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The Evidence Informed School System in England: Where Should School Leaders Be Focusing Their Efforts?

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Abstract This article examines the impetus for schools to engage both in and with evidence in England's self-improving school system. It begins with an examination of how the education policy environment has changed, shifting from predominantly top down approaches to school improvement to the current government's focus on schools themselves sourcing and sharing effective practice to facilitate system-level change. The article then explores some of the key factors likely to determine whether schools engage in meaningful evidence use, before analyzing survey data from 696 primary school practitioners working in 79 schools. The article concludes by highlighting where schools appear to be well- and under-prepared for a future of evidence-informed self-improvement.

Keywords Self-improving school system; Education policy; Primary school practitioners

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Introduction and objectives

Over the past 20 years there has been a well-documented debate over the case for, and extent of, evidence-informed policy and practice in education (e.g., see Hargreaves, 1996; Maclure, 2005; Biesta, 2007; Goldacre, 2013; Brown, 2013, 2014). These debates are complex, but frequently revolve around both the quality and focus of educational research and the nature of teachers's professionalism. At one end of the spectrum lie those who think education can and should resemble medicine, with improvements to practice driven by robust "what works" evidence derived from scientific approaches (such as those produced through the use of randomized controlled trials). At the other end lie those who are fearful of reducing education to a set of tactics for boosting test scores and who see professional judgments as critically important, arguing, as a result, that teachers must become reflective practitioners.

Recent studies on research use have highlighted strengths and limitations of both these arguments. Educational evidence rarely translates into simple, linear changes in practice in the ways that "what works" advocates might hope. Instead, it is suggested that evidence must be combined with practitioner expertise to create new knowledge that improves decision-making and enriches practice so that, ultimately, children's learning is enhanced (Cain, 2015). It is also felt that professional values and ethics should inform any such process, so that teachers retain a focus on "what matters" as well as "what works." At the same time, however, it is argued that any pandering to professional prejudice should be avoided: so while the quality and rigour of the evidence is important, it is also key that practitioners themselves possess the skills, motivation, and support required to access and critique evidence, while overcoming "activity traps": that is, taking quick decisions based on personal judgements, which, in themselves, are often unreliable and susceptible to biases (Katz and Dack, 2013; Barends, Rousseau, & Briner, 2014).

Adding to this complexity is that there has been little research undertaken to provide an evidence base on effective evidence use (Levin et al., 2013; Nelson & O'Beirne, 2014; Cain, 2015) and thus to provide support to either side of the debate; likewise, there are no acknowledged practical systems or processes that have been adopted across the field to represent effective or preferred ways to connect evidence to practice. While this situation is now being addressed through initiatives such as the Education Endowment Foundation's £1.4 million investment in projects focusing on approaches to increasing the use of research in schools, it will take a number of years before the evaluations of these projects emerge, and longer still before any meta-analysis or synthesis of them might be undertaken and used to provide an overarching frame outlining effective and less effective ways to connect research to practice.

Nonetheless, despite such acknowledged issues (Bryk, Gomez, & Grunow, 2011; Gough et al., 2011; Brown, 2013, 2015), education policy in England, now more than ever, is providing greater impetus for schools themselves to access and use research evidence. The aim of this article, therefore, is to examine this impetus and what it means for schools, both in England and elsewhere. The article begins by examining how the English education policy environment has changed, moving from New Labour's top down approach to evidence use, to the recent Coalition (and current Conservative) government's focus on schools themselves sourcing and sharing

effective practice in order to facilitate system-level change. The article then explores some of the key factors likely to determine whether schools can and will engage in meaningful evidence use, before analyzing corresponding baseline data from 696 primary school practitioners working in 79 schools. The article concludes by highlighting where schools appear to be both well and under-prepared for a future of evidence-informed self-improvement.

Defining core concepts

In guiding our work, we draw on the definition of evidence-informed practice provided by England's Department for Education (Department for Education, 2014), which suggests such practice is most effectively conceived as "A combination of practitioner expertise and knowledge of the best external research, and evaluation-based evidence" (DfE, 2014). Based on this, we use the following definitions and terms:

1. We consider the DfE's notion of *external research* to mean research that has been peer reviewed and published by academic researchers. The phrase "evaluation-based evidence," meanwhile, is considered to comprise meta-analyses or syntheses such as those produced by Hattie (2011) or the Sutton Trust-EEF's *Teaching and Learning Toolkit* (Sutton Trust-EEF, 2013). In other words, evaluation-based evidence represents broader overarching assessments of specific approaches to teaching and learning (often detailing effect sizes showing the average improvements in student outcomes these approaches have achieved). It should also be noted that, in keeping with Brown (2014), and in order to avoid repetition of phrasing, in this article we use the terms *research-informed practice* and *evidence-informed practice* interchangeably as shorthand for teaching practice that has been informed by research evidence.

2. We also add to the DfE's definitions two other forms of evidence that might inform practice. These are evidence derived from practitioner enquiry, such as action research (e.g., Stoll et al., 2014), and evidence derived from routinely collected school or system-level data, such as pupil assessment data (e.g., see Schildkamp & Kuiper, 2010).

3. We suggest that the use of the term "combination" within the DfE's definition highlights an evolution in thinking about evidence-informed teaching practice, representing a move from the idea that teaching can be *based* on research evidence (e.g., see Biesta, 2007; Saunders, 2015), to the realization that it is perhaps more realistic, relevant, and effective to consider a situation where teaching practice is *informed* by research evidence. In other words, as we note in the introduction, it establishes a change of emphasis, to consider how teachers can employ research alongside other forms of evidence, such as their tacit expertise, in order to make

effective pedagogic decisions in specific contexts (Brown & Rogers, 2015; Hammersley-Fletcher & Lewin, 2015; Nelson & O'Beirne, 2014; Saunders, 2015; Stoll, 2015).

4. Later in the article we employ the term "knowledge mobilization" to signify the ways in which evidence is represented and shared in order to influence practice. Our definition is inclusive and comprises not only formal representations (such as books or posters) and processes (such as professional development workshops), but also informal modes and processes such as advice seeking from trusted colleagues (Cooper, Levin, & Campbell, 2009; Levin et al., 2013).

5. We use the term "research-engaged school[s]" to represent establishments in which there is a deliberate strategic and developmental approach toward fostering evidence-informed practices and cultures across all staff. This does not necessarily mean, however, that every decision in such schools will be based on rigorous evidence—for example, there are times when change is imposed on schools by policy or contextual changes that do not allow for evidence-informed decisions (Godfrey, 2014a, 2014b). Nonetheless, in research-engaged schools there is intention, willingness, and a capacity to regularly employ evidence where possible.

