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**Headlines and hashtags herald new 'damaging effects': Media and Australia's declining PISA performance.**

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## **Headlines and hashtags herald new 'damaging effects': Media and Australia's declining PISA performance**

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### **Introduction**

This chapter provides a comparative analysis of print and social media coverage of Australia's changing performance on the triennial Organisation for Economic Co-operation and Development's (OECD) Program for International Student Assessment (PISA)<sup>1</sup>. The purpose of our analysis is to offer an empirical base for considerations of how policy might be developed in more democratic and inclusive ways. We comparatively analyse the different ways print and social media discussed and portrayed Australia's 2015 PISA performance in December 2016, when the results of the 2015 test were reported.

PISA results reference two aspects of performance, both of which will be addressed in the chapter. The first is referred to as quality and reports a nation's results in relation to international mean scores and the performance of other nations; and the second called equity, provides a measure of the strength of the correlation in a given nation between students' socio-economic backgrounds and performance. Since the first test in 2000, OECD analysis of performance has indicated that top performing systems, such as Finland and Shanghai, have both high quality and high equity. This is an important finding of PISA which suggests that there is no quality/equity trade-off (Condrón, 2011).

In what follows, we first contextualise global media coverage, identifying the different media logics of practice in the United Kingdom (UK), the United States of America (USA), and Australia. This comparison of media logics enables us to grasp the idiosyncratic specificities of the Australian media context when reporting on PISA. We then outline our theoretical and methodological approaches, followed by documentation of our analyses of newspaper (print and digital) and Twitter coverage of Australia's 2015 PISA performance. We also consider the methodological issues we faced when dealing with our social media data and in relation to defensible comparisons between social and legacy media data. The newspaper and Twitter data were collected for a 26-day period in December 2016. The print media analysis focuses on the major Australian dailies in each of the capital cities and two national newspapers. While the newspaper data were collected by the authors, the Twitter data were provided by a commissioned third-party. Another distinction in the data sources was that

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<sup>1</sup> The OECD's PISA has been conducted every three years since 2000 and assesses the reading, mathematical and scientific literacies of a national sample of 15-year olds. In 2015, approximately 75 nations participated in the test. There are currently 35 OECD member nations.

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the newspapers were all Australian based, while the Twitter data were global, with the restriction that only English language tweets were chosen. A comparative analysis of the similarities and differences between these modes of coverage is then provided. We conclude with a summative account of our findings.

### **Contextualising global media PISA coverage**

There is an expanding interest in social media in contemporary politics where more attention is being paid to issues raised via social media (Mellon & Prosser, 2017). For example, if we contemplate a recent UK election we see the significance that social media played in the campaigns of both major parties, with the *The Guardian* (Australian edition: 10 June 2017, np) referring to it as a 'social media election'. This article, amongst others, argues that the surprisingly good performance of the UK Labour party might be attributed to their very effective use of social media<sup>2</sup>. Similarly, we also note the significance of social media to the successful electoral campaigns of former US President Obama and the New Zealand Prime Minister, Jacinda Ardern. More pertinently perhaps, is the case of US President Trump and his ongoing use of Twitter to bypass traditional legacy media (print and broadcast).

In this use of social media, the President was seeking to communicate directly with his loyal supporters and seeking to avoid interrogation of his ideas by investigative journalists. This is where we might see the 'echo chamber effect' through the alignment of views between the president and his social media followers. President Trump's regular references to 'fake news' and usage of social media are situated in what some have called our 'post-truth' era (Sismondo, 2017). This period has seen attacks by the president on expertise and an emphasis on 'affect' rather than empirical knowledge in framing politics. The latter was evidenced by the ongoing loyalty of the President's followers despite the inadequacies of his presidency.

Alongside this use of social media, computational propaganda is also used in politics (cf The Computational Data Project, <http://comprop.oii.ox.ac.uk/>). There is evidence to suggest that social media internet bots<sup>3</sup> have also been used to frame the issues in the Common Core debate in the US (cf #CommonCore, [www.hashtagcommoncore.com](http://www.hashtagcommoncore.com)). This heralds an era of 'robot journalism', where social media are being used to saturate the public sphere with a particular point of view, thereby attempting to manipulate public opinion. What this shows is that all is not what it seems with social media communications and it is in this context that we analyse our gathered data.

None of this is to say that print media is no longer relevant to contemporary politics. We also note that some newspapers also have complementary online versions, where access is not restricted through paywalls, while some newspapers such as *The Guardian* Australia are online only publications. In terms of political influence, we would suggest that in the UK context, progressive print media such as *The Guardian* and the *Independent*, and investigative journalists associated with

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<sup>2</sup> As an example, we are thinking in particular of the YouTube film clips (<https://www.youtube.com/watch?v=zpSVVgZyUBs>) produced by the distinguished progressive film producer, Ken Loach, and distributed exclusively through this channel.

<sup>3</sup> These are internet robots that run automated processes. This can include posting tweets through individual using user accounts, with the account holder's permission.

