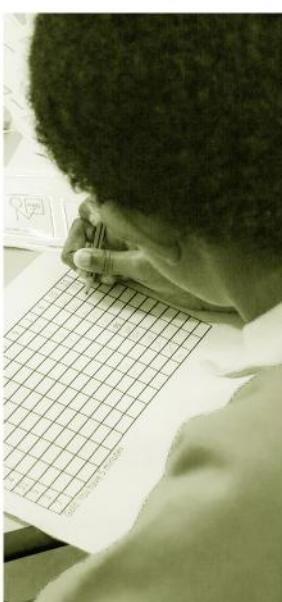


# Research at The Bridge London Trust

## Part Three



**"If research use in schools is to have any chance of becoming a reality, it must be something that school leaders actively believe in.**

**In particular, school leaders need actively to promote their vision for research use within their school, while simultaneously encouraging, facilitating and supporting their teachers to develop and adopt research-informed practices."**

(Brown, 2017 p.387)

## Introduction

Research has long been viewed as a core part of what we do at The Bridge. The designation of the school as a Teaching School Alliance (TSA) further cemented that commitment to research and development (R&D). Recently the main focus for TSAs is in three (as opposed to the original 'big six') areas: school-led initial teacher training; continuing professional development and identifying and developing leadership potential and supporting other schools (National College for Teaching and Leadership, 2017). However, the assumption is that research will still be embedded within these three areas, as the head of the teaching schools council noted "research should never have been one of the six [original priorities]. Rather it must be an integral part of all we do" (Warren, 2017, p.1). The call for research to be integral to all that a TSA does is welcome as a review of the role of R&D in teaching school alliances (TSAs) found that it was often viewed as the least important of the original big six areas of priority (Walker, 2017). Where it was a priority, schools were often found to prioritise the production of evidence-informed outputs over the more fundamental need to develop their staff's research skills (Walker, 2017).

The development of staff's research literacy is a central focus at The Bridge and forms part of the school's adult curriculum. It also reflects the national and international move towards ensuring teaching staff are more research literate (Cain, 2015; Greany, 2015; Hammersley-Fletcher and Lewin, 2015). A meaningful move to developing a research culture recognises that research "needs to be planted in 'fertile ground' if it is to take root and grow" (Nelson & Campbell, 2017, p.127). Indeed, the national survey of newly-qualified teachers requires them to evaluate how well their training has prepared them, "to access educational research ... to assess the robustness of educational research [and] ... to understand and apply the findings from educational research" (Gov.uk 2014). The 'Carter Review' of Initial Teacher Training (2015) also refers to the need for teachers to understand, "how to access, interpret and use research to inform classroom practice" (p. 8). Research literacy is increasingly recognised as a skill that reinforces other pillars of teacher quality: notably subject knowledge and classroom practice (BERA, 2014). It is a key dimension of teachers' professional identity.

It is important to clarify how teaching should be described and understood, and how we view teaching as a profession at The Bridge, as what can be expected of research to contribute to teaching depends upon this conceptualisation of both teaching and research (Cain, 2015). Views of teaching have often been split between teacher as *artisan* or teacher as *technician* (Leat, Ried & Lofthouse, 2015; Winch, Orchard and Oancea, 2014). The shift towards increasing teacher engagement with research may have led to the over emphasis upon a technical view of teaching. This coupled with a narrow view of research can lead to an expectation that research should have a direct, immediate and simple impact on practice. This fails to appreciate the more complex relationship between research and practice and the multitude of ways it can have an impact. So whilst, as Cain (2015) notes in their enthusiasm for randomized control trials (RCTs), policymakers in England appear to hold a narrow-technical view of teaching and research, at The Bridge we call for the (re)acknowledgement of the teacher as a professional. This view recognises both the artisanal and technical conceptualisations of teaching and more. It positions three areas of knowledge – practical, technical and theoretical – as equally important for the professional teacher (Winch, Orchard and Oancea, 2014). Importantly this view also recognises the vital role that research plays in relation to all three of these areas of knowledge. Sustained engagement in or with research can both inform and enhance teachers' technical knowledge about particular strategies, as well as encouraging the rich reflection that is crucial for meaningful, practical deliberation and sound professional judgment (BERA, 2014; Winch, Orchard and Oancea, 2014). Indeed, one of the crucial benefits of greater engagement with research is allowing for, and building capacity for, critical reflection – interrogating your practice, based not only on personal experience but the wider research evidence (BERA, 2014; Winch, Orchard and Oancea, 2014). Sustained engagement with and in research, therefore, leads to better teaching, better teaching professionals and better support for pupils. In addition, the evidence shows that professional capacity is significantly enhanced where there is an overall design that shapes, defines and informs efforts to improve (Lieberman et al., 2016; Harris and Jones, 2013) which is why there is a clear research strategy that underpins all of our research activity.

## Supporting better teaching professionals and practice

The capacity for research to improve teaching has long been established. Hensen (1996), as Hine (2013) emphasised more recently, noted that engaging with research:

1. Helps teachers develop new knowledge directly related to their classrooms,
2. Promotes reflective teaching and thinking,
3. Expands teachers' pedagogical repertoire,
4. Puts teachers in charge of their craft,
5. Reinforces the link between practice and student achievement,
6. Fosters an openness toward new ideas and learning new things, and
7. Gives teachers ownership of effective practices (hensen, 1996; hine, 2013).

It is important to note the positive impact that research can have in less immediately tangible ways, points 2, 4, 6 and 7 made by Hensen (1996) above.

