

Teachers' Orientations to Educational Research and Data in England and Australia: Implications for Teacher Professionalism

Martin Mills
Institute of Education, University College London, UK

Nicole Mockler
Sydney School of Education & Social Work, University of Sydney, Australia

Meghan Stacey
School of Education, UNSW Sydney, Australia

Becky Taylor
Institute of Education, University College London, UK

ABSTRACT

Teachers' engagement with and understanding of educational research and data is an increasing concern for policy-makers around the globe. With unprecedented access to, and new forms of 'data' in schools, concerns for its 'best practice' use in classroom decision-making have come to the fore. In academic spaces, these developments have also been of concern due to what such pushes for 'evidence-based practice' may elide in terms of teacher knowledge and professionalism. In this article, we present findings from two national contexts, England and Australia, in order to explore how teachers understand themselves and their work in relation to educational data and research. We find that despite highly engaged samples across contexts who place considerable importance on such research and data, respondents do not report an equal sense of capacity across the various forms which they may take. Particular limitations are identified in relation to action research. We argue that these results have consequences for the development of a 'mature' profession that goes beyond performative forms of professionalism and towards those of a 'research-rich' culture of trust.

Keywords: teacher professionalism, teacher research, data

Introduction

High performing education systems are said to be characterized by 'research rich' schools staffed by research literate teachers (Tatto & Furlong, 2015; BERA/RSA, 2014). There has thus been significant attention to the ways in which teachers develop their research capabilities throughout their careers, from initial teacher education to continuing professional development (see e.g. Cain, 2017; Prendergast & Rickinson, 2019). In this paper we draw on data collected in England and Australia through two separate surveys to explore teachers' orientations to educational research and educational data. With Opfer, Pedder and Lavicza (2011, p.444), we understand 'orientations' as complex and cohesive sets 'of attitudes, beliefs and practices as well as the alignment of oneself and one's ideas to circumstances and context', noting that orientations are subject to 'the influence of the context, the stage of career development, previous teaching experiences and the pupils a teacher has at any given time'. Consequently, here we set out to explore how teachers in these locations engage with educational research and data, investigate teachers' use of 'evidence', consider teachers' professional learning needs in terms of developing their research literacy capabilities, and compare and contrast the significance of the findings across both locations. This paper thus

attends to the attitudes, beliefs and practices reported by participating teachers in relation to educational research and data, and to contextualise these with reference to the two policy contexts in which they are located. Furthermore, we understand ‘data’ as taking both quantitative and qualitative forms, becoming ‘evidence’ when it is used to make a claim in service of an argument or finding. ‘Research’, meanwhile, is when such processes of data collection and transformation into evidence are systematic and understood in relation to existing findings. The analyses we present in this article indicate that teachers across both contexts regard ‘research’ as important and feel confident to use ‘data’ as ‘evidence’ to influence teaching. However, despite this commitment, they do not see themselves as being good at designing their own research projects and report having had little professional development on research.

In this paper our concern with research and professionalism is aligned with the views of Sachs (2016), who has argued that a mature profession is research literate. The paper thus explores how confident teachers in England and Australia are to engage in research, the support they receive to develop their skills in and expertise with research, how they use and access research and their reasons for engaging in research. Answers to these questions go some way to understanding the extent to which the respondents to our surveys could be considered as part of a mature teaching profession.

In comparing the two locations of England and Australia (bearing in mind that there are differences across the State jurisdictions in Australia) we hope to encourage ‘policy learning’ rather than policy borrowing, which has so often been the case with the two sites considered here (see Lingard 2010; also Phillips, 2000). With England being a common ‘reference society’ (Lingard, 2010, p. 143) for Australian education policy, exploring data from these two settings side by side provides a window into how teachers’ understanding and activity related to research, data and evidence can ‘travel’, (re)articulated in the context of local conditions. We also want to acknowledge here that ‘policy borrowing’ and indeed ‘policy learning’ have both been at the heart of debates about the nature of educational research and teachers’ research engagement. For example, in the moves towards evidence-based teaching, as we discuss below, research evidence is often decontextualised and assumed to be easily replicated elsewhere. Here, we present data from both countries so as to enable an empirically grounded examination of trends in teachers’ research engagement in two distinct, yet not entirely dissimilar, national contexts of neoliberalisation (Peck, 2010). In doing so, we aim to avoid what Ball, drawing on Jessop, Brenner, and Jones (2008), refers to as ‘the fallacy of methodological territorialism’ (Ball, 2012, p. 93).

A concern with teachers’ engagement with research is not new in either location. The capacity of action research/practitioner inquiry to contribute to teacher professional learning, professional renewal and a kind of democratic professionalism has driven traditions of this work since the 1970s in the UK (e.g. Stenhouse, 1979; 1981) and 1980s in Australia (e.g. Kemmis, 1988). What is new is the policy context. While the practitioner inquiry approach was about teachers ‘knowing their own knowledge’ (Cochran-Smyth & Lytle, 1993; 2009) and enhancing their professional judgement, the current political and policy context is one focussed on data and evidence (Hargreaves & Fullan, 2012; Helgetun & Menter, 2020; Ladwig, 2018). This new conceptualisation has more of a pragmatic problem-solving edge to it – a ‘what works’ agenda – while traditionally practitioner inquiry has been more about the problematisation of practice. We are mindful of Gore’s (2020) caution of the pitfalls of both research-informed and inquiry-oriented practice which, when framed by such an agenda, can operate more as de-professionalising forces than as sources of professional growth and renewal.

This policy context operates in both countries and impacts how research engagement is practised by teachers. Hence, in both countries there has been a significant focus on: introducing practices that research has ‘proven’ to work elsewhere (usually relying solely upon randomised controlled trials or meta-syntheses); ‘studying’ evidence that matters, for example academic outcomes, at the expense of developing teachers’ capacities for engaging in research (e.g. see DfE, 2019a, 2019b; in Australia see Teacher Education Ministerial Advisory Group (TEMAG), 2014); and reducing research to ‘tips for teachers’. In England, the focus has played itself out in the calls for evidence-based teaching. For example, in the Government white paper *Educational Excellence Everywhere* (DfE, 2016, p.37), the DfE committed to increasing teachers’ access to ‘high quality evidence’ and ‘training’ to understand and apply it. This focus on evidence-based teaching, argue Helgetun and Menter (2020, p.2), is confirmation that ‘we are now in an “evidence era”, where actions are justified through a language shrouded in talk of research, data, and best practice’.

Research, however, is not an uncontested practice in the lives of teachers. Much of the scholarly literature advocates for teachers to become more research literate, to facilitate what has been referred to as a ‘self-improving education system’ (Sachs, 2016; see also White, Down, Mills, Shore, & Woods, 2020). While this would seem to align with pressures emanating from policy for teachers to become ‘data literate’ (AITSL, 2011; DFE, 2011), that alignment – or not – is very much shaped by understandings of what constitutes research and what data are considered important for teachers to collect and analyse.

In this paper we work with and expand upon the constructs of ‘research’ in the BERA/RSA (2014) report:

Educational research constitutes ‘any deliberate investigation that is carried out with a view to learning more about a particular educational issue’;

Research literacy ‘refers to the extent to which teachers and school and college leaders are familiar with a range of research methods, with the latest research findings and with the implications of this research for their day-to-day practice, and for education policy and practice more broadly’;

‘Research-engaged’ entails ‘the involvement of teachers and school and college leaders in the doing of research’;

‘Research-rich’ is where ‘schools and colleges encourage innovation, creativity and enquiry-based practice, enabling teachers and leaders to drive change, rather than have it “done” to them’ (p.40).

Working with the BERA/RSA constructs, teachers who are research-engaged go beyond the requirements of research literacy (being able to identify, critique and integrate appropriate research to enhance the effectiveness of their own teaching and learning practices, benefitting both students’ outcomes and well-being, and teachers’ own professional development) to conducting their own research.

Furthermore, we go beyond notions of data employed in educational policy in both Australia and England. Within such a policy environment data usually refer to numbers (or other indicators) that demonstrate students’ levels of performance against a range of markers determining acceptable levels of, for example, academic achievement, absenteeism and behaviour. Teachers (and principals) are expected to analyse these data to change classroom practice, sanction or praise students, or introduce school-wide reforms (see e.g. Mills, Howell, Lync, & Dungan, 2019; Stevenson, 2017). However, this limited understanding of data precludes engagement with rich forms of data that can emerge from well thought out research and inquiry into practice. As commented in the BERA/RSA (2014, p.11) report:

...many of those who contributed to the Inquiry are deeply concerned by the emergence of an environment, often narrowly data-driven, that appears to militate against teachers' engagement in more open forms of research and enquiry.