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these publications, have played a significant role in critiquing the privatisation and destruction of government schooling. Similarly, some sections of legacy media in the US (e.g. *The New York Times* and CNN) have played an important oppositional role to the Trump presidency and provide a beacon for democracy and freedom of speech. In contrast to the UK and US situations, the Australian context has concentrated ownership of legacy media (Murdoch and Fairfax) and an apparent comparative lack of voices of critique (Baroutsis and Lingard, 2017), particularly as Fairfax-owned media have downsized and reduced the numbers of investigative journalists.

This brief commentary about the differences in media practices in the UK, USA, and Australia, suggests that the logics of practice (Bourdieu, 2011) of media frames are vastly different in each context, including education reporting. However, in the current context of the global flows of ideas, what Appadurai (1996) refers to as 'mediascapes', we are not denying the movement of media stories across the globe and across media types. We might see these, in Bourdieu's (2011) terms as 'circular circulation' across media types and in and across nations, particularly evident in the reporting of nations' PISA performance.

Against the backdrop of the global context and our previous print media analysis of Australia's changing PISA performance, in this chapter we focus specifically on PISA 2015 and both traditional and social media coverage of Australia's performance. Our earlier research (Baroutsis & Lingard, 2017) showed that there has been an increase in media coverage of PISA results since 2000, with the mediatisation of the political reception of PISA having real policy effects. This has occurred as test performance comparisons across nations have become more significant in policy making (Sellar & Lingard, 2014). Another central finding of the earlier analysis is that instead of focusing on both quality and equity, print media coverage focused almost entirely on national mean scores in respect of quality and on Australia's declining comparative performance since 2009. For example, overall 68% of the content of the news articles focused on evidence of educational quality, that is, a nation's mean scores on PISA (Baroutsis & Lingard, 2017). Furthermore, as Australia's performance apparently declined, a resultant 'PISA shock' occurred, particularly after Shanghai's exceptional performance on PISA 2009, leading to much greater media coverage. Thus, we found coverage of Australia's performance in PISA spiked following this period with 46% of all newspaper articles from this study being published in the two-year period (2012-2013). We note here, that this print media coverage takes for granted the legitimacy of PISA tests and that it is the views of politicians and policy makers that are reported in these stories with the voices of teachers, teacher unions and students largely excluded.

### **Theorising networks and mediascapes**

We have mentioned the significance of circular circulation to contemporary mediascapes that flow across the globe and are mediated to some extent by the specificities of the media field in a given nation. The OECD, through PISA, has also constituted the globe as a commensurate space of measurement with a related network of policy makers and experts working with the same epistemological assumptions (Lingard, Sellar & Baroutsis, 2015). Mobilities and networks are central concepts in our analysis in this chapter, as they facilitate understanding of legacy and social mediascapes. We draw on the concept of 'mobilities' (Thrift, 1996; Urry, 2007) and networks (Castells, 2010) as our theoretical and methodological approaches. Bauman (2000) refers to various mobilities that function within nations and across the globe today as elements of 'liquid modernity'.

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Here, we are interested in movements and flows of ideas or information about a nation's PISA performance. Urry (2007) suggests this concept of mobilities provides a means for interpreting 'how chaotic, unintended and non-linear social consequences can be generated which are distant in time and/or space from where they originate and which are of a quite different and unpredictable scale' (p. 10). As noted above, PISA as an international large-scale assessment constructs the globe as a single commensurate space of measurement. In Rose's (1999) words, utilising the thinking of Latour, 'that which is distant' is represented 'in a single plane, visible, cognizable, amenable to deliberation and decision' (p. 211). Furthermore, reporting of PISA results is done in a globally comparative way through a single global league table of national performances. We also see different mobilities across the print and digital media platforms and traditional and social media formats, where the pace and scope of the production of information are different. Here Bauman (2000) suggests that:

The game of domination in the era of liquid modernity is not played between the "bigger" and the "smaller", but between the quicker and the slower. Those who are able to accelerate beyond the catching power of their opponents [*sic*] rule. (p. 188)

Social media platforms such as Twitter are much faster-paced than legacy media, operating in real-time and with an ephemeral character; and are more pervasive than legacy media. There is another difference in relation to speed between traditional and social media in relation to their conditions of production. Quality journalism in legacy media has often taken time to properly investigate an issue as against the sometimes capricious and unconsidered production through social media. We see here a 'media manifold' (Couldry and Hepp, 2016, p. 53) driving social, economic and political changes, rather than one type of media influencing society. This contemporary context refers to cross-platform media, with influences being played out through both technology and content, representing a contemporary reality which is categorised as 'deep mediatization' (Hepp and Hasebrink, 2018). This is change itself, as well as providing a platform for comments on change. Deep mediatization signifies that what we have is the provision of a space for the free rein of expression and surveillance of participants at the same time.

