The trials and tribulations of teacher-research: an ethnographic study of the research culture in an English secondary school

Abstract

Purpose - This paper explores the tensions in the field of teacher-research when teachers in one school value disparate research approaches. Ethnographic methods were utilised to study teachers' research practices in an English secondary school where 'controlled research trials' were privileged, but disputed by some teacher-researchers preferring qualitative over quantitative data.

Design/ methodology/ approach – The authors draw upon fieldnotes from observations of staff meetings and research training sessions for teachers, as well as semi-structured interviews with key actors. The 21 hours of contact resulted in 41 pages of qualitative data that were analyzed thematically.

Findings – The findings reveal that some of the teacher-researchers recognized the challenges of, and took issue with, the positivist research paradigm promoted by the organization, and acknowledged the benefits of qualitative approaches to teacher-research, including those from the ethnographic tradition.

Originality – A new way of theorizing teacher-research is proposed, which the authors coin 're-search'. Taking the notion of 'research' as literally 're-searching' a phenomenon, it is argued that teachers systematically 'looking again' at their practice, perhaps utilizing auto-ethnography, would be a desirable foil to the positivist hegemony currently found in the field of teacher-research.

Introduction

The study was conducted in an English secondary school serving 11-16 year-olds against the political backdrop of the Department for Education's (2016, p.37) agenda for an 'evidence-informed teaching profession'. One way of fulfilling this agenda can involve teaching staff researching their own practice in what Cochran-Smith and Lytle (2009) would call 'Inquiry as Stance'. This theory sees teacher-research as embedded in the very fabric of the school culture, requiring a whole organizational drive to facilitate inquiry as an ongoing professional learning strategy for teachers. In situating inquiry as a 'stance', or position, a school would rely on teacher-research as a matter of course, with teachers researching their own practice as a standard part of their professional development. Schipper *et al.* (2020) note that studies into the professional development of teachers often ignore organizational influences on professional school culture, which they describe as 'the ethos and social environment in schools' (p.113). They acknowledge that culture is established by how the organization is structured by leadership, and visible in the policies they choose to implement, such as facilitating teachers to research their own practice. The research question addressed here is, therefore, how does organizational culture influence the teacher-research in a

school? With culture being at the heart of this study, an ethnographic approach was taken, which has not previously been used to elucidate the research practices in one particular school.

In the setting studied, all teaching staff were required to undertake a research project in which they would 'trial' an intervention with a class and quantify the educational difference it made in comparison with a class acting as a control group. As well as referring to the research method privileged at the school, the use of 'trial' also speaks to the associated challenges of this approach, hence the title of this paper. Using ethnographic methods to gain an original insight into the perceptions and practices of teacher-researchers, this paper problematizes the positivist approach which dominated the research culture of the school, proposing that teachers 're-searching' (i.e. looking again at) their own practice using qualitative data might be a way for a whole-school Inquiry as Stance culture to be realized. The concept of re-searching will be further explored in the Findings section of the paper.

This paper firstly reviews the literature on research approaches in the teaching profession, before detailing the ethnographic approach to this case study. A description of the research practices in the school follows, revealing a resistance to the positivist research culture established by the school leadership in favour of more qualitative research approaches that some teacher-researchers were drawn to. We end by discussing new implications for theorizing teacher-research as teachers 're-searching' their own practice, by looking again at teaching and learning as an auto-ethnographer might do.

Background to teacher-research

'Teacher-research' is a form of 'close-to-practice research' (BERA, 2018) whereby practitioners in educational settings conduct research to improve their practice. Cochran-Smith and Lytle (2009) coined the term 'Inquiry as Stance', which will be used here as a theoretical lens to review how approaches to teacher-research may be embedded in the organization of a school. For Cochran-Smith and Lytle (ibid.), what they call practitioner inquiry, here termed 'teacher-research', should empower teachers to theorize their practice in a way that is robust and sustained, becoming a standard part of a teacher's work. Although they do not mandate a particular research methodology, the necessity for dialog between inquiry and practice means that Inquiry as Stance aligns with auto-ethnographic approaches to teacher-research where ongoing reflections of practice are shared amongst the teaching community. These reflections are to be from everyday experiences of teachers, who will constantly inquire into the impact of their teaching practice, as a standard practice of their continuing professional development (CPD). As Inquiry as Stance is not about solving problems by extrapolating classroom practices from favourable test scores, it is not necessary for teachers to analyse data for their validity and generalizability as if they are researchers in the positivist paradigm. Interestingly, the current policy context in England favours educational research that utilizes such quantitative data, and the research approaches taken by some teacher-researchers can be seen to mirror this paradigm.

What is most pertinent to this study are the contrasting research approaches that have been used by teachers. These approaches will be reviewed, firstly by outlining the literature on quantitative data in the current political landscape, then by presenting teachers working with qualitative data, in some instances explicitly utilizing the Inquiry as Stance approach. The focus then shifts to the

organizational leadership that ultimately influences the research that teachers can conduct as part of their professional practice.