An examination of a programme to support the professional development of teachers in the US, also noted the impact research engagement had on increasing professionalism and morale of teaching staff. McLaughlin, Black-Hawkins and McIntyre (2004) report that:

- (a) It resulted in a renewed feeling of pride and excitement about teaching and in a revitalised sense of oneself as a teacher.
- (b) It reminded teachers of their intellectual capability and the importance of that capability to their professional lives.
- (c) It allowed teachers to see that the work that they do in school matters.
- (d) It reconnected many of the teachers to their colleagues and to their initial commitments to teach.
- (e) It encouraged teachers to develop an expanded sense of what teachers can and ought to do.
- (f) It restored in teachers a sense of professionalism and power in the sense of having a voice (Leat, Lofthouse & Reid, 2014; McLaughlin, Black-Hawkins & McIntyre, 2004).

The impact of the restoration of **pride, passion** and **professionalism**, working collaboratively, in **partnership**, whilst difficult to capture can be seen, by proxy, in greater **positivity**, morale, self-efficacy and engagement of staff and concomitant benefits for students (Hine, 2013; Johnson, 2012; Leat, Ried & Lofthouse, 2015; Stringer, 2008).

These benefits reiterate the importance of allowing time for teachers to engage with research and also the importance of developing their research literacy skills, something, as noted by Walker (2017) earlier, many TSAs have failed to do. The narrow conceptualisation of what it means to be research engaged, that was observed by Walker (2017) in many TSAs, overlooks the fact that rather than simply looking to generate evidence of 'best practice' or 'what works', research can influence practice in its ability to provide fuel for debate, including the questioning of 'what works' (Cain, 2016). Thus, while the production of research outputs forms a part of the The Bridge's research priorities, the development of staff's research literacy and critical thinking skills and the opportunity to utilise those skills, reflecting on everyday practice is fundamentally more important. The **adult curriculum, journal club, learning communities and protected, directed time for reflection** are all in place to support this.

## Developing a better school

Research engagement has been shown to be one of the most meaningful and purposeful forms of professional development and, as evidenced earlier, adds to staff motivation over the longer term as well as creating a better, more supportive school ethos (Leat, Ried & Lofthouse, 2015). The space that research provides for critical reflection has been highlighted as particularly beneficial for improving a school's practice, culture and ethos (Judkins, Stacey, McCrone & Inniss, 2014). It has been shown to provide a welcome antidote to restrictive or negative aspects of a working environment. As Medwell & Wray (2014) emphasise citing feedback from a teacher engaged in research:

"I have really contributed to new knowledge. It's made me think about that. How you do that all the time, I suppose, but having this as outside my teaching lessons it has made me think a lot more than I do when I am on the planning and evaluating treadmill." (pg. 72).

Time outside of class enabled staff to avoid stagnating in an unthinking, routine dominated style of working (Medwell & Wray, 2014). Again, in terms of returning agency and professionalism to teachers, by allowing time and opportunity to debate research, consider claims and counter-claims and to voice dissent, research stands as a necessary antidote to mandated policy, both from within the school but also from government (Cain, 2016). It can serve to reinforce the values of a school and reconnect staff to them (Leat, Lofthouse & Reid, 2014; McLaughlin, Black-Hawkins & McIntyre, 2004). As one teacher taking part in an ESRC TLRP project that involved developing teachers research skills (Higgins, et al., 2007) stated:

"a lot of people saw the research project if nothing else acting as a "**conscience for the school**". It is a phrase that I coined but other people bought into it, this idea that *we otherwise bundle along doing stuff and not reflecting on why we are doing it....*" (p. 63 – emphasis added)

The questioning and debating of current practice when framed around research enquiry and critical thinking ensures that potential negative impacts of conflicting viewpoints (dissent) are mitigated (Cain, 2016). If the discussion of conflicting viewpoints, challenging and questioning existing practice, is seen as subjective, potentially motivated by competition and therefore threatening to staff members' egos, staff members are likely to simply blindly and loudly reassert their own existing views. This in turn shuts down the possibility of learning from others (Cain, 2016). However, in an enquiry based ethos, where research engagement, critical thinking and reflection is part of the fabric of the school, dissent is viewed as a positive and indeed vital vehicle for progress, not misunderstood as personal criticism. Dissent in the context of socio-cognitive conflict theory is a positive force for change (Butera & Darnon, 2010). In this context, and that in which it is encouraged through engagement with research, it relates to the promotion of learning and development. As Cain (2016) clarifies, learning is generated by social interaction with others who have different training, experience, knowledge and opinions. This constructive interaction then leads to a realisation that 'a different point of view than one's own is possible'. This in turn enables staff to reconsider their own opinions and to integrate the ideas of others and develop a deeper understanding of their practice, values and the values of the school (Butera et al. 2011; Cain, 2016). Earl & Timperley (2009) clearly explain the benefits for critical reflection and discussion of conflicting perspectives for teachers:

"The engagement of competing theories and the evidence underpinning them requires the participants in a conversation to reveal what they believe and why. They must explain their views and why their perspective is preferable to those of others, and also to be open to challenge and critique ... Through the process of explaining these theories to others who hold different views, what is known is made more explicit together with the values, beliefs and evidence that underpin them." (pp. 2-3)