When focusing on the movements and flows of information, it is helpful to consider what Castells (2010) refers to as a 'network society', the 'new social morphology of our societies' (p. 500). The suggestion is that 'networks' have a central role in societies of the Information Age (Castells, 2010). Put very simply, 'a network is a set of interconnected nodes' with the typology of these nodes varying in distance, frequency, length, structure, and networks they belong to and are excluded from (Castells, 2010, p. 501). Networks could include news teams, newspaper owners, private groups and public organisations, and government departments, operating both locally and globally. One manifestation is the emergence of what has been called 'network governance', which sees the inclusion of private sector actors inside the state in horizontal and vertical relationships, with these relationships also stretched globally (Rhodes, 1997; Ball and Junemann, 2011). To some extent, the latter sees the eliding of national borders or at least such national borders are made more porous. Additionally, 'networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture' (Castells, 2010, p. 500). As such, we need to be careful not to accept a flat network ontology, which elides consideration of power differentials (Hepp and Hasebrink, 2018); rather, we need to connect content, 'data traces' (Breiter and Hepp, 2018), and meta-data to different actors and power relations.

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Intertextuality is another useful concept that 'foregrounds notions of relationality, interconnectedness and interdependence in modern cultural life' (Allen, 2000, p. 5). Foucault (1972) refers to the intertwining (intertextuality) of a network through analogy. Foucault (1972) states:

The frontiers of a book are never clear-cut: beyond the title, the first lines, and the last full stop, beyond its internal configuration and its autonomous form, it is caught up in a system of references to other books, other texts, other sentences: it is a node within a network. (p. 23)

This statement provides us with an example of the intertextuality within and between networks. Here, drawing on Barthes (1986), starting with a print or digital 'text' as the central unit, we can weave a web of interrelated 'threads', demonstrating the relation of text to other texts, or data traces to other traces. In this sense, the interweaving is not only about the 'sources' or 'origins' of textual material, but also the 'intertext of another text' that has previously been written and those 'already read' (Barthes, 1986, p. 60). In the digital age of deep mediatization, we can develop Barthes' concept so as to speak of 'interdata', that is, the data threads of other data traces and the already read.

Networks can also be used to theorise movements and flows, particularly as mediascapes. Appadurai's (1996) framework of various 'scapes' is helpful for exploring disjunctive global cultural flows and is closely related to the global imaginary created by contemporary media and politics. Mediascapes refer to the 'distribution of the electronic capabilities to produce and disseminate information' and to the flows of media thus enabled (Appadurai, 1996, p. 35). Appadurai (1996) indicates that what is offered through a theorising of mediascapes are 'image-centred, narrative-based accounts of strips of reality' (p. 35), which are often governed by both private and public interests. Mediascapes offer accounts of local understandings that constitute the global Other. These accounts or narratives may in time constitute a desired or preferred personal or national situation (Appadurai, 1996). However, experiences of media are complex and interrelated, as with the examples we present in this chapter, where we see interconnections between the print media and social media that can, at times, blur 'realities' and 'fictions'. With today's deep mediatization, we argue that there is another new and significant mediascape: namely, a 'datascape'<sup>4</sup>, referring to the flows of statistics and numbers globally across national borders. The drawing together of mediascapes and datascares results in what we see and refer to as a 'deep mediascape'. This deep mediascape is enabling and constraining, providing a medium for the expression of opinions and ideas of all, but also simultaneously functioning as an almost global panopticon of surveillance (Lingard, 2016).

### **Documenting newspaper and Twitter coverage of Australia's 2015 PISA performance**

Previous studies have shown that the month of December is the most active time for analysis of PISA coverage, as this period generates most news articles and discussion about PISA performance (Baroutsis and Lingard, 2017). We draw on two data sets for the period 6 - 31 December 2016, which aligned with the release of PISA 2015 results on 6 December: the first is newspaper text (print and

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<sup>4</sup> Data infrastructures are centrally important here and important in the workings of contemporary globalization (see Easterling, 2014).

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digital) and the second is Twitter text (digital). The newspaper data were gathered through the Factiva database using the Boolean search terms 'pisa' AND 'school' from 10 newspapers in both digital and print formats<sup>5</sup>. The Twitter data were data mined by a professional company as part of a larger project<sup>6</sup>, using the search term 'pisa' and the December data were provided to us in a spreadsheet. Both the newspaper and Twitter data were 'cleaned' to remove irrelevant references, for example, travel to Pisa, Italy. Additionally, with the Twitter data, only posts written in English were retained. These searches yielded 35 newspaper articles, approximately 30% of the total number of articles about Australia's PISA performance that were published in 2016, and 36,672 tweets. Comparatively, the newspaper data consisted of 29,585 words (186,811 characters), while the Twitter data amounted to a significantly larger volume of text consisting of 617,773 words (4,411,878 characters).