Teachers using quantitative data

The current policy context in England encourages teachers to be informed by research findings from quantitative data via a knowledge broker known as the Education Endowment Foundation (EEF), established in 2011 and seed funded by government. This organization synthesizes findings from research, usually from randomized controlled trials (RCTs), with the intention of providing educationalists free access to evidence-informed interventions that might benefit their practice. The use of RCTs, whereby the efficacy of an intervention is measured in relation to a control group, is becoming prevalent in educational research (Petty, 2014), and alongside meta-analyses, is a research model favoured by the UK government (Punch and Oancea, 2014). This narrow conceptualization of research situated in the positivist tradition has now set a precedent for the kind of research utilized by teachers due to its ease of access via the EEF (Coldwell *et al.*, 2017). For teachers to gain access to other forms of research, Coldwell *et al.* (2017) concluded that collaborations with Higher Education Institutions (HEIs) should be part of the culture of schools. This partnership might involve upskilling teachers to engage critically with the (more diverse) research outputs produced within the academy, which may also include ethnographic studies.

As it stands, however, the policy rhetoric (c.f. DfE, 2013) of privileging quantitative data via RCTs has meant that positivist approaches to teacher-research are becoming more prolific. Whilst it is not an expectation for teachers to conduct their own research, schools must evaluate the impact of interventions funded by a premium added to school budgets based on numbers of pupils on roll deemed to be disadvantaged (DfE, February 2024). This has prompted teacher-research initiatives that focus on quantitative data collection as part of teachers' assessment of their pupils' learning, paralleling the favoured research approach from policy (Petty, 2014).

Teaching practice constantly generates quantitative data on pupil attainment, so comparing the attainment scores of two groups of pupils who have been taught differently in an RCT may seem the obvious method of choice for teacher-researchers. Indeed, a market has developed for teachers wanting to conduct their own trials (c.f. Churches and Dommett, 2016), although the ethical conduct of this method has been raised by some teacher-researchers studied (Maxwell *et al.*, 2015). Coldwell *et al.* (2017) found that participants in their study were divided over the usefulness of quantitative data: some liked the perceived certainty they afforded, while others found such data to be too simplistic for a complex environment like a classroom. This professional intuition is echoed by Wrigley (2018) who argues that the privileging of quantitative data in determining the efficacy of interventions is inappropriate in such an open environment as education. Whilst the complexity of a social environment like a classroom may be best studied ethnographically, the findings of such studies are not easily packaged in an infographic for a busy teacher to take on board for the improvement of their practice. It may be argued, however, that teacher-research in the form of ethnographic case studies may be preferable to teachers keen to hear the stories of other teachers (Kushner *et al.*, 2001; Simons *et al.*, 2003), perhaps using practitioner inquiry as stance to foreground the voices of practicing teachers rather than interpreting quantitative data as in Buelow *et al.* (2023).

What Maxwell *et al.* (2015) found to be most beneficial in the research-active schools they studied was the organization facilitating teachers to observe each other's practice and analyse qualitative data on pupil attitudes and behaviour. Wyse and Torgerson (2017) argue that these ethnographic methods could be incorporated into RCTs, with the qualitative data they produce being taken into

consideration alongside the pupil attainment data generated from experimental teaching practices. Indeed, it may be argued that ethnographic methods are the most appropriate for teacher-research, given the unique position of a teacher who is already immersed in the education of children as they move through their schooling. It is these methods, and the qualitative data they produce, which will be reviewed next.

Teachers using qualitative data

In spite of policy makers' preferences for more positivist research, the methods and approaches found to be used by teacher-researchers have traditionally been qualitative. These include observation of practice, both their own and colleagues (Bulterman-Bos, 2017), and action research whereby teachers trial an intervention and reflect on its efficacy in an iterative cycle of improvement (Rea *et al.*, 2015). In their defence of action research, Foreman-Peck and Heilbronn (2018) posit that for research engagement to make a difference in the school at an organizational level, teachers need the agency to be able to adapt practice according to recommendations from research, and move the knowledge base on with their own reflections. This is what Inquiry as Stance offers, as So (2013) found in their study into teachers forming an inquiry community based on a shared focus emerging from their practice. Having a space for reflective dialog allowed teachers to co-construct theory from their experiences in the classroom. Baumann and Duffy (2001, p.612) called teacher experience 'theoretical grist' in that their reflections on their own practice are valuable data to be theorized. Another study into teacher-research refers to 'autobiography' to describe teachers theorizing their own practice to explore possible reasons for improvements in teaching and learning (Saeverot and Kvam, 2019). Cochran-Smith and Lytle (2009) would characterize these teacher reflections as Inquiry as Stance, as long as they are intentional and systematically devised.