Benefits of evidence use

There are nascent and emerging benefits associated with practitioners using research evidence to enhance their practice—although it is important not to overstate the strength of the evidence for these benefits, which is largely derived from correlational evidence. Reviews by Mincu (2014), Cordingley (2013), Godfrey (2014a, 2014b) and Nelson and O'Beirne (2015), for example, all cite studies indicating that where research and evidence are used effectively as part of high quality initial teacher education and continuing professional development, with a focus on addressing improvement priorities, it makes a positive difference in terms of teachers' skills and capacities, and in terms of school and system performance. Furthermore, the experience of "research-engaged" schools that take a strategic and concerted approach in this area is generally positive, with studies suggesting that research engagement can shift a school from an instrumental "top tips" model of improvement to a learning culture in which staff work together to understand what appears to work, and when and why it does (Godfrey, 2014b; Sharp et al., 2006; Handscomb & MacBeath, 2003). Nonetheless, it is generally acknowledged that more research is needed to investigate the impact of evidence use on pupil achievement.

The policy context for evidence-informed practice in England

This section now provides a brief description of the policy context for evidence use and its relationship to school reform in England, based on a review of relevant policy and evaluation documents. This context serves three purposes: to explain why evidence-informed practice is increasingly important in high-autonomy–high-account-

ability school systems such as England's; to explore the difference between top down versus bottom up approaches to developing evidence-informed practice; and to inform the later discussion of the survey findings.

The last twenty years in England have seen significant investment in initiatives aimed at connecting educational research to practice (either directly or via policy) (see Greany, 2015, for a more detailed review). The majority of these were instigated by the 1997 to 2010 New Labour (centre-left) government. These interventions can be divided between those aimed at the supply side—improving the quality of research evidence available and its dissemination—and the demand side—increasing the use of research in schools. Supply side examples include the Teaching and Learning Research Programme (TLRP), which received over £40 million from England's Economic and Social Research Council (ESRC) to undertake original research; a strengthened approach to strategic planning (National Education Research Forum); resource banks to make research available (e.g., the Teacher Training Resource Bank); and networks (e.g., the National Teacher Research Panel). On the demand side, examples included schemes that enabled teachers, leaders, schools, and networks to undertake research (e.g., Best Practice Research Scholarships). In addition, the New Labour government spent many millions of pounds on commissioning and disseminating research both directly and via large scale professional development programmes and toolkits.

Overall, however, it would seem that the impact of this investment was mixed. For example, while schools are now better able to use school-level evidence to inform decision making, this appears to have been driven by accountability demands—such as the requirement by OfSTED, the national inspection agency, for schools to undertake an annual self-evaluation of their work—more than any of the initiatives detailed above (Greany, 2015; Saunders, 2015). In other words, the ability of schools to use their own teacher-generated evidence has been advanced but not necessarily their ability to employ either external research or evaluation-based evidence. What's more, Gough (2013), in his review of the interventions above, ascribes their relative failure to New Labour's over-reliance on "push" (supply) rather than "pull" (demand) factors. Certainly, New Labour's approach to school improvement and system reform was predominantly top down, albeit with a significant role for Local Authorities in both challenging and supporting schools. One indicator of this is that New Labour's time in office saw a proliferation in the number of national agencies (quangos) and "field forces" (teams of consultants charged with the rollout and the implementation of national policy).

By contrast, the Conservative/Liberal Democrat Coalition government elected in 2010 and the Conservative government elected in 2015 have reversed this approach, arguing that "the attempt to secure automatic compliance with central government initiatives reduces the capacity of the school system to improve itself" (DfE, 2010, p. 13). Instead they have sought to implement a *self-improving* school system. One key thrust of the reforms undertaken by these governments has been to increase school autonomy by encouraging schools to become "academies": these are schools controlled by companies and charities that are funded directly by central government, rather than their Local Authority (LA), and they have greater autonomy than LA

maintained schools. As such, academies have a greater freedom to innovate, which in theory means such schools are likely to have a greater propensity to engage with research that might help them enhance their practice. By early 2016 there were 5,500 academies in total, representing almost one in four schools.

At the same time, an expectation that schools should more readily use research evidence can be found in the Department for Education's 2010 white paper (*The Importance of Teaching*) and other related documents, which heralded this change of tack toward self-improvement. An analysis of *The Importance of Teaching*, for example, suggests that the government has four core criteria for the self-improving system, one of which is that teachers and schools should learn from each other and from research so that effective practice spreads. The other three criteria signal the importance of lateral partnerships between schools as a key feature of the new system:

- Teachers and schools are responsible for their own improvement;
- The best schools and leaders extend their reach across other schools so that all schools improve; and
- Government support and intervention is minimized (Greany, 2014).

Two school partnership models have been encouraged by the policy framework, both of which have implications for research engagement and evidence use:

- Academy chains: these are groups of academy schools that are overseen by a single Multi-Academy Trust (MAT). By March 2015, 58 percent of all academies and free schools were in a formal chain (House of Commons Education Select Committee, 2015).
- Teaching Schools: these are outstanding schools that are designated to co-ordinate initial and continuing professional development, school to school support, and research and development (R&D) activity across an alliance of partner schools (Matthews & Berwick, 2013). By October 2015, 692 Teaching Schools had been designated, while by October 2014 at least 7,144 schools were linked with a Teaching School, representing 32 percent of all schools in England (Gu et al., 2015).

Thus it can be seen that the architecture of the "self-improving system" is very different to New Labour's top down model, with significant implications for both knowledge mobilization (Cooper et al., 2009; Gough, 2013) and the development of evidence-informed practice. In particular, the government has explicitly recognized that a more autonomous school system requires school leaders and teachers to become more sophisticated in using research (Goldacre, 2013) and has funded the Education Endowment Foundation (EEF) to commission numerous randomized controlled trials (RCTs) into aspects of improvement for the most disadvantaged children. Schools are expected to use these trials as stimulus for self-improvement (i.e., as a basis for developing and adopting innovative practices).

There are a number of challenges facing the new system (Greany, 2015b), but we focus here on those related to evidence-informed practice. The first is that engagement in the emerging new system is patchy: for example, around three in four

schools have not yet adopted academy status. Correspondingly, there is a risk of a two-tier system emerging, with some schools having access to lateral networks that facilitate sharing knowledge and expertise (via Multi-Academy Trusts), but others not. Another challenge is the limited capacity available within schools to take on new roles. This seems to be particularly true in relation to the research and development (R&D) role of Teaching Schools. The interim and final evaluations of Teaching Schools (Gu et al., 2014, 2015) both reflect considerable progress overall, but they also flag the unreasonable and unsustainable workload required to establish and effectively run teaching school alliances. They highlight that some teaching school alliances see the R&D role as underpinning everything they do and have developed rich relationships with their university partners, but that others have not prioritized R&D, find it daunting, and/or feel that it is underfunded.

