Leadership of schools as research-led organisations in the English educational environment: Cultivating a research engaged school culture

Abstract:

This article examines the conditions for the growth and expansion of research engaged schools in England. The current policy climate is seeing a rapid growth of autonomous schools coupled with the continuing tendency to hold schools to account for overall student educational attainment indicators. Within this context, the article begins by considering some of the benefits of developing a research-led school culture and gives a brief account of the research engaged school movement. Using a biological analogy, the article argues for an understanding of the growth of a school research culture as occurring within an interconnected ecosystem. Four 'nourishing' factors are explained in detail: systemic connectedness; leadership for knowledge creation; teaching as a research informed practice and the school as a learning organisation. School leaders are urged to consider developing a culture of research engagement as a long term, sustainable improvement strategy.

Key words: National Teaching Schools; school leadership; learning organisation; teacher-researcher; research engaged schools; research informed practice

Introduction:

This article examines the leadership and promotion of schools as research-informed organisations within the present educational school structures and policy climate in England. Although focusing on the English system, much of what is presented here will be of interest internationally, as it relates to the perennial issue of how educational research and practice can be more closely linked for the benefit of schools and the education system as a whole. Using the metaphor of a biological ecosystem, the challenges faced by leaders wishing to develop a particular kind of school culture are outlined.

The English education system is dominated by the present Government's renewed and reinvigorated obsession with school autonomy and accountability. As school leaders adjust to this ever shifting policy landscape, one option open to them is to align their decisions with the principles of a research-engaged school (e.g.Handscomb and MacBeath, 2003b; Wilkins, 2011a), i.e. one in which:

"research and enquiry is at the heart of the school, its outlook, systems, and activity"(Handscomb and MacBeath, 2003b, p. 3).

There are strong reasons for school leaders to build an institutional culture responsive to research. High up on the list will be the desire to affect teaching and learning practices positively. Teacher research can increase pupil academic attainment, encourage active learning, increase student enjoyment of lessons and lead to improvements in feedback, to give a few examples (Sharp, 2007, p. 12).

Other reported benefits include: teachers' reports of the deep, reflective professional learning that takes place as a result of conducting research; the incentive to work collaboratively in teams; and the contribution made to the organisational learning of the school (Snoek and Moens, 2011). Schools that have made a commitment to practitioner research have also reported increased numbers of application for teaching posts (Sharp *et al.*, 2006a); high teacher work satisfaction (Godfrey, 2009) and increased staff retention (Sharp, 2007).

However, while "teacher research has the potential to help shift the organizational culture in a direction supportive of school improvement" (Halsall and Carter, 1998, p. 84), a culture supportive of teacher research is also needed. An interest in the 'growth of culture' resonates usefully with the

language of biology, and this will be pursued in more detail later, however, to begin this biological analogy, it is useful to conceptualize school level changes within an ecosystem, along the lines proposed by Urie Bronfenbrenner (1992) in his studies of human development and the family.

The educational ecosystem:

The elements involved in school research engagement form a complex, interconnected, and to a certain extent, hostile, environment:

The Chronosystem (The influence of time) The evolution of reform patterns across time (First, Second, Third 'ways')

The Macrosystem (Overarching beliefs) The neo-liberal economic and political agenda; ideas about a knowledge society.

The Exosystem (The indirect, external environment) Government policies to strengthen school autonomy and accountability; restraints on public spending; parental demands for choice.

The Mesosystem (The interaction of microsystem and environment) The professional learning/organisational culture of the school.

The Microsystem (The immediate environment) The actions and interactions of school leaders, teachers, staff, parents, governors and students.

Viewed as an ecosystem, the top of the hierarchy clearly has a powerful effect on the environment, and therefore on outcomes down the chain and into the microsystem. Nevertheless any change, disturbance or action that occurs at any level can have a disrupting effect on other parts of the ecosystem, including laterally and upwards.

The following section deals with aspects of the chrono, macro and exo-systems - the recent and current history of policies in relation to research-engagement in England - that frame the later understanding of how to achieve organisational level (meso-system) and interpersonal level (micro-system) changes.

The English educational environment:

The Chronosystem

The recent history of England's educational reform pattern - paralleled in other international systems such as Australia and Canada – shows an evolution through three stages (Hargreaves and Shirley, 2009). From the end of World War II and up until the 1970s, innovation was common but accountability was absent and consistency lacking. In response to this, standardised prescription from the top-down, saw the introduction of radical measures such as the National Curriculum for English schools. Hargreaves and Shirley describe this second phase as being characterised by "competition and increased expectations but at too great a cost to student learning, teacher motivation, and leadership capacity in schools" (2009, p. 12).