This data-driven approach to teaching is grounded in notions that within teaching there exist 'best practices' – practices which are effective regardless of context. While we do not focus on 'best practice' in this paper, it is inextricably linked with understandings of research and data. Papanastasiou (2019) has argued that the concept of 'best practice' has worked as a governing practice linked to what has been referred to as 'governing by numbers' (see for example, Rose, 1991). Papanastasiou (2019, p. 17) has contended that within dominant notions of best practice 'complexity is simplified and uncertainty is downplayed', while Mockler and Groundwater-Smith (2018) have drawn links between current deployments of 'best practice', 'evidence-based practice' and 'what works' in education in terms of this simplification of complexity and uncertainty.

There is much at stake in relation to how systems, schools and teachers engage with this drive towards limited and narrow conceptions of research, data, and best practice. In particular, and the focus of this paper, is the ways in which current research practices in schools shape dominant constructions of teacher professionalism. Hence we situate the data presented in this article alongside considerations of the ways in which teacher research engagement in England and Australia may be seen as a pathway for professional knowledge building (Cochran-Smith & Lytle, 1993), teacher professional learning and development (Groundwater-Smith & Mockler, 2009), professional renewal (Sachs, 1997), professional, personal and political transformation (Noffke, 1997), and broader democratic and transformational possibilities for schools and teachers (Zipin & Hattam, 2009).

Professionalism and research engagement

Teacher professionalism and engagement in research and inquiry have a reciprocal relationship. Much has been written about the 'de-professionalisation of teaching', its ideological character (Smaller, 2015) and the ways in which particular conceptions of professionalism can undermine teachers' autonomy, judgement on education matters and considerations about the broader moral purposes of education (see e.g. Moore & Clarke, 2016). Such constraining conceptions can be seen in the ways that teaching is increasingly regulated through professional standards. Standards, Sachs (2016) argues, work to create 'controlled or compliant professionalism,' which she sees as being 'risk averse' (p. 423). Within this conceptualisation of teacher professionalism, teachers are encouraged to not think for themselves, to not challenge policy (or research for that matter) that they deem not to be in the best interests of students, and to not innovate.

Such a narrowing of practice is further advanced through the turn towards 'what works' in education. This turn is epitomised in the current emphasis on developing prospective teachers' practical skills rather than their engagement with the various disciplinary analyses of education (e.g. sociology, history and philosophy of education) and with research methodologies in education. In England, this has been apparent in the devaluing of university studies in initial teacher education (to the extent that it is even possible to acquire a teaching qualification without enrolling at a university!) (Mayer & Mills, 2020). Within the multiple routes possible to become a teacher in England (Whiting et al., 2018), including those that do not have any involvement with universities or academic researchers, and because of the turn to 'what works' there is great variation in the levels of research literacy that intending teachers develop (Carter, 2015).

However, it is not just in initial teacher education, but also in continuing professional development where this turn has been evident. For example, the English ‘Standard for teachers’ professional development’ (DFE, 2019b, p. 8), is silent about engaging with educational theories or research methodologies. Instead the focus is on teachers understanding how and why particular practices work and how they should be implemented in their own contexts. As indicated above, Helgetun and Menter (2020) have argued that this focus on what works is symptomatic of the current ‘evidence era’ operating in England.

Helgetun and Menter analyse policy documents primarily related to teacher education produced from 2010, when the Conservative-Liberal coalition government took office, until the present moment. Within documents produced throughout this period, policy is justified on the basis of ‘evidence’. They note that evidence can constitute such things as Ofsted results, grey literature and reports conducted for government. In the field of educational research, evidence which is valued has been obtained through randomised controlled trials. Evidence can also include something that is perceived to have worked elsewhere. When this ‘evidence’ is utilised in ways that do not tolerate challenge, then the consequence is often supposed ‘teacher-proofed’ classrooms. Such classrooms are not for those who might be deemed as exercising their own professional judgment. This compliant model of professionalism stands in stark contrast to the model implicit in Sachs’ (2016) call for teaching to be recognised as a ‘mature profession’.

A mature profession, Sachs claims, is characterised by trust, which shapes relations between all stakeholders in schooling. Such trust will facilitate teachers taking risks to promote learning in their classrooms and to innovate according to the specific contexts and needs of students in their classrooms. However, she suggests, such trust is backed up by the knowledge that teachers have high levels of research literacy. Being research literate, here, means being both a discerning consumer and a discerning producer of research. ‘Discerning’ is important. Teachers are increasingly accessing ‘research’ through various forms of social media. For example, the Twittersphere is replete with new forms of education activism (Thapliyal, 2018), and new research findings in education. Cain and Graves (2019) document the multiple sources from which teachers in their study accessed research, including for example blogs and online forums. Hence, becoming research literate entails becoming able to critique research, looking for its underlying assumptions and assessing the robustness of its methodologies. Our surveys were thus concerned with what teachers have read, how they have read it and then how they utilise it to inform their own research projects and practices.

As Sachs (2016) observes, being a producer of research is also critical to being research literate. Hence, teachers need to be provided with the opportunity to undertake research, with the support to enhance their research capabilities and an environment that recognises that research can lead to dead-ends, to unexpected consequences, to counter-intuitive findings and on occasion, to ‘unwelcome truths’ (Mockler & Groundwater-Smith, 2015).

We draw attention to the definitions of research and associated concepts employed by BERA/RSA above. However, we would add to them, in accordance with Stenhouse’s definition of research as ‘systematic inquiry, *made public*’ (1981, p. 104, emphasis original), the importance of teachers having the opportunity to present, share and critique each other’s findings publicly, within the ‘community of critical discourse’ (Stenhouse, 1981, p.111) that best serves their professional interests and the interests of their schools and communities.

However, it is important to recognise that research is only one component of a teacher’s complex work life and, unlike academics in universities, not a principal activity. This highlights the importance of partnerships between schools and universities. Indeed school-university partnerships have become increasingly common as a means to produce research with practical impacts. Although, in the support of practitioner inquiry, these

partnerships, Stenhouse argued, need to contain two elements: ‘...first, teachers must inevitably be intimately involved in the research process; and second, researchers must justify themselves to practitioners, not practitioners to researchers’ (p.113).

We now turn to the studies carried out in Australia and England to examine questions about teachers’ understandings of research and their research engagement. However, underpinning our analyses of the survey responses is a recognition that both the pressures coming from academia for teachers to become more ‘research literate’ and from policy to be more ‘data literate’ work with the problematic assumption that regardless of context, including resources, time and quality of professional development, teachers are responsible not only for the educational improvement of their pupils but also of themselves. As Wilkins (2015, p. 1148) has argued, self-improving education systems are dependent on ‘self-improving teachers’. While we are of the view that research should be a key component – not the most important – of a teacher’s job description, we are concerned that in its advocacy the teacher, as is so often the case, becomes the object of the argument and not a participant in its construction.

Methodology

In this article, we draw on quantitative survey data gathered in two separate national contexts: England and Australia. The surveys were designed alongside each other, with the English survey (2019) drawing on the earlier Australian survey (2018). However, each remain part of separate, discrete research projects designed within the bounds of their particular context. Differences in survey items are highlighted as relevant throughout the results and discussion. Immediately below, we provide further detail regarding the recruitment process, research questions and data for each project.

Australia

The Teachers, Educational Data and Evidence-Informed Practice (TEDEP) project began in Australia in 2018. The research questions for the project were as follows:

- (1) How do Australian teachers understand and engage with educational research and educational data?
- (2) How do Australian teachers understand and use evidence of their practice?
- (3) What are Australian teachers’ professional learning and development needs in relation to research and data?
- (4) How are Australian teachers’ professional learning and development needs similar and different across contrasting school and system contexts?

In this article, we draw on data gathered via a survey. The survey was designed in REDcap, and piloted by a small number of teachers. Participants were recruited online via social media platforms, in particular Twitter and teachers’ Facebook groups, resulting in 524 survey responses. The majority of these participants were located in the state of NSW (66%), the most populous Australian state, with 25% located in Victoria, Queensland and the Australian Capital Territory, and the remaining 9% drawn from South Australia, Western Australia, Tasmania and the Northern Territory. Respondents worked across the government (61%) and private (independent and Catholic systemic, 39%) sectors¹, proportions which

¹ In Australia, ‘public’ or ‘government’ schools are those run by state and territory governments. ‘Private’ or ‘non-government’ schools are not and, while still subject to particular curricular and teacher accreditation requirements, have distinct freedoms in relation to the charging of fees and the selective admission of

roughly match those of student enrolment nationwide; and held roles including classroom teacher, middle leader, and deputy principal. Approximately half of respondents worked in primary schools (n=234), and half in secondary (n=231), with a small number choosing the options of middle school (n=12), k-12 (n=31) or 'other' (n=5).

