

# Escaping Numbers? Intimate Accounting, Informed Publics and the Uncertain Assemblages of Authority and Non-Authority

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## Abstract

Recent decades have seen a significant rise in the use of numeric evidence in education policy and governance. Using the case of the Education Revolution in Australia, this paper explores the processes by which both 'distant accounting' and 'intimate accounting' were made possible by new national assessments and a public website which published comparative information about schools' performance on these assessments. Building on concepts proposed by Kristin Asdal (2011) on intimate actions in accounting, the paper elaborates how Australian regulating authorities created new intimacies by compelling schools to reveal details they might have preferred to keep private. Parents, and the public in general, came to be seen as deserving of such intimate information, and as capable of using such information appropriately. The resulting 'informed publics' then played a significant role in the productions of authority and non-authority. Various efforts unfolded to challenge the authority of numbers and to escape being governed by them, by subverting the efforts of quantification and refusing the numbers that were produced. Tracing the story of the Education Revolution affords an opportunity to elaborate the processes of 'accounting intimacy' suggested by Asdal (2011) and to examine the relationship between 'the production of non-authority' that she described, the production of 'non-calculation' suggested by Callon and Law (2005), and the concept of 'informed publics' conceptualised by Callon et al. (2009). The paper proposes that 'distant' and 'intimate' forms of accounting are not mutually exclusive, but can operate simultaneously and even reinforce each other, and it describes how this was achieved in the Education Revolution.

**Keywords:** sociology of numbers, education policy, accountability, informed publics, escaping numbers

## Introduction

While quantification and measurement have long been features of social policy and governance, there has been a steep rise both in the generation of numeric data and in the significance accorded to numbers in recent years (Miller, 2005; Rose,

1991). In education, the deployment of standardised, large-scale assessments at national, regional and international levels has been on the rise since the 1990s (Espeland and Stevens, 2008; Lingard et al., 2013; Simola et al., 2011; Strathern, 2000;

Steiner-Khamsi, 2015). This increase in large-scale assessments is in part due to developments in psychometric and statistical sciences, which have generated global indicators for a variety of educational phenomena (Gorur, 2015a), and in part it is an effect of the rise of 'evidence based policy' and more generally the expansion of neoliberal forms of governance (Gorur 2011a, 2011b; Rose, 1991; Strathern, 2003). As marketisation and deregulation have gained prominence over the last few decades, the traditional roles of 'government' – regulation and control based on a set of political and moral philosophies – have come to be rethought and replaced in many ways by the practices of 'governance' associated with orchestration and management. 'Ideology' came to be replaced with 'evidence,' most often numeric, or at least produced by independent, distant, disinterested, external, expert consultants assumed to be neutral (Porter, 1994).

One of the first countries to popularise the term 'evidence based policy' was the UK. The then Prime Minister Tony Blair summed up this new form of governance in his manifesto with stark clarity:

New Labour is a party of ideas and ideals but not of outdated ideology. What counts is what works. The objectives are radical. The means will be modern. This is our contract with the people (Politicaresources.net, 1997)

"What counts is what works" in this form of 'New Public Management' (NPM). The quest for 'what works' has set in motion a particular type of accounting machinery. Once 'what works' is identified, the narrative goes, governments need only operate at arm's length, steering from a distance (Rizvi and Lingard, 2010). Citizens, corporations, schools and other entities can also be responsibilised to do 'what works' since 'what works' can be translated into targets and key performance indicators (KPIs). Transparency and accountability practices would facilitate the monitoring of institutions and organisations. In the marketised, neoliberal economy, competition and the emphasis on consumer choice and privatisation would, it was believed, encourage individuals and organisations to perform at their best (Gorur, 2013). Otherwise, an informed and empowered consumer

base would vote with its feet, forcing school closures or amalgamations (Thomson, 2002).

As these practices of quantification and the audit culture (Power, 1997) in education have expanded, so has their critique. One set of critiques has come from statisticians and psychometricians concerned with the accuracy of numbers and the practices of numbering, such as the models, theories and techniques used and the validity of constructs, assumptions and calculations. Another set has come from policy sociologists concerned with the ways in which these numbers are being taken up, used or misused in policy and politics (Gorur, 2015b). Sociologists of education have worried about the effects of these practices on students, families, teachers and schools. There has been great concern for issues of equity and social justice on the part of many researchers in education – particularly since inequities appear to keep rising despite efforts to redress them.

In this paper, I add to these critiques of numbers in education and problematize the power conferred on numbers in current studies of education policy. Focusing on the lively empirical site of Australia's education policy, I examine the imbroglio of politics, numbers, competing interests, changing relations and new instruments of measurement and monitoring in this age of transparency and accountability. The analysis brings together and examines the relationship between three different concepts related to the productions of authority – Asdal's (2011) notion of the production of *non-authority*, wherein the 'centre' or the 'office' actively seeks to devolve or decentralise authority through practices of 'accounting intimacy'; Callon's (2009) notion of *informed publics* in which previously distant actors are drawn into new relations with 'settled' accounts and summary calculations, resulting in the rearticulation of such accounts as controversies; and the notion of *non-calculation* proposed by Callon and Law (2005), which considers the conditions under which non-calculability may be achieved (or, in other words, numbers can be escaped). I explore how productions of authority and non-authority, and of calculation and non-calculation, are held together in the Education Revolution. Based on these explorations, I identify two new strategies that help in the production of non-calculation: subversion and refusal.

## The uncertain assemblages of authority and non-authority

STS scholars have described the processes by which bureaucracies and administrative offices become centres of calculation, enabling them to exert influence on distant others (Latour, 1987). In these processes, synoptic apparatuses bring abstracted, standardised versions of distant objects of regulation into a central bureau where they can be tabulated, manipulated and ordered in ways that render the objects amenable to control (Scott, 1998; Porter 1995). The translation of objects into their stylized versions enables their reckoning for the purposes of the state.

If we regard the processes of gaining a synoptic view, abstraction, creating new facts useful to the state, and regulation from a distant centre of calculation as a detached and aloof type of accounting practice (or 'distant accounting'), Asdal (2011) has provided a description of another kind of governance – a more intimate practice which she calls 'accounting intimacy'. Asdal's (2011) observations about accounting intimacy arise from her studies of the regulation of emissions of aluminium factories in post-war Norway. Here, regulation and control were not exercised 'at a distance', but by the pollution control agency penetrating individual factories and by recreating the factory within the office of pollution control. This was done through a system of providing concessions to each individual factory, giving each factory, in essence, an individualised 'licence to pollute'. In this practice of regulation, there was a reversal of movement – instead of factories being translated into numbers and taken *away* to the centre, pollution numbers became vehicles through which the centre was inserted *into* individual factories. The centre thus became glued intimately to the factory site. In this way, a particular regime of accounting – an intimate form of accounting – replaced the practices of distant accounting and rearranged relations and produced new intimacies between the factory and the office of pollution control.

