantine, *The Western Australian*, 15 September 2017); 'Financial literacy is a public policy problem' (Guest, *The Conversation,* 23 October 2017); 'Here's how to teach your kids about money' (Sawatzki, *Business Insider*, 24 October 2017); 'Make finance studies compulsory in schools' (Machado, *The Daily Telegraph*, 2 November 2017); 'Why Gen Ys are getting short changed on money management' (Worrall, *Domain*, 3 November 2017); 'What needs to be done to get our kids money smart' (Pedersen–McKinnon, *The Guardian, 7* November 2017); 'Overly confident: 80% of Australians rate themselves as financially savvy' (Burke, *Domain*, 19 December 2017); 'Young Australians are worried about making poor financial decisions' (Banney, *Finder*, 7 June 2018); and 'Never too early for cash lessons' (Baker, *The Adelaide Advertiser*, 29 June 2018).

At various points in the monitoring period, there was particular interest in the role of the AC in enabling students to access knowledge and understanding of Australia's identity, and early European exploration and colonisation. This interest tended to coincide with the anniversary of events or in response to public statements by individuals. Examples of these discussions include: 'Ideologues have captured school history curriculum' (Norington, *The Australian*, 24 August 2017); 'Drive to increase pre-settlement history lessons' (Kelly, *The Australian*, 30 August 2017); 'Beware history's capitulation to the left' (Brown, *The Australian*, 31 August 2017); 'Standing in history's shadow' (Garrick, *Northern Territory News*, 2 September 2017); 'Cook rediscovered: white ghosts on coast' (Dalton, *The Australian*, 5 September 2017); 'Save Australia Day? You don't even know what you are fighting for' (Verass, *SBS–NITV*, 14 January 2017); 'January 26 is a day to remember the First Fleet and its contribution to Australia' (Fearon, *ABC News*, 26 January 2018); 'The have a go spirit is kept out of most classrooms' (Wiltshire, *The Australian, 26 January 2018);* 'Education basics teach a lesson on principles and values' (Smith, *Herald Sun*, 26 January 2018); 'Teaching the history of nothing' (Evans, *Quadrant,* 10 April 2018) and 'Know this? It's all our history' (Australian Council of Deans of Education, *Medianet*, 24 May 2018).

Another recurring topic was the civics and citizenship education of young Australians and its influence on political action and discourse. This was seen in articles such as: 'Same sex marriage: we should all be out campaigning' (Price, *Brisbane Times*, 14 August 2017); 'Young Australians are engaged in political issues, but unsure how democracy works' (Ghazarian, *The Conversation*, 28 September 2017); 'Should schools be encouraging political engagement?' (Middlemiss, *The Educator*, 5 October 2017); 'Citizenship education: making it count' (Heggart, *Education Today*, 8 October 2017); and 'We must provide our students with the tools to engage and understand the political process' (Cudmore, *Education HQ*, 3 November 2017).

There was also coverage of approaches to Aboriginal and Torres Strait Islander histories and cultures within the AC in general, and the HASS curriculum in particular. Example articles included: 'Aboriginal culture at centre of journey' (Pelusey, *The Western Australian*,

7 August 2017); 'Bipartisan support for Scullion's pre-Cook history lessons' (Kelly, *The Australian*, 31 August 2017); 'St Justin's Catholic primary school's controversial Stolen Generation lesson won't happen again' (Osborne, *Wollondilly Advertiser*, 31 August 2017); More on Aboriginal history' (Tuffield, *Shepparton News*, 5 September 2017); 'Preserving the Noongar language' (Phillips, *The Western Australian*, 17 October 2017); 'Australians must unite to learn from the past' (Sullivan, *Noosa News*, 17 January 2018); 'Political divisiveness happens every time Indigenous people are the topic of national debate' (Cromb, *SBS–NITV*, 17 January 2018); and 'Closing the gap on Indigenous education must start with commitment and respect' (Buckskin, *The Conversation*, 11 February 2018).

As in 2016–17, these articles and discussions all explored in some way the importance of intercultural understanding and ways in which the AC, in both the primary and secondary years, contributes to the creation and strengthening of Australian values and identity.

ACARA continues to support jurisdictions and individuals through the revision, review, updating and expansion of resources and support material, including work samples, curriculum connections and illustrations of practice on the AC website.

The Arts

The Australian Curriculum: The Arts (AC: TA) was endorsed by the Education Council in September 2015. It consists of five related but distinct subject areas; Dance, Drama, Media Arts, Music and Visual Arts. Each of these subjects organise learning and teaching through two interrelated strands: making (the knowledge, skills, techniques, processes, materials and technologies to explore arts practices and make artworks), and responding (exploring, responding to, analysing and interpreting artworks).

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period focused on technologies, literacy and numeracy. There was limited specific feedback in relation to the AC: TA apart from some stakeholders (AISNSW and AISWA) calling for publication of advice to support literacy and numeracy development across the learning areas including The Arts, noting, for example, that "such resources could provide targeted activities and examples that explicitly outline the literacy demands for a particular learning area and strategies to develop students' literacy skills" (AISNSW) and "the Australian Curriculum may assist teachers by providing an outline of other learning areas where mathematical skills could be developed to meet learning demands" (AISNSW).

Some aspects of the feedback identified connections between ICT and/or the Digital Technologies curriculum and the AC: TA. These included suggestions that opportunities for using ICT across the learning areas could be highlighted through elaborations (QCAA). In The Arts, such elaborations could highlight opportunities to use ICT tools, for example, "using multimodal, multimedia-based apps for digital portfolio work" (AISWA) or use of interactive controllers, green screen or 3D printers (CESA).

Enquiries

During the 2017–18 monitoring period, ACARA responded to a range of enquires about The Arts curriculum. These included teachers seeking general information about implementation and resources, and specific requests such as those for a dedicated curriculum for Instrumental Music and further details about the Dance curriculum.

Information sought by teachers and subject associations about state and territory implementation of The Arts came from arts educators and advocates interested in knowing of the status of the learning area. Queries related to whether it was mandatory for schools to implement the complete curriculum or whether schools or school systems could decide to develop programs that incorporate some but not all of The Arts subjects. There was also interest in the number of hours mandated for teaching The Arts and/or individual Arts' subjects across the states and territories. These implementation questions mainly related to the AC F–6.

Requests for ACARA to publish or publicise a range of teaching materials developed by organisations and artists were also received.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total number of pageviews for The Arts learning area entry webpage on the AC website was almost 248,000.

Of all subjects in The Arts, the Visual Arts pages registered the most pageviews, followed by Music, Drama, Media Arts and Dance.

There were 5,798 pageviews of The Arts pdf documents over the reporting period. Queensland registered almost 2,500 pdf pageviews, followed by 935 from South Australia. Outside Australia, East Java, a province in Indonesia, registered the most pdf pageviews at 34.

In The Arts learning area, there were over 38,000 pageviews for work samples portfolios. The most popular work samples portfolios were in Visual Arts with 26,047 pageviews, followed by Music with 6,599 pageviews, Media Arts with 2,809, Drama with 1,560 and Dance with 1,152 pageviews. The single most visited work samples portfolios webpage in The Arts was in Visual Arts: Foundation – Year 2 at satisfactory level and within this category the most popular project was 'Leaving home' with 1,311 pageviews. The most visited work samples portfolios in other subjects in The Arts were in Foundation – Year 2 at satisfactory level.

The average time spent on The Arts learning area entry webpage was 48 seconds, and the bounce rate was well within the desirable range at 24.46 per cent.

Media and issues for consideration

Media coverage related to The Arts – Dance, Drama, Media Arts, Music and Visual Arts – over the period focused on: the STEM/STEAM debate; advocacy for, and valuing of, the Arts; and ways that learning in and through Dance, Drama, Media Arts, Music and/or Visual Arts benefit students, schools and communities.

Many stories released through local and national channels reported on ways schools, artists, creative professionals and cultural organisations are collaborating to offer programs that broaden and enhance learning. Reports refer to the positive impacts these programs have on student learning around engagement, equipping students for their futures, and nurturing social and emotional wellbeing in 'State could lead nation in arts education' (Jackett, Baguley and MacDonald, *The Hobart Mercury,* 18 May 2018); and strengthening the culture of schools in articles such as: 'Teaching creative subjects like music and the arts is crucial in lifting the performance of Australian schools' (Dodd, *The Australian Financial Review*, 22 October 2017); 'Sydney Symphony Orchestra teaming with government to help disadvantaged areas in the Musical Engagement Program (Sully, *Channel 10)*; 'Dedicated performing arts teachers do a better job' (Wilson and Green, *Education Today*, Vol.18 (1) 14 August 2017).