There are some methodological issues traversed here, so as to problematise our analysis and make transparent the difficulties we faced. These are in relation to Twitter data and comparisons with legacy data. There are also some specific features of the Twitter data that raise analytical and methodological issues. For example, there is a huge amount of such data raising questions about selectivity for analysis. Our data show that from the 19 November - 31 December 2016, there were 200,022 tweets returned through the search term 'pisa'. There is an immediacy about Twitter data; it being instantaneous in one respect and short-lived in another. There are also issues with authorship with Twitter data, in that, without deep investigation it is not known if bots have been used to produce the posts. There is also an implicit epistemological equivalence between tweets, that is, there is no curation of the veracity or otherwise, of the views expressed. Indeed, at time any curation might also be considered censorship. In comparing the legacy media data and the Twitter data, we need to acknowledge that we are using data located in different places and spaces. The legacy media data were largely situated in Australia and dealt mainly with national issues regarding Australia's PISA performance. In contrast, the Twitter data were situated in a global space with only some of these data focused explicitly on PISA in Australia. As such, there are inherent difficulties with the comparative analysis in this chapter and for any future research that uses social media as empirical data.

A separate content analysis was undertaken on each data set using Leximancer software (<https://info.leximancer.com/>), a text analytics tool that analyses the context of textual documents and extracts visual representations such as conceptual heat maps and quadrant graphs. These analyses were used to facilitate comparisons and to identify key concepts within the texts. In order to be able to provide a cross-case comparison, 16 specific category words related to the PISA testing were used that were common to both data sets (see Table 1). Based on these concept rankings, we selected four categories for investigation that were ranked highly across both data sets: 'result', 'performance', 'test' and 'achievement' (see Table 1 \*). The concepts 'rank' and 'findings' were classified higher in Twitter texts, but not in newspaper articles (see Table 1 +) and while 'equity' and

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<sup>5</sup> The newspapers are: *The Australian*, *The Courier Mail*, *The Advertiser*, the *Hobart Mercury*, the *Northern Territory News* (News Corp Australia); the *Australian Financial Review*, *The Sydney Morning Herald*, *The Age*, *The Canberra Times* (Fairfax Media); and *The West Australian* (Seven West Media).

<sup>6</sup> The Twitter data were mined as part of an Australian Research Council Discovery Project, DP150102098, entitled, *Data in Schools and Systems: An International Study*.

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‘quality’ ranked low across both data sets (see Table 1 ^ and #), ‘equity’ ranked higher in Twitter text, while ‘quality’ ranked higher in newspaper texts.

Table 1: Common categories across newspaper texts and tweets

Ranked Newspapers Categories (word counts)	Ranked Twitter Categories (word counts)
result (120) *	test (12,864) *
performance (100) *	result (12,863) *
test (41) *	rank (12,844) +
achievement (18) *	findings (12,260) +
data (18)	performance (11,917) *
comparison (17)	achievement (11,665) *
measure (12)	measure (1,120)
quality (12) #	standards (1,045)
rank (10) +	data (911)
standards (7)	equity (863) ^
change (6)	reasons (685)
evidence (6)	comparison (537)
outcomes (5)	evidence (422)
reasons (4)	change (318)
equity (3) ^	quality (280) #
findings (3) +	outcomes (236)

In addition to the categories, relevant concepts were identified using the Leximancer software. The newspaper texts yielded 40 concepts, while the Twitter texts identified 56 concepts. The concepts were included in the analysis parameters if they were deemed to be an evaluative term that denoted a positive, negative or neutral description of Australia’s performance on PISA. These varied across the two data sets and Table 2 identifies the top-ranking concepts based on frequency counts. The cut-off point was decided where a ‘natural’ break occurred in the numeric values. The two common top-ranking concepts across both data sets were ‘behind’ and ‘drop’ (see Table 2 =). We note also, that while the concept ‘decline’ was ranked highest in the newspaper texts (see Table 2 @), it appeared three points lower than the last ranked concept in the Twitter texts with a count of 1935, therefore it is not displayed in Table 2.

Table 2: Ranked concepts across newspaper texts and tweets

Ranked Newspapers Concepts (word counts)	Ranked Twitter Concepts (word counts)
decline (33) @	indictment (12,980)
improve (24)	regret (12,977)
behind (22) =	lags (12,890)
falling (20)	bottom (12,866)
drop (18) =	insufficient (12,865)
backwards (16)	damaging (12,865)
problem (15)	latest (12,864)
highest (15)	strong (12,862)
lift (15)	damning (12,860)
	top (12,830)



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	drop (12,720) =
	lagging (12,400)
	informed (11,725)
	behind (11,649) =
	exaggerating (11,530)
	hammering (11,530)
	ruin (11,418)

Finally, for each data set, the related concepts were clustered into broader themes and displayed on a conceptual heat map of the social network that identified Australia’s PISA performance. Figure 1 identifies the clustered themes and hot concepts based on the newspaper texts, while Figure 2 does this for the Twitter texts. The heat maps display related or connected concepts in close proximity on the map. The maps were adjusted to include 100% of the concepts and a 70% theme size, which means that there were fewer, broader themes, enabling us to gain a better understanding of the main content associated with Australia’s PISA performance. The themes are algorithmically determined by the Leximancer software. That is, the ‘hottest’ or most relevant concepts are clustered into themes that appear in ‘hot’ colours such as red or orange (the largest circles on Figures 1 and 2).