However, neither aloof steering at a distance nor intimate regulation is guaranteed success. Both calculation and governance are uncertain assemblages that require the cooperation and enrolment of a range of actors – cooperation that

cannot be taken for granted (Callon 1986). Like the fishermen and the scallops of Saint-Brieuc, irrespective of regulators' 'will to power', authority may fail to be produced (Asdal, 2011), or it may only be partially accomplished. How and with whom actors might align themselves, and how these changed relations might impact the production of authority or non-authority, is difficult to predict.

How is non-authority produced? If 'authority' for administration and governance is based on the authority of numbers and calculations, then non-authority is also linked with non-calculation – or, as Callon and Law (2005) would have it, non-qualculation. Here, the use of Cochoy's (2002) neologism 'qualculation' is designed to draw attention to the particularity and the constructed nature of the spatio-temporal frames within which particular calculations become feasible. Callon and Law (2005) assert that both 'qualculability' and 'non-qualculability' are achievements that require effort. To create non-qualculability, they propose two strategies – that of rarefaction, in which the resources required for qualculation are withdrawn, and proliferation, in which qualculations are multiplied such that they do not remain stable – a single summation becomes difficult. The importance of a single number (or in the case of Asdal (2011), a single number series representing the declining levels of pollution) in maintaining authority and enabling administration can also be linked to Latour's (1987) 'immutable mobiles' – as numbers circulate, they require some stability to enable both calculation and authority.

Australia's Education Revolution provides a lively case study through which to examine and elaborate how the processes of steering at a distance *and* the more intimate forms of accounting are operationalised in tandem. I use the case study to elaborate Asdal's (2011) concept of 'intimate action' or 'accounting intimacy' and study the empirical ways in which various forms of intimacy are generated by new calculations and new forms of governance. I describe how these processes rearranged relations between actors, creating new intimacies and interesting and enrolling different and unexpected actors. I take a liberty here with the term 'accounting intimacy' and speak instead of 'intimate accounting,' prefer-

ring to use ‘intimate’ as an adjective, as a descriptor for a particular form of accounting – so as to contrast it with the distant forms of accounting evoked and enabled by centres of calculation.

In tracing the competing discourses and the challenges to authority as the Education Revolution unfolded, I link Asdal’s concept of the *production of non-authority* to Callon et al’s *informed publics* (Callon et al, 2009; Gorur and Koyama, 2013). As the government simplified complex calculations to make them available to the public, the public used these accessible numbers to challenge their accuracy and validity. Whereas the calculations were developed in a bid to eliminate emotion and ‘irrational thinking’ and to develop rational and ‘evidence-based’ machinery for governing, the newly mobilised informed publics managed to drag emotions and other ‘irrational’ elements back into the conversation. Calculations proliferated and became mutable ‘matters of concern’. This took away some of their authority and created some conditions to escape the numbers. However, the twin strategies of distant and intimate accounting working together allowed the federal government to maintain the calculative and administrative infrastructure, albeit as a leaking edifice in which at least some actors were able to subvert or refuse the numbers.

The empirical material for this study comes from policy documents; press releases from the education ministry; and from publicly available websites and accounts in the popular media.

### Australia’s education revolution

In 2008, Australia’s Labor government ushered in a suite of ‘evidence based’ education reforms under the banner of the Education Revolution, heralding a heavy investment in new calculative practices. In Australia, education falls within the purview of state governments, and not the federal government. Before the Education Revolution, each state and territory had its own curriculum, examinations and assessments. The federal government’s Education Revolution ushered in *national* calculations so that the whole nation could be judged against the same benchmarks.

Significant in the new reforms were new forms of responsabilisation of states and territories. Outcome calculations and comparisons were

expected to serve as technologies of transparency and accountability, motivating states to achieve the targets set by the federal government:

The Australian Government is moving away from the overly prescriptive approach of the past over how the States and Territories should deliver services. Accountability for performance under the new Commonwealth-State agreements will instead be achieved through *significantly improved public reporting*, focussing on key outcomes to be achieved by Australia’s schooling system. (Commonwealth of Australia, 2008b: 33. my emphasis)

The most significant of the transparency and accountability measures were:

- The introduction of a nation-wide standardised assessment, the National Assessment Program – Literacy and Numeracy (NAPLAN)
- The development of the Index of Community Socio Economic Advantage (ICSEA) that enabled ‘like-school’ comparisons (i.e., comparisons of each school with 60 other schools with ‘similar’ populations); and
- The development of the ‘My School’ website – open to the public – on which each school was required to present a range of information about itself, including its performance on NAPLAN, which was presented both in absolute scores and as comparisons with other ‘like’ schools.

The reforms were championed by the then Minister for Education, Julia Gillard, through press releases, media interviews and her blog. Each step also met with rigorous opposition by various groups. The value of the tests was disputed, as were the calculations of the ICSEA Index. Ultimately, some changes were made to the calculations and to the information made publicly available. Thus numbers were done, challenged and redone in the Education Revolution. However, efforts to escape the calculus of NAPLAN and My School have not been successful – they have become well entrenched in the Australian education policy landscape.

## Intimate accounting in the education revolution

Transparency and accountability were placed at the centre of the Education Revolution. Through a new national data and reporting framework, the government proposed to acquire a range of information about each school and become intimately familiar with them. It would also disclose that information to the public so that “parents and community members will be able to compare schools in the local community and their own school with schools with similar student populations around the country”, as Julia Gillard explained in a speech (Commonwealth of Australia, 2008a). She added that her department’s survey had found that 96.9 percent of parents agreed that it was important for them to have information about such things as the state of a school’s buildings and infrastructure, its performance on national testing, and the qualifications and experience of the school’s principal and teachers. Insisting that parents were “hungry for information”, Gillard said that a range of new information needed “to be at our fingertips and at the fingertips of parents and teachers ...”.

The revelation of intimate details of schools to the government and to the public was seen as a necessary step towards transparency, and transparency itself, however controversial and keenly contested, was argued as necessary for improvement:

Yes, I think we’re going to have an argument about transparency, but ... I’ve made it perfectly clear that we will want this information, we want parents to have it, we want the community to have it, and ... we want it so that when we find where disadvantage lies we can make a difference to fixing it. (Julia Gillard, in a radio interview; Sales, 2008)

Here transparency itself comes to be presented as a rather violent form of forced intimacy. Despite the “argument” that ensued, the first round of NAPLAN was conducted in 2008, and in 2010, the My School website went live, carrying a range of data about every Australian school.