Dissent, therefore, is crucial to stimulating the consideration of new ideas and encouraging creativity (Cain, 2016; Nemeth & Goncalo 2011), avoiding the stagnation of the day to day, routine treadmill of unexamined school practice noted above. Research can provide a 'safe' space in which staff can feel comfortable and confident to question practice - their own, that of others in the school and the wider research. When staff feel confident in allowing their own practice to be questioned (by themselves and others) and to expose perceived vulnerabilities they are going to be better equipped to identify and voice problems (and therefore begin to address them), seek support and feedback, innovate, and develop partnerships with others (Bryk & Schneider, 2002; Edmondson, 2004; Moolenaar & Sleegers, 2010). Without the space and time in which to engage in dialogue and discussion, to examine disagreements, teachers' can only engage in a superficial examination of evidence that, whilst paying lip service to an ideal of a research engaged school, leads to few benefits for the school or tangible change for the better (Little & Curry 2009). This will not be the case at The Bridge where collaborative, constructive discussion will be facilitated through **journal clubs, learning communities, protected, directed time for reflection and in research focused leadership meetings** underpinned by an **adult curriculum** that increases research literacy. All of which forms an overarching strategy to ensure that becoming more research engaged will lead to meaningful change, notably in terms of whole school improvement. Schools that have taken a strategic and concerted approach towards becoming more research engaged have reported a shift from superficial school improvement to the development of a learning culture in which staff

work together to understand what appears to work, when and why (Handscomb and MacBeath 2003; Godfrey 2016; Greany 2015; Sharp, Eames, Saunders, and Tomlinson 2006).

## Delivering on school improvement

The importance of social relations, which in turn develop social capital<sup>1</sup>, to the ultimate outcome of any attempts at self-improvement is widely accepted (Brown, Daly & Liou, 2016; Spillane, 2015). Furthermore, there is an established relationship between a school's social capital and wider school performance including: implementation of school improvement; teacher commitment; parental satisfaction and pupil achievement (Penuel et al., 2010; Penuel, Riel, Krause, & Frank, 2009; Supovitz, Sirinides, & May, 2010). However, this research evidence has not yet translated to an understanding that the development of these relationships should be a central focus for school improvement with many schools still focussed simply on developing individual staff capital (Spillane, 2015). Whilst it is acknowledged that developing individual staff members' capital (i.e. knowledge and skill) is important, indeed this is a focus for the **adult curriculum**, we recognise that social capital is a further way to grow individual capital (Frank, Zhao, Penuel, Ellefson & Porter, 2011; Zhao & Frank, 2003). Providing time and space at The Bridge for research engagement will allow for greater collaboration and partnerships, the development of social capital. This is not only within class teams, school teams or across the MAT but also with other schools and universities. The development of these wider links will be discussed further below.

In the shorter term, however, the greater collaboration brought about through research engagement within the MAT will serve to develop social relations that in turn can increase and solidify *trust*, not only within peer groups but also in senior leadership teams (Leat, Reid & Lofthouse, 2015). There is a clear association between social capital and trust within a school (Bryk & Schneider, 2002). In addition a school that supports and engages in research use is also associated with a greater sense of trust - particularly a school that provides the space and time to discuss and reflect together and critically discuss practice by engaging with research (Brown, Daly & Liou, 2016). This also results in a positive impact upon pupils, as where social relations are imbued with high levels of trust, they are likely to improve outcomes for pupils (Bryk and Schneider, 2002; Mintrop, 2004; Mintrop and Trujillo, 2007). Furthermore, Finnigan and Daly (2012) argue that relations that are underpinned by trust can reduce some of the key barriers to self-improvement. So, rather than respond to any barriers to improvement by playing safe and sticking to a narrow range of "tried and tested" methods, in high-trust schools, individuals feel supported to engage in risk taking and innovative behaviours associated with efforts at developing or trialling effective practice in a "safe" learning environment (Brown, Daly & Liou, 2016; Bryk and Schneider, 2002; Mintrop, 2004; Stoll et al., 2006; Mintrop and Trujillo, 2007).

Research engagement is also key to the development of an ethos that embraces innovation and questioning. Though, once again, the focus for research should not be dictated by a performativity culture that values evidence-based output above all else (published articles, for example) but to also recognise the value of research in fostering a questioning mentality. Jones and Stanley (2010) caution that research can become enmeshed within a national agenda of raising standards through school improvement whereby the critical perspective that research brings is secondary to the value of the superficial marketing of the enterprise of research engagement – a school predominantly concerned with wearing a shiny 'evidence-based' badge. This reflects wider criticisms of the output focussed view of the value of research in schools. Elliott (2012) has argued that research in school has moved away from the concept of teacher as critical, reflective thinker where nothing is taken for granted but evaluated through systematic enquiry to instead becoming a captive of outcomes based education. Teaching then simply becomes focused on finding ways of being more effective in delivering predetermined knowledge outcomes (Cain, 2015). So whilst research can, and indeed must, play a crucial role in school improvement and effectiveness approaches, it must not be at the expense of the development and predominance of critical autonomy (a questioning mentality) for all practitioners within that school and by extension teaching as a profession.

Indeed, to solely focus on improvement through measurable, evidence-based output can negatively impact on staff morale due to an implicit high stakes intensification of focus on output (the product as opposed to the importance of the process), and make a school a less attractive place to work (Finnigan & Daly, 2012). This can then result in a negative, cyclical process whereby a negative atmosphere results in an increase in staff turnover and teachers do not, therefore, have enough time together to develop a trusting culture (Brown, Daly & Liou, 2016). As a result, within these schools, there will be diminished levels of collaboration and professional interchange and exchange (Finnigan & Daly, 2012) and therefore less innovation or development and promotion of good practice.