The third way, introduced a system which continued to encourage competition, accountability and standards but also with added state support and partnerships between schools and many state and private providers. Educational reforms would now need to be approached 'systemically', taking into account the need to build leadership capacity, in order to achieve sustainable educational improvement (e.g. Fullan, 2009, p. 304; Hargreaves and Shirley, 2009; Hopkins, 2007). Research on Ontario's school system provides one notable example where sustained school improvement has occurred as a result of such an approach (Levin, 2007).

In this 'third way', school leaders were (and still are) supported by bodies in England such as the National College for School Leadership to gain further skills, training and qualifications in a re-professionalised school environment. Top-down initiatives are now more widely seen as being about supporting changes from the bottom-up, with the help of models of leadership which encourage and embrace collaboration and networking (e.g. Hargreaves, 2000; Spillane, 2012).

The Macrosystem and Exosystem

The General Election in 2010, saw the introduction of a new Secretary of State for Education whose highly selective reading of the international evidence on the best school systems worldwide has led to English schools being hastily driven towards even greater levels of autonomy (Glatter, 2012). The government policy document, 'The Importance of Teaching' (DfE, 2010) sets out a rapid expansion of school 'Academies' and 'Free Schools'. These schools, rather like 'Charter schools' in the U.S. and Free Schools in Sweden, are detached from Local Authority control and have greater responsibility for managing their own finances. The rationale for increased competition to drive

up standards of educational attainment, as well as being highly questionable (Allen and Burgess, 2010) also runs counter to the desirable systemic leadership and collaboration aims set out above.

Alongside autonomy, the continued emphasis on school accountability in England (and indeed, worldwide) (Glatter, 2012), arises out of a neo-liberal political agenda that highlights parental choice, competition, quality assurance and performance management. While having some merits, such priorities can distort and limit our understanding of the broader aims of education and lead to measurements of quality that are steeped in a language derived from financial auditing (Biesta, 2004).

The result of the twin obsessions with accountability and autonomy in England is a disproportionate pressure on school leaders to 'account for' their pupils' academic achievements and to find quick fixes where standards are lower than national benchmarks. Such pressures often unfairly disadvantage schools in deprived areas or with challenging intakes and fail to take account of considerable evidence suggesting that the effect of schools on student outcomes is dwarfed by other factors such as teacher quality (e.g. Barber and Mourshed, 2007; Hattie, 2003) and parental socio-economic status (Foreman‑Peck and Murray, 2008). In this environment, where OFSTED[i] standards continue to impose ever more stringent ways of 'weighing the pig to fatten it', schools in England need to wrest back some of their own judgement to decide their educational direction.

Through a deliberate process of researching and enquiring, a school can create its own criteria by which to judge success and thereby compensate for the pressures of external accountability by becoming more 'internally accountable' (Rallis and MacMullen, 2000). Seen in this way, the drive to become a research engaged school is highly empowering not only to school leaders but staff, students, parents and other stakeholders.

Supporting Mesosystem and Microsystem changes: The birth of research engaged schools:

The debate about the nature of evidence-based practice was re-ignited in the UK in a lecture given by David Hargreaves at the 1996 Teacher Training Agency annual lecture (Hargreaves, 2007). Now well documented, he criticised the poor quality and irrelevance of much educational research conducted in

universities at the time, and was backed up later by the Hillage and Tooley reports (Hillage *et al.*, 1998; Tooley and Darby, 1998). He also proposed that teachers' professionalism – and as a result, the learning of their pupils – would be much improved by a deeper engagement with research and evidence. A great deal of education policy during the period of New Labour Government in England (1997-2010) can be seen to have been motivated with this assumption in mind.

Out of this drive to strengthen links between educational policy, practice and research in the 1990s and early 2000s in England, came a plethora of initiatives. Some of these focused on supporting practitioner involvement in research, such as Best Practice Research Scholarships (Furlong and Salisbury, 2005) the National Teacher Research Panel[ii] and the National College's Research Associate Programme (Coleman, 2007) (for a more extensive list see Cordingley (2011)). To a certain extent, these built on a tradition going back to the 1960s and 1970s in England, particularly in the work carried out by Lawrence Stenhouse, who advocated action research as an integral part of teachers' professional roles (see Hopkins and Rudduck, 1985). Other schemes focused on building up networks or partnerships of schools around research, for example Networked Learning Communities (Earl *et al.*, 2006) and the Teacher Training Agency's school-based research consortia (Kushner *et al.*, 2001). The latter programmes were examples of the trend towards seeing the school itself as a research institution, an idea that Donald McIntyre described as "much more complex than that of teacher-as-researcher, and one that has developed more slowly" (McLaughlin, McIntyre and Black, 2004).