As with Asdal’s (2011) factory, the numbers produced in this activity were tailored and individualised. This was not about knowing at arm’s

length, as with the abstracted numbers used in steering at a distance. These measures were about knowing each school intimately. But there was nothing ‘private’ about this intimacy – schools would be required to provide intimate details about themselves *publicly*. On the My School website, a host of details are provided on each of Australia’s nearly 10,000 schools.

Figure 1 shows the NAPLAN results of a well-known private school in Melbourne displayed on the My School website. The menu on the left displays links to information about the school’s finances, student attendance, and five different views of their NAPLAN results. Parents can see the school’s NAPLAN performance in Years (Grades) 3, 5, 7 and 9 in a colour-coded comparative format, with the pale and dark green bands reflecting “above average” and “substantially above average”; white showing “close to average” and pale and darker red showing “below” and “substantially below” average. These data can be accessed for each year of testing as graphs, bands, and against “similar schools”. Parents can see “student gain” – the change in performance between one NAPLAN test and the next.

This contrasts with the same school’s own website which is not constrained by My School regulations (Figure 2). Here, attention is drawn to the opportunities and the care offered by the school. The opportunities include the possibility for students to make choices “unhampered by stereotypes”. The valuing of diversity is signalled in the “many tribes” that children can find in the school. “The MLC Difference” on this website is not based on its relative performance on NAPLAN, but its emphasis on its curriculum, the co-curricular opportunities, the school’s campus and facilities, as well as its “results” – not much is said about NAPLAN. Parents gain access to information on My School that the school might not otherwise not have revealed, or at least would not have not highlighted to parents (see also Gorur, 2015c; Gorur and Koyama, 2013).

Did the new calculations – NAPLAN assessments, the ICSEA index, the like-school comparisons, the other numbers from the My School website – help the government and the parents to know each school more intimately? Gillard certainly thought so. The day before the My

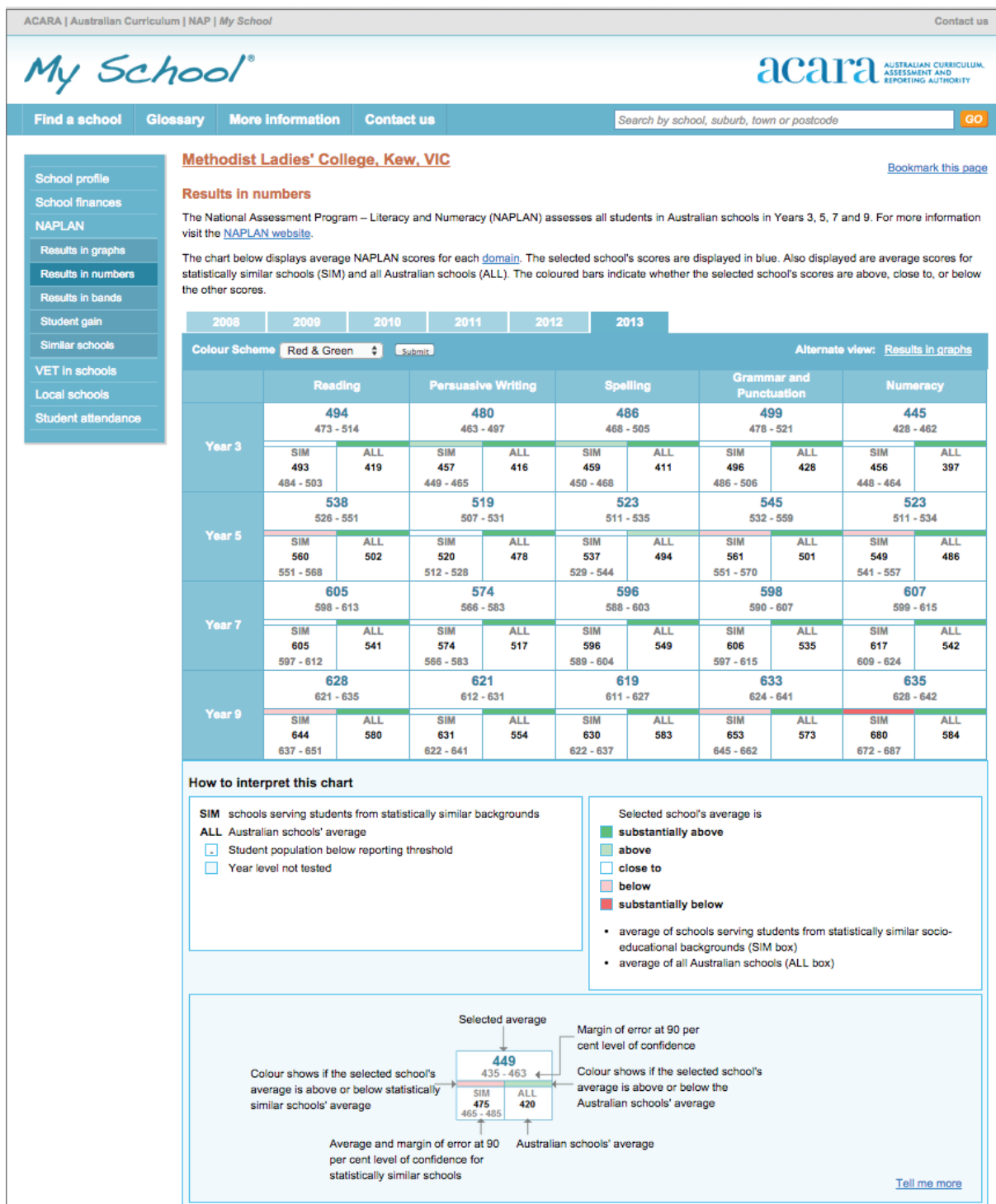



Figure 1. Screenshot of a page from the My School website ACARA (2018).

## Big school opportunities, small school care


With an unrivalled range of curricular and co-curricular options, opportunity and choice are a hallmark of an MLC education. However, we also provide small-school care so every student feels valued and supported. With four smaller learning communities over the different year levels, learning and personal development programs have been tailored to meet the unique needs of each age and stage of students' growth, further supported by our renowned wellbeing programs.

**Our over-arching goal is to nurture and develop each MLC student so that she leaves school with the skills, knowledge and values necessary to be a world-ready woman.**




**STEAM Learning**

MLC has long had an interdisciplinary approach to learning with a strong focus on STEAM (Science, Technology, Engineering, Arts and Design, Mathematics) subjects, and we recognise the necessity of diverse disciplines, such as science and the arts, coming together to drive innovation. We encourage our students to collaborate and combine critical thinking with creativity, so they develop into the next generation of skilled, technologically capable and creative problem solvers.



