

Ten Years of Print Media Coverage of NAPLAN: A Corpus-assisted Assessment

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The National Assessment Program – Literacy and Numeracy (NAPLAN) has been a key tenet of Australian education policy since its launch over a decade ago. Print media coverage of NAPLAN and myschool.edu.au¹, which displays and compares NAPLAN results across Australia, has played a role in both reporting and shaping this aspect of education policy. This paper uses a corpus-assisted approach to map print media representations of NAPLAN over the first decade of the Program, from 2008 to 2018. Building on previous work on NAPLAN and the print media (Mockler, 2013, 2016), it draws on a corpus of almost 6000 articles from the Australian national and capital city daily newspapers published between 2008 and 2018. It charts the discursive shifts that have taken place over this period as NAPLAN has transitioned in the public space from a diagnostic tool seen to be useful to educators, to a comparative tool seen to be useful to parents and the general public, and more recently to a contested tool seen to have narrow or limited utility.

Keywords: NAPLAN, corpus-assisted analysis, discourse analysis

1. Introduction

Introduced in 2008 as a key plank of the “Education Revolution” reforms of the Rudd-Gillard-Rudd Labor Government (2007-2013) in Australia, the National Assessment Program – Literacy and Numeracy, known as NAPLAN, has gained significant print media coverage over the past decade. NAPLAN is an annual testing program that involves all school students in Year 3, 5, 7, and 9. Since 2010, each school’s NAPLAN results have been made publicly available on the MySchool website (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2019). The website provides comparisons between “statistically similar schools”, based on an Index of Socio-Educational Advantage (ICSEA) developed by ACARA.

Almost since its inception, NAPLAN has been a divisive and hotly debated education policy intervention. On the one hand, the Program has been defended by politicians on both sides of the political spectrum (Gillard, 2008; Pyne, 2015) as a harbinger of greater transparency and clarity around student progress and achievement. On the other, and particularly through its link with MySchool, it has been criticized by teacher, principal, and parent groups along with education researchers as contributing to competition between schools and the marketisation of education (Angus, 2015; Connell, 2013). It has also been criticized for being statistically problematic (Wu, 2016) and for narrowing the curriculum and students’ school experience (Howell, 2017; Polesel, Rice, & Dulfer, 2014). The print media have reported these debates, and have also, over time, been a key player in these debates through their advocacy for and publication of school league tables constructed from MySchool data, at times expressly against the wishes of the government of the day (Mockler, 2013).

¹ myschool.edu.au is a website hosted by the Australian Curriculum, Assessment and Reporting Authority (ACARA)

This paper aims to map print media representations and discussions of NAPLAN over the ten years of the Program's life. This study is deliberately interdisciplinary in nature, using corpus linguistic techniques to conduct a critical analysis of media texts in relation to this central concern within Australian education. It uses a corpus-assisted approach, based on analysis of a three-million-word corpus comprised of almost 6,000 articles from the Australian national and capital city newspapers. The paper is presented in four parts. After a brief background section which surveys recent work on NAPLAN and the media, and provides an overview of the approach and methods of analysis employed, the detailed analysis is presented, drawing on keyword and concordance examination conducted using AntConc 3.5.8 (Anthony, 2018) and Wordsmith Tools 7 (Scott, 2018). A brief discussion and conclusion section follows these results.

2. Context and approach

Mandatory standardized testing of school students in Australia was first introduced by states and territories as a consequence of negotiations between members of the Ministerial Council on Employment, Education, Training and Youth Affairs (MCEETYA) in the Howard (Liberal/National) Government years (1996-2007). The Rudd-Gillard-Rudd (Labor) Government subsequently introduced national testing in 2008, as noted above, as one element of the Government's signature suite of federal policies said to be designed to promote consistency and transparency in school education in Australia (Commonwealth of Australia, 2008). The national tests range across the five areas of reading, writing, spelling, grammar, and numeracy, and are, subject to parental consent, taken by students annually in May. Results are released to schools in the second half of the year and subsequently published on the myschool.edu.au website, another of the signature education policy interventions of the Rudd-Gillard-Rudd Government.

As noted above, NAPLAN has been the subject of considerable media attention. Lingard (2010), reflecting on the flurry of media attention in the wake of the release of the original version of the MySchool website in January 2010, suggested that the Government had effectively used the density of media coverage to "circumvent teacher union opposition to the publication of NAPLAN data, in effect working a different politics in the information age" (2010, p. 130). Accordingly, a range of research studies conducted over the past decade have explored media representations of NAPLAN, either as a central concern (see, for example, Mockler, 2016; Shine, 2015; Thompson & Lasic, 2011) or as part of a broader focus on media representations of school performance or educational quality (for example, Baroutsis, 2016; Doolan & Blackmore, 2017; Forgasz & Leder, 2011).

In general, this work utilizes close analysis of a selection of media texts to highlight the various discourses or frames evident. Shine (2015), for example, conducted a close examination of 454 articles drawn from *The Sydney Morning Herald*, the *Herald Sun* and *The West Australian*, using a grounded theory approach to highlight four discourses relating to teachers and NAPLAN. Namely, these were that teachers: oppose the testing and publication of results; should be accountable to the public; feel the need to teach to the test and cheat to influence NAPLAN results; and that teachers and schools are failing Australian students. Baroutsis's (2016) analysis of 86 media articles collected from *The Courier Mail* and *Daily News* (a regional Queensland daily newspaper) over a six year period from 2009 to 2014 highlighted the prevalence of media frames that rank school performance, compare the performance of Government and non-Government schools, and criticize school management practices. Mockler's (2016) comparison of 152 NAPLAN-related media texts from the

twelve Australian national and capital city daily newspapers from 2010 and 2013 identified three “problem frames” (Altheide, 1997, 2013) in use, namely “school as problem”, “test as problem”, and “teachers and teaching as problem”, and charted the progression of these in the work of six journalists over this period. She found an increase in the prevalence of “schools as problem” and “test as problem” over this time, along with a substantial decrease in the “teachers and teaching as problem” frame.

While these studies and others highlight particular aspects of media reportage around NAPLAN based on partial readings of a larger body of texts, they are necessarily limited in their scope, determined according to the close analytical nature of the examination and thus their capacity to point to discourses and patterns writ large in the media coverage. It is the intention of this paper to explore the media coverage through a more wide-angled lens, using corpus analysis tools to chart the discursive shifts that have taken place in the public space over the first decade of the Program’s life.