England

The Teachers' Use of Research Project began in 2019 as a collaboration between the Centre for Teachers and Teaching Research (CTTR) at UCL Institute of Education and the Chartered College of Teaching (CCT), the national professional body for teachers in the UK². We were interested in the ways in which research was used 'within teaching practice', that is how did it shape issues of pedagogy, curriculum and assessment in the school. The research questions for the project were:

- (1) What are participants' views on the use of research within teaching practice?
- (2) How is research evidence used within teaching practice?
 - a. How is it interpreted and 'operationalised' in schools?
 - b. What status does research evidence have within school discourse, e.g. teaching resources, professional development and staff meetings?
 - c. How is practitioner/school level research conducted in schools and how is this used?
- (3) What are the opportunities and barriers around teacher-researcher collaboration?

In this article, we report on the project's quantitative survey findings. The survey was designed in REDcap and piloted with current teachers and those who had recently left the profession. It was then launched nationally and the link for completion distributed to all teacher members of CCT via their weekly newsletter. In addition, it was publicized through the CCT Twitter account and UCL Institute of Education schools newsletter. This yielded 145 complete responses, of which 14 were from participants who were ineligible due to their role and so were removed, leaving 131 responses. Respondents worked across the state-funded (equivalent to Australian government schools, 82%) and private (18%) sectors, meaning that teachers in private schools are somewhat over-represented in our sample, as only 7% of children are educated in private schools in England. Respondents held a wide range of roles including classroom teacher and middle and senior leadership. The majority of respondents taught in secondary schools (61%) with 27% teaching in primary schools and 11% teaching in all-through schools. Two participants did not provide information about the age range of the school in which they taught.

Findings

In this section, we present descriptive statistical findings from both surveys. We present the comparable data across both settings, first providing background regarding the profile of each sample, before exploring reports of teacher skill and expertise, professional development needs, nature and frequency of research access and the reasons for such access. While both samples included a range of teacher profiles in relation to stage of career and school type, we do not disaggregate the data according to these differences as they are not the focus of our

students, as well as often having religious affiliations. We note this is different to 'public' schools in England, which in many ways bear greater resemblance to 'private' schools in Australia.

² www.chartered.college

investigation.

Sample profiles

In both contexts, the majority of teachers in the sample had been teaching for more than 10 years, as highlighted in Figure 1.

While the Australian sample was, on the whole, more experienced than the English sample (63% of English participants had been teaching for longer than 10 years as opposed to 74% of Australian participants), in both cases the survey sample was more experienced than the general teaching population. Data from the OECD Teaching and Learning International Survey (Organisation for Economic Cooperation and Development, 2019) indicate that the percentage of teachers in Australia and England with more than 10 years since completion of their initial teacher education is 60.9% and 52.5% respectively.

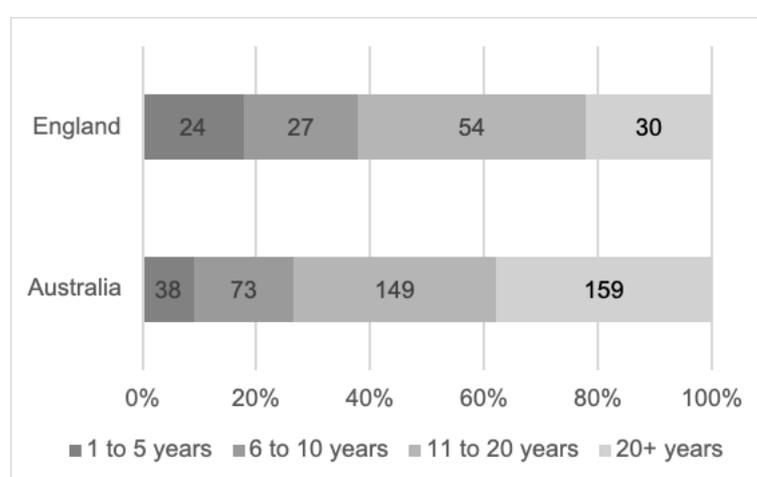


Figure 1. Years of teaching.

Given the sampling process, where teachers were recruited either partly or entirely via social media, we might have expected to have recruited a larger proportion of younger, less experienced teachers. However, the samples were in fact skewed toward teachers with more years of experience. This suggests that issues of research engagement and data use may be of more interest to experienced teachers in both contexts than to their younger peers.

Participants in both samples were also asked about the importance of engaging with research. Perhaps unsurprisingly, due to the sampling approaches employed, both samples reported seeing such engagement as important. Australian participants were asked how far, on a five-point scale ranging from strongly disagree (1) to strongly agree (5), they agreed or disagreed that teachers should care about engaging with educational research, and approximately 81% either agreed (n=162) or strongly agreed (n=177) with this statement. Meanwhile, an even larger majority (approximately 97%) of participants in the English survey reported that it was very important (n=85) or somewhat important (n=42) to engage with research. While there are differences in constructs here – ‘importance’ versus having to ‘care’, the latter being potentially more personal in its interpretation – we can conclude from these profiles that the teachers in both samples were generally well-disposed toward using and engaging with and in research, an orientation we must bear in mind in interpreting their responses to questions regarding their skills and experiences in doing so. This suggests that

our samples may not be representative of the teaching profession as a whole, but provide a window into the experiences of more research-engaged teachers.

Teacher skill, expertise and confidence

Both surveys included items relating to respondents' perceptions of their skill and expertise (Australia) and confidence (England) in engaging with educational research. In both cases participants were asked to respond on a five-point scale ranging from least skilled/confident (1) to most skilled/confident (5). Respondents in the Australian survey were asked to indicate how far they agreed with a range of statements related to their skills and expertise in reading and using research in their work (see Figure 2). Over 80% of the Australian sample agreed or strongly agreed that they are skilled at collecting their own data from their students about their learning, and that they are good at evaluating the quality of published research. This latter item is particularly interesting as less than 60% and 50% of respondents indicated that they were good at reading and interpreting educational research that uses qualitative and quantitative data respectively, which would seemingly indicate that few respondents feel accomplished at utilising both. Almost 80% of respondents agreed that they are good at interpreting and using the data available to them at their school while approximately 70% agreed that they are good at evaluating the classroom relevance of published research and translating findings into classroom practice. The lowest agreement (40%) was in teachers designing their own research projects to investigate practice.

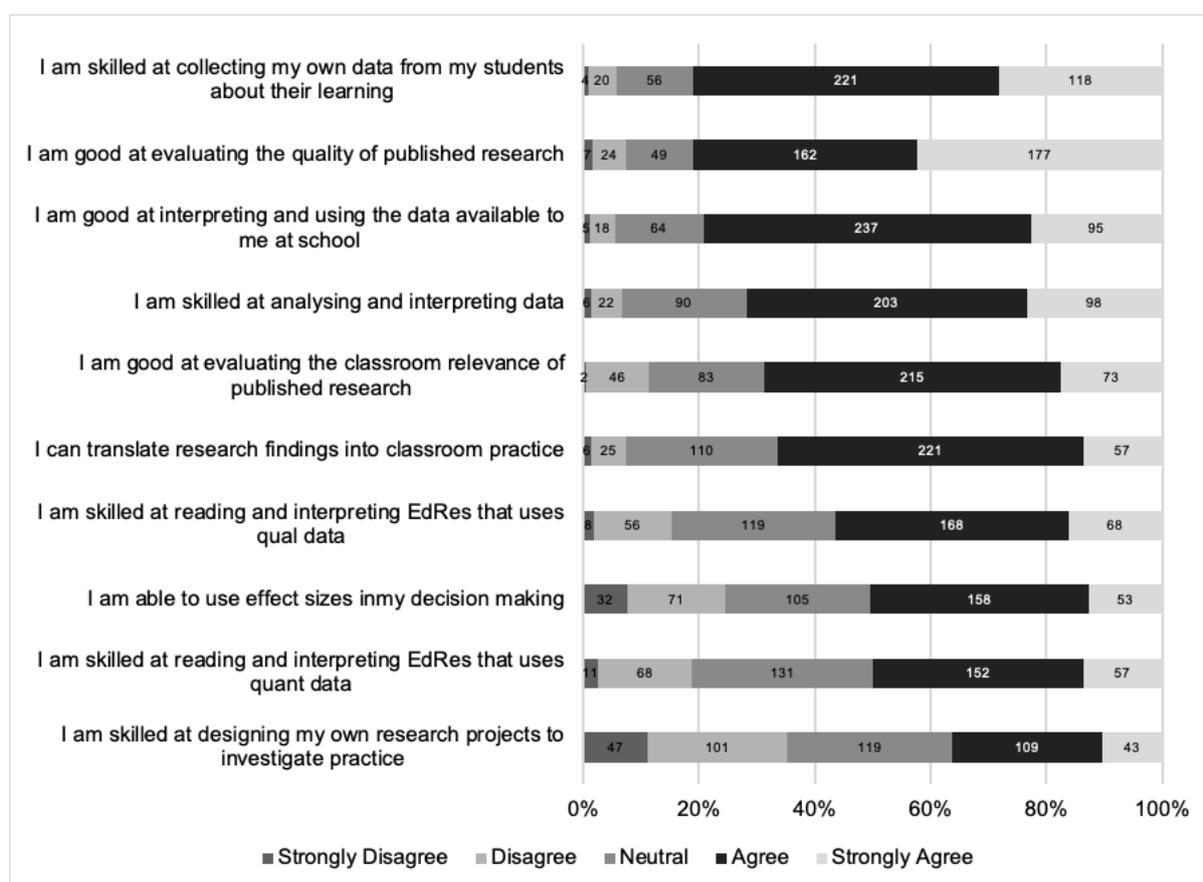


Figure 2. Teacher skill and expertise (Australia).