**Opportunity**

Along with our extensive subject choices, our large and varied range of co-curricular activities enables MLC girls to make choices unhampered by stereotypes. With more than 30 sports and a wide range of orchestras, ensembles, choirs, committees and clubs on offer, there is sure to be something to ignite your daughter's passion and discover a new set of skills for life beyond the classroom.




**Community**

With so much on offer, MLC girls don't just find one 'tribe', they find many; forming friendships across different interests, year levels and houses. Our strong school community extends to supportive families, wonderful staff and our valued network of alumnae. The Parents' Association encourages all parents to be involved with a wide range of special interest groups and events.


### The MLC Difference

Explore what makes our College one of Australia's leading independent girls' schools.


Curriculum




Co-curriculum



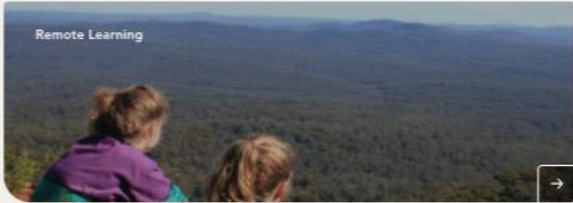
VCE, VCE VET & IB



Student Wellbeing



Remote Learning



Our Results




Figure 2. Screenshot, Methodist Ladies College website. Methodist Ladies College (2018)

School website went live, carrying the like-school comparisons to the public for the first time, she wrote on her blog "For the first time, parents will be able to see exactly how their child's school is doing".

The publication of like-school comparisons left schools feeling exposed and vulnerable. The regulatory power of the centre penetrated the most intimate spaces of schools, right down to resources and funding and student performance. At the same time, these numbers also spilled into other intimate spaces, as Gillard noted:

Everywhere I have been since January 28th, people have told me stories about the conversations that *My School* has sparked. Conversations in workplaces and kitchens. Conversations between parents and school principals. Conversations between teachers in staff rooms. Conversations between parents and their children. (Commonwealth of Australia, 2010a)

The numbers in the Education Revolution thus began to mingle with people in many more places, mediating relations between various actors.

The Education Revolution's calculative practices produced an 'imagined community' for which these numbers were relevant. As Asdal (2011) explains, an 'imagined community' is not a *non-existent* one, but one that is brought together in and through the relational processes of calculation. First, there is the case of 'like schools' – schools that were deemed to be 'statistical neighbours', because the communities in which they were located had socio-economic profiles that were calculated to be similar. Prior to the Education Revolution, even the most competitive private schools in Australia had only to compare favourably with other nearby schools, with whom they might have competed for students. But with the like-school comparisons published on My School, a Melbourne School might find itself compared with schools hundreds of kilometres away, in Perth or Brisbane or Darwin, on the basis of the demographic profile of their student body. Distant schools were pitted against each other on the single feature of their NAPLAN results. Even if it is unlikely that parents would move to a different state just to enrol their child in a 'better performing' school, these distant schools had an

impact on a school's rankings, and this in turn had the potential to impact how a school might invest its resources, prioritise its efforts or be affected by parent decisions.

Another 'imagined community' was that of parents, who were cast in the role of those who needed and deserved the numbers. They were presented as having the capacity, responsibility and the right to understand and use the numbers sensibly and to hold schools accountable. The government's stance is exemplified in this excerpt from a 2010 Media Release from Gillard, titled "My School to provide unprecedented school performance data":

Parents will get unique access to data which tracks the progress of students in Australian schools with the launch of the new-look My School website... This will provide unprecedented insight for parents and carers on the impact of teaching and learning across Australia's schools. The enhanced version of My School will also include financial information on schools. It will be the first time information on the resources available to schools will be publically available. ... Anyone will be able to follow a cohort of students as they move through school levels to see what progress they have made over the last two years. (Commonwealth of Australia, 2010b)

This 'right to information' on My School enacted a division into being – with the government and an imagined community of parents on the one side, eager to get to the bottom of what was happening at each school, wanting to track the progress of each cohort of students, and determined to have the numbers; and on the other side the schools, trying to protect their privacy from the prying eyes of regulators and parents.

At the same time, by claiming to provide more information than was ever before available to parents about their child's school, the government dismissed parents' personal and subjective understandings of schools, suggesting that the Education Revolution's dispassionate numbers were more authoritative.

The Education Revolution's numbers thus brought schools, parents and the government into new sets of relations. These relations were held together and mediated by NAPLAN and My School, which were devised as obligatory



passage points for schools. The intimate forms of accounting through which the centre inserted itself into each school thus begat a number of new intimacies.

### **Transparency, steering at a distance and informed publics**

The new practices of intimate accounting did not replace distant forms of accounting. As with Asdal's (2011) case, the insertion of authority into each school via the numbers of the Education Revolution saw a replication of the 'office' (the federal government) at each site, as NAPLAN and My School became more and more firmly entrenched, and began to affect schooling practices more and more. But equally, every school site also travelled in stylised forms to the new centre – the My School website. This material-semiotic device, the My School website, mediated relations between the government, schools and parents in very specific ways and enhanced the authority of the centre.

A hallmark of governance is *public* accountability and community engagement with numbers and institutional accountability. Transparency and accountability are achieved through making widely available information that was previously centrally held (Power, 1997). The Education Revolution exemplified this desire to share information with the public. The focus was on presenting information in a clearly accessible format – both in the sense of laying one's hands on the information (a public website) and being easy to understand:

The focus must be on providing parents with clear, meaningful and comparable information about student achievement across all areas of the curriculum in a format that is nationally consistent. Parents are entitled to honest judgments about how students are progressing at school, and without this clear communication, learning cannot be effective. (Commonwealth of Australia, 2008b: 32)

But this desire to inform publics and empower them to "make honest judgements" about student progress was not universally popular. Principals and teachers felt that entrusting this kind of expert information to inexperienced parents would

not be in their interest. But when school principals and teachers expressed these fears, Gillard responded strongly, saying "where information exists about the nature of students' learning, it is not appropriate that it should be held by some – professionals and administrators – and not available to the wider community" (Commonwealth of Australia, 2008a). She emphasised this point again, a year later:

Parents want to know. I find it offensive to suggest that this information should be withheld or that parents are too stupid to know what to do with it. (Gillard, in Tomazin and Tovey, 2009)

Parents and the general public thus gained new information, and armed with this information, they became authorised to participate in the processes of accountability and steering at a distance. As I will describe later, this allowed various groups, each with particular anxieties and motivations, to present a variety of scenarios and to speak on behalf of different actors. Although this situation is the result of the actions of the regulators, the proliferation of interests, problematisations and voices became far too unruly – it encouraged the production of non-authority.