A further challenge for the new system is that it relies, even more heavily than the New Labour model, on a tight accountability framework as a means of ensuring consistency and driving improvement. Based on evidence suggesting that a positive impact is associated with high school autonomy when coupled with high accountability and capacity building measures (OECD, 2011, 2015), key features of the accountability system in England include a National Curriculum, national tests and exams, the publication of school-level performance in these exams, floor targets and other metrics that schools are required to meet, regular inspections of schools with reports published grading schools on their quality, and a framework and system for intervening in schools that are deemed to be underperforming. Well-designed accountability systems can provide clarity for schools and parents on what success "looks like" and can help governments assess value for money (Ehren, Perryman, & Shackleton, 2014). At the same time, there exists the very real risk that such systems quickly descend into unhealthy "performativity" regimes, flattening the very freedom, autonomy, and innovative ethos that governments want to encourage, while encouraging school leaders to narrow the curriculum (teaching to the test) and to focus their efforts on attracting the most desirable students (Lubienski, 2009; Cappon, 2015). Thus, such systems are arguably only conducive to the development of evidence-informed practice insofar as this is focused on measures that are valued by the accountability framework (Earley, Higham, & Allen, 2012; Waldegrave and Simons, 2014).

Four key factors for evidence-informed practice based on a review of the literature

This section draws on a review of the literature to identify four key factors that appear to underpin efforts to develop evidence-informed practice in schools. These factors are 1) teacher capacity, 2) making research-use a cultural norm, 3) an effective learning environment, and 4) supporting structures and processes. Since these four factors are key to the effective enactment of evidence-informed practice, we also argue that they represent aspects vital to the success of self-improvement. As such, after exploring them in detail, we use these factors as the basis of a survey instrument designed to measure where schools appear to be well- and under-prepared for a future of evidence-informed self-improvement.

1. Capacity to engage both in and with research evidence and data

Being evidence-informed can result both from teachers actively engaging in their own practitioner-inquiry to investigate an issue, and from teachers seeking out research or evidence on "tried and tested" approaches from elsewhere. The scope of these activities in reality is likely to significantly overlap, especially if the form of professional development used to support evidence use builds upon a joint practice development such as Lesson Study (Sebba, Tregenza, & Kent, 2012). For practitioners to be able to do either, however, will require them to have capacity (ability) in the following areas:

- An ability to access and interpret routinely collected school data, which can help teachers identify or pinpoint the specific problems or issues they face in relation to teaching or learning (Schildkamp & Ehren, 2012; Schildkamp & Lai, 2012; Datnow, Park, & Lewis, 2013). Teachers also need skills and opportunities to then analyze and "get under the skin" of these issues in order to understand their underlying causes.
- An understanding of research approaches and methods and the strengths and limitations of each, as well as knowledge of associated core aspects of the research process (sampling, analysis, measurements of validity and reliability, etc.). This will enable teachers to be able to ascertain the robustness of any given study and the types of inference or understanding they may draw from it (Goldacre, 2013; Bennett, 2015).
- The ability to understand how the findings of any given study can be effectively recontextualized. Rather than simply "cutting and pasting" approaches to improve practice from one setting to another, which is never likely to be effective, teachers need to be able to gauge which theories of action and supporting/dependent factors were required to make the intervention work in its original setting and how these might translate to their own setting (Argyris & Schön, 1978; Cartwright, 2013; Moss, 2013; Brown, 2014).
- What's more, teachers require the ability to ensure research evidence adds to rather than replaces existing effective practice and that research is engaged with in deep rather than superficial ways.

Also required is that schools have:

- Access to a robust evidence base (for example, that which is held in academic journals or research databases) *and* access to high quality research syntheses (Goldacre, 2013).
- An understanding of cycles of inquiry and an approach to measuring impact (e.g., those set out in Halbert, Kaser, & Koehn, 2011; Harris & Jones, 2012; Schildkamp & Ehren, 2012; Timperley et al., 2014). This is because engagement with research evidence should not be something that occurs in isola-

tion; rather, it should be undertaken within the context of a wider iterative "cycle" of inquiry and improvement. Here, goals are set (via an analysis of school data), the current situation or issue(s) are ascertained, hypotheses are developed, and new approaches are implemented and their success is measured (with approaches refined, scaled up, or dropped as a result; Taylor & Spence-Thomas, 2015). As schools progress through the cycle, only successful evidence-informed approaches are implemented. Broadly, cycles of inquiry will fit within the auspices of a school's Professional Learning Community, using techniques associated with Joint Practice Development (see sections three and four below).

2. Making research use a cultural norm

If it is to be "the way things are done around here," research-use needs to become a cultural norm. As such, it must stem first and foremost from a full commitment to evidence-informed practice from school leaders (Roberts, 2015; Galdin-O'Shea, 2015). True research engagement within and across schools requires school leaders to address both the "transformational" and "learning centred" aspects of becoming research and evidence engaged (Brown, 2015). The former is described as a process based on increasing the commitment of those in a school to organizational goals, vision, and direction (Bush & Glover, 2003). The latter relates to the efforts of principals to improve teaching in their school and their focus on the relationships between teachers as well as the behaviour of teachers vis-à-vis their work with students (e.g., Timperley & Robertson, 2011). School leadership buy-in to research use means then that they promote both the vision for and develop the culture of a research engaged school (including the promotion of the values required for learning communities to operate, as described in the next section). In addition, they must provide the necessary resources and structures (e.g., time and space) for sustained and meaningful research use to become a reality (Leithwood, Jantzi, & Steinbach, 2006; see also section four below). Stoll (2015) argues that a key characteristic for senior leaders to model is having an "inquiry habit of mind": senior leaders actively looking for a range of perspectives, purposefully seeking relevant information from numerous and diverse sources and continually exploring new ways to tackle perennial problems.

At the same time, a key aspect of many definitions of leadership is that there must be a process of influence (e.g., Leithwood et al., 1999). But leadership activity as a form of influence can be undertaken by more than just those possessing "formal" responsibility: Ogawa and Bossert (1995), for example, suggest that leadership as influence "is something that flows throughout an organization, spanning levels and flowing both up and down hierarchies" (pp. 225–226). This notion is also reflected by Spillane, Healey, and Kim (2010), who argue that, perhaps more than formal leaders, it is informal leaders who determine the fate of reform initiatives. As a consequence, they suggest that the implementation of new initiatives must attend to the informal aspects of an organization: i.e., the organization as lived by organizational members in their day-to-day work life. Bringing into play the informal organization

means that the vision of the school leader in relation to research-use needs to be grounded in collaborative ideals and be consensual. It also means that any new vision for school activity, such as being research informed, needs "on the ground" champions if it is to be more than embedded simply at a surface level.

3. A learning culture: Using research as part of an effective learning environment

Within evidence-informed schools, school leaders and teachers must also establish and build effective learning environments in which the development of evidence-informed practice can flourish. We suggest that such environments are best represented by Professional Leaning Communities (PLCs). This is because meaningful practitioner engagement with research is most likely to originate from a process of learning and the development of expertise (and correspondingly confidence) in relation to the research in question (Brown, 2014; Datnow & Hubbard, forthcoming). As Stoll et al. (2006) argue, one of the key characteristics of PLCs is that participants engage in such learning and develop expertise through reflective professional inquiry. Such inquiry includes "reflective dialogue" (Louis et al., 1995) or conversations about serious educational issues or problems; seeking new knowledge (Hord, 2004); tacit knowledge constantly converted into shared knowledge through interaction (Fullan, 2001); and the application of new ideas and information to problem solving and solutions addressing pupils' needs.