<sup>1</sup> "Social capital captures the idea that capability (and by extension productivity) is not simply an individual matter but also a *social* matter. In other words, in addition to individual capability, there are (often untapped) resources that reside in the relations among people within organizations" (Spillane, 2015)

## The 5 Ps – Partnership, Positivity, Professionalism, Pride, Passion

The introductory rationale above has made clear throughout how increased engagement with research not only promotes passion, part of the central ethos of The Bridge, encapsulated by the ‘5 Ps’, but is in fact fundamental to these five values. Brighouse (2008) notes, when exploring the relationship between passion and outstanding success in schools, that:

“Passionate schools might best be described as places where the critical mass of the school community enjoys a shared passion for learning in whatever sphere of activity motivates them plus a determination to excel both against their own previous personal best and be benchmarked against the highest standards of excellence from time to time. Moreover, they live and work in a community where they come together in teams or groups engaged in a shared activity in a passionate quest for collective excellence. Each member of the school community shows evident enjoyment in the prowess of other members and while there is competition among peers, it’s a competitive edge that is tempered by the knowledge that they belong to a community which enjoys a magic of achievement shared by almost all.” (Brighouse, 2008 p.14)

Engaging staff in the enjoyment of learning and professional development that draws on shared personal experiences and research evidence will therefore lead to more **passionate** schools that foster **pride, positivity, professionalism** and **partnership**. Partnership with communities outside the MAT will be central to the longer term development plans for research at The Bridge. A range of partnerships, including with university based researchers, will also be developed in response to a wider need to bridge the research to practice gap that exists particularly within autism education (Guldberg, 2017; Kasari & Smith, 2013; Kratochwill, 2007; Parsons et al., 2013; Pellicano, Dinsmore, & Charman, 2013; Stephenson, Carter, & Kemp, 2012). Increased partnerships and communication between teachers and university based researchers will allow for more open discussions about the value of research evidence and how it should be interpreted, this in turn can increase trust and collaboration between these two groups (Carrington et al., 2016; Milton, 2014, Parsons et al., 2013). Greater involvement from the bottom-up, information flowing from practitioners to university based researchers (as opposed to the typical top- down model), will also lead to research being seen to have greater social validity, i.e. research being in line with the needs of practitioners, parents and any other individuals it is aimed at benefitting. This lack of social, or more broadly external, validation has not only been posited as a major reason for a persistent research to practice gap in autism research (Callahan et al., 2008) but also in research in education more generally (Boardman, Arguelles, Vaughn, Hughes, & Klingner, 2005; Dagenais et al. 2012; Hudson et al., 2016; Jones, 2009).

## Meaningful Research/Bridging the gap

"Knowledge transfer from researchers to the classroom has shown little impact on improving educational outcomes for children" (BERA-RSA, 2014, p. 8)

"a considerable research-to-practice gap exists in special education that has inhibited the outcomes of students" (Cook, Tankersley & Landrum, 2016, p.10)

"there remains a substantial gap between research and practice in autism education" (Guldberg, Parsons, Porayska-Pomsta & Keay-Bright, 2017, p.395)

In order to address the research-to-practice/practice-to-research gap it is crucial that research examines issues that are relevant to practitioners, children and young people and their families. As such the research agenda must be driven from the 'bottom-up'. One of the criticisms of evidence-based practice in education is that it is not relevant to, or applicable in, everyday practice. Practitioners have reported that they view the development and dissemination of evidence-based practice as a 'top-down' process in which evidence is derived from studies that may be rigorous and internally valid but fail to reflect the unique, messy and complex contexts in which they actually teach (Boardman, Arguelles, Vaughn, Hughes, & Klingner, 2005; Hudson et al., 2016; Jones, 2009). As such, educational research is viewed by teachers as "not practical, contextual, credible, or accessible" (Gore & Gitlin 2004, p.38). The lack of involvement of the community the research is intended to benefit further perpetuates the presupposition of irrelevance. Levin (2013) notes that it is not just in education but that "practitioners in every field give greater weight to the views of their colleagues and their interpretations of their own experience than they do to research evidence" (Levin 2013, p. 12). Teachers value evidence from other teachers *in the trenches* working in classrooms with students similar to their own (Boardman et al., 2005; Landrum, Cook, Tankersley, & Fitzgerald, 2002; 2007). Specific work in the area of autism has also emphasized practitioners' priorities for accessing practitioner-oriented methods in the area of intervention (Reichow et al., 2008). However, tokenistic involvement of teaching professionals, pupils and their families in research will not lead to a significant bridging of the research to practice gap. Research must be driven by practitioners, pupils and their families to ensure that it is connected in a meaningful way with the specific realities of practice - "the real, messy, complicated world" (Swisher, 2010, p. 4) - and therefore is considered more relevant and meaningful (Simons, Kushner, Jones, & James, 2003). Practitioners are not simply empty vessels, waiting to be filled with research evidence that will then translate into implementation of evidence-based practice, it must be meaningful (Green, 2008).