### **Challenging numbers: The productions of non-authority**

When like-school comparisons were first made public, several schools found themselves classified with others they did not think were 'like' them at all. In some cases, large and small schools, and rich private schools and poor state schools, were cast as 'like schools'. These instances were gleefully highlighted in the media. In an article headlined "Teachers slam index comparisons",<sup>1</sup> one paper reported some 'mind boggling' comparisons made between very different schools. The ICSEA calculation became quite controversial as more and more unconvincing comparisons were reported.

One widely expressed dissatisfaction with My School was that the like-school comparisons were not *accurate*. The Sydney Morning Herald, a popular newspaper, published an article headlined "Principals reject My School site", that said "principals have given it a fail in a survey of

more than 1000 school leaders" (Harrison, 2010). It continued:

More than 87 per cent of the 1166 public school principals who responded to the survey said they did not believe the website in its current form presented an accurate picture of school performance ... more than a quarter of principals said they believed information published about their school on the site was not correct. (Harrison, 2010)

Far from being self-evident and convincing, the numbers still required 'belief'. The same survey also said that Principals questioned the methodology of like-school comparisons, and felt the calculations of index values were inaccurate and using those as a basis for similarity was not valid. The proliferation of views on this calculation made it unstable and diminished its authority.

The adequacy and validity of NAPLAN tests as measures for school comparisons were also challenged. The idea that a single snapshot account represented school performance irked many school principals and teachers. The wisdom of using standardised literacy and numeracy tests, which were fairly narrow in scope, as measures of student or school performance came to be widely debated. The Australian Education Union's journal *Professional Voice* produced a special issue called *The NAPLAN Debate* (Australian Education Union, 2010) with a series of essays on the flaws of NAPLAN and My School.

Even some parents, in whose name and interest measures of transparency had been developed, showed themselves to be fickle. They joined with teachers in pointing out that creating a causal link between the teacher and student performance failed to take into account that students would have been with a particular teacher for only a few months when NAPLAN was administered. Like Callon's (1986) scallops, parents could not be reliably 'enrolled' – they did not stick to script; instead, they began to improvise.

The Australian Education Union (AEU) was a particularly strong opponent of My School, fearing that the numbers on the website would be misinterpreted and misused. The AEU's 180,000 teacher members voted to boycott the 2010 round of NAPLAN tests, saying that the My School website

would damage the reputations of some schools unfairly, on the basis of false calculations. This threatened the feasibility of conducting NAPLAN 2010 altogether, but an agreement was reached at the last minute. Teachers allowed NAPLAN to go ahead in return for a greater say in what was displayed on the My School website.

The most contentious of the calculations was the ICSEA index, whose accuracy, and the validity of its use in such calculations, continued to be queried. To quell the voices contesting ICSEA, Gillard spoke up, emphasising the complex technical and scientific nature of the calculations:

We have obviously had public debate about the ICSEA index ... I do have a standing offer to any journalist who has read Barry McGaw's book on meta-analysis and would like to sit through and work through the regression equations with him, anybody who wants to do that, a standing invitation to come to my office for the number of days necessary to get that done. (Commonwealth of Australia, 2010a)

The expertise and reputation of the head of the newly established ACARA, Prof Barry McGaw, a highly regarded academic who had previously served as the Director of Education at the OECD, was called upon to boost the objectivity and believability of ICSEA. His reputation and scientific expertise also set him apart as bipartisan and apolitical, an arbiter of validity and a dispenser of unbiased knowledge. Moreover, Gillard suggests that the technicality of regression analysis creates a more believable set of numbers, and ordinary citizens and journalists needed days of instruction to become expert enough to appreciate these numbers.

Teachers' unions produced their own experts. Mike Williss, from the South Australian branch of the Australian Education Union attacked the very basis of the calculations on its own terms, rather than on the basis of any 'irrational' or emotional objections.

The only honest thing about [ICSEA] is the word "community". ... ICSEA is not an accurate assessment of school similarity. School data is not used to construct ICSEA values. The data comes exclusively from what the Australian Bureau of

Statistics calls Census Collection Data sets (CCDs) ... ICSEA values, for all intents and purposes, are measures of quite small communities. That is why ACARA is at least honest in stating that it is an index of communities, not an index of schools. (Williss, 2010)

Thus the very core of the ICSEA-based commensurability that supported the like-school comparisons came to be attacked. Debates ensued with regard to which entities were fit for inclusion in the calculations (for enrolment of entities into calculations, see Lippert, 2018, this issue).

Organisations such as Save our Schools produced their own research reports.<sup>2</sup> Some organisations invited well-known experts and public intellectuals to address issues concerning NAPLAN and My School. The Australian Primary Principals' Association invited Dr Ken Boston to comment on NAPLAN and My School and provide cautionary tales about the negative effects they could bring in their wake, based on his experience with similar initiatives in England.<sup>3</sup> In this way more experts were called in to challenge the expertise that produced the numbers.

At the core of this controversy, we might say, was this question: Who is grown up enough for intimacy? The numbers generated by the Education Revolution might be 'objective' – but could the public be trusted to draw 'objective' conclusions based on it? Or would 'emotion' and 'prejudice' – the very things NAPLAN and My School were trying to counteract – rule? The capacity of the public to have enough understanding to make sense of the numbers in all their complexity and sophistication itself became a focus of debate. But Gillard was steadfast in her belief that parents were capable of understanding the data and using it responsibly, saying, "I absolutely reject the proposition that somehow I am smart enough to understand information and parents and community members are somehow too dumb" (Donovan, 2008).

Thus in these attempted assemblages of authority and non-authority, a range of factors, raised by diverse actors, faced a series of trials. The numbers stayed in the public arena, and so did the debates about the accuracy and validity of the numbers, and about who was expert enough to claim authority about this numeric knowledge.

Both became part of the public debate. Intimacy not only with the numbers but also their shortcomings encouraged various groups to feel expert enough to challenge the numbers, the complexities of regression analysis notwithstanding.

The production of non-authority or partial authority did not just happen through any passivity or failure on the part of the government, but through vigorous efforts on the part of various interested actors who actively attempted to contest and to escape numbers.

### Escaping numbers: The prospects for non-calculation

The tug of war between the simple narrative being put forward by the government – measure, monitor, identify 'best practice' and train and incentivise teachers to use that 'best practice' to raise outcomes and eradicate disadvantage – was disrupted as more and more actors that were left out of this narrative were dragged back in. One of the most widespread concerns expressed after the introduction of NAPLAN was the stress experienced by students as NAPLAN approached. Children were reported to experience sleeplessness, bed-wetting and other manifestations of anxiety. Another concern was to do with teachers spending too much time on NAPLAN preparation at the expense of time on other subjects and activities. The concern over the feelings of students and teachers when their school is publicly shown up as doing badly was also raised.