In the English survey, participants were asked about their 'confidence' in relation to these areas as opposed to 'skill and expertise'. These constructs, although distinct, are related (in

self-report data particularly), as perceptions of skill and expertise can be expected to lead to feelings of confidence. Respondents for the most part expressed a high degree of confidence in their ability to handle different research-related activities (see Figure 3). Over 76% of the English sample were certain or thought that they could probably collect their own research data from pupils and 75% were certain or thought that they could probably evaluate the quality of published educational research. Participants maintained this level of confidence when asked specifically about interpreting qualitative (77%) and quantitative (73%) research evidence. A similar proportion of teachers (77%) expressed confidence (certain or could probably) with interpreting and using the data available to them at school and 71% felt confident to evaluate the classroom relevance of published research (although it is notable that in this case more responded ‘I could probably do this’ (47%) than ‘I am certain I could do this’ (24%)) and translate published research to classroom practice (80%). Teachers reported less confidence with using effect sizes in their decision making (44% certain or could probably) but were much more confident in their ability to design their own research projects (73%).

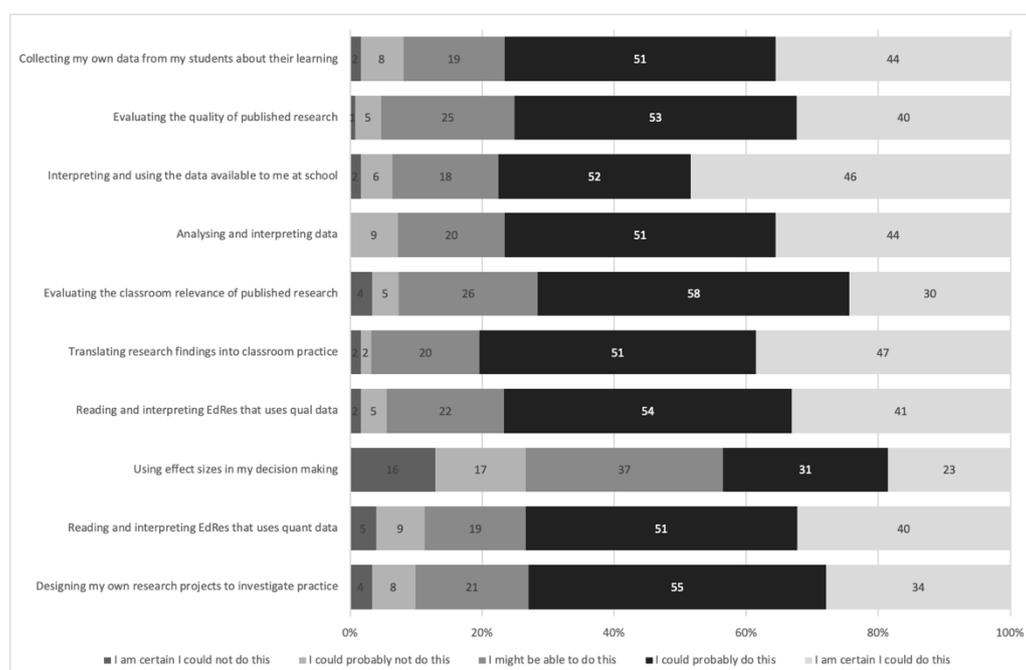


Figure 3. Teacher confidence (England).

While participants perceived that they had relatively high levels of expertise and confidence overall, some particular contrasts and similarities were present in the data between the two contexts, as demonstrated in Table 1, which highlights mean responses for the two groups, which were compared using a Welch’s independent samples t-test.

	ENGLAND		AUSTRALIA		Ind. Samples t-Test (Welch)		
	mean	SD	mean	SD	t	df	p
Designing my own research projects to investigate practice	3.88	1.00	3.00	1.17	8.219	226	<0.001
Using effect sizes in my decision making	3.23	1.27	3.31	1.13	-0.631	184	0.529
Reading and interpreting research that uses quantitative data	3.90	1.06	3.42	1.00	4.486	192	<0.001
Evaluating the quality of published research	4.02	0.87	3.53	0.98	5.348	223	<0.001
Reading and interpreting research that uses qualitative data	4.00	0.91	3.55	0.98	4.751	214	<0.001
Translating research findings into classroom practice	4.14	0.88	3.71	0.83	4.810	188	<0.001
Evaluating the classroom relevance of published ed. research	3.85	0.95	3.74	0.89	1.149	191	0.252
Analysing and interpreting research findings/data	4.02	0.96	3.87	0.88	1.557	188	0.121
Interpreting and using data available at school about my pupils	4.18	0.98	3.95	0.81	2.384	175	0.018
Collecting my own data from my students about their learning	4.02	0.99	4.02	0.833	0.000	185	1.000

Table 1. Comparison of teacher confidence/skills.

On six items, respondents in the English sample reported significantly higher levels of confidence/skill than those in the Australian sample. These included designing my own research projects to investigate practice, reading and interpreting research that uses quantitative data, evaluating the quality of published research, reading and interpreting research that uses qualitative data, and translating research findings into practice, all of which were significant at the $p < 0.001$ level. Additionally, the difference between English and Australian samples with respect to interpreting and analysing school data was significant at the $p < 0.05$ level ($t(175) = 2.384$, $p = 0.018$). This could be related to the questions being framed around ‘confidence’ rather than ‘skill’ and ‘expertise’; perhaps ‘confidence’ is a more general, and less intimidating dimension upon which to rate oneself than having to avow ‘skill’ and ‘expertise’. Nevertheless, the higher levels reported by the English sample cohere with reports around professional development, which we discuss next.

Professional development

In relation to professional development (Figure 4 below), only a minority of Australian teachers agreed that they had received good professional development on engaging with educational research (46.5%), on interpreting and using data (39.1%), and on conducting research in their own contexts (28.2%).

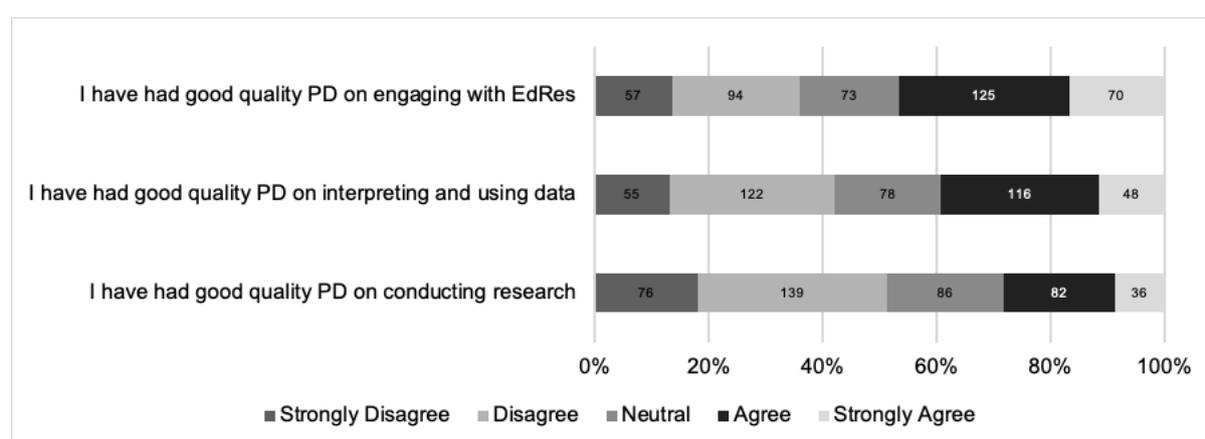


Figure 4. Professional development (Australia).

In the English survey (see Figure 5), in contrast to their Australian colleagues, a majority of teachers agreed that they had received good professional development on engaging with educational research (52%), but it was still a minority of teachers who agreed

that they had received good quality professional development on interpreting and using data (34%) and on conducting research in their own context (42%).