3. Methods

The *Nexis* database was used to identify all articles in the twelve Australian national and capital city daily newspapers from 1 January 2008 to 31 December 2018 that referenced NAPLAN using “NAPLAN” as the search term and including all articles with at least one reference to NAPLAN. A python script was subsequently used to split the Nexis files into individual media articles, deleting metadata and noting their date, source, article type, and author in the file name, and identifying and eliminating duplicate articles from the dataset. The resulting collection of articles, referred to here as the *NAPLAN Corpus*, includes 5,949 articles, comprising 3,609,563 words.

3.1 The NAPLAN corpus

The 5,949 articles included in the NAPLAN Corpus are not evenly dispersed across publications, or indeed publisher or newspaper type. As with other forms of media, newspaper ownership is highly concentrated in Australia. Eleven of the twelve national and capital city daily newspapers were until 2018 owned by Fairfax Media (four broadsheets, two of which have Sunday tabloid variants, all of which were purchased in 2018 by Nine Entertainment) and News Corp Australia (one broadsheet and six tabloids). The remaining newspaper, *The West Australian*, is a “right leaning” tabloid, to employ the categorisation of Paul Baker, Costas Gabrielatos, and Tony McEnery (2013) published by Seven West Media. While the particular representations of NAPLAN constructed by different publishers and newspaper types is not a focus of this paper, this initial background is provided to highlight the complexity of the corpus, other aspects of which may be the focus of subsequent research.

Table 1 highlights the profiles of each of the newspapers in this study, while Figure 1 shows the dispersion of articles in the NAPLAN Corpus by publication.

Publication	Owner	Type	Orientation	Readership ¹
The Advertiser (Adelaide)	News Corp	Tabloid	Right-leaning	257,000
The Age (Melbourne)	Nine	Broadsheet	Left-leaning	394,000
The Australian (National)	News Corp	Broadsheet	Right-leaning	295,000
The Australian Financial Review (National)	Nine	Broadsheet	Right-leaning	182,000
Canberra Times (Canberra)	Nine	Broadsheet	Left-leaning	41,000
Courier Mail (Brisbane)	News Corp	Tabloid	Right-leaning	333,000
Daily Telegraph (Sydney)	News Corp	Tabloid	Right-leaning	544,000
Herald-Sun (Melbourne)	News Corp	Tabloid	Right-leaning	655,000
Hobart Mercury (Hobart)	News Corp	Tabloid	Right-leaning	48,000
Northern Territory News (Darwin)	News Corp	Tabloid	Right-leaning	26,000
Sydney Morning Herald (Sydney)	Nine	Broadsheet	Left-leaning	372,000
The West Australian (Perth)	Seven West	Tabloid	Right-leaning	350,000

Table 1: Newspaper profiles

While tabloids contributed 58% of articles to the NAPLAN Corpus with broadsheets contributing only 42%, as articles published in broadsheet newspapers tend to be longer than those published in tabloids, this means that broadsheets contributed 51% of the word tokens in the corpus as opposed to 49% contributed by articles in tabloids.

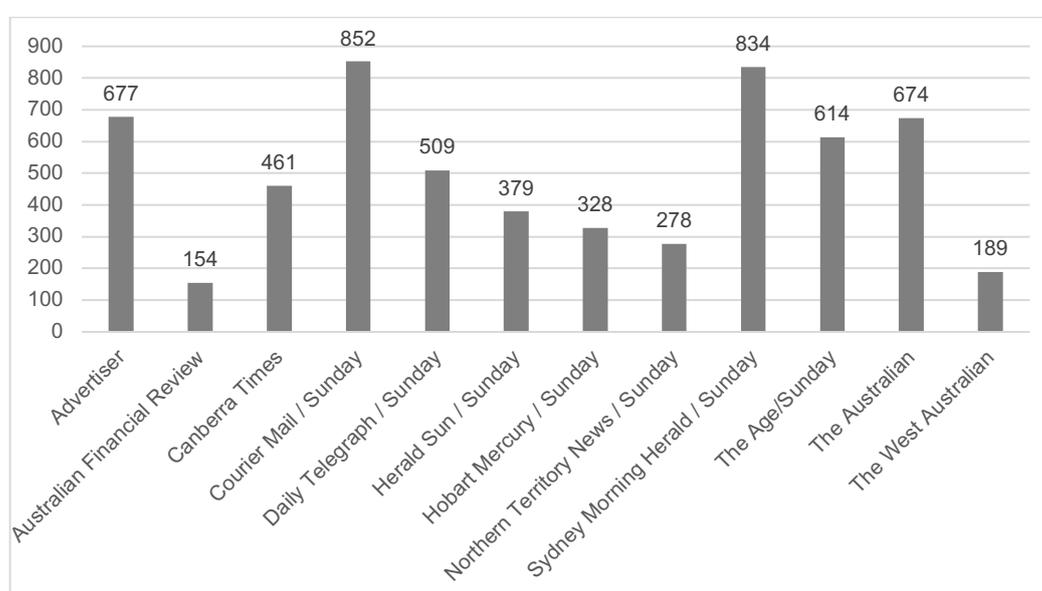


Figure 1: NAPLAN Corpus by Publication

3.2 Analysis

Because this analysis is primarily focused on the “aboutness” of the corpus and of smaller groups of texts within the corpus, keyword analysis was the primary corpus-assisted technique used in the analysis. Scott notes that keywords “give robust indications of the text’s aboutness, together with indicators of style” (2010, p. 43), thus providing a sense of the important distinctions between different groups of texts. Keyword analysis is frequently used as a starting point in corpus-assisted discourse analysis (e.g., Carr, 2020, this volume). Analysis of keywords has consequently been used to explore the *aboutness* of the full NAPLAN Corpus, and then the changing nature of the media discourses surrounding NAPLAN over the ten-year period through the examination of subcorpora by year.

The Wordsmith Tools 7 keyword function was used to compare the NAPLAN Corpus to a subsection of the News on the Web (NOW) corpus (Davies, 2013). The NOW corpus includes over three billion words gathered using Google News from 20 countries on a daily

basis, and dates from 2010 to the present day, updated monthly. The subsection of NOW used as the reference corpus was of Australian news texts only, from 2010 to 2018 inclusive. This subsection of the NOW Corpus includes over 503 million words in total, and over 813,000 distinct word types².