*Education is a dynamic, complex, messy process - we must not fall into the trap of seeking to understand only those components that can easily be quantified.*

To produce more meaningful research and reduce the research to practice gap there must be a significant change in the way in which research in education is carried out - practice must always be put first. To do so the methods used must be the best fit for the topic being examined. Education, as a context, is distinctive for its messiness. Traditional empirical approaches look to ascertain the signal from the noise when collecting data. Such designs often deliberately strip away the contexts of unpredictable elements to remove any potential biases trying to control confounding variables, turning the volume down on the noise to better isolate causal factors. This mutes the ability to meaningfully capture and understand what happens in real practice, or to therefore arrive at practical real-world solutions (Guldberg et al., 2013). In education the signal is meaningless when divorced from the noise. The signal is the noise. Complexity cannot be tamed without loss of meaning. Learning in a classroom is, for example, influenced by a child's individual psychology, which in turn will be influenced by their life outside of the classroom, their upbringing and familial relationships, their social interactions (with staff and peers) within the classroom, the pedagogy and actions of the teacher and support staff as well as wider structures outside of the classroom – social inequalities, curriculum and policy frameworks, political agendas etc. Not only will all of these factors have an influence in and of themselves but they will also interact with one another in myriad ways, potentially leading to further combined factors that bring their own influences depending on the combinations at play (Jay, Rose & Milligan, 2017). Trying to isolate a single factor or a single interaction between two factors in a large scale study that seeks to provide a clear description of 'what works' presents a significant methodological challenge. The sheer numbers required to randomise out the noise of the multitude of baseline variables, and their interactions, that could impact on findings (most of which would be unknown) is prohibitively costly and may also preclude research looking at better supporting smaller subpopulations of children and young people or schools, specifically pupils with complex needs. Research in education should focus as much on how things work and their relationship with the working context as on 'what works' (CUREE 2011).

Despite these concerns the prevailing orthodoxy in education has not sought to explicitly advocate research methods that are, above all else, fit for purpose (be it RCTs or single case studies). Instead there is an unimaginative clinging to straws designed and refined for drinking less didactic liquids. It has been noted that more generally "in both policy and practice, although a variety of sources are used, there is a tendency to rely on that which is well known rather than, necessarily, appropriate to task."(Nelson & Campbell,

2017 p.129). Well-meaning advocates of greater research use in education have pointed to the rigour of research in other professions as potentially providing a template for research in education. Notably the use of RCTs, often referred to as the gold standard, in research in medicine (Goldacre, 2013a, 2013b; Prenzel, 2009; Slavin, 2002; 2008). Medical research is often hailed as a field for education to emulate (Bryk 2015; Slavin 2002). However, research in medicine could be seen to have grown from a conceptualisation of science more broadly based upon hard sciences such as biology, physics and chemistry (Odom et al., 2005). Education is not a hard science but, as noted by Berliner (2002), it is instead the ‘hardest-to-do-science’ due to the knotted complexity of the conditions and people being examined.

Odom and colleagues (Odom et al., 2005) go on to further state that research in special education is the hardest ‘hardest-to-do-science’ due to the additional layer of complexity brought about by the unique profiles of pupils in special education. The heterogeneity of pupils in special education renders the use of research designs that require the establishment of equivalent groups (so that one or more may serve as a control) exceptionally difficult to the point of potentially being meaningless, even where, on exceptionally rare occasions, ethical considerations (regarding allocation to ‘non-treatment’ or delayed ‘treatment’ groups) permit randomisation and stratification. Certain cohorts of pupils are small, perhaps due to small prevalence rates of particular needs or combination of needs and as such recruiting a sample large enough to build meaningful power into any subsequent analysis is not feasible (Odom et al., 2005). Indeed, as noted by Costley and colleagues “there is no definitive sample size within the refereed [autism] educational literature that is considered to have statistical power as variability of the student’s educational requirements needs different research methodologies to evaluate efficacy” (Costley, Clark, & Bruck, 2014, p.8). However, the rhetoric around the use of RCTs goes beyond a plea to merely add RCTs to the methodological toolkit. If RCTs continue to be deemed to be the ‘gold standard’ of educational research and funding is explicitly, or implicitly, prioritised for such studies, pupils in special education may find themselves discriminated against by the same rigid, blind application of a proscribed orthodoxy that inhibits their inclusion in many mainstream school settings.

“the condition of being a student is quite different from that of being a patient — being a student is not an illness, just as teaching is not a cure” (Biesta, 2007, p.8)

There is a long standing and ongoing argument around the positioning of RCTs as being the ‘gold standard’ for research in education with this being debated from a philosophical and ethical (Biesta, 2007; Carr, 1992; Hammersley, 2005; Marchal et al. 2013) as well as methodological standpoint (Bryk, Gomez, Grunow & LeMahieu, 2015; Gopal & Schorr, 2016; Pogrow, 2017). Aside from the specifics of such debates many supporters of the use of RCTs in education nevertheless highlight that they should not be seen as a ‘panacea’ (Sharples, 2013). It is widely accepted that, like any other methodology, it has its weaknesses, such as clarifying the impact of specific variables within interventions applied to complex situations (Jüni, Altman & Egger, 2001; Rothwell, 2005; Weiss, Koepsell & Psaty, 2008). However, despite long cited reservations regarding the deference to RCTs as the ‘gold standard’ in medical research including the fact they may be unsuitable or even implausible for some complex interventions (Craig et al. 2008), the method continues to be positioned as the apex of a reified methodological hierarchy. More specifically, within education, a recent review of RCTs looking at mathematics interventions in US schools noted that “...none of the RCT’s provides useful information for consumers wishing to make informed judgments about what mathematics curriculum to purchase” (Ginsburg & Smith, 2016 p. 44). The UK Government in 2013 proclaimed that they would be “Championing a move to more quantitative analysis with greater numbers of randomised controlled trials in schools”

([https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/193910/00047-2013PDF-EN-03.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193910/00047-2013PDF-EN-03.pdf)).