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final section, we outline these traditional and social media understandings of the damaging effects of PISA testing. In particular, our findings suggest that newspaper texts reinforce test legitimacy through a focus on the damaging effects of declining results on a nation's future economic prospects. In these accounts, the legitimacy of the tests and of cross-national comparisons are taken for granted. While this is also evident in Twitter texts, social media tends to demonstrate more opinions from multiple voices and perspectives. There is a tendency for social media, in our case Twitter, to provide a space to question test legitimacy and comparison through a greater focus on the damaging effects of testing on the future, focusing on socio-economic consequences.

### **Comparative analysis of media**

We next provide a comparative analysis of the similarities and differences between these modes of media coverage.

#### ***Traditional media reinforce test legitimacy***

There is a propensity within the logics of legacy media practice to push particular agendas when framing news coverage (Baroutsis, 2017). One such push across both the Australian national and metropolitan newspapers is to reinforce PISA test legitimacy and to focus on PISA test results using agendas related to the nation's economic outcomes and future prosperity. This approach is seen elsewhere, where traditional media outlets tend toward policy reinforcement rather than policy contestation (Baroutsis, 2016). Here, we provide examples of this reinforcement in the news coverage through news articles by journalists, editorials and opinion pieces across a number of newspapers.

The framing of news coverage about Australia's PISA performance in mainstream media reporting by journalists reinforces test legitimacy by linking test performance with economic outcomes. Many of the news articles, for example Wade (2016) and other articles in our data set and elsewhere (Baroutsis & Lingard, 2017), commence with a comparative analysis of the PISA mean scores over time that serves to highlight Australia's declining PISA performance. Often, this is followed with the article highlighting the economic costs associated with the decline. For example, this news article in *The Age* titled, 'Falling school standards are costing us billions', states:

The deterioration in the performance of school students has slashed billions from Australia's economic wellbeing. ... The latest PISA result, released on Tuesday, showed Australia's reading score dropped from 512 to 503 between 2012 and 2015. ... That deterioration has sliced \$15.2 billion from Australia's wellbeing since 2012. (Wade, 2016, p. 10)

This article reports on a Fairfax analysis that seeks to measure Australia's 'wellbeing' by representing the Gross Domestic Product (GDP), an economic measure, in relation to PISA performance. By linking the PISA results, which are measures of school systems, to GDP, a measure of economic performance, there is a legitimization of the value of the test. The outcome of this is to state that just over \$15 billion has been lost due to Australia's poor PISA performance.

PISA test legitimacy is also reinforced through editorials, again through a focus on economic outcomes and score slippage. In particular, the focus expands to provide a commentary about

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economic mismanagement by government and education systems, suggesting more could be achieved with less funding. For example, this editorial critiques approaches governed by 'heavy spending with sloppy targeting and poor policy', lamenting that despite the significant economic input, Australia has 'slipped steadily' in PISA rankings (*The Australian Financial Review*, 2016, p. 38). This is a prevalent theme, for example, another editorial in the online version of *The Australian* titled, 'Rebuild education from basics' states:

Money is not the main problem. While commonwealth school funding has increased by 50 per cent from 2003 and will rise from \$16 billion to more than \$20bn by 2020, 15-year-olds have fallen an entire school year behind their counterparts in maths just 12 years ago. (*The Australian*, 2016a, np)

The editor suggests that 'a stronger curriculum and better teaching' are the answer (*The Australian*, 2016a, np). This absurd 'funding does not matter' stance ties with the views of conservative politicians.

Finally, hired opinion writers also tend to have a focus on the economic outcomes of Australia's declining PISA performance. For example, this op-ed piece published in *The Advertiser* states:

In the 2000 PISA reading test, our students scored 528 points; by 2015 the figure fell to 503. Notwithstanding we are a First World country with an advanced economy and record levels of expenditure, our results are going backwards and generations of students are leaving school ill-prepared for the demands and challenges of the 21st century. (Donnelly, 2016, p. 22)

Here, the link with the economic imperatives of a developed country is juxtaposed with declining PISA performance. Additionally, even though there is mention of the next generation of young people being poorly prepared for their future lives, the argument presents young people as homogenous without references being made to equity and socio-economic differences. This is not surprising, as of the 35 newspaper articles on PISA published in December 2016, only two articles, both by the same journalist in *The Courier Mail* (Martyn-Jones, 2016a; Martyn-Jones, 2016b), are supportive of and comment on equity issues in relation to schooling. Additionally, an editorial in *The Australian* titled 'Economic status has little bearing' outright states that 'the claim that SES is the significant determinant of educational outcomes is a furphy'<sup>9</sup> (*The Australian*, 2016b, np). In contrast, Australia's PISA performance since 2000 unequivocally shows a strengthening correlation between students' socio-economic background and performance. Equity has declined along with the decline in quality, but is denied in this newspaper report and remains unreported in most print media coverage. Here, we see that the newspaper framing of PISA performance tended towards an economics-based argument rather than a socio-economic-based one.

### ***Social media questions test legitimacy***

A popular perception of the role of social media suggests that it is able to promote political activism

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<sup>9</sup> 'Furphy' is Australian slang for an erroneous story that is claimed to be factual.