Some commentators noted the economic benefits of these programs; for example, Victoria's Deputy Premier and Minister for Education, the Hon. James Merlino, said at the launch of the Creative Victoria, Creative Learning Partnerships program, "We need to teach our children to think critically and creatively to ensure they are ready for the jobs of the future. That is why programs like this are so important". (Minister for Creative Industries, Victoria, media release, 6 March 2017)

Other reports highlight social and emotional benefits; for example, the capacity of partnership programs to provide inclusive, learner-centred experiences that broaden young people's awareness of the wider world in 'How artist-led creative learning breaks access barriers for children' (Boland, *Arts Hub,* 22 May 2018). Coverage of projects involving schools and Aboriginal and Torres Strait Islander peoples illustrated connections between the arts, language and culture, and ways that students in all schools can learn about these connections from members of the Aboriginal and Torres Strait Island communities such as 'Arnhem dancers visit Port Lincoln' (Ovan, *The Port Lincoln Times* and *The Newcastle Herald,* 5 July 2018).

Reports discussing the nature of creativity, distinctions between creative thinking skills and arts practice and the wider community's understanding of creative industries appeared regularly, particularly around the 2018 NAPLAN test period. These included: 'NAPLAN needs to get creative', Baran and Jacobs, *2SER*, 25 May 2018); Associate Professor Kathryn Grushka's commentary that, "a Creative Industry skill set, where technology, creativity and passion abound, may well become the missing link for school learning in Australia" (*Edu Research Matters*, 4 February 2018); paring back F–6 curriculum to focus on literacy, numeracy, The Arts and PE, (Roberts, *Sydney Morning Herald*, 21 May 2018); using STEAM programs to support students to learning to see STEM problems in new ways (Wade–Leeuwen, Vovers and Silk in 'Explainer', *The Conversation*, 12 June 2018). Other commentators called for the contribution of the Arts to STEM programs to be made more visible and less of a 'soft study' (MacDonald, *Newcastle Herald*, 15 March 2018).

Some coverage focused on potential negative impacts on student learning due to an excessive emphasis on NAPLAN results (Ward, *Nine News,* 3 August 2017) and calls to recognise the need for more time for arts education (Stone, *The Examiner*, 12 September 2107).

Limited coverage appeared regarding the delivery of individual Arts subjects. Often these reports were released by project teams; for example, Richard Gill's article 'Collaboration's the name of the game' about the National Music Teacher Mentoring Program, (*Limelight Magazine*, 1 December 2017). Gill, who designed and directs the program[18], comments that, "Professor Margaret Barrett and her team of researchers at the University of Queensland are evaluating the effectiveness of the program. Two of three key benefits are: 1. increase in teachers' confidence and competence in teaching music 2. improvement in student singing ability, regardless of gender, socio-economic standing, ethnicity or school locality".

Health and Physical Education

The Australian Curriculum: Health and Physical Education (AC: HPE) for Foundation – Year 10 was endorsed by Education Council in September 2015. Health and Physical Education is organised into two interrelated content strands: Personal, Social and Community Health, and Movement and Physical Activity.

ACARA has developed resources to support teachers engage with, understand and implement the AC: HPE. These resources include student work samples (published August 2016), which support teachers to make judgements about student achievement in AC: HPE against the achievement standards. In addition, the curriculum connections for Outdoor learning and Food and wellbeing (published February 2017) demonstrate how the AC can be delivered in different contexts. Teachers can link learning from the AC: HPE to other learning area content as well as to the general capabilities and cross-curriculum priorities.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period was focused on the areas of technologies, literacy and numeracy. In supplying detailed responses to these aspects of the AC, little direct mention was made of the AC: HPE. NESA reported that the New South Wales Years 7–10 syllabus in PDHPE was "being revised for currency and for inclusion of appropriate and relevant Australian Curriculum content".

Enquiries

Enquiries from a range of stakeholders and media outlets were received in relation to the implementation of the AC: HPE. These included questions regarding how the learning area explicitly promotes social and wellbeing issues such as the teaching of gender equity, domestic violence, resilience, social and emotional skills and positive mental health strategies.

Enquiries were also received in relation to the use of achievement standards and work samples when assessing student learning.

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[18] Australian Youth Orchestra (2015). Introducing the National Music Teacher Mentoring Program. Retrieved from www.ayo.com.au/content/national-music-teacher-mentoring-program/gjgbmm

ACARA's participation in the OECD Education 2030 project involved responses to some international research in relation to HPE curricula and policy. This included a questionnaire and a case study in relation to health and physical education policy and practice.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total number of pageviews for the HPE learning area entry webpage on the AC website was almost 222,000.

Access to pdf documents measured 12,410 pageviews, with the average time on the page registering 3 minutes. The most pdf pageviews were from Queensland at 4,440, followed by South Australia with just over 2,000. Outside Australia, the largest number of pdf pageviews were from England at 67, followed by the Amman Governorate in Jordan with 34 pdf pageviews.

In HPE, there were over 29,000 pageviews for work samples portfolios. All work samples portfolios were accessed at least 1,200 times in Foundation – Year 10. The most visited work samples portfolios were in Foundation – Year 2 at satisfactory level and logged over 7,500 pageviews, followed by Years 3–4 at satisfactory level with 4,820 pageviews. The most visited work samples portfolios at above satisfactory level were in Foundation – Year 2 with 2,036 pageviews.

The average time spent on the HPE entry webpage was 1 minute 19 seconds, and the bounce rate was within the desirable range at 28.79 per cent.

Media and issues for consideration

Media coverage over the 2017–18 monitoring period for AC: HPE revealed a strong correlation with many themes from the 2016–17 period including: advocacy for compulsory swimming lessons and water safety; wellbeing, mental health, mindfulness, social and emotional learning; alignment between physical activity and academic achievement; support for outdoor and play-based learning; the impact of technology on daily physical activity and obesity levels; and issues around sexuality, gender and sex education.

Extensive coverage in national and local media highlighted pleas from a range of stakeholders within government, sporting and educational fields to implement compulsory swimming lessons in Queensland schools. Reports also remarked a push for water and swim safety to be implemented within school curricula across the country (*The Courier Mail, The Age, The Herald Sun, Sunshine Coast Daily, The Gympie Times, South Burnett Times, Whitsunday Times, Illawarra Mercury*, August/September 2017). Surf Lifesaving Queensland Chief Operating Officer, George Hill, publicised the importance of swimming lessons for all students, "… equipping all students, regardless of location, with vital swimming skills and awareness will not only save lives, but also significantly reduce the number of major incidents on Queensland beaches and in other locations" (*The Age*, 8 August 2017). National commentary advocated for water safety and swim safety programs in school curricula in response to increased drowning statistics and children not being able to swim by the time they reached high school. For example, 2017 reported larger numbers of drownings in Australia than 2015 and nine more than 2016 (Morris, *Whitsunday Times,* 27 August 2017). *The Courier Mail* also reported the Griffith University Early Years Swimming Study

revealing links between swimming and extended cognitive skills, problem-solving, literacy, numeracy, social skills and coordination (23 August 2018).

Media publications proposed a need for schools and teachers to adopt a holistic approach to wellbeing and implement mental health, and social and emotional programs in schools. These were in response to research findings reporting a rise in student anxiety and lower levels of student motivation, classroom engagement, a sense of belonging and happiness (*The Courier,* 21 July 2017, *Education Today*, *The Australian, The Sydney Morning Herald*, *The Advertiser, Sunshine Coast Daily, Education HQ, The Educator,* May 2018). For example, a study measuring student wellbeing in South Australia, involving 43,000 students in Years 6–9, revealed more than 70 per cent have experienced bullying, nearly half reported low classroom engagement and one in three indicated low levels of perseverance (*The Courier*, 21 July 2017). Similarly, *Education Today* conveyed the results of the 2017 Gallup students' poll in April, which indicated that while 55 per cent of Australian students were engaged positively in school life, 17 per cent were disengaged and student hopefulness remained still at 48 per cent (*Education Today*, 4 May 2018). *The Australian* also reported results of research conducted by ACER and Melbourne University educational psychologist Michael Barnard, highlighting underachievement, low or emerging social and emotional wellbeing and lacking confidence (*The Australian*, 15 May 2018).