Stoll et al. (2006) also note additional characteristics of PLCs that make them suitable learning environments for research use, including 1) a shared vision and sense of purpose, centred on improving outcomes for children (Hord, 2004; Andrews & Lewis, 2007); 2) collective responsibility for student learning (e.g., Kruse, Louis, & Bryk, 1995; King & Newmann, 2001); 3) PLC participants collaborating in ways that go beyond mere superficial exchanges of help, support, or assistance (Louis et al., 1995); as well as 4) the promotion of both group and individual learning. External input, sometimes in tandem with internal specialists, is also key in developing PLCs. Successful external input includes the provision of multiple and diverse perspectives and challenges to orthodoxies. Successful external facilitators can also act as coaches or mentors. Underpinning these characteristics is the need for PLCs to be promoted by leaders as an environment that supports collaborative learning, rather than as an imposition linked to accountability (Datnow et al., 2013). In turn, promotion will be a function of the supports put in place to facilitate research use (see below). Promotion will also affect how these supports will be received and engaged with (Datnow et al., 2013).

4. Structures, systems, and resources

Underpinning capacity and culture are the structures, systems, and resources required to support research use. First and foremost, it is paramount that school leaders make available and coordinate time and the space and budget required for teachers to engage in the capacity and learning related activity outlined above (Galdin O'Shea, 2015; Roberts, 2015). Schools must also have in place systems for operationalizing research use in ways that are congruent with the process of learning

achieved within Professional Learning Communities; in other words, they must have formal systems for allowing teachers to work together in trialing, implementing, and refining proposed approaches for improving practice. This is best achieved via methods such as Joint Practice Development (JPD) and similar approaches, including Lesson Study, Learning Walks, et cetera.

In addition, school leaders need to consider how to best mobilize the knowledge that results from this activity: i.e., how to ensure effective practice is shared and acted on. Clearly, this will be most effective if a school's PLC is fully inclusive, meaning all staff should be engaged in quality learning conversations even if they have not been actively trialing and refining new approaches to practice. Nonetheless, full participation of staff in PLC activity is not always perceived by school leaders as either an efficient or a practical use of resources, and instead, PLCs can often be more akin to "task forces," where a small team of practitioners is focused on instigating change in isolation (Roberts, 2015). In such instances, knowledge mobilization (KM) within schools can often comprise a mix of formal and informal approaches. Formal KM, that is KM outside of any PLC/JPD activity, will involve processes of dissemination via high quality Continuous Professional Development and Learning (Cordingley et al., 2015). Simultaneously, it is likely that information will be both believed and acted on if its source is a trusted peer, who may or may not be as well versed in the practice being disseminated as those involved first hand in the PLC/JPD activity (Daly, 2010). In other words, knowledge in relation to best practice often flows informally. This requires school leaders to understand how to ensure the informal social networks within their school operate effectively and efficiently and are working toward the distribution and take-up of effective practice (both within and outside of PLC activity).

5. The research learning communities project

The Research Learning Community (RLC) project represents a pilot approach to increasing the use of evidence by schools in England. Funded by the Education Endowment foundation, the project involved recruiting 114 primary schools across England, with half forming RLCs (made up of ten groups of five to six schools) and half forming the control group. Over the past two years (2014–2016), the ten RLC groups have met four times a year for full-day workshops, supported by researcher-facilitators (i.e., team members conversant with using evidence and able to engage participants in learning conversations). Workshops focus on specific issues agreed on in advance (i.e., to look at issues of importance identified by schools) and introduce research evidence that investigates "what seems to work" in relation to these issues. Within the RLC workshops, researcher-facilitators engage in learning conversation exercises to enable participants to 1) engage interactively with data, evidence, and their own and colleagues' tacit practice-based knowledge; 2) conceive of specific inquiries (in terms of issues) that were relevant to their school and develop, trial, and embed evidence-informed solutions to tackle these; and 3) evaluate the impact of these approaches through a variety of perspectives.

Methods

Since the four factor areas outlined in the preceding section were deemed vital to meaningful and effective research use, in order to assist schools in putting in place initiatives to tackle them, we began the project by creating a baseline picture of the schools involved (i.e., data collection occurred before RLC workshops were held). To do so, we produced a survey focused on the four areas above, with questions designed to provide an indication of the base state of individual schools in relation to each. The design of the survey was undertaken in conjunction with Professor Alan Daly of the University of California, San Diego, who is experienced in examining the movement of evidence within and between schools in Californian school districts (see Daly, 2010; Finnegan & Daly, 2012). Before it was distributed, the survey was also piloted with teachers from the primary sector (not involved in the project) in order to test "face" and "construct" validity. Feedback from the pilot was then incorporated into the final questionnaire. The final survey questions for this aspect of the survey are set out in Table 1.

Table 1. Baseline survey questionnaire employed by the Research Learning Communities Project

Factor	Survey questions
Capacity to engage both in and with research evidence	1. Information from research plays an important role in informing my teaching practice. 2. I have found information from research useful in applying new approaches in the classroom. 3. This school has a formal process for evaluating programs or practices.
School cultures that are attuned to evidence use (i.e., make research use a cultural norm)	4. I do not support implementing a school-wide change without research to support it. 5. My school encourages me to use research findings to improve my practice. 6. Research and evidence is used to inform staff here about potential improvement strategies. 7. People in this school are eager to share information about what does and doesn't work.
Schools promoting the use of research as part of an effective learning environment	8. This school frequently discusses underlying assumptions that might affect key decisions. 9. Staff at my school use research and evidence to stimulate conversation/dialogue around an issue. 10. In this school, people value new ideas. 11. This school experiments with new ways of working.
The existence of effective structures, systems and resources that facilitate research use and the sharing of best practice	12. In the last year, I have discussed relevant research findings with my colleagues. 13. This school has forums for sharing information among staff. 14. In this school, time is made available for education/training activities for school staff.

Each question in Table 1 employed a five point Likert scale which ranged from "Strongly Agree" to "Strongly Disagree." The survey itself was developed using Survey Monkey and distributed electronically to all RLC schools and control schools via their principal or headteacher. The survey period lasted from October 2–19, 2014. Because the survey formed part of a larger Social Network Analysis (see Daly, 2010), the research team were in possession of the names and exact number of the teachers and school leaders in each school taking part, meaning we were able to ascertain individual response rates for each school. Response rates for both RLC (intervention) and control schools are set out in Tables 2 and 3.