One respondent on Gillard's blog<sup>4</sup> raised a new issue with regard to possible negative fallout from these numbers and argued that:

If the govt [sic] is aware of underperforming schools then they should fix the problem, not publicise it so parents can choose another school, thus creating a "second tier" of undesirable [sic] schools. Making this info available is simply encouraging people to treat the public sector like the private sector and force under resourced local public schools to compete for students like private schools. I think it's a disgrace.

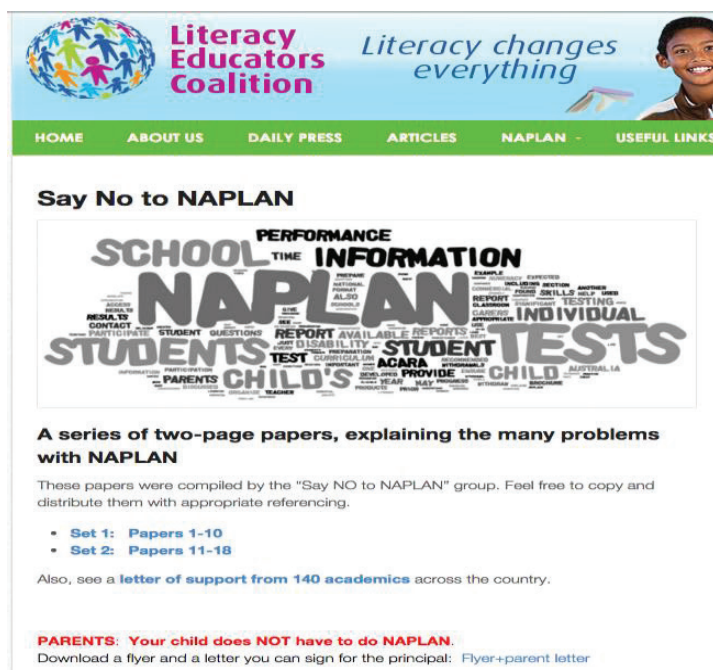
So the wisdom of the Gillard government's plan of attack – transparency, accountability and the production of informed publics – was itself com-

ing under attack by informed publics. Discussion engaged with the outcomes and effects of these calculations and the possible damage they might bring in their wake. Thus the public engaged with the *performativity* of numbers (Gorur, 2016; Scott, 1998). In the matter of effects such as anxiety in children, parents possibly were in a more expert position from which to speak than the Education Revolution, which did not have any complex regression analyses with which to quell these emotional protests.

Where Gillard and others were promoting a single narrative that spoke of calculations yielding accurate and useful results which would lead to better strategy and tailored reforms, which in turn would raise the quality and equity of Australian schools, the involvement of a range of other actors brought in its wake a proliferation of narratives, issues and scenarios. The Education Revolution’s emphasis on a single set of goods as what ‘all Australians’ wanted came to be dislodged as more – and more diverse – voices joined the debates.

However, these attempts to produce non-authority and to challenge and escape the numbers of the Education Revolution, while rigorous and wholehearted, were limited in their

success. The challenges to the ICSEA calculations and to NAPLAN and My School resulted in some changes to the calculations and to what was presented on My School. But the Education Revolution’s most salient features have remained, and so have the protests against them. Every year, especially around May, when NAPLAN is conducted, and in September, when the NAPLAN results are released, a spate of articles appear in the media, with titles such as “NAPLAN: The case against”,<sup>4</sup> “Concerns over NAPLAN testing”,<sup>5</sup> “Testing the test: NAPLAN makes for stressed kids and a narrow curriculum”,<sup>6</sup> “Parents concerned NAPLAN tests stress children”,<sup>7</sup> and “Parents, principals concerned about the potential inaccuracies in NAPLAN results, research shows”.<sup>8</sup> Some of these continue to challenge the calculations themselves, whilst others raise issues that are outside the calculations. A group called “Say NO to NAPLAN” has sprung up (see Figure 3), and their messages are hosted by another group called the Literacy Educators’ Coalition.<sup>9</sup> The group reminds parents that their children do not have to do NAPLAN, and offer templates for letters to the Principal to exercise the right to withhold their children from taking the test.



**Figure 3.** Screenshot of the webpage of the Literacy Educators Coalition. Note the letters in red at the bottom, with the link to the parent letter, and above that, the letter of support from 140 academics across the country for Say NO to NAPLAN

So vigorous has the protest been against NAPLAN that a senate enquiry was set up in 2013 to investigate whether NAPLAN was effective, and whether it generated any unintended negative effects. The enquiry was initiated by the political party called The Greens. When the Senate Standing References Committee on Education, Employment and Workplace Relations called for submissions to inform its investigation, it received 93 submissions from a variety of sources. A public hearing was held in Melbourne in June 2013. The investigation produced a 50-page report (Education and Employment References Committee, 2014) with several recommendations to mitigate what it saw as the worst effects of NAPLAN. The report documents submissions citing examples of “a range of unintended consequences” which have resulted from NAPLAN testing, including “narrowing of the curriculum’ or ‘teaching to the test’; the creation of a NAPLAN preparation industry; and adverse or negative impacts on students” (Education and Employment References Committee, 2014: 13). The committee recommended that:

... ACARA closely monitor the use of NAPLAN results to ensure results are published to assist the Government to deliver extra, targeted funding to schools and students who need more support, rather than the development of league tables. (Education and Employment References Committee, 2014: 25)

However, the most prominent recommendations focused on the introduction of computer adaptive testing,<sup>10</sup> rather than the dismantling of NAPLAN or My School.

Thus the production of non-authority, or the bid to escape these numbers, was thwarted. NAPLAN and the reporting of like-school comparisons based on NAPLAN have now become routine and established annual features. Performing well on NAPLAN has come to be seen as important even by schools that claim that they do not believe NAPLAN provides a good or comprehensive account of student learning. Some state governments instituted measures that reinforced the authority of the Federal numbers by engaging in expensive, wide-spread reforms to raise NAPLAN scores. All over the country, workshops began to

be held to train teachers in using NAPLAN data to inform their teaching. Thus, despite the vigorous challenges, these numbers have become thoroughly entrenched in schools.