The concept of the 'Research Engaged School' has sought to address this issue (Handscomb and MacBeath, 2003a; Handscomb and MacBeath, 2003b; Sanders *et al.*, 2006; Sharp, 2009; Sharp *et al.*, 2005; Sharp *et al.*, 2006a; Sharp *et al.*, 2006b; Wilkins, 2011a; Wilkins, 2011b; Wilson, Hemsley-Brown and Sharp, 2003). Graham Handscomb and John MacBeath set out, in a publication for Essex Council's 'Forum for Learning and Research Enquiry' (FLARE) a way of connecting research to practice (and to an extent, policy) via the mechanism of the school itself. To achieve this would require:

- A research rich pedagogy
- A research orientation
- The promotion of research communities
- Putting research at the heart of school policy and practice

(Handscomb and MacBeath, 2003b)

Several schools were supported in an alliance between groups of school leaders, local education authorities and Cambridge University. A series of case studies were then undertaken by researchers at the National Foundation for Educational Research (NFER) sponsored by the General Teaching Council for England (GTCE), the Local Government Association (LGA) and the National College for School Leadership (NCSL). The research, based on a study of 15 schools and five English Local Authorities over a period of two years, was captured in a book called "Postcards from Research Engaged Schools" (Sharp *et al.*, 2005). Based on this empirical study, other publications were released, which were aimed at advising researchers, school leaders and local education authorities on developing or working with research engaged schools (Sanders *et al.*, 2006; Sharp, 2009; Sharp *et al.*, 2006a; Sharp *et al.*, 2006b). The NFER followed up more recently with an award that schools and colleges could apply for (NFER, 2010). Those that satisfy the criteria for the award gain a kind of quality 'kite mark' which acknowledged its commitment to research engagement. The criteria distilled a range of knowledge from a variety of scholars about the features of successfully research-engaged schools, which will be returned to later in this article.

To make explicit the various strands of the definition, a research engaged school should differ from other schools in that it:

1) Promotes practitioner research among its staff
2) Encourages its staff to read and be responsive to published research
3) Welcomes (as a learning opportunity as well as a responsibility to the wider educational community) being the subject of research by outside organisations
4) Uses research to inform its decision making at every level
5) Has "an outward looking orientation" (Wilkins, 2011a) including research based links with other schools and universities.

The next section looks at the particular features of the 'ecosystem' that need to be in place in a research engaged school. However, it is salutary to start with some justification for the approach taken in this article, pointing out some caveats and making clear the intended parameters of the argument.

Firstly; in reality, schools that adopt a mission of research engagement will reflect various degrees of 'fit' compared to this Weberian ideal. Secondly; the a
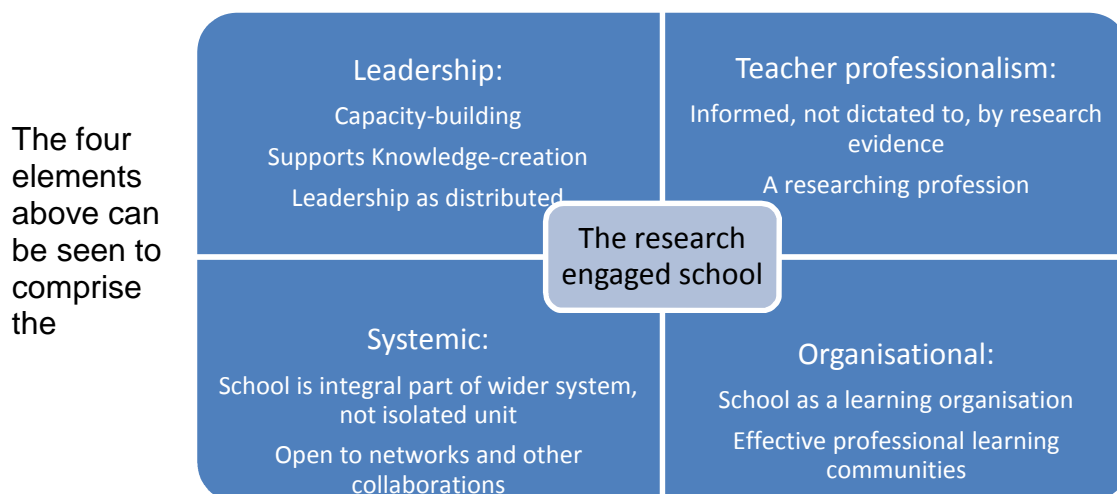
priori position is taken that school research engagement is a *good thing;* notwithstanding some points of caution noted in relation to the 'growth state' of the school raised in the discussion section. Thirdly, it is not the intention in this article to evaluate the impact of schools as research institutions or to make the case that every school must pursue such an approach as a top priority.