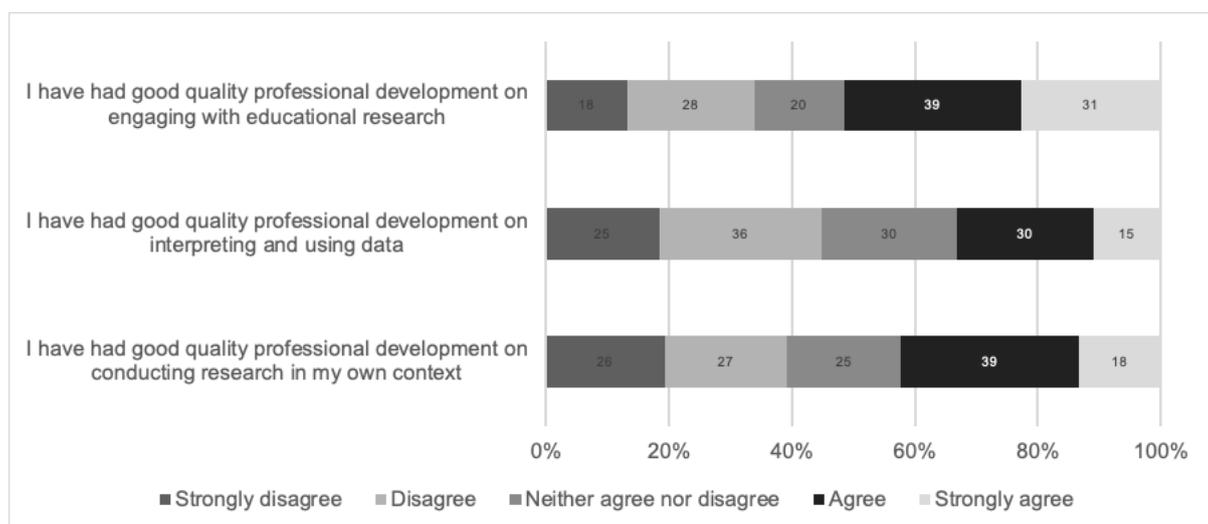


Figure 5. Professional development (England).

Interestingly, a comparison of the means of the English and Australian samples with respect to these items via a Welch's independent samples t-test (see Table 2) showed a significant difference only on the item I have had good quality professional development on conducting research in my own context, where teachers in the English sample reported significantly higher levels of agreement than those in the Australian sample, $t(200)=2.346$, $p=0.020$ (noting that in neither country did a majority of teachers agree that they had experienced good quality professional development in this area). This would seem to align with reports of skill and expertise, or confidence, within this domain as outlined in the previous section. Despite slightly higher levels of agreement on the part of English participants regarding their perceptions of their professional development on engaging with educational research and Australian participants on interpreting and using data, these differences were not statistically significant.

	ENGLAND		AUSTRALIA		Ind. Samples t-Test (Welch)		
	mean	SD	mean	SD	t	df	p
I have had good quality professional development on engaging with educational research	3.29	1.36	3.14	1.31	1.111	210	0.268
I have had good quality professional development on interpreting and using data	2.85	1.28	2.95	1.25	0.785	213	0.433
I have had good quality professional development on conducting research in my own context	2.98	1.35	2.67	1.22	2.346	200	0.020

Table 2. Comparison of experiences of professional development.

Nature and frequency of research access

Participants in both surveys were provided with a range of different sources and access points for educational research and asked how frequently they access research related to their work via each means. Responses to the Australian survey are highlighted in Figure 6 below. Websites, social media and researchers' blogs were the most common points of access for these Australian teachers, with over 50% of participants having accessed these more than ten times over the past year. Additionally, over a third of respondents had accessed scholarly publications and professional publications more than ten times in the past year, with a

substantial number in both cases having accessed these sources between five and ten times. Over 95% of participants had accessed professional publications or research in the context of formal professional development at least once in the past year, while over 80% had accessed academics or educational researchers as sources of research at least once (and approximately 50% had done so at least three or four times). Less common were university courses (although here approximately 50% had accessed research in the course of university study at least once) and professional conferences, where while 80% had accessed research in the course of professional conferences at least once, only a relatively small proportion of the respondents had done so more frequently.

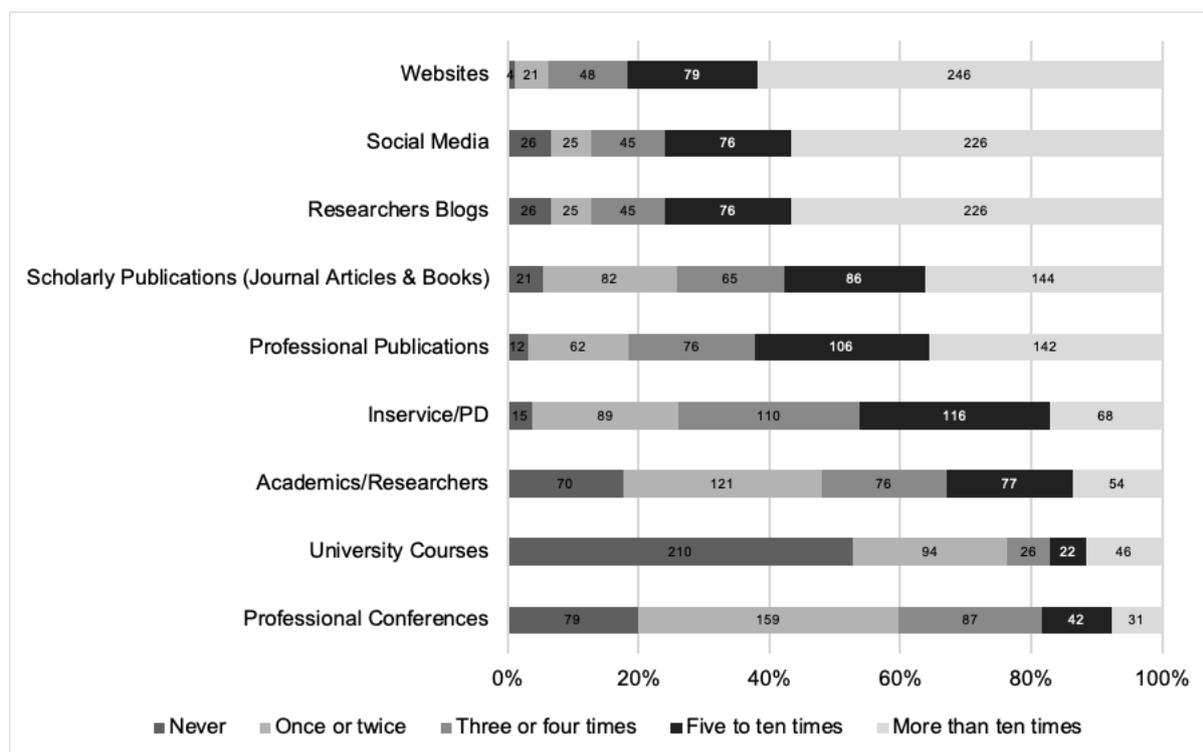


Figure 6. Accessing research (Australia).

Participants in the English survey were asked similar questions, with responses summarized in Figure 7 below. The most frequently-used sources of educational research for English teachers were similar to those in the Australian sample, featuring Twitter, blogs and articles about research in educational publications, all of which were accessed by at least 80% of respondents termly³ or more often. Over 70% of respondents reported accessing original journal articles and books by academic authors, as well as from the general news media at least termly. Research was accessed through professional development and conferences less frequently – unsurprising given the time and expense associated with these activities. Nevertheless, 87% of respondents reported accessing research through professional development and 78% through conferences at least once or twice a year, therefore only a minority of respondents did not access research at all in this way.

³ The English school year is typically divided into three terms, September – December, January – Easter and Easter – July.