Table 2: Response rates for RLC schools (*n* = 60)

Response	Frequency (%)
Less than 30%	1 (1.7%)
Greater than 30% and less than 40%	2 (3.3%)
Greater than 40% and less than 50%	0 (0%)
Greater than 50% and less than 60%	5 (8.3%)
Greater than 60% and less than 70%	12 (20.3%)
Greater than 70% and less than 80%	8 (13.3%)
Greater than 80%	32 (53.3%)

Table 3: Response rates for control schools (*n* = 19)

Response	Frequency (%)
Less than 30%	1 (5.3%)
Greater than 30% and less than 40%	3 (15.8%)
Greater than 40% and less than 50%	4 (21.1%)
Greater than 50% and less than 60%	0 (0%)
Greater than 60% and less than 70%	2 (10.5%)
Greater than 70% and less than 80%	3 (15.8%)
Greater than 80%	6 (31.6%)

All RLC schools had some staff complete the survey. The majority of RLC schools (53 percent) had response rates of over 80 percent, and some 95 percent of RLC schools had response rates of 50 percent or more. It should also be noted that of those schools returning a response rate of 80 percent or greater, 13 (22 percent of the total) achieved a 100 percent response rate. Of the 57 control schools, 28 responded to the survey. Response rates for these schools are set out in Table 3 (with three schools, or 11 percent, returning a 100 percent response rate). In total, we

achieved 797 responses to the survey, of which 696 were analysed. These 696 represent those who had joined the school before September 2014, since it was reasoned that three to five weeks into a school term wouldn't provide sufficient time for teachers new to a school to reflect on its longer term research use activity.

Results

Data for each of the four factors are set out in Tables 4–7. Unless otherwise indicated, these are based on a percentage of n = 696 responses (with data aggregated for control and intervention schools, since at baseline there appears to be no specific reason for keeping analyses separate). For all four factors, results are encouraging. School capacity to engage in and with research, as illustrated in Table 4, appears to be high, with 76 percent of teachers strongly agreeing or agreeing that research plays an important role in informing their practice (question 1) and 86 percent indicating that information is useful in helping them apply new approaches in the classroom (question 2). Where capacity is lower, however, is in terms of the evaluation stage of the cycle of inquiry: understanding impact and so determining what the future of any given school initiative might be (i.e., refined, rolled out, or stopped; Taylor & Spence-Thomas, 2015). Here, while some two thirds of respondents to question 3 agreed that their school had formal processes for evaluation, 13 percent did not, a much higher figure than for the other two capacity related questions. While a failure to evaluate changes to practice is not specific to England (e.g., see Christman et al., 2009; Cosner, 2011), it is of concern: if the impact of any new initiative is the difference it makes to the learning and experience of pupils as a result of changed teacher practice (Earley & Porritt, 2013), then clearly schools should only be adopting new practices (informed by evidence or not) when these have been shown to have clear benefit for them. Thus, as Datnow and Hubbard (forthcoming) note, when teachers do not assess the effectiveness of changes to practice on student outcomes, the entire process of continuous improvement is compromised.

Table 4: School capacity to engage both in and with research evidence

	1) Information from research plays an important role in informing my teaching practice.	2) I have found information from research useful in applying new approaches in the classroom.	3) This school has a formal process for evaluating programs or practices. (n = 694)
Strongly agree	20%	26%	17%
Agree	56%	60%	50%
Neither agree nor disagree	21%	13%	20%
Disagree	3%	2%	8%
Strongly disagree	1%	0%	5%

While capacity for research use is high, the existence of research use as a cultural norm within schools appears to be mixed. As Table 5 shows, 61 percent of respondents are either unsure or disagree that school change should be grounded within a research base. This finding suggests schools within the English system are exposed to the risk that they might adopt fads or unproven initiatives rather than those with a higher chance of success. Alternatively, this may be representative of one the major issues for research use in a self-improving system: school accountability. That is, it may represent the argument that England's regime is flattening the very freedom and autonomy that the Coalition government wants to encourage, meaning that schools look to second guess what they think OfSTED (England's school inspectorate) wants to see rather than looking at the evidence base (Greany, 2015). In addition or alternatively, under strict accountability regimes, it is the use of summative assessment data (i.e., data tracking pupil progress), rather than other forms of evidence relating to effective practice, that tends to dominate (Datnow & Hubbard, forthcoming)—despite studies illustrating that such data is unlikely to be useful for guiding improvements in teacher practice (e.g., Karr et al., 2006; Supovitz, 2015). Fears or anxiety in relation to accountability are thus potentially undermining the foundations required to build a strong evidence-informed self-improving school system.

Other cultural factors (represented by questions 5–7) score more highly, however, implying that within individual classrooms teachers are encouraged to seek out and use research to aid their practice (question 5), with 76 percent agreeing or agreeing strongly with this statement. Within staffrooms there appears to be a culture of highlighting effective practice: 79 percent agree or strongly agree that research and evidence are used within their school to inform staff about potential improvement strategies (question 6); while 89 percent agree that staff within their school are eager to share information about what does and does not work (question 7).

Table 5. School cultures that are attuned to evidence use (i.e., make research use a cultural norm)

	4) I do not support implementing a school-wide change without research to support it.	5) My school encourages me to use research findings to improve my practice.	6) Research and evidence is used to inform staff here about potential improvement strategies.	7) People in this school are eager to share information about what does and does not work.
Strongly agree	13%	23%	17%	40%
Agree	37%	53%	62%	49%
Neither agree nor disagree	38%	18%	18%	9%
Disagree	12%	5%	3%	2%
Strongly disagree	1%	1%	1%	0%

Table 6, meanwhile, examines the extent to which staff believe their school promotes the use of research as part of an effective learning environment. Again, generally, results are positive. As is noted above, Stoll et al. (2006) argue that a key aspect of successful Professional Learning Communities is that members engage in reflective practice. The key aspects required for such practice are reflected in questions 8 to 11. It is clear from the results that while responses to questions 9 to 11 are relatively high, with 73 percent agreeing or strongly agreeing that research is used to stimulate conversation, 74 percent agreeing or strongly agreeing that staff within their school value new ideas, and 82 percent agreeing or strongly agreeing that their school experiments with new ways of working. For question 8 the level of agreement is much lower. Here, only 55 percent agree or strongly agree that staff within their school frequently discuss underlying assumptions that affect key decisions, which means many school practices are potentially falling into *activity traps* (Katz & Dack, 2013). These are situations in which practitioners do not meaningfully engage in PLC activity and instead immediately move to identify solutions to problems rather than engage in an in-depth exploration of what is causing the problem and why.