The author's inspiration for an ecosystems metaphor comes from interviews with dozens of staff and surveys of over 300 teachers in eight English secondary schools. These have revealed some of the distinctive ways that research engagement is enacted. The leadership practices, systemic factors, learning environments and professional outlooks emerging from those interviewed have brought to mind the complex interconnectedness that is found in a dynamically changing and sometimes fragile ecosystem. In this, as yet unpublished research, the notion of a process of development of many years towards a rich school research culture; something previously outlined by Ebbutt (2002), is reaffirmed. To the analogy of an ecological system is added the idea of 'growth' and 'development', with the notion of 'culture' analogous to that of cultures used to stimulate the growth of organisms such as bacteria. Within this analogy, 'nourishing' the development of a research engaged school culture (above) will be mediated by a range of factors at every level (Chrono-, Macro-, Exo-, Meso- and Micro-system) of the present school ecosystem. The school leader is thus cast as an agent of intentional school design (Dimmock and Walker, 2004), genetically engineering an organism 'fit' for its environment; able not only to survive and flourish in this environment, but also to reproduce and ultimately, to affect the wider ecosystem.

Nourishing a researching school culture

When seen as a school development strategy, a powerful epistemological theory of action is proposed, based on evidence from four fields of scholarship: school leadership, teacher professionalism, schools as learning organisations and systemic educational reform (see fig. 1). These comprise four elements or 'nutrients', in which research engagement can thrive. This model also offers a persuasive long term vision that school leaders can present to staff, parents, students and governors.

Figure 1: Nutrients of the research engaged school 'culture'

The four elements above can be seen to comprise the

Leadership:	Teacher professionalism:
Capacity-building	Informed, not dictated to, by research evidence
Supports Knowledge-creation	A researching profession
Leadership as distributed	

The research engaged school

Systemic:	Organisational:
School is integral part of wider system, not isolated unit	School as a learning organisation
Open to networks and other collaborations	Effective professional learning communities

nourishment for the growth a particular type of school 'culture' (analogous to 'bacterial culture', for example). The nature of this research culture is determined by the nourishment present in the educational ecosystem; the ingredients of which - research-informed staff, a learning organisation, systemic connectedness and distributed leadership - also form an inseparable part of the learning culture of the school itself.

The particular qualities of these four nutrients are discussed in detail, below:

Systemic connectivity

The emphasis on research engaged schools having an "outward-looking professional orientation" has been described by Wilkins (2011a). He reinforces the importance of such an orientation, saying that "it was (and still is) possible for a school to be heavily involved in teachers' action research in a way that not only was disconnected from the wider world of education research, but in other respects had an inward-looking focus (2011a, p. 6). Handscomb and MacBeath state that "it (the school) recognises that at every level there is a *[sic]* research of some kind already ongoing, and finds ways of supporting that endeavour and making it more rigorous, transparent and of value *not only to the school itself but to a wider constituency"* (my emphasis) (2003b, p. 4). Research and enquiry are seen not only as "integral to the day-to-day practice of school and

classroom", but also "built into the school's culture which fosters groups within and beyond the schools collaborating on research and enquiry activity" (ibid 2003b, p. 4).

Leaders in research engaged schools form collaborative partnerships and networks not only out of self-interest but also out of a commitment to wider, systemic educational responsibilities. Networking can consist of alliances between schools, by teachers across schools and between schools and Higher Education Institutions or numerous other private and public bodies. Such networks can have a range of benefits to students, the school, staff professional learning, or the community (e.g. Bell, Cordingley and Mitchell, 2006; Earl *et al.*, 2006; Frost and Roberts, 2006; Hargreaves, 2003; Jackson, 2006; McLaughlin *et al.*, 2007; Rickinson, 2005; Worrall and Noden, 2006)

The present economic environment provides challenges to the formation and sustainability of school networks. Previously well-funded examples in England of programmes designed to support school to school collaborations and teacher research, include Networked Learning Communities (Earl *et al.*, 2006) and Best Practice Research Scholarships (Furlong and Salisbury, 2005). Such schemes are unlikely to be emulated by a cash-strapped government education department.