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and bring about social change. However, we note, as does Miller (2017), that while social media does connect people across spaces, enriching the potential to mobilise political resistance or change, this tends to be 'based on limited forms of expressive solidarity as opposed to an engaged, content-driven, dialogic public sphere' (p. 251); that is, the pejorative of 'clicktivism', governed by a logic of practice often referred to as 'low investment politics' that does not take a lot of time nor much sacrifice on the part of the activist (Miller, 2017, p. 254). Additionally, research has shown that social media users, particularly Twitter users, are not typically representative of the general population (Mellor & Prosser, 2017).

Social media enables individuals to express their perspectives about current issues or debates. This is mostly formulaic; taking the form of statement followed by a supporting link to another text on the internet. This practice is potentially due to the assistive buttons on many website that encourage readers to share the page on social media. For example, this post by *The Guardian*:

@Guardian: The Guardian 2014 'OECD and PISA tests are damaging education worldwide – academics' <https://t.co/lC5633omil>

This hyperlink takes the reader of the post to an open letter, with the same headline as the tweet, written to Andreas Schleicher, the director of the OECD's PISA. The letter was written by academics two years earlier. This post was tweeted and re-tweeted 382 times during the month of December 2016. Additionally, this is an example of a modernised version of the circular circulation of information. In this example, there is cross-fertilisation between traditional and social media and across time; that is, where a newspaper article written in 2014 resurfaces in tweets two years later in 2016.

While acknowledging the current limitations of political activism within social media, that is not to say that such practices are not important, and on one level, there is the future potential for this logic to evolve and become 'an important transformational political force' (Miller, 2017, p. 266). Indeed, we note that while newspaper texts in this study implicitly tend to take for granted the legitimacy of PISA test and results, while Twitter posts are more inclined to question the legitimacy of both the test results and the test regime. If, as we hypothesise, legacy media have greater impact on actual policy making and on policy makers, this then excludes certain perspectives from entering political debate. This in itself represents a significant shift in communicative practice and focus of media debate around PISA. For example, the following tweet shared 94 times in December 2016, also references the open letter to Andreas Schleicher, and also highlights the damaging effects of PISA:

@ACADEMIC1<sup>10</sup>: 2yrs ago, academics said OECD and Pisa tests are damaging education worldwide <https://t.co/Apn3ltagjX> It's time to #endpisa

This post is by an academic, @ACADEMIC1, who is opposed to PISA testing, and references the hashtag, 'endpisa'. Similarly, another academic from the United States, @ACADEMIC2, links to an article by a journalist in the *Times Educational Supplement*, that quotes @ACADEMIC1:

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<sup>10</sup> For ethical reasons, a pseudonym is used here and for all other non-public figures.

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@ACADEMIC2: Pause on PISA - read results with caution warn @ACADEMIC1  
<https://t.co/yomQMWSJb8>

This post was retweeted 52 times in December 2016. Combined, these two examples demonstrate how social media crosses geographic and national boundaries in questioning the legitimacy of the testing regime on a global scale.

Another aspect of the Twitter data for December 2016 was the greater focus on equity, which also was presented as a reason to question test legitimacy and the potentially damaging effects of PISA. Broadly, these perspectives appeared across both individual posts and those from teacher organisations invested in the consequences of the test outcomes. For example,

@PERSON1: Equity and quality in education go together. See Japan Finland, Estonia, Canada in 15 year old science results in PISA @OECDeduSkills  
@PERSON2: Equity requires a shift in how we talk about Australia's results. Shocking disparity highlighted again in analysis... <https://t.co/J0h6celPxs>

The first post references an OECD working paper titled, 'Education policy implementation: A literature review and proposed framework' (Number 162) and was retweeted 16 times. While the second post, linking to a *Guardian* Australia article titled, 'If there's a magic bullet to fix education outcomes, it starts with equity', was not retweeted at all during December 2016.

In other examples from peak bodies or teacher organisations, we again see that sometimes the scope of the reach of the equity message is limited, if not picked up by followers and retweeted. For example,

@TeachForAU: #TeachForAll reports that the #PISA results highlight the link between socio-economic advantage and performance: <https://t.co/DaPFMjGSjE>  
@TeachersFed: p.206 of #PISA report defines success in education as high achievement AND high equity - this is why Australia needs #Gonski funding <https://t.co/F9y8GrB4W8>

Both tweets reference the then newly released PISA reports in December 2016. The first post from Teach for Australia was retweeted twice, while the second from the New South Wales Teachers' Federation, a trade union representing teachers was retweeted 8 times. In other examples, the equity message was rejected outright. For example,

@PERSON3: NEW TODAY: The narrative about PISA and equity is flawed  
<https://t.co/ecv8DT8fNu> #aussieED

This post was re-tweeted 19 times in December 2016 and provided a link to the individual's own blog that outlines their perspective.