Unfortunately this hierarchical positioning of knowledge, is further endorsed by the biggest funding body for research in education in the UK, the Education Endowment Foundation (EEF) who state that they “remain convinced that RCTs provide the best way of producing useful results for schools” (<https://educationendowmentfoundation.org.uk/news/do-eef-trials-meet-the-new-gold-standard/>) and in their own evaluation tool for schools note that alternatives to RCTs are “a much weaker option” to consider in your research design. The move to funding more research in education, to be carried out by practitioners, was good in principle there was an explicit aim to having those in education not being dictated to by central government mandates. The irony, therefore, rests in the fact that in seeking to empower and enable schools to develop good practice through research, liberating them from being dictated to by a centralised body, the Government have created a central funding body (EEF) that is still mandating good practice<sup>2</sup>. Whilst the EEF have recently looked to provide clearer detail around the efficacy of the trials they have evaluated, the “inappropriate certainty [which] can be a barrier to progress” (Goldacre 2013, p. 12) that was cited as a reason why more RCTs

<sup>2</sup> The EEF reported in 2016 that 83% (n=100) of the evaluations they had commissioned were RCTs (<https://educationendowmentfoundation.org.uk/news/do-eef-trials-meet-the-new-gold-standard/>).

should be used in education can also be applied back to the privileged position that RCTs have now been raised to in research in education.

RCTs should be recognised as forming part of a researcher's toolkit rather than being the researcher's toolkit. RCTs typically have high internal validity due to the random allocation of participants to intervention groups, minimizing indication bias and confounding, as well as reducing potential biased reporting of endpoints. RCTs also often use inclusion and exclusion criteria<sup>3</sup> that seek to further minimise the effect of confounding factors - such as specific cognitive differences. However, this limits the generalisability of results to a wider population, something that is often not stressed behind the 'what works' obsession. Indeed, the majority of evidence-based autism practices have been typically examined on younger children, who due to exclusion criteria and self-selection often have greater familial resources and less heterogeneity than those children typically supported in real world settings, by real teachers (Lord et al. 2005). This means there is often less evidence around effective support for older children or those from families with fewer financial resources or greater ethnic heterogeneity (Dingfelder & Mandell, 2011).

The main benefit of an RCT is to try to make a judgement on the efficacy of an intervention where the extent of the contribution of a variety of other potentially confounding circumstantial factors are unknown. As such control of these factors is sought through random selection in the research design. However, in order to extrapolate from positive outcomes in an RCT (or even a set of RCTs) to the idea that some intervention will work in a different setting or in general presupposes that the intervention protocol builds in all the relevant circumstantial factors that will be necessary for it to succeed (Cartwright & Hardie, 2012). This in turn assumes that we have a level of knowledge about the circumstantial factors, relative to the setting in which the trial 'worked', that the use of an RCT implies we did not in fact have (Cartwright, Cowen, Virk & Mascarenhas-Keyes, 2015). Therefore, the simple fact that an RCT was deemed the most appropriate method implies that knowledge of how to generalise to different circumstances and settings is likely to be absent. The specifics of why something might work for a specific group is often unclear and potentially masks the fact that educational interventions should always be appropriately tailored for individual needs (Simpson et al., 2007; Parsons et al., 2009), they are contextually bound.

RCTs do have an important role in education research - the closure and control (internal validity) of RCTs means they can provide an indication of efficacy (relating to performance under controlled, specific circumstances). What needs to be acknowledged more explicitly, however, is that they are often far less able to demonstrate effectiveness (relating to performance under ordinary circumstances). Lohr et al. (1998) made the distinction between 'efficacy' and 'effectiveness' research, the former being the main concern of medical researchers, and the latter being what real world practitioners are most interested in. They noted that efficacy was concerned with examining the extent to which individuals (in clearly defined populations) benefitted from an intervention under ideal or optimal circumstances; this is where RCTs typically operate.

Effectiveness, by contrast, requires that an intervention, in ordinary or average settings and circumstances, do more good than harm for a typical person from that setting. Lohr et al. (1998), foreshadowing current concerns around the overemphasis on efficacy, concluded that a myopic definition of scientific truth on being represented by efficacy oriented leaves a large gap between what is known from trials and how that knowledge holds up in the context of the real world. The burden of bridging this gap is more often than not then left to practitioners. So whilst the demonstration of efficacy is an important component of evaluation, it does not provide a complete picture and it must be recognised that it is not sufficient in and of itself. We also need to understand effectiveness. There is, therefore, a need for multiple methodologies that can address how to apply knowledge (Porter, McConnell & Reid, 2017). As Thomas notes in discussing social science more broadly "there can be no specific, superior type of question...laying out of hierarchies of better and worse kinds of research. We should, cherish, not disown, methodological pluralism" (Thomas, 2017, p. 258).