Beyond this broad view of the corpus as a whole, a keyword analysis of a set of eleven subcorpora comprised of all articles published in each calendar year was undertaken. While in some ways this division might seem arbitrary or artificial, reporting of NAPLAN follows an annual pattern (like many other phenomena related to schooling), beginning in March in the lead-up to testing in May (at which time the MySchool website is usually updated), concluding with the release of the results in the second half of the year. In the interests of simplicity and to reflect this pattern, a calendar year division was used for the subcorpora. Each subcorpus was compared to the corresponding year of the Australian portion of the NOW Corpus in order to identify keywords for each calendar year.

A combination of measures of significance and effect size was used to identify keywords. The Bayesian Information Criteria (BIC) statistic (a built-in option in Wordsmith Tools 7) was used to identify words that appear more frequently in the NAPLAN Corpus than in the reference corpus, in a statistically significant sense. The BIC was used in preference to the more commonly used log likelihood statistic because it is sensitive to the sizes of compared corpora, an important consideration in a study such as this where subcorpora vary in size from 34 texts in 2008 to 924 in 2010 (Gabrielatos, 2018). According to Wilson (2013), a BIC value of over six indicates strong evidence against the null hypothesis that there is no difference between frequency in the two sets of texts, corresponding to a p-value of 0.000014. Accordingly, as a measure of statistical significance, keywords with BIC values equal to or greater than six were selected for analysis, with the added stipulation that to be identified as *key*, a word must appear in at least 10% of the texts in the NAPLAN corpus or relevant subcorpus. This latter parameter was applied to attend to the issue of keyword dispersion (Egbert & Biber, 2019), ensuring that a sense of *aboutness* within the corpus or subcorpus was not ascribed to a word appearing in a very small proportion of texts within the group. The Log Ratio statistic (Hardie, 2014) was used to judge the relative importance of the differences in frequency once their significance had been established using the BIC. Words with a log ratio equal to or greater than one (indicating that the normalized frequency of the keyword is two times greater in the study corpus than the reference corpus) were selected for closer analysis.

In order to chart the changing “aboutness” of the NAPLAN Corpus from year to year, and to ensure that each interpretation was verified, extensive concordance analysis exploring the keywords in context was undertaken. Concordances were generated for all keywords, and all concordance lines were analyzed systematically. This has contributed to an understanding not only of the quantifiable differences over time, but also the more subtle and nuanced differences indicated in varying usage.

4. Keywords in the NAPLAN corpus

The top 100 keywords, ranked according to Log Ratio, were selected for closer analysis as a “way in” to understanding the NAPLAN Corpus. 150 keywords were identified, using the

² A limitation of the NOW Corpus is that for copyright reasons in line with the United States Fair Use Law, ten words per 200 words have been replaced with ‘@’. This effectively means that 95% of the data are available without contravening copyright, and as the omissions occur “blindly”, all words are affected equally. For more information see <https://www.corpusdata.org/limitations.asp>.

Australian portion of the NOW Corpus from 2010 to 2018 as the reference corpus. As might be expected, words specifically relating to the NAPLAN tests (*NAPLAN, numeracy, literacy, testing, reading, spelling, sit, assessment*), as well as words more generally related to education (*principals, curriculum, schools, schooling, classroom, teaching, students*) constituted the vast majority of words on the keyword list. Four groups of other lexical words emerged through the concordance analysis as interesting, in relation to mapping the shape of the NAPLAN Corpus (see Table 2).

Keywords: NAPLAN Corpus
Possessives Australia's, child's, children's, government's, school's, year's
Performance / Improvement / Funding Related Catholic, disadvantaged, funding, improve, improved, improvement, improving, independent, measure, needs, performance, performing, poor, private, public, quality, resources
MySchool Related areas, average, compared, data, debate, difference, individual, score, socio, similar, tables, website
Government / Other Policy Related department, federal, Gillard, government, governments, Indigenous, Julia, minimum, minister, Peter, review, standard, state, system

Table 2: Selected keywords from the NAPLAN Corpus

Six of the top ten keywords, as ranked by log ratio, were possessive forms. As the examples below demonstrate, these imbue the corpus with a sense of NAPLAN's service to the public good (either a "real" or imagined public), and position NAPLAN as the property of governments, schools, children, and by association, parents. The prominence of *Australia's* and *government's* as keywords within the NAPLAN corpus also point to the ways in which NAPLAN is linked into broader policy agendas, whether related to broader education policy or economic policies around productivity. For example,

- (1) *Australia's* performance in national and international tests is flatlining (Jacks & Cook, 2017)
- (2) It is about *Australia's* productivity and prosperity and that means we must address those factors that limit student achievement. (Milburn, 2012)
- (3) The results of the tests taken by Year 3, 5, 7 and 9 students form the basis of comparison on the Federal *Government's* school performance website, My School. (Keller, 2010)
- (4) MySchool points the way forward, but far more crucial is the *government's* review of funding for schools. (Moore, 2011)
- (5) Federal School Education Minister Peter Garrett said the results were a wake-up call. He maintained that a fairer funding system, coupled with the federal *government's* school improvement agenda, would boost standards and take Australian schools into the top five in the world by 2025. (Topsfield, 2012)

A second group of keywords relate to the concept of school quality and improvement, which in policy terms is one of the central aims of the NAPLAN program. These words also relate to the issue of school funding, particularly with reference to bolstering the quality of education and schooling, which has been explicitly linked to NAPLAN results since 2010. A third group relates to the MySchool website, the public comparison of schools based on the Index of Socio-Educational Advantage (ICSEA)³, and the use of the website by newspapers

³ The ICSEA is a measure devised by the Australian Curriculum, Assessment and Reporting Authority to allow comparison of NAPLAN results across 'statistically similar' schools on the MySchool website.

to construct and publish school league tables. A fourth group relates to significant politicians (*Julia Gillard, Peter Garrett*) and broader policy discussions around NAPLAN that took place over the timeframe, including those relating to *Closing the Gap (Indigenous)*, *minimum standards* that students should attain, and NAPLAN-inspired or related *reviews*.

5. Changing discourses of NAPLAN

The primary interest in this paper is the changing shape of the media discussion of NAPLAN over time, so having sketched the essential ‘shape’ of the NAPLAN corpus, we turn now to a diachronic analysis. After a brief discussion of contextual elements, and in particular the ‘peaks and troughs’ (Gabrielatos, McEnery, Diggle, & Baker, 2012) of article frequency, the analysis will map the changing shape of the NAPLAN discussion in the print media through a focus on changing keywords.