Theorizing from practice may be achieved by teacher-researchers using ethnographic approaches. Dressman (2006) trained post-graduate students, who were in-service teachers, to reflect systematically on the impact of evidence-based teaching strategies they employed, and were offered a monthly forum over a school year to share their working theories with each other, resulting in co-construction of knowledge. In this way, teacher-researchers were empowered to 'talk back' to researchers by recontextualizing their findings to their own school settings. Rather than this empowerment being confined to a post-graduate course attended by paying teachers, there is potential for what might be termed 'everyday ethnography' (Watson, 2012) to be worked into the professional development of teachers as Inquiry as Stance. Cochran-Smith and Lytle (2009, p.148) draw comparisons between teachers and surgeons, who work with 'the data of everyday life' to improve their practice, which may be gathered by ethnographic means. If researching ethnographically is additional to the duties of a teacher, though, there is a danger that it can become onerous (Riemer and Blasi, 2008).

Whatever methods teachers use to conduct their own research, the skill-set needed to do so would need to be explicitly taught. Frank and Uy (2004) report on their success in teaching ethnographic methods to pre-service teachers so they could explore their workplace context as teacher-researchers in the USA. Without this training, it is unsurprising that the teachers who do research during their career turn to methods favoured by government in the evidence-base they promote via the EEF. What might aid methodological diversity in researching one's workplace could be collaborations with HE. Thomas *et al.* (2014) report on a project whereby Lead Teacher Researchers in primary and secondary schools collaborated with academics to collect and analyse qualitative data to be presented to their colleagues as case studies. Similar projects reported by Wall and Hall (2017)

involved schoolteachers and academics corresponding via telephone consultations and emails to aid teacher-research. The teacher-researchers mostly gathered qualitative data, even if the main method was a randomized trial whereby three different classes were each taught using a different teaching method. In this way, teaching approaches may be trialled and conclusions drawn about the best way forward without the reliance on quantitative data. As Mincu (2013) concluded, school improvement is achieved when teachers are enabled to collaborate with external researchers, and as researchers in their own right. Indeed, Dressman (2006) found that teacher-researchers sharing their auto-ethnographies of their teaching practice with their fellow teacher-researchers was part of their co-construction of theory, and all involved found these discussions beneficial in providing a fresh perspective of what their interpretations were surfacing. For Cochran-Smith and Lytle (2009), Inquiry as Stance is not only about teachers constructing a knowledge base of their particular school context, but sharing these with the teaching community more widely as their insights may be valuable to other teachers in developing their own practice.

Indeed, it has been noted that the research that teachers are most interested in is action research conducted by fellow teachers rather than quantitative results from large studies (Eberhardt and Heinz, 2017). However, the outcomes of such teacher-research are dismissed by wider accountability frameworks within schooling (Brown and Zhang, 2016) and qualitative data that are generated by teachers are often overlooked in favour of results from more large-scale studies (Hardy, 2016). Therefore, even if the findings from auto-ethnographic teacher-research are valued by other teachers, there is a danger that they are dismissed by school leaders in favour of research that aligns with the research outputs included in the EEF.

The role of leadership

School leaders also have an important role to play in a school's approach to teacher-research (Godfrey and Brown, 2018) and indeed, Inquiry as Stance requires organization-level buy-in so that all teachers are empowered to be researchers as part of their role. Some studies, however, reveal that rather than research being part of the professional practice of all teachers, or a 'stance', it is sometimes reserved for middle leaders only. In one school studied by the National College for Teaching and Leadership (2014), individuals had been appointed with a specific responsibility to evaluate interventions being trialled in a school by analysing pupil attainment data. Another school leader's approach was to appoint 'Research Champions' (Griggs *et al.*, 2016) to their leadership structure, with time granted within the working day to engage in research activity that was then disseminated to teaching staff. Most teachers within an organization following these types of teacher-research approaches are, therefore, passive, rather than actors in their own professional development.

Other studies report on more inclusive research practices where research engagement is integrated into organizational structures to facilitate teacher-research for all. Coldwell *et al.* (2017) propose that an enabler of teacher-research may be an organizational requirement for teachers to research a topic derived from the school improvement plan. In this way, their research is valued by leaders and facilitated within the organization. Godfrey (2016) has highlighted the significance of leadership in setting a research culture in schools if education is to be evidence informed. This may involve teachers engaging with diverse research outputs, or engaging in their own research using a variety of research methods, perhaps in collaboration with HEIs. Brown *et al.*'s (2018) study into research-informed teaching practice in English primary schools found that what mattered the most was the space to discuss research collegially. They, as well as others (e.g. Coldwell *et al.*, 2017), have

proposed that for research engagement to make a difference in the long term, teachers need time to debate educational research before reflecting on how evidence-informed practice may be contextualised and subsequently evaluated. With a teacher's timetable being dictated by organizational priorities, the importance of senior leaders in influencing teachers' research practices must not be underestimated.