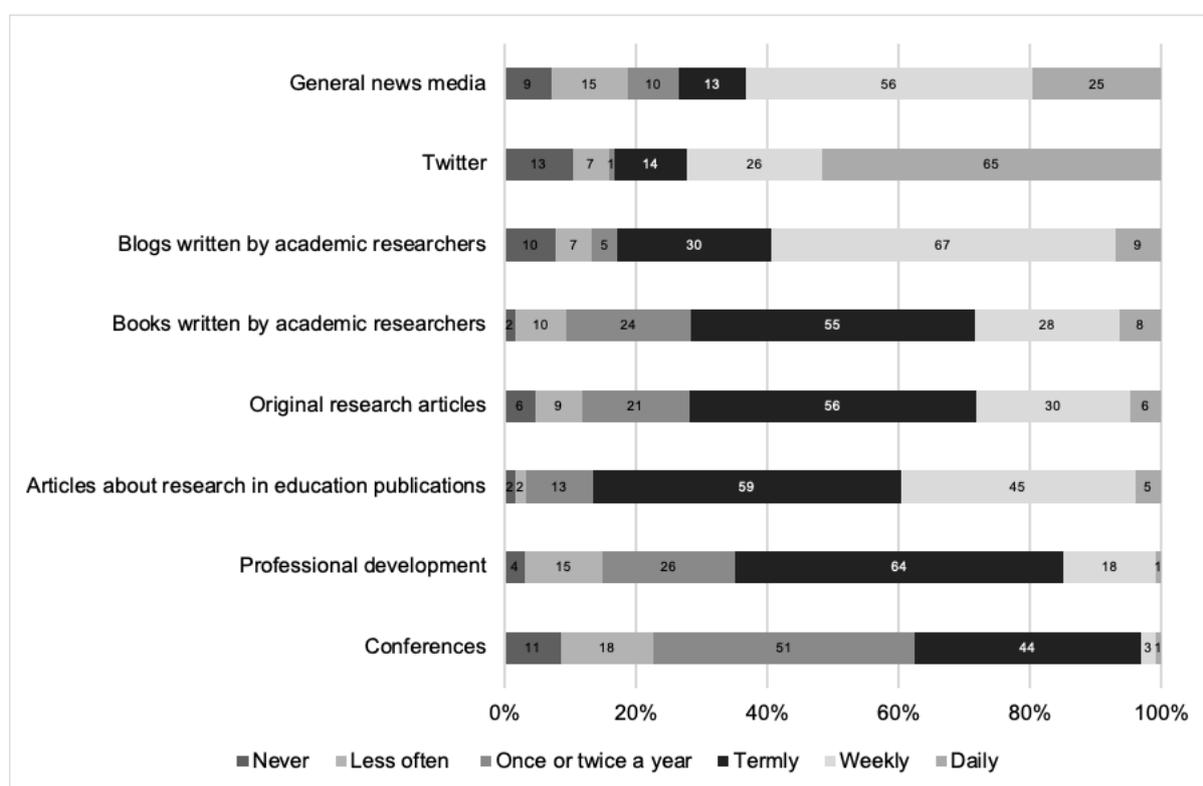


Figure 7. Accessing research (England).

Both sets of findings are consistent with these samples reporting high levels of engagement with educational research and data. These teachers manage to access research through a wide range of sources and do so very frequently when sources are available at low or no cost to themselves.

Reasons for research access

Finally, the teachers in the Australian sample were asked to indicate the frequency of their reasons for accessing research, represented in Figure 8 below. Research was most often reported to be accessed by the Australian respondents to improve their professional practice; update their knowledge of pedagogy or assessment, or content knowledge; or to support them in developing new activities, programs, guidelines or materials. Problem solving in relation to practice and justification or validation of actions or decisions were less common motivations for accessing research, although in both cases over 50% of respondents indicated that they ‘often’ engaged for these purposes.

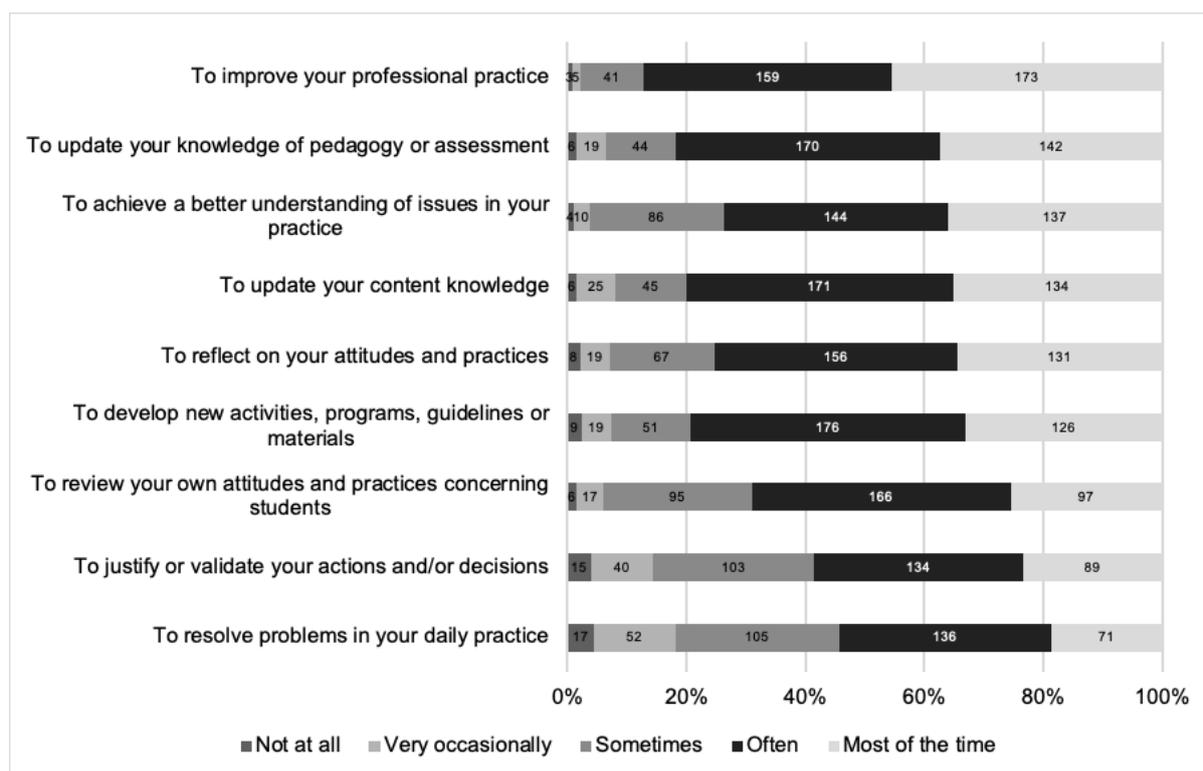


Figure 8. Reasons for accessing research (Australia).

In the English survey, this topic was framed around teachers' motivations for their engagement. While this does not include analysis of frequency, these questions capture a very similar dimension of reasons for access as that in the Australian survey. Responses indicate that their reasons for engaging with educational research are personal rather than managerial (see Figure 9). Teachers were most likely to agree or strongly agree that they engaged with educational research for reasons of curiosity (95%), improving their teaching (95%), expanding their practice (96%), expanding their thinking about a topic (94%), out of a sense of professional responsibility (94%), and for the sake of critical engagement with their context (91%). Teachers were much less likely to report that they engaged with research because it was an expectation of senior leaders in their school (30%) or because it was required for an academic or professional qualification (26% and 27%, respectively).

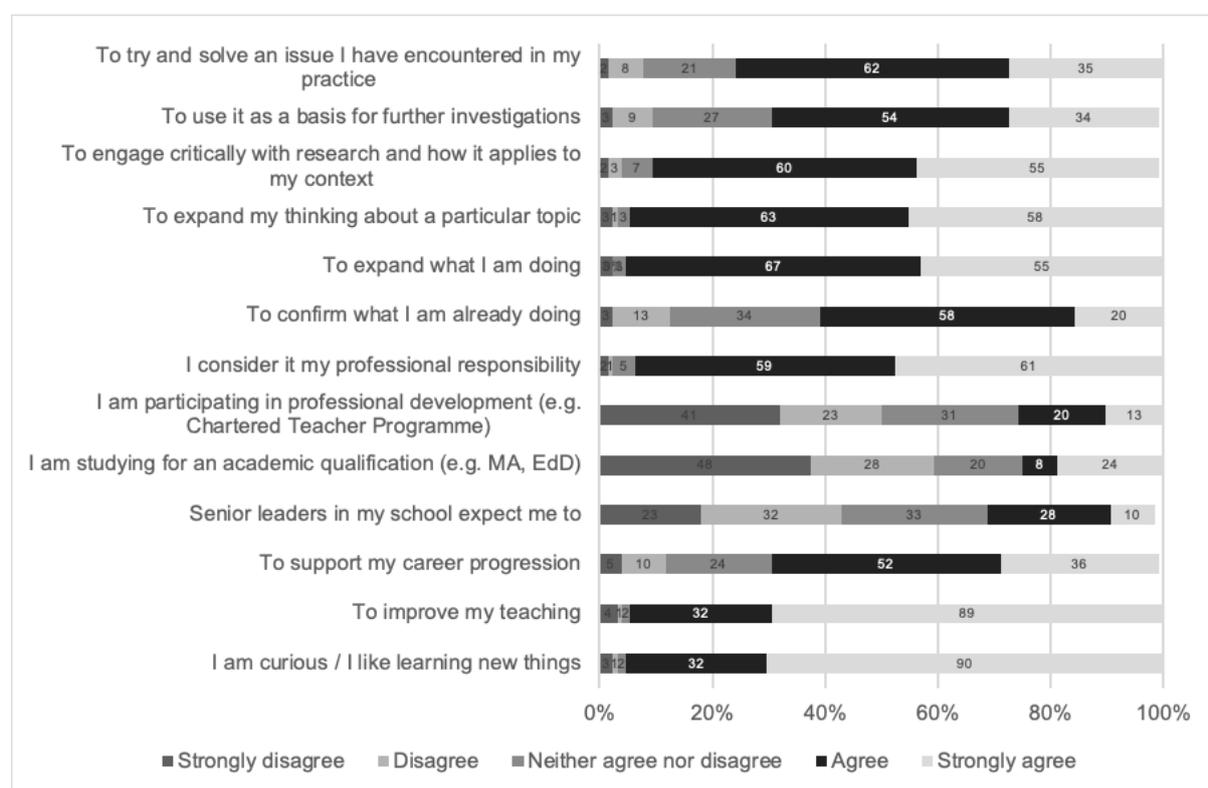


Figure 9. Reasons for accessing research (England).