As Figure 2 highlights, the media texts were not equally dispersed across the eleven calendar years, with relatively few articles published in 2008 and 2009, a peak in 2010 (with the release of the original version of the MySchool website, in January, and newly-sparked media interest in NAPLAN testing that year) and a reasonably stable coverage of between 500 and 700 articles per year thereafter. This graph highlights the important role of the MySchool website in driving conversation in the public space about NAPLAN. The Program’s introduction in 2008 was not a topic of media interest, sparking only 34 articles nationally in that calendar year, many of which highlighted the comparatively poor performance of particular groups of Australian children with Indigenous children in remote communities being a particular focus for the (albeit very limited) discussion. The number of media articles then increased five-fold in 2009, as media interest in comparing results grew and the MySchool website was announced in August and previewed to principals in November of that year. Print media attention to NAPLAN then increased once again five-fold (a 27-fold increase since 2008) in 2010 with the website’s release.

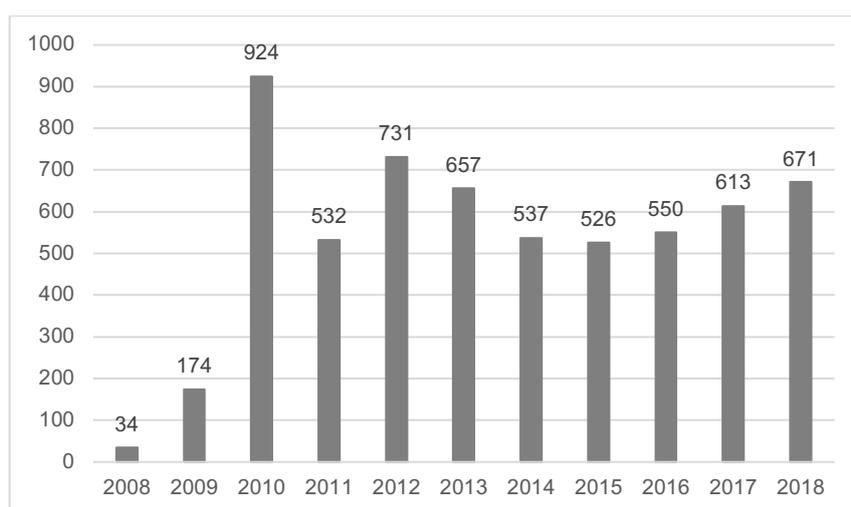


Figure 2: The NAPLAN Corpus by year

Furthermore, the articles were not evenly dispersed within each of the eleven years, with peaks in publication typically around the time of the tests (May) and a smaller peak in the second half of the year, around the time of the release of the results in September each

year. Figure 3 highlights the dispersion of texts over the period from January 2008 to December 2018.

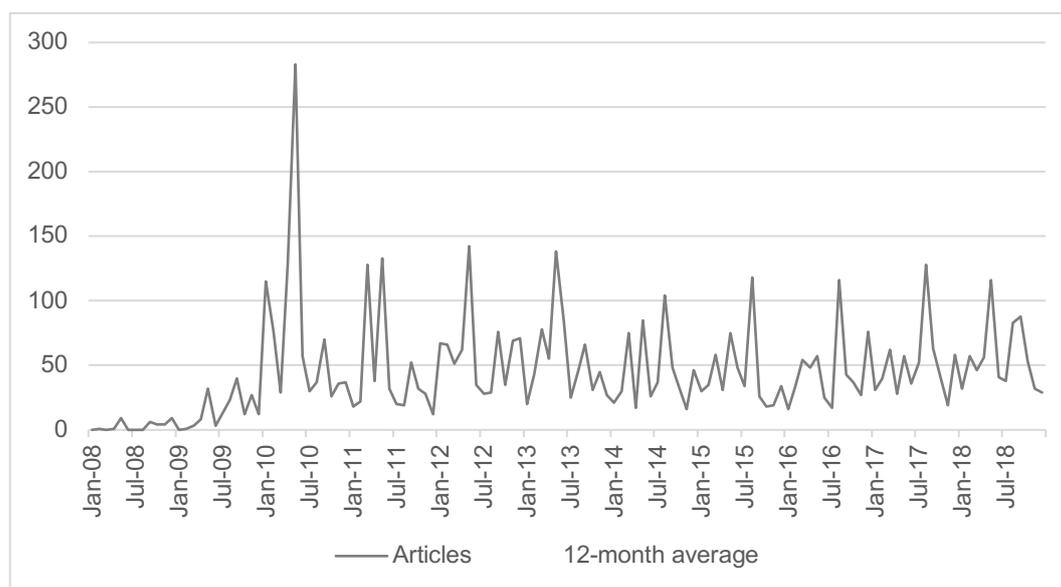


Figure 3: The NAPLAN Corpus by Month

After the heightened interest in 2010, the pattern of articles has remained relatively stable over the past eight years, with NAPLAN being reported widely in the print media around the time of the testing and the release of results, with a steady but smaller stream of articles being produced over the course of each year.

5.1 Keywords and change over time

As noted above, for the purposes of analysing change over time, the NAPLAN Corpus was broken into year subcorpora and each subcorpus was compared to the relevant year of the Australian portion of the NOW Corpus.⁴ The top 100 keywords, chosen on the basis of having a BIC score equal to or greater than six, and ranked according to log ratio which in all cases meant a log ratio greater than one, were selected for analysis. Once identified, keywords were split into two groups according to year: keywords unique to the year and diachronic keywords shared with other years. This approach to analysis was designed to highlight both characteristics of each year subcorpus that were particular to the year as well as those events and discussions that were more enduring within the NAPLAN Corpus, responding in part to Charlotte Taylor's (2013) argument around the importance of a focus on similarity as well as difference in keyword analysis. Table 3 shows unique keywords, aligned with year and with salient discussion points for the year highlighted.

⁴ The 2008 and 2009 NAPLAN subcorpora were compared to the 2010 Australian portion of the NOW Corpus, as the NOW Corpus was not collected prior to 2010.