Mindfulness gained national media attention when it was associated with better mental health and school engagement (*The Australian*, *Education Today, The Sydney Morning Herald*, *Sunshine Coast Daily*, 2018). Smiling Mind CEO, Dr Addie Wootten, reported that "practising mindfulness has been shown to strengthen areas of the brain that control executive function and can lead to strong improvements in attention, reduced stress, anxiety and depression, and better academic skills, social skills and self-esteem" (Wootten, *Education Today,* Vol. 2 (2) 2018). Similarly, child psychologist Dr Michael Carr-Gregg commented on the benefits of mindfulness and explained how it can reduce anxiety and improve concentration, productivity and sleep, " … these skills can help them calm their mind and make the most of their life and set them up for their career and relationships" (Carr-Greg, *The Sydney Morning Herald*, 6 May 2018).

Given this attention, national and local sources promoted personal, social and emotional school intervention programs that were designed to align with the AC. Some of these included, the Mindfulness Curriculum designed by Smiling Mind, which is aligned to the general capabilities, Learning with Healthy Harold by Life Education and the You Can Do It program written by Professor Bernard.

The need for respectful relationships and sex education to be made mandatory in all Queensland state schools was also noted during this period (*The Daily Telegraph*, *The Courier Mail,* September/October 2017).

The correlation with student anxiety, stress levels and NAPLAN testing were raised in several articles with calls for increased time to focus on outdoor learning, play-based learning and physical education (*Nine News*, 3 August 2017, *WA Today*, 9 September 2017, *Cairns Post*, 30 November 2017, *ABC News*, April 2018). It was also highlighted that physical activity is as important as literacy and numeracy. Associate Professor of Physical Education and Sport at Flinders University and President of the Australian Council for Health, Physical Education and Recreation, Shane Pill, said, "… physical activity is as

important as literacy and numeracy ... Quite rightly, we're concerned with the literacy and numeracy skills of young people, but if we want to improve scores in NAPLAN, getting young people active is a way to improve those outcomes" (*WA Today*, 9 September 2017).

Decreased levels of daily physical activity and play-based learning were highlighted as a concern due to increased use of technology and gaming amongst young people alongside an increase in obesity levels. Dr Michael Carr-Gregg raised concerns in response to current studies reporting data of children and adolescents not meeting the daily levels of physical activity and argued for the positive impact physical activity has on the healthy growth and development of children and young people (Carr-Gregg, *2GB Radio*, 25 May 2018).

Technologies

The Australian Curriculum: Technologies (AC: T) was endorsed by Education Council in September 2015 and published on the AC website in October 2015. The F–10 Australian Curriculum: Technologies is organised into two subjects: Design and Technologies, and Digital Technologies. Education authorities in each state and territory determine the timelines for implementation of the AC in schools, and most jurisdictions have implemented the AC: T in most band levels by 2018.

Implementation of the Technologies curriculum continues to be well supported by government programs, such as the National Innovation and Science Agenda initiatives, the development of resources such as the Digital Technologies Hub and by universities and industry. National professional teacher associations continue to provide support for both Design and Technologies, and Digital Technologies.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period focused on technologies, literacy and numeracy. This section includes commentary not included in section 7b) Key issues: Technologies and ICT capability.

Comments were received around the current structure of the Technologies curriculum and the supporting advice. The QCEC considered that the two-strand structure of the Technologies curriculum makes the subjects relatively easy to integrate with other learning areas. AISWA reported that the framework format of the AC has "created some insecurity. Teachers would generally prefer explicit guidelines".

The ISQ considered that the structure section of AC: Digital Technologies is difficult to understand and that the concepts do not clearly align to the strand structure. It was also their view that there is no useful advice on how these things 'fit together' or how a teacher approaches them in their planning. It is worth noting that the earlier version of the AC website included a section on implementation advice, but this was removed as part of the review of the AC.

AISWA also reported some dissent from teachers about the greater cognitive emphasis in the Design and Technologies curriculum in relation to the technologies contexts of

engineering principles and systems, and materials and technologies specialisations, but noted that there is no similar concern for food and fibre production or food specialisations. The QCAA reported that a focus on process rather than product is new for teachers in Queensland and that this "has been a major cultural shift for teachers" and is "continuing to have an impact on Technologies teacher identities and professional learning".

The ISQ considers that the inclusion of cyberbullying, the safe use of technologies and the ethics of digital technologies in Digital Technologies are a distraction. It is important to note that their removal from Digital Technologies would involve reconsideration of these elements elsewhere in the curriculum to ensure they are required learning. If these elements were only addressed within the ICT capability and not within the Technologies curriculum, there would be no requirement for teachers to address them.

Comments were received regarding the time allocation for the Technologies curriculum. The ISQ felt that the curriculum is dense for the allocated time. The main challenges highlighted by AISSA related to two themes – resourcing and accessibility. In terms of resourcing, the submission commented that an overcrowded curriculum and difficulties integrating Digital Technologies into the timetable of a secondary school setting posed implementation challenges. The QCAA commented that particularly in secondary settings there was sometimes insufficient time in timetables to effectively address the Technologies curriculum.

AISWA reported that teachers are becoming more aware of the applicability of computational, design and systems thinking across a number of other subjects, which may assist in the manageability of the curriculum. However, the QCAA noted that the focus on purchasing "resources to support the Technologies curriculum has resulted in an emphasis on teacher product-related skills rather than the knowledge and understanding inherent to the curriculum".

The ISQ stated that primary teachers mainly report against the learning area achievement standard, rather than those for the individual subjects. The ISQ has developed progression points in plain English to unpack the achievement standard in response to the concern that the achievement standard is considered very open to interpretation, and that school leaders and teachers would benefit from a 'story' about the integration of Digital Technologies with Design and Technologies.

Enquiries

During the monitoring period, there were very few enquires received via email or telephone in relation to the AC: T compared with previous monitoring periods. The small number of enquiries were predominantly concerned with the difference between the learning area achievement standard and the subject achievement standards. Some enquiries were redirected to the relevant organisation as the query was an implementation question specifically related to a jurisdiction. There were a few enquiries from schools interested in participating in ACARA's Digital Technologies in Focus project, which is funded by the Australian Government under the National Innovation and Science Agenda

Requests for presentations have included sessions at the STERN Network meeting (October 2017), Australian Alliance of Associations in Education (AAAE) Forum (October 2017), Google Summit (November 2017), Design and Technology Teachers Association AGM

(December 2017), ACDICT ALTA forum (April 2018), Primary Industries Education Foundation Australia Conference (April 2018).

Twenty-five introductory workshops were held across the country for the participants in the Digital Technologies in Focus project.

Once-per-term meetings continue to be facilitated by ACARA for industry, government and universities on supporting implementation of the AC: T. In addition, a forum was held to explore the challenges of providing initial teacher education that supports Technologies implementation.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total number of pageviews for the Technologies learning area entry webpage on the AC website was 207,381. Of the two Technologies subjects, the Digital Technologies entry webpage received about 125,000 pageviews, closely followed by the Design Technologies entry webpage at about 124,000. Queensland was the most frequent user of the Technologies entry webpage, followed by South Australia.

Over the reporting period, there were 7,295 Digital Technologies pdf document pageviews and 6,692 Design and Technologies pdf document pageviews. Most Digital Technologies pdf pageviews were from Queensland with 2,300, and outside Australia, England, registered 59 pdf pageviews. Most Design and Technologies pdf document pageviews were from Queensland with 2,856 pdf pageviews and outside Australia, Bangkok, Thailand, registered 34 pdf pageviews.

In the Technologies learning area there were 70,639 pageviews for work samples portfolios. The most popular work samples portfolios were in Digital Technologies with 39,436 pageviews followed by Design and Technologies with 31,203 pageviews. All work samples portfolios from Foundation to Year 10 were visited at least 1,000 times.

The single most visited category for work samples portfolios in Technologies was in Digital Technologies, Foundation – Year 2 at satisfactory level with over 12,000 pageviews. The most popular project within this category was 'The beach' with 1,827 pageviews.

Design and Technologies echoed the same result for work samples portfolios, with Foundation – Year 2 at satisfactory level as the most visited category with 7,485 pageviews. The most popular project within this category was the 'Push pull toy' with 1,715 pageviews.

The average time spent on the Technologies learning area entry webpage was 32 seconds, and the bounce rate was well within the desirable range at 15.63 per cent.