Furthermore, the promotion of RCTs as the apex of research in education, aside from being unhelpful (Sharples, 2013), perpetuates assumptions about what methods of production of knowledge are deemed more valuable (Jay et al., 2017), leading to imbalance in the power relations between university based practitioners and school based practitioners. In health there have been concerns regarding methodological hierarchies and an imbalance of power with Holmes et al. (2006) noting "the evidence based movement... is outrageously exclusionary and dangerously normative with regards to scientific knowledge" (p.183). In education it can reinforce

<sup>3</sup> Aside from the regular exclusion of special schools and alternative provisions from RCTs in education a selection of examples of other exclusion criteria from various EEF funded RCTs include: schools with only one form entry; pupils who had not met age-related expectations in literacy at the end of Key Stage 1; schools that have ability setting for Yr5 pupils; schools with two form entry; schools with fewer than 15% of pupils receiving free school meals; pupils with a 'high level' of special needs; schools from outside Greater Manchester

a similarly reified hierarchy of producers of educational knowledge which holds university based researchers at the apex (indeed, the Evaluation Panel for the EEF contains no schools and the Evaluation Advisory Group does not contain anybody who is currently teaching in a school). Research by school-based educators is often dismissed as small scale, anecdotal or non-replicable (Borg 2010; CUREE 2011; Enthoven and de Bruijn 2010; Wilkins 2012). There is a need to address these stereotypes rather than perpetuate them. We must broaden what is considered evidence to support ‘evidence-based’ practice. Research should be rooted at a practical level (Thomas, 2012), grounded in professional understanding and experience. This does not imply that information gathered through controlled trials is precluded or seen in any way as being inferior but recognises that by broadening the concept of what is considered ‘evidence’ a more balanced and meaningful insight into best practice can be achieved (Guldberg, Parsons, Porayska-Pomsta & Keay-Bright, 2017)

RCTs should not be rejected based upon dogma, however, the same open mindedness must be applied to other research methods. There should also be a greater focus on the testing and refinement of types of support and interventions rather than merely accrediting particular interventions as effective or not - simplistic proclamations of ‘what works’. ‘What works’ should not be seen as sufficient to validate use, there are a variety of other factors that have to be taken into account (Biesta, 2007). Bredo (2006) noted that a narrowing of education research to an experimentation of ‘what works’ could lead to the important consideration of ‘**what matters**’ being overlooked (Nelson & Campbell, 2017). Therefore, rather than simply focussing on asking ‘what works’, at The Bridge we will ensure that our focus is always looking at things that are important for our pupils, their families and our staff, having ‘what matters’ to our community shape our research priorities. We will also utilise a wide range of research methods that ensure that we can ask ‘why?’, ‘where?’ and ‘how?’ (Hanley, Chambers, Haslam, 2016). Whilst we will always look to disseminate work that others can benefit from we will look to focus on situated generalisation, in order to gain a better understanding of “what works for whom in what circumstances” (Carrington et al., 2016). By embracing the plurality of both the methods and individuals that produce research the research to practice gap can be addressed. This would require a much more open mind regarding the value of different types of research and a move from the emphasis on “experimental trials in evidence-based reforms [which] contributes to the research-to-practice gap and disappointing implementation of evidence-based practice by disaffecting many practitioners—the very people depended on to implement evidence-based practice” (Cook & Cook, 2016 p.145). There is a growing recognition of the value that ‘practice-based evidence’ can provide to this end (Bryk, 2015 & Jones, 2009).

## Practice-Based Evidence

“All research, however large-scale, brilliantly conceived, executed and communicated, needs to be actively interpreted by users for their own context.” (Cordingley, 2008, p.7).

“You know, when I see a program, I don’t go, ‘Let me see your research’; I say, ‘Let me talk to your teachers’” (Boardman et al., 2005, p. 176).

Teachers have been found to express “doubts about the usefulness and appropriateness of applying methods that research has shown to be effective” (Jones, 2009, p.110). This was owing to the belief that their own students were essentially unique and that implementing research findings would not work for them because, “the model classrooms alluded to in most research studies exist only in the studies” (Jones, 2009, p. 110). So whilst evidence-based practice published in the research literature may be recognised by teachers as internally valid, it is perceived as failing to reflect the complex and unique contexts and pupils which they teach (Boardman, Arguelles, Vaughn, Hughes, & Klingner, 2005; Cochran-Smith & Lytle 1999; Hudson et al., 2016; Jones, 2009). The research-practice gap in the autism literature reflects this perception and is mirrored in research around other childhood differences. Interventions for children with developmental differences have been found to not be as effective in real life settings as they had been in a research setting they also do not sustain over longer time periods than those explored in the original research (Storch and Crisp 2004; Weisz et al. 2005; Dingfelder & Mandell, 2011 ).

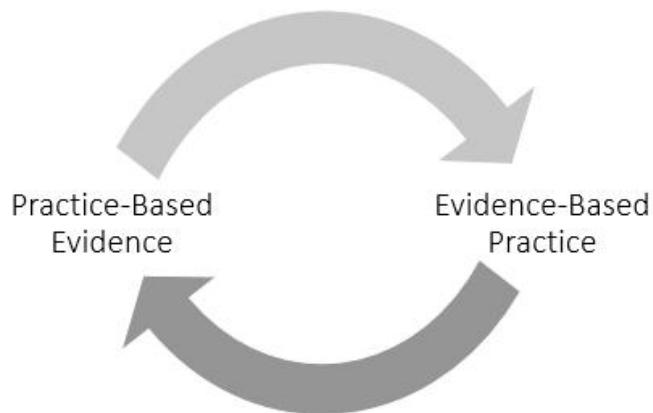
Smith, Richards-Tutor, and Cook (2010) argue that dissemination of evidence-based practice is incomplete and unlikely to be effective if it does not include stories from practitioners describing how the practice works in the real world (i.e., practice-based evidence). As such, without being paired with practice-based evidence, evidence from internally valid, experimental studies often exists solely in the academic realm—generated and consumed primarily by researchers with little impact on actual classroom practice (see Hambrick, 1994) and therefore little benefit for pupils and their families. What is needed is research that is “more relevant, more actionable, more tailored, [and] more particular to ... circumstances of practice” (Green, 2008, p. i23).