2008	absenteeism, assessments, basic, benchmark, benchmarks, child's, column, comparisons, conventions, exam, exams, failed, failing, failure, figures, Hughes, illiteracy, measuring, meeting, northern, NT, proportion, psychologist, punctuation, Scrymgour, stress, WA, welfare, writes	First year of NAPLAN testing; Northern Territory students identified as comparatively underperforming
2009	Brisbane, communities, courier, mail, publication, published	Queensland students identified as strongly underperforming
2010	action, AEU, ahead, ban, boycott, industrial, myschool, page, unions	First year of MySchool website; AEU boycott; League Table discussion
2011	improved, sit	
2012	economic, score	
2013	Abbott, budget, coalition, early, extra, governments, plan, reforms	Federal election brings Coalition Government to power
2014	ability, ACARA, approach, association, Pyne, question, questions, rates, socio, taught	
2015		
2016	Australian, behind, Birmingham, countries, shows, spending, years	PISA 2015 results published
2017	HSC, problem, problems, significant	NSW linking of NAPLAN and HSC
2018	based, development, disadvantaged, doing, issues, less, often, paper, rather, review, why	Gonski 2.0 report released

Table 3: Unique keywords by year

As indicated by the large number of unique keywords, the 2008 coverage (prior to any discussion of broad-based comparison via the MySchool website) is quite different from the remaining ten years, although it is worthwhile noting that with the very small number of articles in the dataset (34), a word could be identified as “key” by appearing in only four of the articles. The discourse of “failure” is strong in the 2008 subcorpus, with *fail/failing/failure/failed* appearing in 14 of the articles, and, as the randomly selected concordance lines in Table 4 highlight, “failure” is said to relate to both the failure of the system and the failure of students and groups of students on the tests. The relatively poor performance of Indigenous children compared to non-Indigenous children is the subject of nine (26%) of the 2008 articles, while a further four articles, published in the *Northern Territory News*, focused on the comparatively poor performance of children in the Northern Territory generally, particularly those in remote schools.

can be said that systemically we have A quarter of Australian children are designed to halt discussion about education a less than 10 per cent rate of failing basic literacy and numeracy tests. The stern Australia, where the proportion of students director, John Serich, said any teacher who 100 per cent in many remote areas and and educators UCA is highlighted by the says one in five indigenous students in Year 3 Assessment Program -- Literacy and Numeracy) -- and 30 per cent in the Northern Territory -- were about 4 per cent of students and can be said that systemically we have	failed Aboriginal children dramatically. ``Our response failing even the most basic standards of maths. failure in remote schools. Early childhood is the failing NAPLAN tests compared with an average 22per failure rate is revealed in findings of the failing the minimum benchmark rose by between 10 and 25 failed to administer the tests to students in fail to credit the positive academic results of failure to foresee the prevention of an agreement failed to meet the reading benchmark. For the failed to reach the national benchmark," the principal failed to sit the tests. Professor Hughes, also failures were around 5 per cent -- a total 9 per failed Aboriginal children dramatically. ``Our response
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Table 4: Fail* Concordance Extract (2008 Subcorpus)

The discourse of failure in the 2008 subcorpus is further contributed to by six articles focusing on the comparatively poor performance of Western Australian (and to a lesser extent, Tasmanian) children, often imbued with a sense of crisis and hysteria, for example:

Children as young as eight will have to go through intensive cramming sessions to train them to perform well in exams so WA can improve its poor ranking in national tests. (Hiatt, 2008, p. 12)

The unique keywords in the 2009 subcorpus reflect the beginning of a focus on Queensland (*Brisbane, Courier, Mail*), where the comparatively poor results of 2008 had caused then Premier Anne Bligh to commission an inquiry into the “deficiencies” (Education faces up to testing times, 2009) of the Queensland Education System, the report of which was handed down in 2009 and was said to have contributed to significant improvement later in 2009:

Western Australia and Queensland especially celebrated their improvements in NAPLAN in September. Both states worked hard at lifting standards. Queensland even employed Professor Geoff Masters, executive director of the Australian Council for Educational Research that develops the NAPLAN tests, to help. (Testing times when figures don’t add up, 2009, 24)

The appearance of the name of the Queensland newspaper (*The Courier Mail*) amongst these keywords mostly reflects self-references within the articles published in the same newspaper, referring to the newspaper’s creation of league tables based on the 2009 NAPLAN results, for example:

The data published in *The Courier-Mail* will be downloaded on a federal government website later this year. (Chilcott, 2009a, p. 20)

The 2008 school-by-school exam results were revealed for the first time in *The Courier-Mail* on the weekend. (Chilcott, 2009b, p. 5)

Additionally, some references to *The Courier Mail* in the 2009 subcorpus came from writers in other newspapers referring to their creation of the Queensland league table, such as in *The Age*:

Today’s meeting comes after Brisbane’s Courier Mail published school rankings over the weekend based on literacy and numeracy results of Queensland students. (Tomazin, 2009, p. 7)

As such, some of these usages, while initially triggered by Queensland performance, echo the remainder of the unique keywords (*communities, publication, published*) which reflect the emerging discussion in 2009 of the propriety of newspapers publishing league tables drawn from the comparative NAPLAN data, which was then about to be made publicly available via the MySchool website in early 2010.

SCHOOL teachers could refuse to carry out literacy and numeracy tests if the State Government does not ban publication of league tables of school performance. (Killick, 2009, p. 11)

[Then President of the NSW Teachers’ Federation] Mr Lipscombe took aim also at sections of the media, saying some newspapers stood to gain financially from the publication of tables comparing schools. His comments came after The Australian published a table last week comparing numeracy and literacy results in schools in the northern Sydney electorate of NSW Opposition Leader Barry O’Farrell, to demonstrate the data available to parents. (Hall, 2009, p. 5)

In 2010, the NAPLAN media discussion was dominated by the launch of the MySchool website and the proposed boycott of the NAPLAN tests by the Australian Education Union (which represents teachers in public schools nationally) in protest over the information to be provided on the MySchool website. The boycott was proposed in January of 2010 and withdrawn the week prior to the tests after the then-Minister for Education, Julia Gillard, agreed to establish a working party to review the use of results on the website (Chilcott, 2010). 190 of the 924 articles in the 2010 subcorpus focused on the boycott. The second issue, namely NAPLAN/MySchool-based league tables, was particularly potent in NSW where an amendment to legislation introduced by the NSW Greens and supported by the Liberal-National coalition in 2009 banned the publication of school league tables in newspapers and opened newspapers to the possibility of legal action should they do so. The *Sydney Morning Herald* exhibited disdain for the new legislation, publishing a league table in January 2010, citing “impetus to parental action on standards at their school”; giving “parents better information on which to base their choice of school”; and support for the Federal Government: “the advantage for a government that wants genuinely to transform education is that publishing the information in this way may create a political groundswell for change” (Why we are publishing a league table, 2010, p.14). Between these two linked issues, and the advent of the MySchool website, the 2010 coverage was dominated by discussions of comparison, ranking and publication.