The literature reviewed points to a policy drive for teaching to be informed by quantitative data from large-scale studies conducted by educational researchers, but there is simultaneously a professional desire for teachers to be part of the knowledge construction of their own practice as teacher-researchers. This has led to some teacher-researchers employing RCT as their method of inquiry due to this being favoured by government. Other teacher-researchers see the benefits of theorizing from qualitative data in the form of their own reflections of what is happening in their classroom. Government policy documentation regarding such self-improvement strategies does not usually reference school culture (Louis and Lee, 2016), but such external factors can influence organizational cultural orientations (Tadesse Bogale and Debela, 2024). The present study focuses on a school's orientation towards teacher-research to answer the DfE's (2016, p.37) call for an 'evidence-informed teaching profession'.

Previous studies (Louis and Lee, 2016; Schipper *et al*., 2020) into teacher development within schools emphasize the importance of a trusting and respectful professional community, which is ultimately enabled by organizational culture within school policy. Supportive school leaders use organizational policy to establish working conditions that channel resource into practices that become the standards of professional life and are embodied by personnel as 'the dominant discourse of the school community' (Lee, 2018, p.307). We, therefore, understand the research culture of a school to be a form of teacher development that is enshrined in the organization's policies and permeates throughout the professional practices of the teachers to create a supportive environment for teachers to be active agents in the knowledge base of education. Inquiry as Stance, then, can be used as a proxy for research culture as it should be an ongoing endeavour in the construction of knowledge that is shared and built upon by others in the teaching community. With the culture of the school being so vital, an ethnographic approach would seem most apt in investigating teacher-research. To our knowledge, there are no such studies of the research culture in one particular school, and thus we attempt to make an original contribution to the field. Therefore, 'a case study using ethnographic methods' (Perryman, 2011, p.861) has now been created to add to the literature of teachers making their own inquiries as an organization-wide stance, or position, on teacher-research, as outlined below.

Research approach and design

To study the research culture of a school, an ethnographic approach was taken in the very literal sense of the Greek translation being 'writings about a culture'. The main objective of this ethnographic study was to experience the research culture of an English secondary school serving 11-16 year-olds. Ethnography centers analysis of such an intangible aspect of an organization as culture (Neyland, 2008), drawing from a variety of different sources (Schubert and Röhl, 2017). Over a school year (2017-8), the lead author produced 22 pages of fieldnotes whilst participating in 16 hours of the following research-related activities in the school:
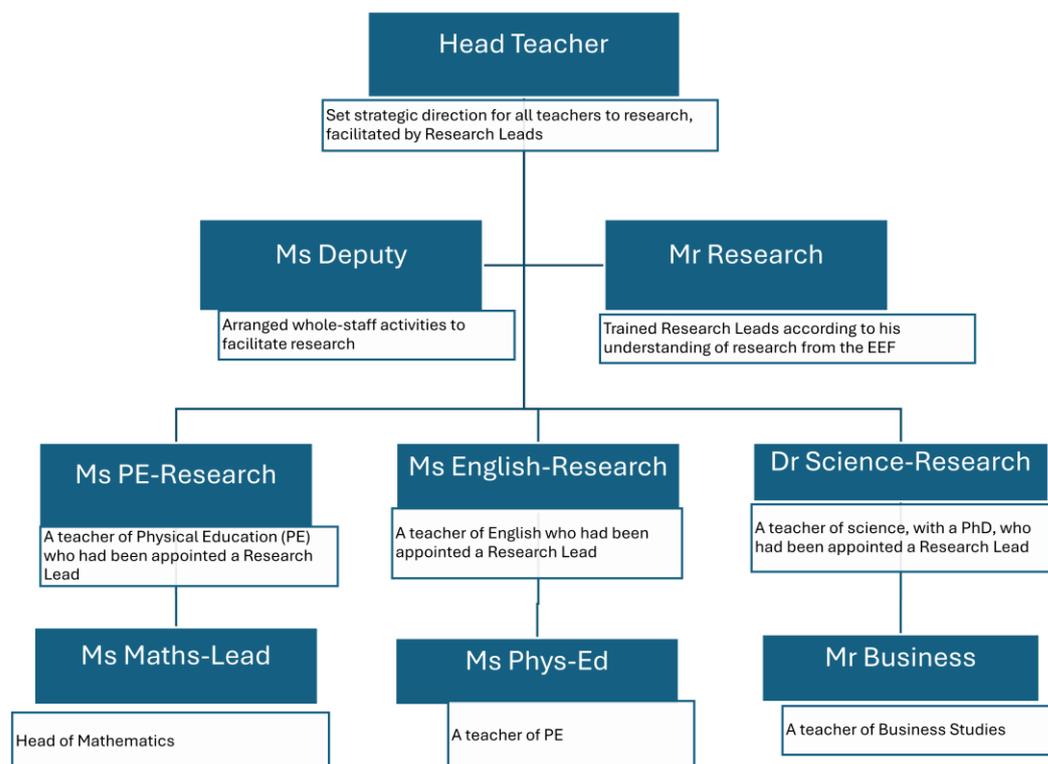
- a teacher training day for all teachers at the start of the school year;

- three training sessions for middle leaders designated as 'Research Leads';
- two compulsory research meetings for all teachers after school;
- five voluntary research fora held before the school day;
- one voluntary journal club; and,
- one research conference hosted by the school.