Media and issues for consideration

During the 2017–18 monitoring period, most curriculum authorities and jurisdictions were implementing the AC: T, including reporting and assessing. In late 2017, NSW published revised syllabuses incorporating the Technologies curriculum.

The final report of the Royal Commission into Institutional Responses to Child Sexual Abuse was released in November 2017 and there was significant media commentary regarding the recommendations, their impact and the issue of online safety for school-aged students more

generally across this period. One of the report's recommendations related to the establishment of a nationally consistent curriculum for online safety education in schools (Rec 6.19).

While the media focus in recent years has been on issues around the place of 'coding' in the curriculum, there were fewer articles in 2017–18. Most articles have been positive ranging from Apple CEO Tim Cook stating, "If I were a French student and I were 10 years old, I think it would be more important for me to learn coding than English. I'm not telling people not to learn English in some form – but I think you understand what I am saying is that this is a language that you can [use to] express yourself to seven billion people in the world" (Wires, *The Sydney Morning Herald*, 13 October 2017), to the South Australian Opposition leader Mr Peter Malinauskas suggesting that "Young students should be taught vital coding skills to enable them to take advantage of a lifetime of job opportunities in shipbuilding and defence" (Novak, *The Advertiser*, 19 June 2018).

Media attention in this period has focused heavily on STEM education. The report, 'Optimising STEM industry–school partnerships: inspiring Australia's next generation', notes, "Research demonstrates that fostering engagement in STEM education in primary school positively influences later participation in STEM disciplines, particularly in the senior secondary years" (*Education Council*, April 2018).

The language used to represent STEM in the media varies; for example, STEM skills, STEM subjects, STEM disciplines. This variation in terminology can result in confusion amongst educators about what is required and how best to implement it. According to Re-Engineering Australia (Myers, REA, May 2018), "STEM is not about *"what you learn"* ... it's not about "more maths", "more science", "more coding" or "more whatever". STEM is about "what you do with what you learn ... it's about moving away from a siloed education system".

This issue and a model of implementation of STEM subjects were highlighted in the article 'STEM studies, our school story' (Schulz, *Teacher Magazine*, January 2018), which described a context where "Students are encouraged to think critically about the world around them and use the STEM Process (an amalgamation of the scientific method and the design process) to define and address issues within wicked problems. A wicked problem can be defined as a problem that is 'highly resistant to a resolution', requiring higher order thinking capable of understanding the big picture, including interrelationships and the full range of causal factors underlying them (*Australian Public Service Commission*, 2012). They do not have straightforward solutions and generally cannot be solved, but rather tamed. An example would be global warming".

There has been concern for some time about the low uptake by girls of STEM courses and careers, and the renewed focus on girls in STEM has seen positive messages. In an article titled 'Engineering not just for boys', Sue White mentioned a reflective moment from a student about engineering, "It's quite creative. I thought it would be much more formulaic, but you are given problems and can solve them however you like" (White, *The Age*, April 2018). While many girls find the experience both positive and rewarding, there is still some way to go: "Girls, Aboriginal and Torres Strait Islander students, students from low socio-economic backgrounds and students from regional and remote areas are underrepresented in the STEM workforce, are more likely to have negative perceptions of STEM disciplines and are

less likely to aspire to STEM careers" (Education Council, *Optimising STEM industry–school partnerships: inspiring Australia's next generation,* April 2018).

The impact of digital disruption also featured during this period. "Unless schools and their D&T departments embrace the digital revolution and what that means beyond using computer aided design and computer aided manufacture, then they are failing to provide fundamental aspects of a technological education for all young people" (Mitchell, *Techwire*, 30 October 2017).

Cybersafety and cybersecurity continue to be areas of concern, from the supply chain for the cybersecurity industry (Borys, *ABC*, 10 October 2017) to the cybersecurity risks for school networks (McGettigan, *CSO Online*, October 2017) and the ongoing challenges of cyberbullying (*The Herald Sun, Courier Mail*, January/April 2018).

Comments by Yasa, (*SBS* articles, 13 April 2018) would seem to support the inclusion of the technologies' context, food and fibre production, within the Design and Technologies curriculum. The article highlighted the disconnect between most people and the source of their food. "In a survey commissioned by the National Farmers' Federation, it was discovered that 83 per cent of Australians would describe their connection with farming as 'distant' or 'non-existent'."

Languages

The Australian Curriculum: Languages (AC: L) includes language specific curricula for 14 languages and two frameworks, with the final components endorsed by Education Council in December 2016. The languages are Arabic, Auslan, Chinese, French, German, Hindi, Indonesian, Italian, Japanese, Korean, Modern Greek, Spanish, Turkish and Vietnamese. The frameworks are for Aboriginal Languages and Torres Strait Islander languages, and classical languages.

During the 2017–18 monitoring period, ACARA collected and annotated student work samples in Chinese, French, Indonesia, Italian and Japanese to illustrate the achievement standards. The first of the portfolios, in Indonesian, was published during the period. The collection of work samples in Arabic, German, Korean, Modern Greek, Spanish and Vietnamese commenced.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period was requested on the areas of technologies, literacy and numeracy. In supplying detailed responses to these aspects of the AC, little direct mention was made of the AC: L. However, there was feedback related to Languages curriculum implementation timelines.

Current projects to incorporate AC content were mentioned in the NESA jurisdictional feedback. During 2018, five K–10 Languages syllabuses, using the NSW K–10 Languages framework were developed to include and incorporate AC content. NESA also indicated that localised Japanese, Chinese, French, German, Indonesian, Italian, Korean and Spanish

syllabuses will be released and due for implementation in 2019 for K–6 and Years 7 and 9, and in 2020 for Years 8 and 10 (*NSW Education Standards Authority*, 16 August 2018).

The implementation timeline for the Languages curriculum in Western Australian schools was also outlined in the SCSA submission, with full implementation, including teaching, assessing and reporting by the end of Semester 1 2018 for Year 3 to allow languages study in WA to be compulsory for Years 3–8 by 2023.

Enquiries

During the 2017–18 monitoring period, enquires in relation to the AC: L were received from various state and territory jurisdictional stakeholders as well as educators in schools and universities. There were a number of common themes: the structure, content and sequences of learning in particular languages; and the provision of further subjects in the Languages learning area.

A number of enquires related to implementation, particularly questions in relation to the interpretation of the sequences and structures of the Languages curriculum. Enquiries relating to assessment, documenting and reporting of student understanding were referred to relevant state and territory authorities.

Questions relating to 'prescribed topics', concepts, time allocation and content within the Languages curriculum were also common. Advice was sought regarding entry points in the F–10 sequence and appropriate bands to reference in the achievement standards, particularly for students starting a language program late in the F–6 sequence. Clarification was also sought regarding version 8.3 of the AC and whether changes had been made to Languages content descriptions and achievement standards, others sought advice about the timing of publication of Languages work samples.

Some questions related to AC: L subject availability in the senior secondary, in particular Auslan, for local credentials. International enquiries related to the development of the Aboriginal Languages and Torres Strait Islander Languages Framework.

During the monitoring period, a range of schools and teachers were provided with guidance and advice regarding the AC: L. A workshop was conducted for government and independent schools in South Australia to support the AC: L work samples project and quality Languages task design.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total number of pageviews for the Languages learning area entry webpage on the AC website was 51,233.

The most popular AC: L webpages were Japanese followed by Chinese, Italian, French, Aboriginal languages and Torres Strait Islander languages, Auslan, Spanish, Indonesian and German. Queensland accessed the language webpages most frequently, with South Australia, Victoria, New South Wales and the Australian Capital Territory following.

Over the reporting period, Japanese pdf documents were the most accessed with 1,532 pdf pageviews, followed by Chinese with just over 1,000 and Auslan with 825 pdf pageviews.

Queensland viewed the Japanese pdf documents most frequently, and outside Australia, the Kanagawa Prefecture in Japan registered 17 pdf pageviews.

In the Languages learning area work samples portfolios were developed for several languages during the monitoring period. The first work samples portfolio to be uploaded was Indonesian, and to date, work samples at satisfactory level have been provided. Languages: Indonesian registered few pageviews due to their recent publication on the AC website. The number of pageviews is expected to build over the next reporting period.

The average time spent on the Languages learning area entry webpage was just over 1 minute, and the bounce rate was within the desirable range at 26.83 per cent.