Table 6. Schools promoting the use of research as part of an effective learning environment

	8) This school frequently discusses underlying assumptions that might affect key decisions. (*n* = 694)	9) Staff at my school use research and evidence to stimulate conversation/dialogue around an issue. (*n* = 695)	10) In this school, people value new ideas. (*n* = 694)	11) This school experiments with new ways of working. (*n* = 694)
Strongly agree	11%	15%	23%	30%
Agree	44%	58%	51%	52%
Neither agree nor disagree	30%	20%	17%	9%
Disagree	10%	7%	4%	4%
Strongly disagree	4%	1%	6%	6%

Falling into activity traps means schools run a number of risks, including the following: that fundamental issues of practice or context may not be fully established (e.g., practitioners may simply identify or target students who are likely to show the quickest gains); that all potential causes of a problem or solutions to it may not be considered; and that ineffective practice may be recycled simply because it is "known." In all cases where the activity trap materializes, approaches to tackling problems are unlikely to be steeped within or adhere to a meaningful theory of action, reducing the chances of them achieving impact beyond any short term "win." It is interesting to note that the international literature in this area suggests that schools

falling into activity traps—seeking quick wins from the implementation of immediate solutions—are often those facing highest levels of accountability pressure. Conversely, those not facing such pressure are able to engage in more meaningful engagement with evidence (e.g., see Firestone & Gonzalez, 2007; Datnow et al., 2013; Datnow & Hubbard, forthcoming). Again, these findings highlight the risks current accountability frameworks present to the development of well-grounded evidence-based school systems.

Data in Table 7 relate to the structures, systems, and resources required to facilitate evidence use within schools. Question 12 shows that staff do have the opportunities for discussing research (82 percent agree or strongly agree that this is the case). But these opportunities are perhaps likely to be less rather than more formal: for instance, only 61 percent of those surveyed said their school has a forum for sharing or discussing information (question 13). This suggests that more coordination of time, space, and other resources is required by school leaders to facilitate PLC activity. Responses to question 13 might also help to explain, in part at least, responses to questions 3 and 8. In other words, perhaps the lack of formal PLC activity and understanding of the tools, processes, and protocols that make these effective (including the use of cycles of inquiry) are also inadvertently leading to schools both falling into activity traps and also failing to effectively evaluate the effects of the initiatives.

Table 7: Facilitative structures, systems, and resources

	12) In the last year, I have discussed relevant research findings with my colleagues.	13) This school has forums for sharing information among staff. (*n* = 694)	14) In this school, time is made available for education/training activities for school staff. (*n* = 694)
Strongly agree	25%	14%	26%
Agree	57%	47%	55%
Neither agree nor disagree	11%	21%	9%
Disagree	6%	10%	4%
Strongly disagree	1%	7%	6%

Significance

As outlined above, evidence-informed practice is now viewed by educational policymakers in England as a driver of school and system self-improvement. In this article, we have explored data in relation to the key factors likely to determine whether schools can and will engage in meaningful evidence use. The results outlined above naturally come with a number of caveats in relation to how they should be interpreted. Firstly, the 79 schools surveyed are all primary schools, so no relationship can be drawn between this analysis and England's 3,200+ secondary schools. Second, it is likely that the schools involved are more predisposed to research engagement than the majority of England's primary schools: not only had they all volunteered to

participate in a two-year study on research use, but of the schools involved in the survey, 20 were in a formal Teaching School Alliance and a further 20 were in a similar relationship (but had not applied or were in the process of applying to be TSAs). As is noted above, TSAs are a key driver of England's self-improving school system, and there are clear expectations that they act as leaders in relation to evidence use. At the same time, this predisposition may also have led to response bias that in turn resulted in the high levels of reported capacity by teachers in terms of their engagement both in and with research (see Table 4), school culture (see Table 5), promoting research (see Table 6), and facilitating structures (see Table 7). In other words, such schools may have wanted to paint this capacity and engagement in a positive light since they were now expected to be "research engaged." Moving forward it is suggested that classroom observation should be used in conjunction with these data in order to triangulate and verify such data.

Nonetheless, our analysis does provide useful indicators as to schools' strengths and weaknesses in relation to evidence use and what might need to be addressed if a system level change is to take place. And while the data appear promising, even within schools at what should be the vanguard of the evidence-informed movement in England, there is still room for improvement. In particular, our analysis suggests that 1) there should be more direction by school leaders to ensure that school-level change is grounded within a research base, 2) schools need to put in place processes to effectively identify the cause of teaching and learning related issues, and to identify a range of solutions to them, 3) schools need to also put in place processes to evaluate the impact of new teaching and learning programmes or initiatives driven by research informed practices, and 4) that points 1 to 3 above need to be underpinned by more formalized and rigorous Professional Learning Community activity within schools.

In addition, echoing the points above about the accountability framework, our analysis suggests that the foundation for evidence-informed self-improvement will tend to be unstable until there is an external accountability and inspection structure explicitly supporting it. We argue, therefore, that there is a case for changes to England's OfSTED framework to ensure that evidence-informed school improvement is encouraged and that it underpins other school improvement activity.

References

Andrews, D., & Lewis, M. (2007). Transforming practice from within: The power of the professional learning community. In L. Stoll & K.S. Louis (Eds.), *Professional learning communities: Divergence, depth and dilemmas* (pp. 132–147). Maidenhead: Open University Press.

Argyris, C., & Schön, D. (1978). *Organisational learning: A theory of action perspective.* Reading, Mass: Addison Wesley.

Barends, E., Rousseau, D.M., & Briner, R.B. (2014). *Evidence-based management: The basic principles.* Amsterdam: Center for Evidence-Based Management.

Bennett, T. (2015). Evidence and Quality. In C. Brown (Ed.), *Leading the use of research and evidence in schools* (pp. 31–39). London, UK: Institute of Education Press.

Biesta, G. (2007). Why "what works" won't work: Evidence-based practice and the democratic deficit in educational research. Educational Theory, 57(1), 1–22.

Brown C. (2013). *Making evidence matter: a new perspective on evidence-informed policy making in education.* London, UK: London, Institute of Education Press).

Brown, C. (Ed.). (2015). *Leading the use of research and evidence in schools*. London, UK: Institute of Education Press.

Brown, C., & Rogers, S. (2015) Knowledge creation as an approach to facilitating evidence-informed practice: examining ways to measure the success of using this method with early years practitioners in Camden (London), *Journal of Educational Change, 16*(1) pp. 79–99.

Bryk, A., Gomez, L., & Grunow, A. (2011). Getting ideas into action: Building networked improvement communities in education. In M. Hallinan (Ed.), *Frontiers in sociology of education, frontiers in sociology and social research* (pp. 127–162). Dordrecht: Springer.

Bush, T., & Glover, D. (2003). School leadership: Concepts and evidence. Nottingham: National College for School Leadership.

Cain, T. (2015). Teachers' engagement with published research: Addressing the knowledge problem. *Curriculum Journal*, *26*(3), 488–509. doi:10.1080/09585176.2015.1020820

Cappon, P. (2015). *Preparing English young people for work and life: An international perspective*. SKOPE Policy Paper 3. Oxford: SKOPE.

Cartwright, N. (2013). Knowing what we are talking about: Why evidence doesn't always travel. *Evidence & Policy*, *9*(1), 97–112.