### **Non-qualculability: Subversion and refusal**

One way of thinking about this difficulty of displacing calculations is that even when particular numbers may come to be challenged – even challenged successfully (for example, the first iteration of ICSEA) – the possibility of achieving calculation remains. A durable challenge requires that not just calculation, but *qualculability* needs to be challenged. Callon & Law (2005) have proposed that the production of non-qualculability is difficult to achieve, and is rarely witnessed. They identify two possible situations in which non-calculability might be achieved: *rarefaction*, in which the resources for producing calculations are wilfully and actively removed, and other arrangements – such as a room and chairs and silence and bodies – are mobilised, as in the practices of Quakers’ silent ministry; and *proliferation*, in which accounts of an event are multiplied to such an extent that a single summation or a definitive account become difficult to produce or sustain.

In the Education Revolution, neither rarefaction nor proliferation, it appears, are in evidence. Rarefaction is difficult when the actors involved are too numerous, too dispersed and too loosely connected to be effectively regulated. It is one thing for a small, intimate group of religious people to follow certain difficult rules and persevere in voluntarily acts of suppressing their selves and submitting to a higher spirit, and quite another to get millions of parents to ignore NAPLAN or disengage from My School. However, a few parents *are* now choosing to keep students away from school on the days of NAPLAN testing, but this is, currently, an aberration and an exception. Even if more parents kept their children away from the test, the absences are unlikely to be significant enough to skew the data, and there would be nothing to stop the government from producing these numbers. There were no opposing agendas in the Quaker worship example, whereas in the Education Revolution,

multiple agendas are in play, making rarefaction nearly impossible to achieve.

Moreover, a particular difficulty with using rarefaction as a technique for the production of non-calculation (and thus non-authority) is to figure out what material resources are needed to produce an *absence* (see also Neyland, 2018 in this issue). I would also argue that rarefaction works only if it *precedes* calculation – once calculation has been established, installing non-calculation in its place would be all but impossible, because calculation would need to be displaced before it could be replaced with non-calculation. Displacement of calculation would need to begin with an engagement with calculation – which would immediately destroy the prospects for the production of non-calculation (however, for a study of ignorance-in-practice as a way of disengaging with calculations, see Lippert 2013, chapter 4.4).

As to proliferation, Callon and Law (2005) argue that ‘qualculation’ involves a definitive summation – a *single* definitive summation – that is more than momentary, and can maintain its currency for a period of time. Asdal (2011) also speaks of the power of a single number series. In the case of NAPLAN and My School numbers, even though they are updated annually, the numbers remain stable on the website for a whole year before a new set of numbers is produced. Indeed, the previous years’ numbers remain on the website and are available to view in subsequent years – they are not replaced by the new numbers. Each new generation of numbers cumulatively produces new calculations of trends and narratives of growth and decline. The new numbers are not a threat to the old – instead, by accumulating within the same stable framework, they strengthen the assemblage (this resonates with Holtrop’s (2018) account (this issue) of the ability of uncertain numbers to strengthen a policy report).

Examining the efforts to *escape* (which is distinct from *undoing*) the numbers in the Education Revolution, two strategies could be observed: *subversion* and *refusal*. NAPLAN was meant to provide ‘objective’ information because it was the *same* test administered throughout Australia. But some schools and some teachers provided more preparation for the test than others and made the

playing field again uneven. This distorted or made less reliable the NAPLAN performance comparisons so dear to the Education Revolution.

So rampant did this practice of test preparation become, that in 2012, an investigation was ordered into allegations of ‘excessive test preparation’<sup>11</sup>. Some schools were reported to be coaching their students a year ahead of the test, prompting the Federal Education Minister to emphasise that this level of preparation was not beneficial (for a more detailed discussion, Gorur, 2015c). However, the Minister’s warning does not seem to have been heeded, because in March 2014, ACARA issued a statement banning principals and teachers from coaching students for the NAPLAN tests.

To further discourage coaching, for the first time, in 2014, ACARA did not disclose ahead of time what type of writing task – persuasive or narrative – would be assigned to students. This coincided with a substantial increase in the number of students who did not attempt the writing task in the test at all, and consequently scored a zero (the writing task is a significant part of the literacy test). Scores on the writing task fell across all the tested grades in 2014, following the non-disclosure of the type of writing task. The refusal to attempt the writing task meant that students had subverted the possibility of their writing skills being assessed. This thwarted the government’s desire to track accurately the growth in students’ writing ability across several points in their school life.

Some schools and teachers even began to cheat on NAPLAN, assisting students to complete the test or compromising the security of the test storage ahead of administering the tests. In the Australian state of Victoria, over 150 schools were found to have breached the rules, prompting a government crackdown on such cheating (Tomazin, 2013). In one school the principal was sacked after it was found that s/he instructed teachers to give the students as much time as they needed to complete their NAPLAN test. Indeed, schools found a variety of ways to cheat, including ‘hothousing selected students to help the school get more students into the “higher achievement bands”’ (Tomazin, 2013). Some schools encouraged students likely to score low in the tests to

stay away from school on NAPLAN testing days. In some cases, schools offered high performing students transport to school to ensure that they participated in NAPLAN in a bid to boost the school's NAPLAN scores.<sup>12</sup>

These strategies for “gaming the system” were widely reported in the media.

As a result of these breaches, new legislation was passed providing ACARA with greater powers to investigate cases of fraud. In 2014, 51 schools came under investigation for cheating in NAPLAN.

Parents also lost sight of their task of making schools accountable. Instead, they began to seek ways to improve their child's score – buying practice books or even engaging tutors to coach students so that they could get better numbers on NAPLAN. A range of businesses sprang up that claimed to improve students' NAPLAN scores.

These actions not only subverted NAPLAN by denting its claim to accuracy and objectivity, it also attacked the very purpose of NAPLAN, which was to ‘shine a light’ on schools, and identify and remedy low performance and reward high performance. High performing schools were to provide examples of good practice to low-performing schools with like populations. But if the strategies for better NAPLAN scores had less to do with pedagogy and more with corruption, high performing schools would be poor exemplars. The objective of doing NAPLAN shifted; both schools and parents appeared to simply want high scores for their students, perverting the possibility of getting useful information. A high NAPLAN number became an object of desire, and in their very acts of subversion, schools and parents appeared to embrace the number intimately.

Another method employed to escape the NAPLAN and My School numbers is to refuse or become a conscientious objector, or encourage others to do so. Some school principals suggest to parents that they might seek exemption from NAPLAN for their child, because taking the test would be too stressful for them.

Some parents are also, on their own, seeking such exemption. Such withdrawals from the test have been steadily increasing, along with reports in the media about the detrimental effects of taking NAPLAN. The 2014 round of tests had the highest rate of absenteeism in the NAPLAN

tests<sup>13</sup>. In May 2014, newspapers were filled with the findings of a new report that suggested that NAPLAN testing could be detrimental for students. Headlines such as “NAPLAN testing ‘not in students’ best interests’: report”<sup>14</sup> further encouraged a refusal to participate in NAPLAN.