Media and issues for consideration

Throughout the 2017–18 monitoring period, several recurring themes relating to Languages and languages learning were present in the media. Aboriginal and Torres Strait Islander languages and cultures, the benefits of bilingualism, Asia literacy, government language programs, reviews and strategies, languages and ICT, migration and its impact on language learning, and the Gonski 2.0 report were common themes in articles and reports.

As was the case for the 2016–17 monitoring period, the most prominent and recurring media coverage related to Aboriginal and Torres Strait Islander Languages and the preservation and revival of these traditional languages. Several reports highlighted the fact that pre-European settlement, over 250 language groups were spoken in Australia, and now less than half of those are spoken, and more are disappearing or at risk of falling asleep with the passing generations. Such articles included 'Endangered Indigenous languages finding a new voice as researchers look back in time' (*ABC News*, 27 May 2018); 'To save a dying language' (*Alice Springs News*, 24 May 2018); 'Young blood keeping ancient Indigenous languages alive' (*SBS News*, 4 July 2017); 'Indigenous languages should have a voice in education' (*Bega District News*, 10 July 2017).

In light of the 2017 NAIDOC week theme 'Our languages matter', schools and Aboriginal communities highlighted the importance of Indigenous languages and their survival for future generations. In some schools and communities, Aboriginal elders and language groups are teaching local Indigenous languages and cultures to keep them alive and help young people rediscover local language and traditions, for example: 'Arrernte language on agenda in NT amid calls for bilingual education for Aboriginal kids' (*ABC News*, 2 July 2017); 'Lake Cathie Public School embraces Aboriginal Language pilot program' (*Port Macquarie News*, 20 July, 2017); 'NAIDOC week: Lost Indigenous languages concerns Central Victorian youth' (*ABC News*, 10 July 2017); 'NAIDOC 2017: Aboriginal students at Hobart primary school turn assembly into celebration' (*ABC News*, 5 July 2017); 'Aboriginal Gathang language brought to life for Taree school students' (Siossian, *ABC mid North Coast*, 9 May 2018); 'Preserving the Noongar language' (*The West Australian*, 17 October 2017); 'Connections to Indigenous culture feed a broader role in the community' (*The Australian*, 25 September 2017).

Several articles agreed that Australia's first languages make our country unique and highlighted the importance of reinvigorating and protecting these languages for future generations, such as: 'Indigenous languages should have a voice in education' (McDonald, *Bega District News*, July 2017), 'Young Blood keeps ancient Indigenous languages alive'

(Reid, *SBS News*, July 2017), 'NAIDOC Week: Lost Indigenous languages concerns Central Victorian youth' (Romensky, *ABC News*, July 2017).

Several media reports related to state government languages policies, projects, funding and reviews. In October 2017, the NSW Government introduced legislation to recognise and protect Aboriginal languages, which will allow local Aboriginal communities to reinvigorate their language and linguistic traditions (McDonald, *Bega District News*, 10 July 2017). The WA Government introduced compulsory language learning from Year 3 in Western Australia schools – see 'Language classes compulsory for Year 3 students in all WA schools from 2018' (Carmody, *ABC News*, 21 November 2017); 'Association of Independent Schools of WA welcome roll-out of compulsory language classes for Year 3 students from 2018' (Lim, *Eastern Reporter*, 28 November 2017).

A number of media articles referred to the implementation of the South Australian Government's languages scheme, cited to reignite interest in language studies and boost senior language numbers. Several articles reported that the number of Year 12 students studying a language in SA had fallen to 4.9 per cent in 2016 and proposed reasons for this decrease (Williams, *The Courier Mail*, 25 July 2017; Richards, *InDaily*, 19 February 2018; Smith, *The Advertiser*, 15 June 2018; *Zedlines*, 10 July 2017). The Modern Language Teachers' Association of SA President, Andrew Scrimgeour, said that "schools were reducing numbers of language lessons in middle school timetables to make more time for science and maths subjects, so students did not feel confident about doing well in Year 11 and 12" (Williams, *The Courier Mail*, 25 July 2017).

These words were also echoed in 'Australia needs to fire up its National Languages policy' (*University of South Australia,* 17 November 2017), which suggested a stronger focus on national languages education to meet 21st century challenges of globalisation and population movement and in 'Hoj, Mayfield warn of language skills depletion' (Lane, *The Australian*, 12 July 2017). University of South Australia's Associate Professor in Applied Linguistics, Angela Scarino, reported that language and communication within and across cultures cannot be taken for granted, "Recognising language as central to communication in personal, social and work environments, it is important for national education policy to reflect the pivotal role of language learning. For most people language is almost invisible and yet it is our most powerful resource. Policies that encompass provision for language learning for all people and include all languages in all domains of life are invaluable" (*University of South Australia*, 17 November 2017). The then Education Minister, the Hon Simon Birmingham, also acknowledged the problems with second language learning in Australia and claimed the government was attempting to "boost the pipelines" of students embarking on languages study to encourage flow through to university (Lane, *The Australian*, 12 July 2017).

There was media interest in the federal government's 'digital, play-based' Early Learning Languages Australia (ELLA) program for preschoolers. The languages offered or to be developed align with those in the AC. By 2019 it is to offer Arabic, Mandarin, French, Indonesian, Japanese, Italian, Spanish, Hindi and modern Greek. Mr Birmingham claimed the government was, "focused on practical measures to revive language teaching and learning in schools" (Lane, *The Australian*, 12 July 2017). Reporting included the funding of this program (*Nine News*, 15 June 2018) and the minister's advocacy that "Language is life changing and learning another language is one of those skills that's best achieved in the

early years and really does then create new opportunities throughout a child's development and life" (*Nine News*, June 2018).

The release of the Gonski 2.0 report in March 2018 resulted in media coverage of the missed key recommendations in relation to language study. Finnish education expert, Pasi Sahlberg, suggested that the importance of foreign languages learning was overlooked in the Gonski report and pointed to OECD rankings, where Australia is at the bottom of 34 countries in high school graduates leaving school with a second language (Young, *SBS News*, June 2018). Sahlberg claimed, "If I could add one recommendation, my [24th] recommendation would be, make learning a foreign language a right for every child in Australia" (Baker, *Sydney Morning Herald*, 3 June 2018).

The benefits of second language learning and bilingualism recurred in reports such as 'Hills first to offer junior bilingual Chinese program' (*Education Today*); 'Bilingual education: A good idea in anyone's language' (Kellahan, *The Age*, 27 July 2017); 'Only 10% of year 12 students are studying a different language' (4ZZZ, *Zedlines*, 10 July 2017); 'Association of Independent Schools of WA welcomes rollout of compulsory language classes for year 3 students from 2018' (Lim, *Eastern Reporter*, 28 November 2017); 'Mind your language ties' (Koonath, *Indian Sun*, 14 November 2017). The most common benefits of second language learning outlined in these articles were increased future job opportunities, connecting with leading export markets, improved native language literacy, building confidence and a sense of empowerment, broadening horizons and communication skills, and preserving language and passing it on to next generations.

Correlation was made between being from a non-English speaking background and better NAPLAN results. Articles such as 'Why some migrant school students do better than their local peers (they're not 'just smarter')' (Dandy, *The Conversation*, 3 April 2018); 'Migrant primary school children with English as a second language are outperforming native speakers in spelling in the Australian NAPLAN tests' (Darvall, *Daily Mail*, 13 December 2017); 'Migrant kids showing how it's done, again' (Penberthy, *Courier Mail*, 28 November 2017) claimed that Year 3 primary school students with English as their second language outperformed native English speakers at spelling in NSW and Tasmania and performed on par with other states. Penberthy (*Courier Mail*, 28 November 2017) suggested that young minds are absorbent and the earlier in life they learn a language, the more fluent they will be; however, he went on to conclude that this does nothing to explain the above-average performance of migrant children in comparisons to their Australian counterparts.

The steadily growing migration levels of people from countries in the Asia region to Australia also gained media attention, suggesting culturally inclusive and relevant pedagogy and building 'Asian literacy' should be a curriculum priority (Curwood, *High Beam research*, 1 October 2017). Highlighted in articles such as 'Australia must not neglect Chinese and other Asian Studies' (Orton, *The Australian*, 27 September 2017), 'Teaching Asia: English Pedagogy and Asia Literacy within the Australian Curriculum' (Curwood, *High Beam research*, 1 October 2017) and 'Chinese language classes added to Prep curriculum' (Clarke, 24 January 2018) were the importance of developing 'Asia literacy' from an early age and allowing students to get a 'head start' in Asian languages. Familiarity with the region being crucial for the ongoing development of the community was another of the themes highlighted.