Christman, J., Neild, B., Bulkley, K., Blanc, S., Liu, R., Mitchell, C., & Travers, E. (2009). *Making the most of interim assessment data lessons from Philadelphia*. Retrieved January 24, 2015, from http://www.researchforaction.org/wp-content/uploads/publication-photos/41/Christman_J_Making_the_Most_of_Interim_Assessment_Data.pdf .

Cooper, A., Levin, B., & Campbell, C. (2009). The growing (but still limited) importance of evidence in education policy and practice. *Journal of Educational Change*, *10*(2–3), 159–171.

Cordingley, P. (2013). *The contribution of research to teachers' professional learning and development*. Retrieved November 22, 2014, from https://www.bera.ac.uk/wp-content/uploads/2013/12/BERA-Paper-5-Continuing-professional-development-and-learning.pdf .

Cordingley, P., Higgins, S., Greany, T., Buckler, N., Coles-Jordan, D., Crisp, B., Saunders, L., & Coe, R. (2015). *Developing great teaching: Lessons from the international reviews into effective professional development*. Teacher Development Trust.

Cosner, S. (2011). Teacher learning, instructional considerations, and principal communication: Lessons from a longitudinal study of collaborative date use by teachers. *Educational Management Administration & Leadership, 39*(5), 568–589.

Daly, A. (2010). Mapping the terrain: Social network theory and educational change. In Daly, A. (Ed.), *Social network theory and educational change*. Cambridge, MA: Harvard Education Press.

Datnow, A., & Hubbard, L. (Forthcoming). *Teachers' use of data to form instruction: Lessons from the past and prospects for the future*. Teachers College Record.

Datnow, A., Park, V., & Lewis, B. (2013). Affordances and constraints in the context of teacher collaboration for the purpose of data use. *Journal of Educational Administration*, *51*(3), 341–362.

Department for Education. (2010). *The importance of teaching*. Retrieved January 20, 2015, from https://www.gov.uk/government/publications/the-importance-of-teaching-the-schools-white-paper-2010 .

Earl, L., & Timperley, H. (2008). Understanding how evidence and learning conversations work. In L. Earl & H. Timperley (Eds.), *Professional Learning Conversations: Challenges in Using Evidence for Improvement*. Springer.

Earley, P., Higham, R., & Allen, R. (2012). *Review of school leadership*. Nottingham: NCTL.

Earley, P., & Porritt, V. (2013). Evaluating the impact of professional development: The need for a student-focused approach. *Professional Development in Education, 40*(1), 112–129.

Ehren, M., Perryman, J., & Shackleton, N. (2014). Setting expectations for good education: How Dutch school inspections drive improvement. *School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice*, *26*(2), 296–327.

Finnegan, K., & Daly, A. (2012). Mind the gap: Organizational learning and improvement in an underperforming urban system. *American Journal of Education*, *119*(1), 41–71.

Firestone, W., & Gonzales, R. (2007). Culture and processes affecting data use in school districts. In P. Moss (Ed.), *Evidence and decision making: 2007 Yearbook of the National Society for the Study of Education*. Chicago, IL: NSSE.

Fullan, M. (2001). *The new meaning of educational change* (3rd ed.). New York and London: Teachers College Press and RoutledgeFalmer.

Galdin-O'Shea, H. (2015). Leading "disciplined enquiries" in schools. In C. Brown (Ed.), *Leading the use of research and evidence in schools* (pp. 91–106). London, UK: Institute of Education Press.

Godfrey, D. (2014a). *Creating a research culture—lessons from other schools*. Retrieved November 22, 2014, from http://www.sec-ed.co.uk/best-practice/creating-a-research-culture-lessons-from-other-schools .

Godfrey, D. (2014b) Leadership of schools as research-led organizations in the English educational environment: Cultivating a research engaged school culture. *Educational Management Administration & Leadership*, 34(4), 479–497. doi: 10.1177/1741143213508294

Goldacre, B. (2013) *Building evidence into education*. Retrieved January 27, 2014, from https://www.gov.uk/government/news/building-evidence-into-education .

Gough, D. (2013). Knowledge mobilisation in education in England. In B. Levin, J. Qi, H. Edelstein, & J. Sohn (Eds.), *The impact of research in education* (pp. 65–74). Bristol: The Policy Press.

Gough, D., Tripney, J., Kenny, C., & Buk-Berge, E. (2011). *Evidence informed policymaking in education in Europe: EIPPEE final project report summary*. Retrieved November 11, 2015, from www.eipee.eu/LinkClick.aspx?fileticket=W6vkqDjbiI%3d&tabid=2510&language=en-GB .

Greany, T., (2014). *Are we nearly there yet?: progress, issues and possible next steps for a self-improving school system.* London, UK: Institute of Education Press.

Greany, T., (2015). How can evidence inform teaching and decision making across 21,000 autonomous schools? Learning from the journey in England. In Brown, C. (Ed.). (2015). *Leading the use of research and evidence in schools* (pp. 11–29). London, UK: Institute of Education Press.

Greany, T., (2015b). *The Self-Improving System in England: a Review of Evidence and Thinking*. Association of School and College Leaders, Leicester, UK.

Gu, Q., Rea, S., Hill, R., Smethem, L., & Dunford, J. (2014). *Teaching schools evaluation: Emerging issues from the early development of case study teaching school alliances*. DfE Research report. London: Department for Education.

Gu, Q., Rea, S., Smethem, L., Dunford, J., Varley, M., & Sammons, P. (2015). *Teaching schools evaluation: Final report*. London: Department for Education.

Halbert, J., Kaser, L., & Koehn, D. (2011). *Spirals of inquiry: Building professional inquiry to foster student learning.* Paper presented at ICSEI 2011, Limassol, Cyprus.

Hammersley-Fletcher, L., & Lewin, C. (2015). *Evidence-based teaching: Advancing capability and capacity for enquiry in schools*. Interim report. Nottingham, England: National College for School Leadership.

Handscomb, G., & MacBeath, J. (2003). *The research engaged school*. Forum for Learning and Research Enquiry (FLARE). Essex, Engeland: Essex County Council.

Hargreaves, D. (1996). *Teaching as a research based profession: Possibilities and prospects*. The Teaching Training Agency annual lecture. Retrieved January 14, 2013, from http://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/TTA%20Hargreaves%20lecture.pdf .

Harris, A., & Jones, M. (2012). Connect to learn: Learn to connect. *Professional Development Today*, *14*(4), 13–19.

Hattie, J. (2011). *Visible learning: A synthesis of over 800 meta analyses relating to achievement*. Abingdon, England: Routledge.

House of Commons Education Select Committee. (2015). *Academies and free schools: Fourth report of session 2014–15*. London: HC 258.

Hord, S. (2004). Professional learning communities: An overview. In S. Hord (Ed.), *Learning together, leading together: Changing schools through professional learning communities* (pp. 5–14). New York: Teachers College Press.