Not only are more parents choosing to refuse NAPLAN by seeking exemption for their child, in an alternative form of refusal, some parents are no longer taking much interest in the test results. They are not eagerly studying their child's NAPLAN report to inform themselves on where their child stands against the national average and other data, or looking at the school's performance and following the progress of cohorts on My School. Letters in social media, endorsed in some cases by school principals, encourage parents to pay less attention to standardised testing, reminding parents that the distant assessors know much less about their child than the teachers who see them everyday.

In the Education Revolution, there is no ‘single number’ or a single number series that is produced – only relational rankings that schools aspire to achieve. The desired status is not a specific, stable number - it was a moving target. The fortunes of a school's rankings are, at least to an extent, out of its hands – its ranking depend on the situation of other ‘like’ schools. Perhaps having such a moving or relational target has contributed to the inability to ‘move’ either the schools or the numbers attached to them. Between 2008 and 2015, the period during which this study was conducted, NAPLAN results for the nation as a whole have not appreciably increased, despite significant expenditure on developing the tests, developing the website, and training teachers to use NAPLAN data in diagnosing students and modifying their teaching. Moreover, Australia's scores on large-scale international assessments have shown an appreciable decline (Thomson et al., 2016). Rather than prompt a rethink on the value of such measures for raising student performance, Australia's declining results in international assessments seem to only spur the efforts to measure and monitor and hold teachers and schools accountable. This may, in part, be the cause of the high attrition rate among teachers in Australia – a new addition to Australia's growing

set of problems in school education. Whether these developments will challenge NAPLAN and My School sufficiently to displace them remains to be seen.

## Conclusion

The Education Revolution provides an empirical opportunity to explore how both intimate and distant forms of accounting can simultaneously operate, each reinforcing, rather than destabilising, the other. While the processes of distant accounting are well known and have been well elaborated in STS literature, Asdal's (2011) notion of intimate accounting actions have not as yet been explored in detail in different empirical settings. In this paper, I have shown how 'transparency' involved a violent form of intimacy that required individual schools to expose themselves to the general public in intimate detail, revealing what they might have preferred to keep hidden. The harsh glare of exposure permitted no shadows into which a school could escape. Intimacy became a right of the tax-paying public and of concerned parents, although their maturity for such intimacy became a matter of debate. Such intimate activity was no longer confined to certain locations, but spilled over through conversations into kitchens and living rooms.

Simultaneously, the Federal government set about reinforcing its capacity to steer at a distance. The practices of intimate accounting produced a new centre in the form of My School – a place where parents, the government, the students and the schools were all gathered in new relational arrangements. The My School website penetrated schools as well as homes – indeed the very name "My School" hints at the intimacy ambitions of the website. The paradox here is that it became possible to extend 'intimacy' to literally millions of actors. Everyone had access to the same numbers, and NAPLAN and My School entered conversations everywhere.

Interestingly, the processes of distant and intimate accounting not only co-existed, they both depended on the same calculations. The My School website is particularly interesting in its hybrid and multiple roles – on the one hand bringing together abstracted versions of distant

schools and children and their test scores through its stylised pages into statistically similar neighbourhoods, and on the other hand, penetrating intimate spaces within homes and schools, entering into conversations in kitchens and living rooms, and creating individualised anxieties and ambitions.

The Education Revolution mobilised public interest in the numbers generated and placed its trust in these numbers as well as in the public. However, this trust was not necessarily reciprocal – the 'informed publics' did not unanimously trust either the numbers or the government; instead, they dragged back issues that the numbers sought to remove from the debate, hindering the production of a single number series or the formation of an immutable mobile which could endure challenges. Access to numbers enabled publics to feel so well informed as to produce damaging newspaper headlines and even force a senate enquiry into NAPLAN.

Behind all of this activity were the calculations – the NAPLAN results, the ICSEA calculations and the like-school comparisons. The more these numbers spread, the more numerous and diverse the actors they encountered, the more they came to be challenged. Not only was the accuracy and the meaning of these numbers challenged, but attempts were made to compromise the very conditions of calculability. Various strategies were used to make the calculations less stable and reliable. To Callon and Law's 'rarefaction' and 'proliferation', I have proposed that we could add 'subversion' and 'refusal' as two further technologies of non-calculability.

However, challenging calculability – or producing non-calculability – appears to be difficult to achieve at scale, and the efforts of the actors engaged in this assemblage were not sufficient to challenge the authority of the numbers and thus of the regulatory efforts. Despite the refusal and the subversion, the assemblages of calculation and authority rumbled on.

The contribution of this paper lies in its bringing together three STS concepts – Asdal's (2011) 'production of non-authority', Callon and Law's (2005) 'production of non-calculability' and Callon et al's (2009) 'informed publics', into new relations with each other as they encounter tech-



nologies of 'intimate accounting' in the empirical site of the Education Revolution. Playing with Asdal's (2011) work on accounting intimacy, I have elaborated various technologies of 'intimate accounting' which complement accounts of 'distant accounting' that are already well-established in STS literature.

Through this account of Australia's Education Revolution, I add to empirical stories of accounting intimacy in social policy fields, where such accounts from the field of education are relatively scarce. Despite their appropriateness to studies of knowledge making, there is surprisingly little use of STS concepts and methodologies in the field of

education. This study adds to the small body of work in the field of education policy that is now engaging with STS. By the same token, it also contributes to the emergent body of STS work in the field of education.

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## Notes

- 1 <http://www.smh.com.au/national/education/teachers-slam-index-comparisons-20100130-n5hc.html>.
- 2 <http://www.saveourschools.com.au/>.
- 3 <http://www.appa.asn.au/reports/Boston-response.pdf>.
- 4 <http://www.theage.com.au/national/education/naplan-the-case-against-20120504-1y436.html>.
- 5 <http://www.goodschools.com.au/news/concerns-over-naplan-testing>.
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- 8 <http://www.abc.net.au/news/2015-03-05/parents-principals-concerned-about-naplan-inaccuracies/6284448>.
- 9 <http://www.literacyeducators.com.au/naplan/naplan-articles/>.
- 10 It is beyond the scope of this paper to examine how Computer Adaptive Testing might impact standardisation, the calculations of like-school comparisons or the prospects for providing rankings for school choice. And indeed, this has not entered the national discourse in Australia at the time of this writing.
- 11 <http://www.theaustralian.com.au/national-affairs/education/education-ministers-order-investigation-into-naplan-coaching/story-fn59nlz9-1226389513631?nk=4254033713e0375c3eaf7f4dc735ab05>.
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