Practice-based evidence emphasizes real-world effectiveness, relevance, and external validity (Barkham & Mellor-Clark, 2003; Smith et al., 2013). Practice-based evidence embraces all the inherent complexities and challenges associated with examining real-world settings and practitioners (e.g., teachers and classrooms) (Bagnato, McLean, Macy, & Neisworth, 2011). In practice-based evidence,

"The real, messy, complicated world is not controlled. Instead, real world practice is documented and measured, just as it occurs, 'warts' and all" (Swisher, 2010, p. 4). Practice-based evidence can help to bridge the research to practice gap mentioned above by providing both contextual (i.e., evidence that the practice is effective in real classrooms) and experiential (i.e., evidence that a practice is supported by real teachers) evidence (Cook & Cook, 2016) - practice-based evidence is situationally bounded, examining "what is credible for these pupils in this classroom in this school in this city" (Simons et al., 2003, p. 356; see also Horn & Gassaway, 2007).

Cook and Cook (2016) note that practice-based research, when viewed in isolation, can be misleading, potentially suggesting that ineffective practices work. However, they go on to highlight that efficacy research also has limitations (discussion in more detail above) when considered in isolation (Cook & Cook, 2016). When viewed together there is a more complete picture. Efficacy research can demonstrate whether or not a practice generally improved outcomes for a specific sample of learners in tightly controlled settings. Practice-based evidence can then explore if the practice will work for a more heterogeneous group of learners, in 'messier' settings, if teachers will be able to sustain the practice in typical settings, or if and how teachers may need to adapt the practice to suit a wider variety of learners in different settings (Bower, 2003).

Practice-based evidence and evidence-based practice become greater than the sum of their parts, each able to address the other's potential insufficiencies. Cook and Cook (2016) provide a clear visual representation of the virtuous cycle, noted by Kovacs (2015), whereby practice-based evidence informs evidence-based practice, which in turn informs practice-based evidence, and so on (see Figure 1). An example of how that might look at The Bridge could be that practice-based research might document that pupils or parents or teachers perceive an instructional practice to be useful and beneficial. Small scale experimental projects can then examine, under controlled conditions, if the practice is useful and beneficial. Practice-based research can then extend this finding to explore whether the practice works in across different settings with different pupils.



*Figure 1. The cyclical relationship between evidence-based practice and practice based evidence. Adapted from "Leveraging Evidence-Based Practice through Partnerships Based on Practice-Based Evidence," by B. G., Cook & L. Cook, 2016, Learning Disabilities-A Contemporary Journal, 14(2), p.150*

The example above also aligns closely with the concept of 'situated generalisation' and the three stage process of developing practice-based evidence and evidence-based practice in school settings described by Simons and colleagues (2003):

**Stage One:** the personal: Here teachers focused on their own understanding. They gathered data (often in relation to a specific issue identified from practice) and analysed it, reflecting on classroom practice. They arrived at generalisations, the ostensible relevance of which was limited to their own practice and their own teaching situation.

**Stage Two:** the collegial: In this stage, research is designed, conducted and analysed in a group setting in which the individual teacher has a degree of professional intimacy in relation to others. Typically, this would be a group of school staff, but sometimes also combined staff and pupils.

**Stage Three:** the collective: By this stage the group—sometimes the individual teacher—had developed sufficient confidence to work with others across the consortium in conducting research and sharing experience with those in other schools. Now the research assumed more of the character of evidence as commonly recognised, as the collectivity explores its relevance for a wider range of settings. The term ‘evidence’ here implies information which is indicative of action or which is incorporated into a judgement preceding action. [This stage may for example involve packaged the research experiences and passing the package to another school for ‘trialling’] (Simons, Kushner, Jones & James, 2003, pp.356-7)

This process, moving from the personal to the collegial to the collective, is reflected in the foundations of the research culture that we are currently developing at The Bridge that looks at embedding reflective practice, establishing learning communities and developing a wider research network. This will help us move towards both disseminating and employing research-informed practice one that represents a change of emphasis that teaching can be solely based on externally driven research evidence to instead consider how teachers can employ research alongside other forms of evidence such as their tacit expertise, in order to make effective decisions in specific contexts – situated generalisation (Brown, Schildkamp & Hubers, 2017; Brown and Rogers 2015; Hammersley-Fletcher, and Lewin 2015; Nelson and O’Beirne 2014; Saunders 2015; Stoll 2015).

Alongside these practices we will also run journal clubs, produce research digests and support the development of research skills through our adult curriculum. All of these elements in isolation have been shown to support the development of a research skills and a research culture more broadly (Bowers & Murakami-Ramalho, 2010; Godfrey, 2014; 2016; Hammersley-Fletcher et al., 2015; Roberts, 2015; Sims, Moss & Marshall, 2017). In gradually putting these into practice and embedding them into the school we look to develop a culture that helps to address the research-to-practice gap but also to inform the research agenda. We are seeking to connect “what we know through research with what we do in special education” (Buysse, Sparkman, and Wesley, 2003, p. 265). To do so we loudly invite the messy and embrace the noise.

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