As well as collecting data from these participant observations via fieldnotes, the lead author also conducted semi-structured interviews (n=5) with teaching staff, as recommended by Schubert and Röhl (2017, to gain an insight into how the organizational culture of research, and the structures that enabled this, were perceived in the school.

The organizational structures established by the leadership team were manifest in the activities listed above, and the lead author was invited into the school when such research-related activities were taking place. Following Angrosino (2012), the phases of observation included familiarisation, whereby notes were made more generally during research-related activities in the school, followed by the selection of key players to be interviewed about their research approaches. Interviewees were identified by the gatekeeper, so it may be assumed that these individuals were perceived by him to think that they had an integral / positive role in the creation of the organization's intended research culture. This bias was countered by observations of and conversations with other teachers who, it transpired, were not as positive about the school's planned research engagement, and enacted their own research culture. This further highlights the benefits of researching ethnographically, which foregrounds an organization's informal culture (Schubert and Röhl, 2017), building a more comprehensive understanding of an organization as a whole (Watson, 2012). Combining interviews with observations revealed what Creswell (2012) calls is the ideal, the actual, and the projective; i.e., noting what was supposed to happen according to the leadership, compared to what was observed to be happening, and listening to participants speculating about what might have happened. Taking Hammersley and Atkinson's (2007) advice that ethnography is problematized by participants opting in to observations, ethical approval was granted that required all teaching staff in the school to receive a participant information sheet, with instructions on how to opt out if desired. If any teacher had availed of this option, no direct interactions with them would have been recorded; however, this selectivity was not needed. The main participants, therefore, were not only the influential school leaders who sought to construct the research culture, but also other teachers who expressed some scepticism about this. All participants are referred to anonymously here using pseudonyms indicative of their role in the school i.e. subject discipline, leadership position, research role (see Fig. 1).

Figure 1: roles of key participants

Head Teacher
Set strategic direction for all teachers to research, facilitated by Research Leads

Ms Deputy
Arranged whole-staff activities to facilitate research

Mr Research
Trained Research Leads according to his understanding of research from the EEF

Ms PE-Research
A teacher of Physical Education (PE) who had been appointed a Research Lead

Ms English-Research
A teacher of English who had been appointed a Research Lead

Dr Science-Research
A teacher of science, with a PhD, who had been appointed a Research Lead

Ms Maths-Lead
Head of Mathematics

Ms Phys-Ed
A teacher of PE

Mr Business
A teacher of Business Studies

A theoretical approach to data analysis (Braun and Clark, 2006) was taken, acknowledging that key themes begin to emerge from the data as soon as the researcher familiarises themselves with the research field and connects these experiences to nascent concepts automatically being constructed in the mind. From the research question on organizational culture impacting teacher-research, and theoretical assumptions around power dynamics affecting a school's organization (Schubert and Röhl, 2017), position in the school emerged as a key theme. Additional latent themes were identified as data collection continued, forming a dynamic conceptual framework that fluctuated during and after the data collection in a reflexive cycle (Robson, 2002). Like Kushner *et al*.'s (2001) study on school-based research, there was further refinement of themes as they crystalized during reflections of experiences in the research field and ongoing theorizing from literature. Three overarching, and connecting, themes were eventually derived from the data to form an overall cultural framework (Watson, 2012). This is presented next and is used to reflect on how the organizational culture influenced the research practices of teachers in a secondary (11-16) school in England.

Findings

Using the themes presented in Table 1 as a cultural framework to structure our findings, we begin by outlining the intended research culture encountered in the school, detailing the influence of organizational structures, to set the scene. Once paragons of this intended research culture have been presented, the case study pivots to the other research approaches encountered via this ethnographic study.

Table 1: cultural framework derived from data

Theme	Sourced from…

Leadership influencing…	Fieldnotes of observations from teacher training day at start of school year.
…a research culture of controlled trials…	Fieldnotes of observations of Research Lead training sessions, voluntary research fora, and a voluntary journal club. Interviews with Research Leads and other teachers.
…problematized by teachers trialling other forms of research.	Fieldnotes of observations from research meetings after school and a research conference hosted by the school. Interviews with teachers.

The leadership of teacher-research

According to the head teacher's speech to staff at the beginning of the school year captured in fieldnotes, the objective of mandating that all teaching staff engage in their own educational research stemmed from a desire to isolate the 'most effective pedagogy' so that this could be rolled out across the school to improve practice. To enable research in the school, middle leaders had been appointed as Research Leads, trained by a senior leader with specific responsibility for research, named Mr Research here. Despite having no formal qualifications in research methodology, and by his own admission 'hadn't looked into research before', Mr Research trained Research Leads to facilitate the research of all teaching staff, who were required to trial a teaching intervention as part of their performance management process. Optional research engagement activities were also offered to teachers, namely a journal club where teachers could discuss published research outputs, and a research forum where teachers could present the preliminary findings of their own research.