Across both samples, improvements to practice are one of the highest rated reasons for engagement. Resolving immediate problems is less highly rated, as are reasons relating to system or school expectations (we note here that in a separate section of the survey, not reported here at length, expectations for ‘using available data’ and gathering ‘systematic evidence about my teaching’ were seen as higher than engaging with educational research for Australian teachers). Thus in both samples, it would seem that engaging with educational research beyond data collection and interpretation at the school and classroom level is less a system requirement than a matter of personal professional development, with teachers doing so because they identify that it will bring rewards in terms of improving teaching and critical engagement. While we do not argue that these motivations for engaging with research and data constitute an holistic reflection of teachers’ orientations, they do provide a particular insight into the way their attitudes to and beliefs about research and data shape their research and data-use practices.

Concluding discussion

An overall finding of the comparative analysis presented in this article is that respondents to both surveys report a considerable sense of engagement with educational data and of research literacy. This is perhaps to be expected in a self-selected sample, and there is some evidence that not all teachers feel as well-disposed as those we report on here. Borg (2009, p.358), for instance, notes a reported ‘lack of time, knowledge, and access’ for some teachers; similarly Cain (2017) reports the contestation of research by teachers not only due to methodological issues but perceived relevance and congruence with personal values. We should perhaps then infer that some of the particular areas of lack of confidence and engagement shown by our sample will be even more strongly the case for the teaching profession as a whole. It is also possible that the teachers in our samples are unusually engaged members of the profession overall, seemingly active on social media and making use of such formats for professional

purposes. Indeed, the growing role of Twitter and other social media in the academic space, and to bridge academic/practitioner divides (whether perceived or real), has been documented elsewhere (Cain & Graves, 2019). This is, however, potentially a concern, as spaces such as Twitter may present particular forms of research; any temptation towards simple connotations between ‘technology, individual empowerment, and social action’ (Thapliyal, 2018, p. 61) is unwise. As such, the considerable use of Twitter in our samples should be balanced with consideration of the markers of discerning research literacy (BERA/RSA, 2014; Sachs, 2016) – including understanding of distinctions between qualitative and quantitative data, and understanding statistical measures such as ‘effect size’, with which only a minority of respondents report comfort. We also note that while social media is an ever-present source of information for teachers, frequency of use does not necessitate impact. Engaging with a single conference or article may have a much more profound influence on a teacher’s professional identity and practice than frequent engagement on social media.

Given the research-literate nature of our samples it is interesting to note that there are also some differences within and across them: they are not equally confident, and do not report equal levels of skill and expertise, across all types of research and data use. The greatest level of confidence in both countries is with reading and using published research and with collecting and using school data, suggesting that teachers are confident with consuming research and with carrying out research activities that are very close to their normal occupational practices. Across both samples teachers seem to define ‘educational research’ as something separate from themselves and their immediate context, with research rarely being reported as used or accessed so as to address immediate problems of practice. This reflects previous studies which have indicated that teachers can be reluctant to engage with educational research where it is not seen as directly applicable to their work (Cain, 2017; Prendergast & Rickinson, 2019), and indeed not all university-based education research would be. This sense of research being broadly relevant, yet largely external to the work of the teacher is also evident within the Australian sample, in the lack of skill and expertise reported in relation to action research, compared with the English sample. We note that the English sample also reports higher levels of ‘good quality’ professional development in relation to action research when compared to Australia (although both are still low overall). We note that in the Australian sample, as determined via a factor analysis conducted for a separate paper (Mockler & Stacey, 2019), higher levels of good quality professional development (as perceived by teachers) appear to be associated with higher levels of perceived importance and perceived usefulness and higher levels of personal expertise in teachers’ use of educational research and data. This suggests that it may be the case that such high-quality professional development is more present in England than in Australia. Furthermore, this notion connects with Opfer, Pedder and Lavicza’s observation that change and growth in teachers’ professional knowledge is ‘driven by personal beliefs, interests, motivations and social/historical contexts and processes rather than solely through rational and logical accumulation of knowledge and skills via participation in a learning activity’ (2011, p.446). That is, in this case, teachers’ orientations to educational research and data, as represented in their attitudes, beliefs and practices, have a reflexive relationship with both professional development engagement and resulting professional learning. Given that teachers in the English sample reported considerable confidence in engaging with forms of action research, compared to the Australian sample, it may be tempting to engage in policy ‘borrowing’ to improve teachers’ understanding and expertise in the Australian context by importing practices from the English setting. Yet we note that the English sample includes a significant proportion of teachers who are members of the Chartered College of Teaching, which facilitates teacher research-engagement through the publication of a journal, *Impact*,

and offering professional development that requires participants to engage with action research (the Chartered Teacher Programme); this may offer some explanation of the difference noted here. In addition, given that the English sample also reported greater confidence with external academic research than engaging in their own, it seems there is still a relative lack of research engagement compared with research literacy. Teachers, it seems, may be relatively 'data confident', and comfortable in making use of published academic research, but seem to be less sure when it comes to engaging with, let alone leading, richer forms of research themselves. While research is not the, or even a main focus of teachers' work in the way that it is in universities, the lack of agency that teachers seem to feel in relation to research may have implications when considering teacher professionalism – being something which teachers are subject to, rather than being involved more directly in conception and development.

This finding of teachers as feeling subject to research may also reflect the broadly comparable policy contexts at play, with an emphasis on external educational 'experts' and hierarchies of knowledge that privilege 'objective', numeric data rather than that produced from the messy realities of the everyday classroom (Helgetun & Menter, 2020; Ladwig, 2018). Indeed, the very nature of our sample as being highly engaged with both research and data may reflect this growing emphasis in both contexts, as well as the privileging of particular forms of research. In Borg's (2009, p.358) recent study of English language teachers, 'teachers held conceptions of research aligned with conventional scientific notions of inquiry'. For teachers in England and Australia, the emphasis in policy has similarly been around the analysis of (largely numeric) 'data' so as to feed into a cycle of continuous student (and teacher) improvement by particular metrics, rather than being about teachers feeling supported to ask their own questions, perhaps with 'outputs' and measures beyond increased student attainment on tests. This suggests a more 'compliant' and 'risk-averse' conceptualisation of professionalism (Sachs, 2016) in teachers across both samples.

Conversely, however, Sachs has argued that understandings of teacher professionalism cannot be separated from the contexts in which teachers work. In order to develop new forms of professionalism then, the context needs to change:

Under the right conditions, teacher learning will be inquiry oriented, personal and sustained, individual and collaborative. It needs to be supported by school cultures of inquiry and be evidence based: in such cultures where evidence is collected and the complex nature of teachers' worlds of learning and teaching is valued and where simple questions provoke thoughtful action (Sachs & Mockler, 2011, p. 252). It also requires a commitment by teachers to recognize the value of engaging in research and inquiry by collaborating with colleagues within their schools and other schools to gain insights into their practice and the application of policy priorities. (Sachs, 2016, p. 423)

We would suggest, however, that this 'commitment' can only come from enabling teachers to generate and explore their own professional concerns, whether via engaging in their own research or electing to engage with that of others. Advocating for teachers' increased research literacy and engagement should not be taken as a call for something else to be 'done to' teachers. What we instead advocate for is the reimagining of teacher professionalism such that it involves teachers in its conception and development. This, will enable the development of the kind of 'mature' profession envisioned by Sachs (2016) via 'research rich' (BERA/RSA, 2014) schools in which teachers can ask, and work on answering, their own questions. Indeed, we note that these respondents reported positive associations with research and data. Other teachers may not see research as being as relevant to their work, or feel as much confidence, or skill and expertise, with it as these teachers do. It is therefore important to find ways of supporting teachers via the provision of time, space and autonomy for

meaningful engagement with research. In so doing it might be possible to bring about a shift in both current policy and practice towards teaching as a ‘research-rich’, ‘mature’ profession.

Acknowledgements

We are grateful to Dr Lisa-Maria Müller and the Chartered College of Teaching for working with us on the survey in England.

Funding

This work was supported by the Centre for Teachers and Teaching Research, UCL Institute of Education; Sydney Research Accelerator (SOAR) Fellowship, 2018-2019, University of Sydney.

Notes on Contributors

Martin Mills is the Director of the Centre for Teachers and Teaching Research, UCL Institute of Education (IOE). Martin's research interests include the sociology of education, social justice in education, alternative schooling, gender and education, school reform and new pedagogies.

Nicole Mockler is an Associate Professor in the Sydney School of Education and Social Work at the University of Sydney. Her research focuses on education policy and politics, particularly as they relate to teachers' work.