We note that Andreas Schleicher, the Director of the Education and Skills Directorate at the OECD, and perhaps the central and most powerful actor in relation to PISA, also uses Twitter. His Twitter posts seek to be educative to the extent that they try to explain what PISA is, what the results mean, and how they might be used for productive policy purposes. For example:

@SchleicherOECD: PISA 2015 results now available: Get the full package  
<https://t.co/3eFQGKCNA> Programme for International Student Assessment

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Thus, the OECD, as embodied in Schleicher, uses social media as another mode of communicating the OECD's desired message in respect of PISA. Elsewhere, we have noted the OECD's usage of various national print media to disseminate the OECD's desired message and policy implications of PISA results (Baroutsis and Lingard, 2017).

In contrast to legacy media, there is more scope for multiple voices on social media. For example, the voices of teacher unions and academics are much more prevalent on social media than in the legacy media coverage of PISA. Yet we note that this more inclusive potential does not mean these are representative of the population or that any expressed voices will necessarily be listened to by politicians and policy makers, nor do we suggest that they are always worthy contributions. Legacy media have a much stronger framing of coverage of PISA test results and a closer management of voices, which tend to be aligned with the editorial stance and thus restrict the range of views expressed (Baroutsis, 2017).

## **Conclusions**

Figure 3 represents our summative comparative analysis of similarities and differences between the two data sets (print and digital newspapers and Twitter posts) commenting on Australia's 2015 PISA performance reported in 2016. We note though, as with all abstractions the figure simplifies the reality. However, we need to explain that in the diagrammatic representation, the strength of the arrow (solid or broken) signifies the magnitude of the relationship between the elements.



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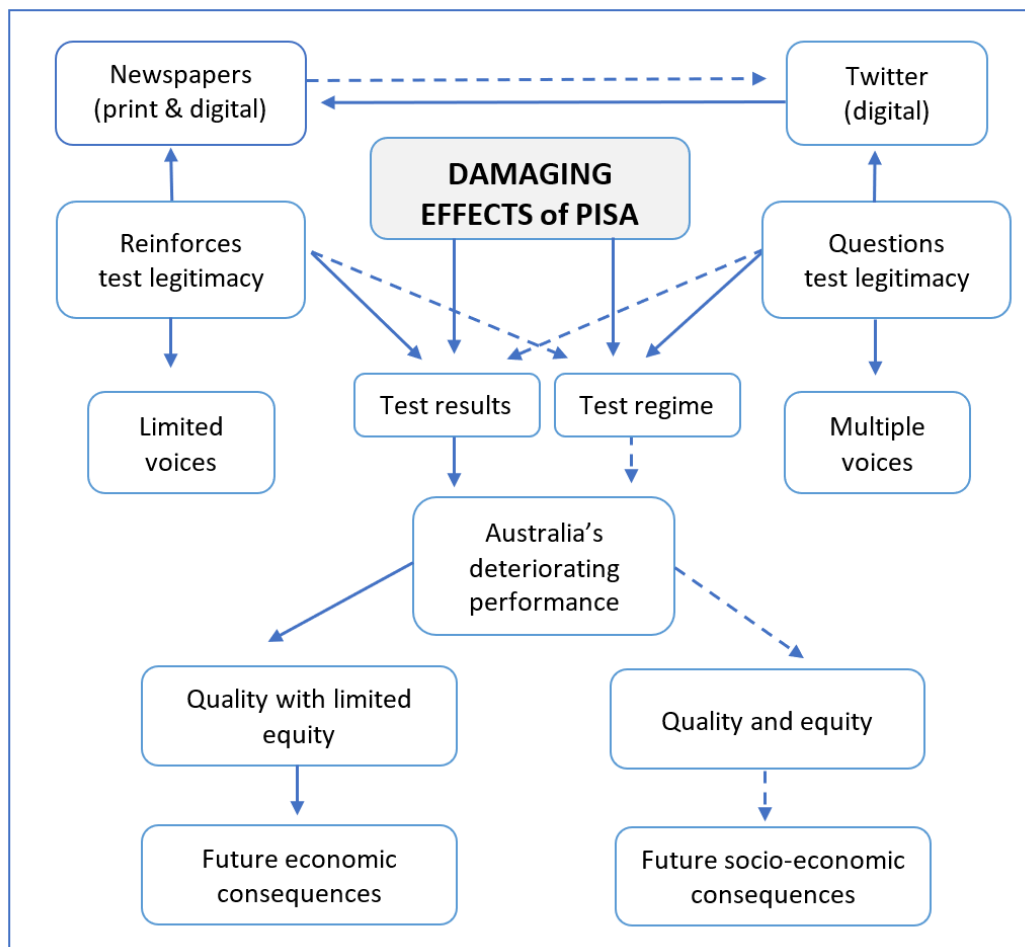


Figure 3: Comparative findings of newspaper and Twitter commentary on PISA

While Twitter is often seen as enabling multiple voices to express opinions, we note in our analysis that much Twitter commentary actually references newspaper articles. We also note that digital newspaper reporting, in contrast with print newspaper texts, also often references Twitter posts; sometimes, these include the entire screenshot of a tweet. Also, often included is the location referencing (URL) of the digital media text, and more specifically the location of this text within the network, thereby increasing the complexity and density of the data network. These actions leave digital traces, which ‘are not just made by the users themselves but also by others when they interact online with reference to them’ (Breiter and Hepp, 2018, p. 388).