The Federal Government is quick to deny that it is supporting the generation of scholastic league tables. This denial is, at best, naive. Of course they will be produced. Efforts to curtail the public comparison of school performance at federal, state or territory level are all doomed to failure. (Hawkes, 2009, p. 11)

I’m for doing what needs to be done to make sure we have all the information we need to improve education in every school. I also have to dispel some myths. My School does not present league tables of schools or compare the results of rich schools with the results of poor schools. A crude comparison of St Joseph’s Hunters Hill with the most remote school in the Northern Territory is not going to tell us anything we don’t know. That’s why the My School website will only compare similar schools with similar schools. (Gillard, 2010, p. 27)

Between 2011 and 2016, relatively few unique keywords (excepting those related to the federal election and arrival of the new Abbott Liberal-National Coalition Government in 2013) reflect the lack of significant NAPLAN/MySchool-related events over the course of these years. The launch of ‘MySchool 2.0’, which highlighted the schools recognized as having improved since the introduction of the Program, is the other exception to this. Concordance analysis reveals that the 2012 keyword *economic* is strongly related to the aftermath of the 2011 review of school funding (Gonski et al., 2011), the report of which was made public in early 2012, and raised the connection between students achievement and socioeconomic factors. 140 of the 227 appearances of *economic* in the 2012 subcorpus are as part of the hyphenated word *socio-economic*.

“There is also an unacceptable link between low levels of achievement and educational disadvantage, particularly among students from low socio-economic and Indigenous backgrounds,” the report found. (Hall, 2012, p. 4)

The unique keywords in the 2016 subcorpus relate predominantly to the release of the 2015 OECD Programme for International Student Assessment (PISA) results in December 2016.

In PISA Australia's results remain just above the OECD average overall, placing fourteenth in science, sixteenth in reading and twenty-fifth in mathematics, of 72 participating countries and economies. (Hardy, 2016, p. 1)

NAPLAN and international standardized testing regimes have long been linked in Australian national education policy through the enactment of the Australian Education Act (2013), which expressly states the aim "for Australia to be placed, by 2025, in the top 5 highest performing countries based on the performance of school students in reading, mathematics and science" (p. 3). Since the earliest days of the "education revolution", NAPLAN has been regarded as a significant resource for tracking and ensuring Australia's performance toward this goal (Lingard, Sellar, & Savage, 2014).

In the 2017 subcorpus, the unique keywords reflect the NSW Government's decision to link NAPLAN and achievement of the 'minimum standard' to eligibility for a Higher School Certificate (HSC). Under the new rule (which was subsequently abandoned in favour of separate online tests), students who failed to gain a 'Band 8' result on each test would need to re-sit Year 9 NAPLAN tests for up to five years after the year they began their first HSC course (usually Year 11) until they obtained the required result. The NSW Government overturned the rule in February 2018, "to ensure NAPLAN remains focused on its diagnostic purpose and to reduce unnecessary stress on young people" (NSW Education Standards Authority, 2018 paragraph 15), but the controversy had dominated much of the media coverage of NAPLAN in 2017.

This is the first year that the state government's new minimum literacy and numeracy standard required year 9 students to achieve at least a NAPLAN Band 8 in three areas - reading, writing and numeracy - or they will have to pass the online test in the following years to qualify for their HSC. (Smith, 2017, p. 6)

The consequences of being denied an HSC are profound and potentially protracted for the students who are most in need of it. (Martin, 2017, p.18)

The release of the report of the 'Gonski 2.0' review, *Through Growth to Achievement*, with its emphasis on needs-based funding to address the particular needs of *disadvantaged* students, was a central issue that dominated NAPLAN coverage in 2018. The increasing discussion of NAPLAN online, which will be touched upon below, is reflected in the appearance of *paper* (as in pen-and-paper test vs online test) on the unique keyword list. Finally, the appearance of the keyword *why* reflects the emerging questioning of the NAPLAN Program, which became a theme of the 2018 media coverage particularly sparked by the then NSW Minister for Education, Rob Stokes, who called for the replacement of NAPLAN with low-stakes formative assessment in an article published in *The Sydney Morning Herald* just ahead of the 2018 tests.

and not the community - is the reason need for a government inquiry to determine consider long-term results more than popularity. burning question for the administration should be are. The question shouldn't be " all the money spent on gender bending schools are Australia's most advantaged, so been no improvement, we have to ask, swimming. We know how to teach reading. driven by an in-depth examination of More research will be conducted to determine the commentary goes on the lines of schools and produce such high-achieving students? with their education - may also help explain sudden changes. The outcome, and the reason	why a Year 10 student in Australia's most why ACT schools are underperforming in NAPLAN Why am I banging on about this? Because why are our student results sharply declining in why are some children falling by the wayside?", why are student results going backwards? Going backwards why are they falling behind? Sherryn Groch investigates why are we continuing to subject our schools Why are we not preventing Australian children from why Australian education standards are falling behind why Australian students' writing skills have dropped. why can't all schools be like selective Why can't all teachers be of such why fewer Tasmanian students complete Year 12 than in why Finland's system is so highly regarded,
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Table 5: Why Concordance Extract (2018 Subcorpus)

While *why* appears in 203 of the 671 articles in the 2018 subcorpus and is often not directly related to NAPLAN (as highlighted in the selected concordance lines shown in Table 5 above), the prevalence of the keyword *why* in the 2018 dataset is at least somewhat reflective of this ongoing debate, with proponents on both sides of the debate reflecting on the ‘why’ of NAPLAN.

5.2 Diachronic keywords

The keyword analysis highlighted not only keywords unique to individual years, but also 148 lexical words identified as key in more than one of the year subcorpora, 45 of which were key in all eleven years, and which might be categorized as “lockwords”, words that are reasonably static in frequency over time but whose usage might shift over the same timeframe (Baker, 2011). While the majority of these keywords (particularly those common to all eleven years) were directly related to material aspects of NAPLAN (for example, *NAPLAN*, *test*, *tests*, *testing*, *schools*, *school*, *results*) and are thus unsurprising given the way in which the NAPLAN Corpus was constructed, the remainder of these words were mapped into four groups for the purpose of exploring patterns across the eleven years of the dataset.