To aid the trials, pupils in Years 7 and 8 (the first two years of secondary school in England, serving 11-13 year-old children) had been allocated to classes to form what was referred to as 'parallel classes' so that an intervention could be trialled with one class and be compared with a similar class acting as a control group. For example, there would be two higher attaining classes, each with the same number of pupils with English as an Additional Language (EAL), Special Educational Needs and Disabilities (SEND), recipients of the Pupil Premium fund (as a proxy for economic disadvantage) etc. It was said by a Research Lead, here known as Ms English-Research, that this 'wouldn't be appropriate for Key Stage 4', which usually covers the final two years of secondary school in England, when high-stake examinations are being prepared for. Whilst the research approach was commonly referred to in the school as a randomized controlled trial (RCT), the contrived sampling, described by Mr Research as 'good old-fashioned equipoise', rather than random sampling of participants, calls its 'randomized' nature into question, and will here be referred to as a 'controlled trial'.

In Research Lead training, Mr Research was noted as defining research in a positivist way: 'turning uncertainty into an answerable question', providing the formula 'if I do A there is a B% chance that, on average, C will happen'. For him, C meant progress in learning evidenced by higher attainment in tests. Teachers were encouraged to trial an intervention with one class, baselining their starting points alongside their parallel class, which acted as a control group doing 'business as usual'. At the end of the intervention, both classes would complete another test, with these data being inputted into a Microsoft Excel template to measure the effect of the intervention on the 'test' group in comparison to the control group.

Another senior leader, Ms Deputy, shared in interview with the lead author that she was proud that research projects were replacing top-down programs of CPD as they empowered individual staff to

work on an element of their practice that was more pertinent to them, which Ms English-Research was heard describing as a 'bugbear'. Teachers did not have complete freedom to choose their research focus, though, as it had to be aligned with their particular subject area's priorities as stated in departmental action plans. Each member of the respective departments trialled an intervention that was thought to address an element of the plan and was required to research the impact of such an intervention. The common research topics from each department were then collated to create inter-departmental 'Hubs' covering these broad areas. Each Hub met after school on predetermined dates to discuss key milestones in the research process throughout the school year, facilitated by a dedicated Research Lead.

At the beginning of the school year, the head teacher explained in a briefing to all teaching staff that line managers would be scrutinising the attainment of pupils as an outcome of the intervention being trialled. Reassurances were made that the outcome of an intervention might not always be 'positive' in that the intended outcome of the intervention might not be achieved. Ms Deputy explained that in this case, teachers should write up an explanation as to why the intervention had not worked as planned. In an interview, Mr Business, expressed his appreciation that the appraisal system would not penalise teachers whose trials appeared to be unsuccessful as the focus was on reflection and not a 'blame culture', as he quoted. Not all teachers were as positive as Mr Business, with one teacher at a Hub meeting proclaiming 'my research has failed' because the intervention group had not been more successful than the control group. Observing this interaction, it appeared that they wanted to provoke a discussion on the worth of teacher-research in favour of other forms of professional development. Although they were reassured by the Hub lead, Dr Science-Research, that it is important to know what has not worked, it was recorded in fieldnotes that the teacher did not fully engage in the research culture of the school, leaving the meeting to work independently.

Although this intended research culture was not embraced by all, the roles that senior and middle leaders had in the overall structure of the organization meant that experimental research was ultimately privileged, as explored next.

Research culture of controlled trials

Data from fieldnotes revealed that there was an assumption by some teachers that trialling an intervention with a test group and a control group was the only way to research. At a research forum hosted by Ms Deputy for teachers to attend voluntarily before starting their day of teaching, she expressed her view that trials were the only way to research. It was documented in fieldnotes that this belief seemed to be shared by others in the group. This consensus is, perhaps, unsurprising given that those present had voluntarily chosen to attend such a forum in which colleagues shared preliminary findings from their trials. When escorting the lead author out of the school after this particular gathering, Ms Deputy talked about how surprised she was that teachers she knows in other schools do not conduct trials of their own. In a similar vein, Ms PE-Research assumed that the present study in which she was participating took a similar approach to the school's preferred method of research. Fieldnotes captured a conversation in which she asked the lead author 'are we in the control group?', implying a narrow conceptualisation of the forms that research can take.

This focus on controlled trials appeared to stem from Mr Research's push for teachers to use the EEF to source their interventions as well as utilizing their preferred method of controlled trials in evaluating the efficacy of these interventions with their particular classes. He was keen to stress the importance of quantitative data at Research Lead training, stating 'anecdote is not evidence'. His insistence of teacher-researchers having a control group was because 'if there's no comparison, it's

impossible to interpret'. With no qualifications in research methods, it is, perhaps, unsurprising that Mr Research would rely on the EEF for the content of his Research Lead training, clearly influencing other senior and middle leaders in attendance, who then cascaded this preferred methodology to teachers in their Hubs.