Our analysis has shown that newspaper reporting on PISA in Australia takes as given the purposes, technical quality, and legitimacy of PISA; rarely are these problematised. In contrast, some of the Twitter commentary actually questions the purposes, quality and legitimacy of PISA. The Twitter posts also draw attention to the negative impact on school systems, and to the PISA test practice of ‘gaming’ by some national systems in relation to the test. The focus of newspaper reporting is on test results, while much of the Twitter commentary is broader, focusing on what we might see as the PISA test regime. Here, test regime means much more than simply test results;

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rather, it includes broader purposes, the nature of the tests, analyses of test data, related policy recommendations, policy implications, and national responses and usages of PISA testing data.

We note that the two data sets are different in content, contexts, and authoring voices. The newspaper data set deals specifically with Australia's PISA performance (test results), while the Twitter data deal more with the PISA testing regime, rather than specific national test results. The newspaper articles are basically national in focus, but there is some referencing to high performing systems (Baroutsis and Lingard, 2017). The Twitter commentary acknowledges the reality of a 'global education policy field' (Lingard and Rawolle, 2011) and is thus more global in coverage. The newspaper articles are written by professional Australian journalists, as well as opinion writers and newspaper editors, who largely reference Australian policy makers and politicians in their stories. In contrast, a wider range of voices are represented on Twitter, including academics, teachers, teacher union representatives, interested public, stakeholder organisations and activists within them, while student voice is not included<sup>11</sup>. Thus, we would argue that there are multiple voices on Twitter and limited voices reported in newspapers.

Our analysis of Australian newspapers in December 2016 also demonstrates a focus on Australia's deteriorating comparative performance on PISA. This reporting gives much more emphasis to quality with limited attention paid to equity. It is the case, however, that for Australia, as for other OECD member nations, the correlation between socio-economic background and PISA performance has strengthened since the first PISA was administered in 2000. This growing inequality remains largely unreported in Australian newspaper coverage of PISA. At times, coverage denies the significance of socio-economic background. Twitter posts also give emphasis to quality, but pay more attention to equity matters than print media. The latter includes some commentary on the need for additional and redistributive funding to schools serving the poorest communities. Both sets of accounts see future consequences of declining quality, particularly in relation to future economic prosperity. Twitter posts pay more attention to a broader set of socio-economic consequences of declining quality and growing inequality. Both data sets thus speak of the damaging effects of PISA, but some of the Twitter posts also include in these damaging effects some negative and reductive impacts of the PISA testing regime on the quality of schooling provided. The newspaper accounts, in contrast, simply emphasise the damaging future economic consequences of Australia's declining PISA performance.

Media researchers (Breiter and Hepp, 2018; Hepp and Hasebrink, 2018) have recognised the danger of accepting a flat network ontology when exploring media trends and effects. This means we need to ascertain which voices in which media have most policy and political effects, thus acknowledging power differentials. Here we can only speculate. We have noted the differences in national media fields, but there are also significant differences in national political fields. In Australia, we do not have a national, tweeter-in-chief, as is the case in the contemporary US, where the president has used social media to massage, mobilise and manipulate his constituency and to bypass quality print media. The impact of social media including Twitter is of course not simply either 'good' or 'bad' and remains an empirical question that requires research and further investigation. Indeed, Howard (2015) has argued we are now in an era of 'Pax Technica' to acknowledge the substantial interconnectedness of the world today, which he argues provides some

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<sup>11</sup> This raises the question of whether students are excluded or are not just present on this social media platform.

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stability in the context of what we see as destabilising events such as Brexit and the election of President Trump. We have seen this global interconnectedness in our analysis of Twitter posts of PISA 2015 results.

Our comparative analysis has provoked a number of important questions. While social media is putatively more democratic and inclusive, for example, in our case, expressing a range of opinions from a range of authors about both quality and equity on PISA, it manifests what we might see as epistemological equivalences, that is, that any and all points of view are treated as equally valid. In contrast, high quality investigative print and digital newspapers, which focus on narrower aspects of PISA, nonetheless putatively provide critical and evidence-informed accounts. Here, we might see social media opinions as non-curated, while traditional investigative media reporting is curated. One could possibly speculate that, at times, the more inclusive character of social media might function as a form of 'repressive tolerance', that is, noise without effect, allowing all in a seemingly democratic way to express their opinions.

The question remains, and this is an empirical question for future research: What comparative impact do traditional and social media have on actual policy making in education, both separately and interactively? There is an additional normative, political question about how both traditional and social media might be mobilised in more democratic ways in policy making and to ensure greater quality and equity in Australian schooling? In our view, research is required to answer these empirical questions and such research needs to be tightly focused in terms of place and space, time and duration, all of which would contextualise the policy impacts of specific media coverage. We hypothesise that in Australia, print media still function as opinion leaders and continue to have influence with policy makers and politicians, with a complex interplay between print and digital newspapers and social media.

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