Karr, K., Marsh, J., Ikemoto, G., Darilek, H., & Barney, H. (2006). Strategies to promote data use for instructional improvement: Actions, outcomes, and lessons from three urban districts. *American Journal of Education*, *112*(4), 496–520.

Katz, S., & Dack, L. (2013). *Intentional interruption: Breaking down learning barriers to transform professional practice.* Thousand Oaks, CA: Corwin Press.

King, M., & Newmann, F. (2001). Building school capacity through professional development: Conceptual and empirical considerations. *International Journal of Educational Management, 15*(2), 86–93.

Kruse, S., Louis, K., & Bryk, A. (1995). An emerging framework for analyzing school-based professional community. In K.S. Louis, S. Kruse, & Associates (Eds.), *Professionalism and community: Perspectives on reforming urban schools*. Long Oaks, CA: Corwin.

Leithwood, K., Day, C., Sammons, P., Harris, A., & Hopkins, D. (2006). *Successful school leadership: What it is and how it influences student learning.* Research report 800. London: DfES.

Leithwood, K., Jantzi, D., & Steinbach, R. (1999). *Changing leadership for changing times*. Buckingham: Open University Press.

Levin, B., Qi, J., Edelstein, H., & Sohn, J. (Eds.). (2013). *The impact of research in education: An international perspective.* London: Policy Press.

Louis, K.S., Kruse, S., & Bryk, A.S. (1995). Professionalism and community: What is it and why is it important in urban schools? In Louis, K.S., Kruse, S., & Associates (1995) *Professionalism and community: Perspectives on reforming urban schools* (pp. 3–22). Long Oaks, CA: Corwin.

Lubienski, C. (2009). *Do quasi-markets foster innovation in education? A comparative perspective.* OECD Education Working Papers No. 25. Paris: OECD Publishing.

MacLure, M. (2005). "Clarity bordering on stupidity": Where's the quality in systematic review? *Journal of Educational Policy, 20*(4), 393–416.

Matthews, P., & Berwick, G. (2013). *Teaching schools: First among equals*. Retrieved January 19, 2015, from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/329742/teaching-schools-first-among-equals.pdf .

Mincu, M. (2014). Teacher quality and school improvement: What is the role of research? Inquiry paper 6. In British Educational Research Association and Royal Society for the Encouragement of Arts, Manufactures and Commerce (Eds.), *The Role Of Research In Teacher Education: Reviewing The Evidence*. Retrieved November 8, 2014, from https://www.bera.ac.uk/wp-content/uploads/2014/02/BERA-RSA-Interim-Report.pdf .

Moss, G. (2013) Research, policy and knowledge flows in education: What counts in knowledge mobilization. *Contemporary Social Science: Journal of the Academy of Social Sciences*, *8*(3), 237–248.

Nelson, J., & O'Beirne, C. (2014). Using evidence in the classroom: What works and why? Slough: NFER.

OECD. (2011). *School autonomy and accountability: Are they related to student performance?* PISA in Focus. 2011/9. Paris: OECD Publishing.

OECD. (2015). *Education policy outlook 2015: Making reforms happen*. Paris: OECD Publishing.

Ogawa, R., & Bossert, S. (1995). Leadership as an organizational quality. *Educational Administration Quarterly*, *31*(2), 224–43.

Roberts, C. (2015). Impractical research: Overcoming the obstacles to becoming an evidence-informed school. In C. Brown (Ed.), *Leading the use of research and evidence in schools* (pp. 107–117). London, UK: Institute of Education Press.

Saunders, L. (2015). "Evidence" and teaching: A question of trust? In C. Brown (Ed.), *Leading the use of research and evidence in schools* (pp. 40–53). London, UK: Institute of Education Press.

Schildkamp, K., & Ehren, M. (2012). *From "intuition" to "data" driven decision making in Dutch secondary schools*? In K. Schildkamp, M. Lai, & L. Earl, (Eds.), *Data-based decision making in education: Challenges and opportunities* (pp. 49–68). Dordrecht, Springer.

Schildkamp, K., & Kuiper, W. (2010). Data informed curriculum reform: Which data, what purposes, and promoting and hindering factors. *Teaching and Teacher Education, 26,* 482–496. doi:10.1016/j.tate.2009.06.007

Schildkamp, K., & Lai, M. (2012). Introduction. In K. Schildkamp, M. Lai, & L. Earl, (Eds.), *Data-based decision making in education: challenges and opportunities* (pp. 1–7). Dordrecht, Springer.

Sebba, J., Tregenza, J., & Kent, P. (2012). *Powerful professional learning: A school leader's guide to joint practice development.* Nottingham: National College for School Leadership.

Sharp, C., Eames, A., Saunders, D., & Tomlinson, K. (2006). *Leading a research engaged school*. Nottingham: NCSL.

Spillane, J., Healey, K., & Kim, C. (2010). Leading and managing instruction: Formal and informal aspects of elementary school organization. In A. Daly (Ed.), *Social network theory and educational change* (pp. 129–156). Cambridge, MA: Harvard Education Press.

Stoll, L. (2015). Using evidence, learning, and the role of professional learning communities. In C. Brown (Ed.), *Leading the use of research and evidence in schools* (pp. 54–65). London, UK: Institute of Education Press.

Stoll, L., Bolam, R., McMahon, A., Wallace, M., & Thomas, S. (2006). Professional learning communities: A review of the literature. *Journal of Educational Change*, 7(4), 221–258.

Stoll, S., Earl., L., Anderson S., & Schildkamp, K. (2014). Changing teachers and teaching: The relationship between educational effectiveness research and practice. In C. Chapman, D. Muijs, P. Sammons, & D. Teddlie (Eds.), *Routledge international handbook of educational effectiveness* (pp. 348–364). London: Routledge.

Supovitz, J. (2015). Teacher data use for improving teaching and learning. In C. Brown (Ed.), *Leading the use of research and evidence in schools* (pp. 117–125). London, UK: Institute of Education Press.

Sutton Trust-EEF. (2013). Teaching and Learning Toolkit. London: Sutton Trust-EEF. Retrieved November 21, 2015, from http://www.literacytrust.org.uk/assets/0002/6752/EEF_Toolkit_pdf_version.pdf .

Taylor, C., & Spence-Thomas, K. (2015). Understanding impact and the cycle of enquiry. In C. Brown (Ed.), *Leading the use of research and evidence in schools* (pp. 126–137). London, UK: Institute of Education Press.

Timperley, H., Kaser, L., & Halbert, J. (2014). *A framework for transforming learning in schools: Innovation and the spiral of inquiry: Seminar series 234*. Melbourne/Victoria, Australia: Centre for Strategic Education.

Timperley, H., & Robertson, J. (2011). *Establishing platforms for leadership and learning*. In J. Robertson & H. Timperley (Eds.), *Leadership and learning* (pp. 3–12). London: Sage Publications.

Waldegrave, H., & Simons, J. (2014). *Watching the watchmen: The future of school inspections in England*. London: Policy Exchange.