Several reports were published regarding language teaching and use of technology and virtual language classrooms. These included 'Chinese, Indonesian language teachers get creative bringing Asia to regional Australia' (*ABC Radio News*, 14 February 2018); 'Virtual language classes bring Indigenous culture into Queensland classrooms' (Archibald, *NITV*, 21 February 2018); 'Chinese languages classes added to Prep curriculum' (Clarke, 24 January 2018); 'Schools tackle teacher shortages with online language classes from overseas' (Meachim, *ABC News*, 14 May 2018); 'Brisbane private school students get lessons from China' (O'Malley, *Westside News*, 4 June 2018). Technology-based language learning programs and virtual language classes, which are used in schools to connect with Asian countries and boost student engagement, were cited. St Ignatius Principal, Roycelyn Wilden, claimed, "Technology has proven to be a massive engagement tool for the kids, especially those who would ordinarily zone out during traditional language lessons" (O'Malley, *Westside News*, 4 June 2018). Similarly, technology that has allowed remote and regional schools to engage in second language and cultural learning and will allow First Nations languages to be more broadly represented in the curriculum was reported on positively (Archibald, *NITV*, 21 February 2018).

f.   General capabilities

The general capabilities were developed to inform the writing of each learning area curriculum and were first published in 2010. The general capabilities encompass knowledge, skills, behaviours and dispositions that students develop as they learn to apply and understand content taught within each of the learning areas. There are seven general capabilities identified in the AC: Literacy, Numeracy, Information and Communication Technology capability, Personal and Social capability, Critical and Creative Thinking, Ethical Understanding, and Intercultural Understanding. Embedding the general capabilities, as appropriate, in learning area content supports the development of 21st century skills and dispositions in learners.

Resources available on the AC website describe the nature and scope of each capability, the organising elements that underpin each learning continuum, learning continua that describe the knowledge, skills and behaviours that students can be expected to develop at particular stages of schooling, and high-level advice material on the place of the capabilities within the learning areas. Educators may also use the general capabilities to adjust the focus of age-equivalent learning area content to differentiate instruction for students with diverse learning needs.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period focused on technologies, literacy and numeracy. This section includes commentary not included in sections 7b) Key issues: Technologies and ICT capability, and 7c) Key issues: Literacy and numeracy.

Other feedback that related to the general capabilities was provided by the ISQ. The ISQ affirmed the place and role of the general capabilities as critical components of the AC. Further to this, the ISQ questioned the embedding of the general capabilities within learning

area curricula, "In places this embedding would appear to be uneven and inconsequential" and identified this among the challenges faced with implementing the three dimensions of the AC.

Enquiries

During the monitoring period, enquiries received via email or telephone were predominately concerned with the implementation of the general capabilities in the AC and requests for historical background information on the development of the general capabilities. Presentations and information sessions were provided to sectors following requests from the Tas DoE, CESA, Catholic Education Northern Territory, Catholic Education Archdiocese of Canberra and Goulburn, AISSA, the AISNSW and the AISACT.

Requests for information and briefings from organisations and professional groups included the Office of the eSafety Commissioner, Primary Principals Australia, Primary Principals New South Wales Curriculum Reference Group, Principals Australia Institute State Reference Group, Australasian Curriculum Assessment and Certification Authorities and the University of New South Wales Faculty of Education.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total pageviews for the general capabilities 'Overview' page on the AC website was almost 239,000. Queensland was the most frequent user, followed by New South Wales and South Australia.

Apart from the 'Overview' webpage, the 'Literacy' webpage appears to have remained the most popular general capabilities webpage since 2015.[19] Critical and Creative Thinking was the next most popular area, followed by Personal and Social capability. The 'General capabilities: Numeracy' webpage was the fifth most popular.

General capabilities learning continuum pageviews were monitored over the 2017–18 reporting period with 42,603 pageviews overall. The Literacy continua was the most popular with over 14,000 pageviews, followed by Critical and Creative Thinking, 6,734; Personal and Social capability, 6,566; Numeracy, 5,586; ICT capability, 4,560; Ethical Understanding, 2,494; and Intercultural Understanding with 2,474 pageviews.

The average time spent on the general capabilities entry webpage was 1 minute 38 seconds, and the bounce rate was just above the optimum range at 42.67 per cent.

Media and issues for consideration

Throughout the 2017–18 monitoring period, several themes relating to the general capabilities, and more broadly, 21st century skills, have received recurring media attention. This coverage falls into three categories: the importance of including the general capabilities in curriculum and classroom practice to prepare young people for the future; concerns that

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[19] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

including general capabilities in the curriculum and classroom practice will detract from the acquisition of disciplinary knowledge; and the impact of the recommendations of the 'Through growth to achievement: Report of the review to achieve educational excellence in Australian schools' *(Gonski, 2018)*.

Various media pieces highlighted the role of the general capabilities and related skills as important aspects of contemporary curriculum and educational programs. Commentary highlighted issues related to: the impact of artificial intelligence (AI) and digital technologies into the future; the changing nature of the work force; the importance of increasing student agency; and the need to develop enterprise skills including creativity, collaboration and resilience.

Articles emphasised the importance of students developing strong understandings related to learning area content as they acquired skills articulated in the general capabilities. The discussion was exemplified in multiple articles of which the following reflect key aspects: 'How do we teach 21st century skills in classrooms?' (Care, Kim and Vista, Brookings Institute, 17 October 2018), 'Why PISA is moving towards creativity' (Lucas, Mitchell Institute, 13 November 2017), 'Shifting paradigm around what it means to learn' (McPherson, Foundation for Young Australians, 28 November 2017), 'Teaching people to think, not code and promoting innovation of others' (Boyton, *The Australian Financial Review,* 20 March 2018), 'The rise of humans' (Eggleton, *The Australian Financial Review,* 21 March 2018), 'Why student agency matters in the digital age' (Henebery, *The Educator*, 17 April 2018), 'Ken Robinson: creativity the key to better education' (Westwood, *The Australian,* 29 May 2018), 'Are you ready to change what we learn at school?' (Life Matters, *ABC Radio National*, 12 June 2018), 'Hard message for Australians debating soft skills' (*Education Today*, 13 June 2018), 'Yes we can greatly improve the teaching of creativity in Australian schools and yes we can measure it' (Harris and de Bruin, *EduResearch Matters*, 25 June 2018).

Conversely, other media coverage focused on the concern that any emphasis on general capabilities would detract from student learning in the subject disciplines. These pieces correlated declines in international assessment rankings (PISA and TIMMS) with a decline in focus on traditional learning approaches in subjects such as English, Mathematics and Science. This discussion was exemplified in: 'Kevin Donnelly: Get back to basics or the slide will continue' (Donnelly, *Herald Sun*, 29 January 2018), 'Kevin Donnelly: It's not learning it's laughable 21st century learning' (Donnelly, *2GB*, 18 March 2018), 'Gonski fails a second time around' (Buckingham, *The Australian Financial Review*, 1 May 2018).

Media coverage on the report 'Through growth to achievement: Report of the review to achieve educational excellence in Australian schools' in relation to the general capabilities commented on the stronger focus on the development of the general capabilities as part of learning within subject areas. Articles that supported this point of view included: 'Gonski is backing proven reforms' (Boston, *The Age,* 21 May 2018), 'Why Aussie kids lag behind in global education report card' (DiGirolamo, *The Courier Mail*, 5 May 2018), 'Gonksi 2.0: teaching creativity and critical thinking is already happening' (Louden, *ViW*, 3 May 2018), 'A creed for the 21st century – but how do you teach it?' (Urban, *The Australian,* 1 May 2018).

Contrasting commentary highlighted Australia's performance in international assessments as a key factor for rejecting the report's recommendations, and a misinterpretation of the report

recommendations regarding the relationship between learning area content and the general capabilities. These articles included: 'Gonski school of overthinking education ignores the worthy basics' (Smith, *The Australian,* 8 May 2018), 'Gonski 2.0: Where the impractical meets the incomprehensible' (Donnelly, *The Australian Financial Review*, 7 May 2018), 'Gonski push for creative thinking puts the basics at risk, says principal' (Urban, *The Australian*, 5 May 2018), 'Gonski 2.0: Creativity can't be taught or learned in a vacuum' (Donnelly, *The Australian*, 5 May 2018), 'Guaranteeing a generation of dolts' (Donnelly, *Quadrant*, 2 May 2018).