When advising Research Leads about where to direct teachers in their Hub, Mr Research said 'of course, the first port of call is the EEF Toolkit'. Interestingly, this was not the case at a journal club attended, where teachers were discussing educational research reported in the press which did not use quantitative data. The dominance of the controlled trial remained, however, with one attendee noted as remarking 'this could be a trial', meaning that they could trial the recommendations of the research output with one class and compare to a 'control' class. Of course, one might trial a new strategy and collect qualitative data on the perceived outcome, as some teacher-researchers did, in what is styled below as counter-cultural to the hegemony of controlled trials.

Counter-cultural use of alternative research methods

Despite teachers being encouraged to use the results from RCTs to inform an intervention, as well as a basis to evaluate them, some teachers were found to be reconciling their own understandings of research with these strictures placed on them by the organization. One teacher interviewed told of how she thought it was important to gather qualitative data to capture how her pupils felt about her intervention, rather than just comparing the attainment data of two classes treated differently, as advocated by senior and middle leaders. Instead of dividing her pupils into a test group and a control group as instructed, the teacher trialled separating the genders in Physical Education (PE) by redistributing pupils from two classes so that they were taught PE in single-gendered lessons to ascertain the impact on 'attitude and behaviour and do they bring their kit in and things like that'. Rather than trialling an intervention with one group, whilst exposing the other to 'business as usual', Ms Phys-Ed adapted her teaching of both classes according to the new gendered make-up of the two groups, based on her professional intuition and experience. She was mandated to analyse quantitative data on attainment, from which she concluded that 'they're actually achieving more in just the boys class than in the [previously] mixed one', but Ms Phys-Ed also captured pupils' thoughts and feelings of the change in their physical education. This additional data collection took the form of written responses to open-ended questions about their experiences, which she shared when interviewed as 'things like "I feel uncomfortable around the boys", "they misbehave"'. Her analysis of these qualitative data and her own experiences of teaching the two classes led her to conclude that it was favoured by both the boys and the girls, who respectively appeared to be more at ease than they were previously. This research approach may be characterized as ethnographic in the sense that this teacher was using qualitative data to theorize what was happening in her classes.

Another teacher, Ms Maths-Lead, presented her 'experiment' (as she called it) at the school's conference, including reflections of her own learning as a teacher. Having a platform to formalize these reflections enabled her to articulate that she believed the trial's success was not a consequence of the curriculum change, but rather a result of the research process itself. She explained how she had modified the curriculum of one class based on her reading of a 'shuffled' curriculum design and compared attainment with the 'business as usual' approach of another class. In line with the school's facilitation of research, the pupils in these two classes had been redistributed so that each group was equal academically, demographically and socio-economically, with one class being taught the usual way i.e. one topic over several weeks, and the other class being taught integrated units of study throughout each week. Ms Maths-Lead talked about

evaluating the test results of these two classes to measure the impact of the new style, but when presenting the outcome of this 'not-so-randomized' controlled trial, it was captured in fieldnotes that she also reported her own observations of the research process to complement the quantitative data. It was these reflections that she presented at the conference, and the audience were observed to be fascinated by these insights which explained the quantitative results in a surprising way.

According to Ms Maths-Lead's presentation, it was the *process* of re-searching the efficacy of the intervention that revealed why the intervention appeared to be successful. The intervention itself, i.e. changing the curriculum so that multiple topics are taught in one week, was deemed to be impractical, therefore not responsible for the desirable learning outcomes. What did make a positive difference, however, was the variety in the class dynamic and the pupils in the 'test' group knowing they were doing something different to their counterparts in the 'control' group and wanting the 'experiment' to succeed. Pupil awareness of being put into parallel groups for the purpose of research was not the intention according to Mr Research's Research Lead training, which poses its own ethical issues. However, Ms Maths-Lead explained how the class clearly knew and became more invested in their learning as a result of being part of the trialling of a novel initiative. Without the qualitative data in the form of Ms Maths-Lead's observations, or re-search, it is easy to see how relying solely upon test results can result in misleading conclusions about the success of an intervention being trialled.

Ultimately, our findings present teacher-researchers who either embraced controlled trials or rejected them in favour of methods that can be identified as ethnographic in nature. However teachers researched, the school's research culture can be seen as conducive to Inquiry as Stance, as discussed next.

Discussion

Although leaders of the school studied did not intend to incorporate Inquiry as Stance into the organization, the research culture established by the school's leadership did embed teacher-research into the professional development of teachers, as Cochran-Smith and Lytle (2009) advocated. Therefore, Inquiry as Stance is used here as a lens with which to view the organization of teacher-research within the school. The research question of 'How does organizational culture influence the teacher-research in a school?' can be answered by discussing both the practicalities offered by school policies, such as time and space to research, as well as the intangible factors of a school's culture that fosters trust and support (Schipper *et al*., 2020). Although teachers were restricted in what and how they inquired, they were afforded the opportunity in the working day to interrogate not just their teaching practice, but also the research practices advocated in the organization. In this way, they may be seen as 're-searching' (Marsden, 2020) their practice, both as teachers and researchers, in the very literal sense of 'looking again' at their teaching and research practices in a more active and involved way. It was not the requirement of teachers to conduct controlled trials that fostered a research culture; rather, it was the organizational facilitation of reflecting systematically on their practice that inadvertently resulted in Inquiry as Stance. This professional reflection is conceptualized here as 're-search', and it is proposed that this process has the potential to be formalized as a form of auto-ethnography.