Meghan Stacey is a lecturer in the sociology of education and education policy in the School of Education at the University of New South Wales. A former high school teacher, she takes a particular interest in education policy, teachers, and the operation of dis/advantage within systems of schooling.

Becky Taylor is Senior Research Fellow in the Centre for Teachers and Teaching Research at UCL Institute of Education, where she leads on the Teaching strand of the Centre's work. She is interested in the relationship between research, policy and practice in schools, with a social justice perspective.

ORCID

Nicole Mockler <http://orcid.org/0000-0002-0617-3506>

Meghan Stacey <http://orcid.org/0000-0003-2192-9030>

Becky Taylor <http://orcid.org/0000-0002-7257-4463>

References

- AITSL. (2011). *Australian Professional Standards for Teachers*. Melbourne: ESA.
- Ball, S. J. (2012). *Global education inc.: New policy networks and the neo-liberal imaginary*. London & New York: Routledge.
- BERA/RSA. (2014). *Research and the Teaching Profession: Building the capacity for a self-improving education system*. Final Report of the BERA-RSA Inquiry into the Role of Research in Teacher Education. London: BERA.
- Borg, S., 2009. English Language Teachers' Conceptions of Research. *Applied Linguistics*, 30 (3), 358–388.
- Cain, T. (2017). Denial, opposition, rejection or dissent: why do teachers contest research evidence? *Research Papers in Education*, 32(5), 611-625. doi:10.1080/02671522.2016.1225807

- Cain, T., & Graves, S. (2019). Building a research-informed culture. In T. Cain (Ed.), *Becoming a research-informed school: Why? What? How?*, pp. 99-119. London: Routledge.
- Carter, A. (2015). *Carter review of initial teacher training (ITT)*. Retrieved from UK: <https://www.gov.uk/government/publications/carter-review-of-initial-teacher-training>
- Cochran-Smith, M., & Lytle, S. (1993). *Inside/Outside: Teacher Research and Knowledge*. New York: Columbia University Teachers' College.
- Cochran-Smith, M., & Lytle, S. (2009). *Inquiry as stance: Practitioner research for the next generation*. New York: Teachers College Press.
- DfE. (2011). *Teachers' Standards*. London: DfE.
- DfE. (2016). *Educational excellence everywhere*. London: DfE.
- DfE. (2019a). *Early Career Framework*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/773705/Early-Career_Framework.pdf
- DfE. (2019b). *ITT Core Content Framework*. Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/843676/Initial_teacher_training_core_content_framework.pdf
- Gore, J. (2020). Why isn't this empowering? The discursive positioning of teachers in efforts to improve teaching. In A. Brown & E. Wisby (Eds.), *Knowledge, policy and practice in education and the struggle for social justice: Essays inspired by the work of Geoff Whitty* (pp. 199-216). London: UCL Press.
- Groundwater-Smith, S., & Mockler, N. (2009). *Teacher professional learning in an age of compliance: Mind the gap*. Dordrecht: Springer.
- Hargreaves, A. and Fullan, M., (2012). *Professional Capital: Transforming teaching in every school*. Abingdon, Oxon: Routledge.
- Helgetun, J. B., & Menter, I. (2020). From an age of measurement to an evidence era? Policy-making in teacher education in England. *Journal of Education Policy*. doi:10.1080/02680939.2020.1748722
- Jessop, B., Brenner, N., & Jones, M. (2008). Theorizing sociospatial relations. *Environment and Planning D: Society and Space*, 28, 389-401.
- Kemmis, S. (1988). Action research in retrospect and prospect. In S. Kemmis & R. McTaggart (Eds.), *The action research reader* (2nd ed., pp. 11-31), Geelong, Australia: Deakin University Press.
- Ladwig, J. (2018). On the limits of evidence-based learning of educational science. In G. E. Hall, L. F. Quinn, & D. M. Gollnick (Eds.), *The Wiley handbook of teaching and learning*. New Jersey, US: Wiley-Blackwell.
- Lingard, B. (2010). Policy borrowing, policy learning: Testing times in Australian schooling. *Critical Studies in Education*, 51(2), 129-147. doi:10.1080/17508481003731026
- Mayer, D & Mills, M. (2020) Professionalism and teacher education in Australia and England, *E European Journal of Teacher Education*.
- Mills, M., Howell, A., Lynch, D. & Dungan, J. (2019) Approaches to improving school attendance: Insights from Australian principals, *Leadership and Policy in Schools*, <https://doi.org/10.1080/15700763.2019.1695847>
- Mockler, N., & Groundwater Smith, S. (2015). Seeking for the unwelcome truths: Beyond celebration in inquiry-based teacher professional learning. *Teachers and Teaching: Theory and Practice*, 21(5), 603-614.
- Mockler, N., & Groundwater-Smith, S. (2018). *Questioning the language of improvement and reform in education: Reclaiming meaning*. London: Routledge.
- Mockler, N., & Stacey, M. (2019). 'I'm doing something that every teacher should be doing': Understanding teachers' orientations to educational research and data. Paper presented at AARE, Queensland University of Technology, 1st-5th December.
- Moore, A., & Clarke, M. (2016). 'Cruel optimism': Teacher attachment to professionalism in an era of performativity. *Journal of Education Policy*, 31(5), 666-677. doi:10.1080/02680939.2016.1160293
- Noffke, S. (1997). Professional, personal, and political dimensions of action research. *Review of Research in Education*, 22(1), 305-343.
- Opfer, V. D., Pedder, D. G., & Lavicza, Z. (2011). The role of teachers' orientation to learning in professional development and change: A national study of teachers in England. *Teaching and Teacher Education*, 27(2), 443-453.
- Organisation for Economic Cooperation and Development. (2019). TALIS 2018 Results. Retrieved from <http://www.oecd.org/education/talis-2018-results-volume-i-1d0bc92a-en.htm>
- Papanastasiou, N. (2019). Best practice as a governing practice: Producing best practice in a european commission working group. *Journal of Education Policy*, 1-22.
- Peck, J. (2010). *Constructions of neoliberal reason*. New York, NY: Oxford University Press.

- Phillips, D. (2000). Learning from Elsewhere in Education: Some perennial problems revisited with reference to British interest in Germany. *Comparative Education*, 36(3), 297-307.
- Prendergast, S., & Rickinson, M. (2019). Understanding school engagement in and with research. *The Australian Educational Researcher*, 46(1), 17-39.
- Rose, N. (1991). Governing by numbers: Figuring out democracy. *Accounting, organizations and society*, 16(7), 673-692.
- Sachs, J. (1997). Renewing teacher professionalism through innovative links. *Educational Action Research*, 5(3), 449-462.
- Sachs, J. (2016). Teacher professionalism: why are we still talking about it? *Teachers and Teaching*, 22(4), 413-425. doi:10.1080/13540602.2015.1082732
- Smaller, H. (2015). The teacher disempowerment debate: Historical reflections on 'slender autonomy'. *Paedagogica Historica: International Journal of the History of Education*, 51(1-2), 136-151. doi:10.1080/00309230.2014.997752
- Stenhouse, L. (1979). Research as a basis for teaching: Inaugural lecture, University of East Anglia. Retrieved from <https://www.uea.ac.uk/documents/4059364/4994243/Stenhouse-1979-Research+as+a+Basis+for+Teaching.pdf/8a005112-a420-4e39-85a0-0fde58d4846d>
- Stenhouse, L. (1981). What counts as research? *Educational Studies*, 29(2), 103-114.
- Stevenson, H. (2017). The 'datafication' of teaching: can teachers speak back to the numbers? *Peabody Journal of Education*, 92(4), 537-557.
- Tatto, M.T. and Furlong, J., 2015. Research and teacher education: papers from the BERA-RSA Inquiry. Oxford Review of Education, 41 (2), 145–153.
- Teacher Education Ministerial Advisory Group. (TEMAG) (2014). *Action Now: Classroom ready teachers*. Canberra: Australian Government.
- Thapliyal, N. (2018). #Eduresistance: a critical analysis of the role of digital media in collective struggles for public education in the USA. *Globalisation, Societies and Education*, 16(1), 49-65.
- White, S., Down, B., Mills, M., Shore, S. & Woods, A. (2020) Strengthening a research-rich teaching profession: An Australian study, *Teaching Education*. DOI: 10.1080/10476210.2020.1737666
- Whiting, C., Whitty, G., Menter, I., Black, P., Hordern, J., Parfitt, A., . . . Sorensen, N. (2018). Diversity and complexity: Becoming a teacher in England in 2015–2016. *Review of Education*, 6(1), 69-96.
- Wilkins, C., 2015. Education reform in England: quality and equity in the performative school. *International Journal of Inclusive Education*, 19 (11), 1143–1160.
- Zipin, L., & Hattam, R. (2009). Partnership action research for social justice: Politics, challenges and possibilities. In S. Noffke & B. Somekh (Eds.), *The sage handbook of educational action research*, pp. 508-520. Thousand Oaks, CA: Sage.