Additional media coverage relating to general capabilities included the publishing of the OECD's PISA results for Collaborative Problem-solving. This report placed Australian 15-year-olds tenth out of the 56 countries that participated in the assessments (see 'Australian students among world's top performers with this surprising skill', Cook, *WA Today*, 22 November 2017).

g.   Cross-curriculum priorities

The inclusion of the cross-curriculum priorities in the AC was endorsed by the Education Council in December 2010. The three priorities are: Aboriginal and Torres Strait Islander Histories and Cultures, Asia and Australia's Engagement with Asia, and Sustainability.

In October 2016, the ACARA Board formed the Aboriginal and Torres Strait Islander Education Taskforce, made up of members of the ACARA Board and ACARA's Aboriginal and Torres Strait Islander Education Advisory Group, to look at ways to enhance the Aboriginal and Torres Strait Islander Histories and Cultures priority in the AC. During the 2017–18 monitoring period, Science has been the focus of this work with the development of new content elaborations in the AC: Science F–10.

Key points

Jurisdictional feedback

Jurisdictional feedback in the 2017–18 monitoring period focused on technologies, literacy and numeracy. There was limited mention of the cross-curriculum priorities in the jurisdictional responses. However, there were broad concerns centering on teachers effectively and successfully integrating the three dimensions of the AC (QCEC) and the upskilling process needed to enable this integration to occur (Australian Catholic University, ACU) as part of the National Catholic Education Commission (NCEC) submission).

The SACE BSA's submission noted the encouragement of teachers to include Aboriginal and Torres Strait Islander knowledges and perspectives in the design, delivery and assessment of teaching and learning programs.

Enquiries

The enquiries during the monitoring period pertained mainly to Aboriginal and Torres Strait Islander education important events such as Reconciliation Week and conferences. Others related to access to, and requests for, permission to share the CCP information outside a mainstream education facility.

The Australian Association for Environmental Education expressed a desire for a more focused resources and advice on the AC website in relation to sustainability. In particular, the association sought parallel resources to those being developed in Science and the Aboriginal and Torres Strait Islander priority.

Data analysis: Google analytics

Following an apparent trend since 2015[20], 'Aboriginal and Torres Strait Island Histories and Cultures' remains the most popular cross-curriculum priorities webpage with almost 74,000 pageviews. During the 2017–18 monitoring period, the total pageviews for the cross-curriculum priorities 'Overview' page on the AC website registered almost 67,000 and 'Sustainability' and 'Asia and Australia's Engagement with Asia' pages followed in popularity.

Queensland accessed the cross-curriculum priorities webpage most frequently, with Victoria, New South Wales and South Australia following.

Of all illustrations of practice pageviews in 2017–18, 'Aboriginal and Torres Strait Islander Histories and Cultures' was the second most viewed webpage, with over 12,500 pageviews.

The average time spent on the cross-curriculum priorities 'Aboriginal and Torres Strait Islander Histories and Cultures' webpage was over 3 minutes, and the bounce rate was above the optimum range at 68.5 per cent. However, the average time on the on the cross-curriculum priorities entry page was 1 minute and 28 seconds and the bounce rate was within the optimum range at 34.54 per cent.

Media and issues for consideration

During the 2017–18 monitoring period, media articles related to the priorities – Aboriginal and Torres Strait Islander Histories and Cultures, Asia and Australia's Engagement in Asia, and Sustainability have been captured in the sections related to HASS and Languages.

In addition, there have been further articles pertaining specifically to the Aboriginal and Torres Strait Islander Histories and Cultures priority. These focused on four major themes: the failure to meet 'Closing the Gap' targets a decade after their initial implementation; associated low literacy levels; language preservation and enhancement; and debate about interpretations of Australia's history.

A number of articles provided statistical data to highlight the discrepancy between levels of attainment and the predetermined 'Closing the Gap' targets. These comparisons were often combined with references to NAPLAN results identifying differences between Indigenous and non-Indigenous students' performances. Shortcomings in education policy were identified but possible solutions were less prominent. Buckskin (*The Conversation*, 13 February 2018) and Rose (*The Conversation*, 14 February 2018) both advocated the return of MATSITI (More Aboriginal and Torres Strait Islander Teaching Initiative) to increase the number of Aboriginal and Torres Strait Islander teachers trained and appointed to school

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[20] Google Analytics: Data used in the 2017–18 monitoring report will yield non-comparative results due to a change in web hosting and the website structure used in 2015–16 and 2016–17 monitoring reports

positions. Buckskin submitted, "these role models help lift student aspirations and achievement and provide a rich and deep understanding of Aboriginal culture and knowledges in all Australian classrooms". As a preliminary step in that process, Rose emphasised the importance of translating gains in Year 12 attainment into equivalent representation in universities. Shay and Lambert (*The Conversation*, 14 June 2018) advocated a more radical solution through the development of 'flexi schools' in which "the system is changed to meet the needs of the student".

Aboriginal and Torres Strait Islander language initiatives, from New South Wales and Queensland in particular, were regularly and positively portrayed. Archibald–Binge (*SBS*, 21 February 2018) identified the many potential benefits of teaching Aboriginal and Torres Strait Islander languages. These include resurrecting and preserving languages, incorporating culture into the curriculum, creating a positive identity, incorporating technology, fostering community connection, offering team teaching opportunities and providing viable pathways for students.

Differences in political philosophies relating to the historical content that should be taught in schools, the accurate portrayal of Aboriginal and Torres Strait Islander histories and cultures in the teaching process, and the debate relating to the celebration of 26 January as Australia Day – all figured prominently in media articles.

h.   Student diversity

The AC sets the expectations for what all young Australians should be taught, regardless of their location in Australia or their background. Resources and advice materials are available on the AC website to support teachers in using the three dimensions of the AC to cater for the learning of all students, including students for whom English is an additional language or dialect (EAL/D), gifted and talented students, and students with disability.

Key points

Jurisdictional feedback

For the 2017–18 monitoring period, jurisdictional feedback was primarily sought on the areas of technologies and literacy and numeracy. There was a limited number of jurisdiction responses that made specific references to matters directly related to student diversity. However, there were inclusions in other areas of jurisdictional feedback related to matters of student diversity.

TCEC and the QCEC commented on the capacity of the AC to support teachers in meeting the needs of all students in practical and meaningful ways. The QCEC noted the value of the literacy learning progressions in supporting diverse needs.

The ACU submission as well as that of the NCEC made the observation that through the Australian Curriculum ACARA supports the principles of differentiated instruction.

Enquiries

During the monitoring period, enquiries received in relation to student diversity were predominantly from educators. A small number of enquiries were also received from parents/guardians and outside organisations. Most of the enquiries were about the Literacy general capability and the perceived inability of sub-elements 1a–1d of the Literacy learning continuum to meet the needs of all students, especially those students with a cognitive delay.

Rob Randall, Chief Executive Officer ACARA, presented at the ACEL Disability Summit – Leading (E)quality for All on 21–22 June 2018 and invited participants to provide comment and suggestions in relation to the AC and its provision for the diversity of students' needs. From this invitation came comment addressing a range of matters from individual school stories, to recommendations about future direction to address student diversity. Responses also highlighted the potential for further research and resources, the complexities of the national curriculum for students with cognitive delays, and the need for further work in the area of communication skills. Some responders also praised ACARA for the development of the NLNLP.

During this monitoring period, ACARA continued to develop online resources and advice on how to embed the three dimensions of the curriculum to deliver meaningful learning to all students.

A nominal number of enquiries were also received in relation to students for whom English is an additional language or dialect, the main concerns were the use of, and relationship between, the Literacy general capability continuum and that for English as an Additional Language or Dialect (EAL/D). Advice provided in these cases was dependent on the specific skills of the students.

Data analysis: Google Analytics

During the 2017–18 monitoring period, the total number of pageviews for the student diversity 'Overview' page on the AC website was 235,786. 'Students with disability' had the most pageviews in the 2017–18 reporting period, followed by 'English as an additional language or dialect (EAL/D)' and 'Gifted and talented'.

Of all 'Student diversity: Illustrations of practice' webpages, the most viewed was 'Students with disability' followed by 'Students with disability: Procedural writing, EAL/D, Gifted and talented students', 'Students with disability: Integrated approach', and EAL/D: Analysing language in narrative texts'.

The average time spent on the 'Students with disability' webpage was 2 minutes and 53 seconds, and the bounce rate was above the optimum range at 64.03 per cent. The bounce rate for 'Student diversity: Students with disability: Illustrations of practice' webpage was 40.26 per cent, just over the desired range.