The organizational culture of foregrounding research in the professional development time allotted to teachers gave teacher-researchers the space to inquire, not only in relation to the research they were mandated to conduct, but also into the nature of this research. What the school's organization of research did, via the Research Hubs, was allow teachers to discuss the details of their research

and receive support from leaders and other colleagues (Shipper *et al*., 2020). Teachers theorizing their practice may be characterized as 're-search', and the process of collaborating with other teachers to co-construct an evolving knowledge base is the essence of Inquiry as Stance. The benefits of teachers engaging in professional dialog with colleagues across different subject areas taught has been noted by Louis and Lee (2016), who also point to trust being essential in a school's culture if organizational learning is to enhance practice. Wall and Hall (2017) identified three necessities of teacher-research: autonomy, disturbance and dialog. In this ethnographic study, organizational structures allowed disturbance and dialog through the establishment of inter-departmental Hubs where teachers were empowered to adapt an aspect of their practice and discuss their progress with colleagues. There was, however, limited agency in how they did this as they were confined to the boundaries of the appraisal system. These parameters were set by school leadership, both in the research method that was required as well as the research focus dictated by the improvement plan constructed by each head of department. Nonetheless, teachers still found ways of deviating from the dominant research culture.

Senior and middle leaders in the school studied mostly privileged a variation of the RCT in what Higgins (2016, p.233) would call 'methodolatry', but others introduced alternative methods, which the organizational culture enabled, even if it did not actively encourage this counter-culture. One teacher found more useful data in the observations she made of the class dynamics in the 'test' group of her controlled trial. The very process of researching using a controlled trial meant that both classes were more diverse, and it was this, coupled with the performativity of the pupils who knew they were involved in a novel experiment, that made the difference. Cochran-Smith and Lytle (2009, p,149) would extol this inquiry as 'both method and outcome' in that the research process itself, not the intervention being trialled, produced positive results because the pupils felt special in being researched by their teacher. It is not a particular research method that should be advanced, therefore, but the notion of inquiry as a stance, or teacher-research as a standard course of action, in the school's organization.

Despite all teachers at the school being required to conduct their own controlled trials to produce quantitative data that are easily measurable for the staff appraisal process, some teachers rejected this 'effectivity' (Biesta, 2007, p.6) as not truly revealing the efficacy of their intervention. Cochran-Smith and Lytle (2009) warn that when assessment data are privileged as a means of enquiring about classroom practice, the causation of higher attainment is often misleading. Some teachers supplemented their controlled trials with qualitative data (Koutsouris and Norwich, 2018) from pupils and their own reflections, and the school's research conference provided a platform for teacher-researchers to share these more meaningful data (Simons, 2004) to their fellow teachers. Inquiry as Stance necessitates this deeper understanding of how young people learn, from the perspective of teachers who may 're-search' by reflecting deeply on their practice. It is easy to see how introducing 'systematicity and intentionality' (Cochran-Smith and Lytle, 2009, p.44) could formalize these reflections into auto-ethnography, and there is clearly potential and the appetite for teachers to research in this way, perhaps with help from researchers skilled in this methodology.

Conclusion

This case study presents just one school's approach to fulfilling the DfE's agenda for education to be informed by evidence, but raises important questions about how this evidence is generated. It is no surprise that the teacher-research practices used a variation of an RCT, not for any strategic reason such as funding requirements, but to align with positivist discourse perpetuated by government.

Returning to the research question on how organizational culture influences teacher-research, it can be seen that the privileging of RCTs filtered down into the research culture of the school, but did not preclude teachers utilizing other methods as the research culture fostered a sense of curiosity to experiment, both with their teaching practice and with their research. Having a form of Inquiry as Stance (Cochran-Smith and Lytle, 2009) in the school enabled teachers to realize organically through trial-and-error the value of qualitative data because they were gifted the resource and the trust to develop as inquirers.

The alternative methods that some teachers employed to research may be termed 're-search' (Marsden, 2020) in the sense that they were systematically 'looking again' at their practice to theorise. There are implications here for both school leaders seeking to embed Inquiry as Stance in their schools, and researchers with a particular interest in co-constructing knowledge with teachers (Cochran-Smith, 2016). Rather than manipulating classes of pupils into control and test groups for teachers to trial an intervention, teachers may be facilitated to 're-search' as part of their professional development. This practitioner-led 're-search' may be formalized into auto-ethnography, with the practicalities of such rich data collection being aided by academic partnerships (Passy *et al.*, 2018). In this way, teacher-researchers may avoid 'trial by ordeal' (McIntyre, 1997, p.10) in the dual sense of using, and being troubled by the use of, trials in education.

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