Table 6 contains keywords related to educational/school effectiveness and improvement. In all cases, a tick in the ‘year’ column denotes that the word was key in that year. The tables show a consistent use of words related to effectiveness and improvement over the eleven years, with four words (*average*, *improve*, *performance*, *standards*) key in all eleven years and a further two (*data*, *performing*) key in eight or more of the eleven years. The remaining 14 keywords point to discursive shifts that took place over this time period, often linked to the slew of effectiveness and improvement policies introduced by both state and federal governments over the timeframe.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
average	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
improve	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
performance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
standards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
data	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
performing	✓	✓	✓	✓	✓		✓	✓	✓		
minimum	✓	✓			✓	✓			✓	✓	
achievement	✓						✓		✓	✓	
pay	✓	✓	✓	✓		✓					
standard		✓			✓				✓	✓	
compared		✓					✓	✓		✓	✓
improvement				✓	✓	✓		✓	✓	✓	
quality				✓	✓	✓		✓	✓	✓	
outcomes				✓	✓		✓	✓	✓	✓	✓
top				✓	✓			✓			
low			✓						✓		
better						✓	✓	✓	✓		✓
higher						✓		✓	✓	✓	✓
evidence						✓			✓	✓	✓
progress								✓			✓

Table 6: Effectiveness and Improvement Keywords

Pay, key from 2008 to 2011 and again in 2013, reflects the recurrent public conversation stoked by the Federal Rudd-Gillard-Rudd Labor Government over that period about teacher performance or incentive pay, said on occasion to be linked to NAPLAN performance. The consistent appearance of *improvement* and *quality* as keywords from 2011 to 2013 reflects in the first instance Gillard’s *National Plan for School Improvement*, which formed the Government’s response to the first Gonski review (Gonski et al., 2011) and shifted the subsequent focus from equity (on which the policy discussion had to that point in time centred) to *quality* (Mockler, 2014). While *school improvement* resonates strongly through the 2011-2013 texts, this discourse dissolves with the demise of the Labor Government, and when *improvement* resurfaces as a keyword in 2015, it is not linked to the concept of school improvement, but rather is used in reference to improvement of students’ results. The discourse of *teacher quality*, on the other hand, very strong from 2011 to 2013 and responsible for the appearance of *quality* on the keyword list, returns in 2015 in much the same way, this time a main plank of the Coalition Government’s *Students First* policy (Mockler, 2018). While *top* and *low* in 2011 and again *top* in 2015 refer to top or low achieving or performing schools, in 2012 *top* referred most often to the Government’s intention for Australia to become “top five by 2025” on international standardized tests, subsequently embedded in legislation. When *low* returns as a keyword in 2016, it is most often used in conjunction with *socio-economic* or *SES*, reflecting renewed conversations about equity and school funding that led to the “Gonski 2.0” *Review to Achieve Educational Excellence in Australian Schools* (Gonski et al., 2018). *Better*, in 2013, was directly linked to the Gillard Government’s *Better Schools* policy (which was in turn linked to the National Plan for School Improvement), but in subsequent years, along with *higher*, *compared*, *outcomes* and *progress*, reflects a growing discourse of comparison between both schools and school systems and across years. *Evidence*, key in 2013 and then from 2016 to 2018, points to a growing attention to *evidence-based* practice in education and the central place of *evidence*, often narrowly defined as ‘what works’ in educational decision making at all levels from Government policy to classroom practice. *Minimum* and *standard*, key in 2008-2009, 2012-2013, and again in 2016-2017, was reflective of the first two instances of the introduction of the NAPLAN and then to the National Plan for School Improvement, but in the final instance

reflective of the NSW Government’s short-lived decision to link Higher School Certificate eligibility for students to NAPLAN results.

The diachronic effectiveness and improvement keywords thus reflect how central the discourses of school effectiveness and improvement have been to Australian education policy since the early years of the Rudd-Gillard-Rudd Government (Clarke, 2012), and in some cases (such as around teacher/teaching quality and comparison of school and student performance) how these discourses have been uninterrupted in subsequent years.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
website		✓	✓	✓	✓	✓	✓	✓			
union		✓	✓								✓
league		✓	✓								
tables		✓	✓								
similar			✓	✓				✓			
online							✓	✓	✓	✓	✓

Table 7: MySchool-related Keywords

Table 7 presents keywords related to the MySchool website and publication of NAPLAN results more broadly. The concentration of these keywords in 2009-2010 reflects the focus on the construction of league tables around the time of the establishment of the MySchool website and teachers’ unions’ response to the website generally, which, as noted above, included a proposed boycott. The reprisal of *union* as a keyword in the 2018 subcorpus relates to the backlash against NAPLAN in that year (of which Minister Stokes’ commentary, discussed above, was a central part), including unions’ response to proposed “robomarking” of NAPLAN writing tasks (a plan that was jettisoned due to parents’ backlash) and the trial of “NAPLAN Online”, the subject of much media discussion from 2014 to 2018.

The keywords related to MySchool/publication of results suggest that the MySchool website was no longer a subject of substantial print media attention post-2015, which was the last year in which *website* and *similar* (reference to the comparison of statistically similar schools available on the website) appeared as keywords. At the same time, discussion and critique of the trial of NAPLAN online increased.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
federal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
government	✓	✓	✓	✓	✓	✓			✓	✓	✓
minister	✓	✓	✓	✓	✓	✓			✓	✓	✓
government's	✓	✓	✓	✓		✓					
Gillard		✓	✓								
Julia		✓	✓								
Kevin		✓	✓								
opposition		✓	✓								
Rudd		✓	✓								
Labor			✓		✓	✓					✓
election			✓			✓					
prime			✓			✓					
Tony			✓			✓					
Peter				✓	✓	✓					
Garrett					✓	✓					

Table 8: Politics Keywords

Fifteen keywords were related to politics, which is perhaps unsurprising given the central place of NAPLAN/MySchool in the Australian education policy assemblage of the early twenty-first century (see Table 7). While the politics keywords demonstrate that across the entire first decade of the Program media discussion positioned it as a federal government

concern, the ownership of the Program indicated by the possessive *government's* is confined to the first six years of the Program under the Rudd-Gillard-Rudd Government. The prevalence of politicians' first and last names as keywords during this period highlights the way in which the Program was regarded as the particular interest, property or policy of individual politicians, such as *Julia Gillard*, *Kevin Rudd* and Minister for Education 2010 to 2013 *Peter Garrett*. Concordance analysis shows that the prevalence of *Tony* in 2013, referring to Leader of the Opposition then Prime Minister Tony Abbott, is due to the linking of NAPLAN with pre- and post-election discussions of school funding arrangements, which in turn were linked with broader discussion of education policy, including NAPLAN. The prevalence of *election* as a keyword in the federal election years of 2010 and 2013 also highlights this link, although by 2016 (the final election year in this time period) NAPLAN and broader election-related policy issues were no longer connected in the media discussion.