Media and issues for consideration

During the monitoring period, student diversity continued as a focal point in the media, with

concerns around students with diverse needs accessing NAPLAN taking precedence over curriculum-based issues. Articles (Omar, *SBS Radio*, 31 August 2017, and Fox, *The Guardian*, 31 March 2018) focused on students with diverse needs participating in a cognitively or linguistically inappropriate testing model. Similarly, other articles accentuated the increase in the number of students with diverse needs being exempted from NAPLAN (Luke, *ProBono*, 6 November 2017, Cucchiara, 16 March 2018, and Mourad, *Daily Mail*, 2 April 2018). This media attention also raised issues of the relationship between the delivery of the AC and student performance in NAPLAN. *The Conversation* (Cumming, 2 November 2017) stated that barriers to student success in NAPLAN for students with disabilities include lack of access to learning the material on the tests. This results from 'restrictive' placements, in which children with disabilities are separated from other students, and potentially not being given full access to content required using all three dimensions of the AC.

ACARA has continued to emphasise how the three dimensions of the AC can support teachers in ensuring that all students with diverse needs have full access to the curriculum. During the monitoring period, these matters have begun to be addressed through a renewal of the 'Student diversity' pages, as well as through a shift in focus in the structure of future Illustrations of practice.

Another focus for the media during this period included articles around the capacity of teachers to meet the needs of students with special needs in mainstream classrooms. Graham (*EduResearch*,10 July 2017) identified that classroom teachers are not necessarily qualified to teach students with special needs. This media release also identified a gap that may exist between what universities are teaching future teachers and the diversity of student needs they will encounter in classrooms. Again, while the responsibility for teacher qualifications is not one attributed to ACARA, media releases highlighted the importance of ACARA continuing to provide advice and support around the delivery of content, the general capabilities and the cross-curriculum priorities. Graham (*EduResearch*,10 July 2017) emphasised the necessity for this level of support by linking the need for increased teacher capacity to the local school becoming more diverse.

Luke Michael (*Probono*, 6 November 2017) and Chelsea Channing (*Education HQ*, 21 July 2017) identified that a shift in culture is necessary for change to occur. All students in a class need access to each lesson while being seated with their peers and receiving appropriate adjustments. This notion was supported with several news releases where parents expressed the need for inclusive school cultures before learning could occur (*ABC Radio National*, 18 May 2018; *The Guardian*, 31 March 2018). *The Conversation* (3 May 2018) also identified how Gonski highlighted the benefits of mixed ability (inclusive) classes.

The Daily Telegraph (Markson, 30 May 2018) articulated the need for a revamped curriculum so that schools can deliver individualised learning for all students (those with disability, those who are learning English as an additional language or dialect, as well as those who are gifted and/or talented). In the same article the then Minister for Education, the Hon Simon Birmingham, was quoted as saying that "we need to support each student to reach their potential".

Several media articles focused on the multicultural nature of Australian schools. *The Australian* (Urban, 19 March 2018) highlighted how migrant children were achieving baseline results in greater numbers than Australian-born students. The relevance of this trend was more notable when contrasted with the *Daily Telegraph*'s story on how some schools are struggling to address the surge of non-English speaking students enrolling in their schools (Houghton, 25 August 2017).

7.   CONCLUSION

The AC is being implemented across all states and territories in ways that meet local contexts and requirements. Jurisdictions use the resources published on the AC website to support their implementation and have requested that ACARA maintain the currency, and expand the scope and coverage, of these resources.

The key findings from the 2017–18 monitoring period in relation to Technologies and the ICT capability are:

- The Technologies learning area, and the two subjects within the learning area, are supported as important aspects of the AC.
- ICT as one of the general capabilities is supported.
- While jurisdictions provide advice and support for the implementation of the learning area and the capability, there is some variability across schools and systems based on the local phase of implementation and capacity of teachers.
- Systems and schools would like further advice and support in relation to the coherence between and complementarity of Digital Technologies and the ICT capability.

The key findings from the 2017–18 monitoring period in relation to literacy and numeracy across the curriculum are:

- Systems and schools strongly support literacy and numeracy as foundations to student learning and value literacy and numeracy being embedded in the AC learning areas and the general capabilities.
- While jurisdictions expressed support for the development of the NLNLP as teaching and learning tools, there is variability of interest in commitment to, and uptake of, their use.
- Systems and schools would like further advice and support in relation to the coherence among literacy and numeracy in learning areas, capabilities and the progressions.

LIST OF ABBREVIATIONS

AAAE	Australian Alliance of Associations in Education
ACACA	Australasian Curriculum, Assessment and Certification Authorities
ACARA	Australian Curriculum, Assessment and Reporting Authority
AC	Australian Curriculum
AC: DT	Australian Curriculum: Digital Technologies
AC: E	Australian Curriculum: English
AC: GC	Australian Curriculum: general capabilities
AC: HPE	Australian Curriculum: Health and Physical Education
AC: HASS	Australian Curriculum: Humanities and Social Sciences
AC: L	Australian Curriculum: Languages
AC: M	Australian Curriculum: Mathematics
AC: S	Australian Curriculum: Science
AC: T	Australian Curriculum: Technologies
AC: TA	Australian Curriculum: The Arts
ACDICT*	Australian Council of Deans & Information and Communications Technology
ACER	Australian Council for Educational Research
ACU	Australian Catholic University
AGDET	Australian Government Department of Education and Training
AI	artificial intelligence
AISNSW	Association of Independent Schools of New South Wales
AISSA	Association of Independent Schools of South Australia
AISWA	Association of Independent Schools of Western Australia
ALTA	ACDICT* Teaching and Learning Academy
CECV	Catholic Education Commission of Victoria
CESA	Catholic Education Office South Australia
Tas DoE	Department of Education Tasmania
EAL/D	English is an additional language or dialect
ELLA	Early Learning Languages Australia
ELSA	Early Learning STEM Australia

HSIE	Human Society and Its Environment
ICT	information and communications technologies
ISQ	Independent Schools Queensland
IST	Independent Schools Tasmania
ISV	Independent Schools Victoria
MATSITI	More Aboriginal and Torres Strait Islander Teaching Initiative
NAIDOC	National Aborigines and Islanders Day Observance Committee
NAPLAN	National Assessment Program – Literacy and Numeracy
NCEC	National Catholic Education Commission
NESA	NSW Education Standards Authority
NLLP	national Literacy learning progression
NNLP	national Numeracy learning progression
NLNLP	national Literacy and Numeracy learning progressions
OCS	Office of the Chief Scientist
OECD	Organisation for Economic Co-operation and Development
PIRLS	Progress in International Reading Literacy Study
QCAA	Queensland Curriculum and Assessment Authority
QCEC	Queensland Catholic Education Commission
QDoE	Queensland Department of Education
SACE	South Australian Certificate of Education
SACE BSA	South Australian Certificate of Education Board of South Australia
SCSA	School Curriculum and Standards Authority
STEAM	Science, Technology, Engineering, Arts and Mathematics
STEM	Science, Technology, Engineering and Mathematics
STERN	Science and Technology Education Research Network
TCEC	Tasmanian Catholic Education Commission
TIMSS	Trends in International Mathematics and Science Study
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UTAS	University of Tasmania
VCAA	Victorian Curriculum and Assessment Authority

![acara ACARA AUSTRALIAN CURRICULUM, ASSESSMENT AND REPORTING AUTHORITY]

APPENDIX A

List of respondents

Australian Catholic University	ACU
Australian Government Department of Education and Training	AGDET
Association of Independent Schools of New South Wales	AISNSW
Association of Independent Schools of South Australia	AISSA
Association of Independent Schools of Western Australia	AISWA
Catholic Education Commission of Victoria	CECV
Catholic Education South Australia	CESA
Department of Education Tasmania	Tas DoE
Department of Education and Training Victoria	DETV
Independent Schools Queensland	ISQ
Independent Schools Victoria	ISV
National Catholic Education Commission	NCEC
New South Wales Education Standards Authority	NESA
Queensland Catholic Education Commission	QCEC
Queensland Curriculum and Assessment Authority	QCAA
Queensland Department of Education	QDoE
South Australian Certificate of Education Board of South Australia	SACE BSA
SA Department for Education	
School Curriculum and Standards Authority	SCSA
Tasmanian Catholic Education Commission	TCEC
Victorian Curriculum and Assessment Authority	VCAA