Finally, *Labor* re-emerges as a keyword in the 2018 subcorpora amid calls from state-based Labor politicians (NSW Minister Stokes among them) for a review of NAPLAN “to look at whether it is doing what it was intended to do when it was introduced 10 years ago” (Bolton, 2018, p.6), and also in the light of an academic paper co-authored by a member of the federal Labor frontbench, Andrew Leigh, highlighting the unintended consequences of the Program (Coelli, Foster, & Leigh, 2018).

Table 9 highlights the diachronic keywords linked to the issue of school funding, which includes discussion and comparison of different school sectors (*public*, *private*, *non* [referring to non-Government schools], *Catholic*).

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
funding	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
private	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
public		✓	✓	✓	✓	✓		✓	✓	✓	✓
non		✓		✓	✓	✓				✓	
independent			✓	✓	✓	✓	✓	✓	✓		✓
resources			✓	✓							
needs				✓	✓			✓	✓	✓	✓
Gonski					✓	✓			✓		✓
money						✓			✓		
Catholic							✓	✓			✓
need									✓	✓	✓

Table 9: Funding Keywords

School funding reform, as a central plank of education policy for both Labor (Rudd-Gillard-Rudd) and Liberal-National (Abbott-Turnbull-Morrison) federal Governments, was linked to print media reporting of NAPLAN consistently over this period, particularly from earliest discussions of the “Gonski review” in 2011 through to 2018. The prevalence of funding and sector keywords across each of the subcorpora underlines the relationship in Australian education policy (and consequently, reporting) between “achievement” and funding, and the salience of discussion of the school sectors to this broader discussion.

6. Discussion and conclusion

This study charts the history of print media discourses of NAPLAN and provides broader empirical evidence for a number of central claims made previously in research that has used a different approach and/or focus. First, it provides strong and sustained evidence of the critical link between NAPLAN and MySchool in Australian public discourse around education. This evidence is generated not only on the basis of the shift in intensity of print media coverage of

NAPLAN since the introduction of the MySchool website, but also by the way in which the NAPLAN Corpus is so strongly imbued with the language of comparison of schools and results. As the technology affording (and indeed encouraging) such comparisons both privately and publicly through enabling the construction of school league tables, MySchool has played a significant role in positioning NAPLAN as a high stakes test despite the protestations of politicians and policymakers. As such, this study contributes to our understanding of the NAPLAN/MySchool nexus and to the role played by MySchool in the public space, effectively reconfiguring NAPLAN through its use of data for purposes other than those for which they were intended (Gorur, 2013; Ragusa & Bousfield, 2017).

The analysis also highlights the sustained strength of effectiveness and improvement discourses in Australian education policy over the past decade. The policy moves of state governments (with whom the responsibility for the provision of schooling lies, under the Australian Constitution) to improve NAPLAN results or use NAPLAN results as evidence of systemic effectiveness (resonant in the unique year keywords in the NAPLAN Corpus) feed into these discourses. Furthermore, in this realm we see the growth in discourses of “evidence-based practice” in education policy over these years, a concept long critiqued as problematic for education in Australia and elsewhere (Biesta, 2007; Groundwater-Smith & Mockler, 2009; Ladwig, 2018; McKnight & Morgan, 2019); and the continuing growth of “quality” discourses, with “teacher quality” emerging as a powerful and enduring theme, the problematic implications of which have long been recognized by scholars or education policy and practice on a variety of fronts (Berliner, 2005; Bourke, Ryan, & Lloyd, 2016; Connell, 2009; Lampert, Burnett, Comber, Ferguson, & Barnes, 2018; Mockler & Groundwater-Smith, 2018).

The analysis highlights the sustained and indeed increasing association of standardized test performance and school funding in the public discussion of education policy in Australia, an association of which there was little evidence in the years pre-dating national testing. In turn, this also highlights the ongoing links between quality and equity in education policy discourse, a link first exploited in the current iteration of school funding debates by the Gillard Government in their discursive shift from discussions of equity to discussions of quality in the wake of the first Gonski review (Lingard et al., 2014; Mockler, 2014; Riddle, 2018). Over time, this discursive shift has been used as a tool in the undermining of the notion of education as a “public good” (Savage, 2013), wherein:

Instead of equity being understood as a focus on providing all young people with access to high- quality, meaningful education within their particular community contexts, equity becomes the production of outputs, efficiencies and accountabilities (Ball 2006) within a quasi-market of schooling. (Riddle, 2018, p. 18)

This analysis provides strong and sustained evidence of this shift over the past decade, as represented in print media sources.

Additionally, the study has highlighted the shifting nature of critique of the National Assessment Program. Previously the province of teachers’ unions and select academics and commentators who railed at the advent of the MySchool website who warned of the unintended consequences of testing and threatened boycotts, the analysis shows that in recent years critique has become more mainstream. Discussion of NAPLAN in the print media in 2018 was imbued with a questioning of the Program, calls for review by politicians leading education in states and territories, and justification of arguments for and against continuing the program. Where in previous years the premise of NAPLAN as a mutually understood ‘common good’ stood at the centre of discussions of resistance, in 2018 this premise was

increasingly questioned and, in some cases, actively rejected by the mainstream. The changing shape of this debate, previously observed in analysis of academic work (Rose, Low-Choy, Singh, & Vasco, 2018), is also observed here in print media discourses.

Methodologically, the analysis has highlighted the usefulness of corpus linguistic techniques in interdisciplinary research that seeks to understand the role of language in shaping public discourses around social processes and phenomena such as education. Keyword analysis, in particular, is a valuable way of thinking about the form of such discourses, through a focus on the “aboutness” of groups of texts and the contribution of language to such “aboutness”. This study has sought to demonstrate the utility of these techniques for researchers in education, applied linguistics, media studies and fields beyond.

In conclusion, this paper makes a notable contribution to the analysis of changing debates and discussions of Australia’s national testing program in the public space, and the shifting positioning of NAPLAN in relation to both education policy and practice. It does, however, constitute only a first step in such analysis, and necessarily has some limitations. First, it has employed only keyword and keyword-associated concordance analysis. The application of other corpus-assisted analysis tools such as collocation analysis would augment this analysis, tell us more about the discourse prosody of the texts, point to changes in word usage (as opposed to mere keyness) over time, and highlight more about the discursive shifts that have taken place. Second, the analysis has been based only on newspaper articles. Media coverage of NAPLAN has been diverse and multi-faceted, so this analysis represents only one part of the picture of the public discussion of NAPLAN, and further work could broaden this focus to television and radio texts, for example. Notwithstanding these limitations, which point to fertile areas for subsequent research, the study has provided a comprehensive and detailed analysis of the discursive construction of print media discourses of NAPLAN and the shifts that have taken place over the past decade.

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