The impact of further school autonomy and separation from local authority links also means that networks may become less likely between geographically proximal schools. A report from a network of schools that includes Academies[iii], has recommended that the Government help "build capacity among heads for collaboration and challenge" (Bassett *et al.*, 2012). However, the logic that competition leads to the need for schools to improve, which in turn leads to the incentive to cooperate with other schools seems optimistic to say the least. The later 'plea' to school leaders to 'trust' each other and avoid short-termism in the same report (2012, p. 53), reads like an admission of the difficulties of engendering such cooperation in the current structure.

Besides 'internal' cooperation between schools within academy chains, there are other, existing collaborative networks. Three long-standing research-based research networks have Cambridge University Faculty of Education as their hub (SUPER, HertsCam and CamSTAR[iv]). There is also a group of schools with voluntary membership who engage in peer review (Challenge Partners[v]).

Perhaps the most promising new development with regard to the creation of local school networks arises out of the recent designation of National Teaching Schools (NCSL, 2011). These schools, rather like Professional Development Schools in the USA (see Darling-Hammond, 1994 ,for example), have a key role in training new teachers, building local partnerships, supporting local schools and engaging in research and development. Within National Teaching Schools Alliances, there are already indications that some of these are strongly committed to research and development (NCSL, 2012).

The number of schools designated as National Teaching Schools is set to grow to 500 in England over the next three years. These schools and their local alliances could become a formidable national network. However, the Teaching School model faces some strong challenges in the years ahead. Firstly, the funding model depends on the school eventually selling on its own expertise as a way of creating its own additional income. Moreover, with a clear requirement to be "outstanding" [vi] schools, they will also need to keep firm sight of the factors which help them retain this status or risk losing their designation.

Such multiple challenges for Teaching Schools can result in school leaders viewing research engagement in one of two ways; either the 'additional' efforts to become a researching institution are seen as a distraction from more pressing educational imperatives or, conversely, research engagement can be seen as a powerful and effective vehicle to underpin the activities of the Teaching School. The Joint Practice Development model (Fielding and Britain, 2005) highlighted in a recent report from the National College for School Leadership (NCSL, 2012), gives strong support for the latter view.

Regardless of whether a school is in a Teaching School alliance or not, the need for all school leaders to understand how their own organisation fits in, and contributes to a system-wide promotion of educational change, can be seen as a professional obligation. Connecting research to practice must surely be part of this picture. Levin thus points out, "the vital role that organisations play in shaping receptivity to and use of research" and, implicitly supporting the idea of a research engaged school, he remarks that, "organisational structures and processes are important, yet also neglected in education." (Levin, 2010, p. 304).

Schools as learning organisations

The focus on learning organisations can be seen within a context of the global concept of the 'knowledge economy' (e.g. Drucker, 1998). The shift from a modern, industrial era to one of the production of 'knowledge' (postmodern), in the context of schools, has been summarised below:

Table 1: Paradigm shift towards the knowledge era:

The Modern (Industrial) Era	The Postmodern (Knowledge) Era
• Power as 'control over'	• Shared power and power from shared knowledge
• Top-down chain of command	• Distributed leadership
• Individualised learning (Professional Development)	• Learning encouraged and disseminated throughout the organisation
• Knowledge closely held by an elite	• Knowledge held by all members in all roles
• Decisions made by administrators with little input by teachers	• More collective decision making at school level
• Emphasis on stability and control	• Emphasis on balancing continuity and change
• Fear of failure	• Support for risk taking and innovation
• Teachers and schools work independently	• Interdependent members (teams; networks)
• Employees are interchangeable, replaceable	• Loss of members signals loss of knowledge and organisational memory
• Interest in short-term adaptations	• Interest in continuous improvement and organisational renewal

(adapted from Collinson and Cook, 2007, p. 5)

Collinson and Cook define organisational learning as:

"the deliberate use of individual, group, and system learning to embed new thinking and practices that continuously renew and transform the organisation in ways that support shared aims" (2007, p. 8).

While formal definitions of 'research' do not appear as prerequisites for effective organisational learning, one of key assumptions is usually taken to be that of the centrality of 'enquiry' (often written as 'inquiry'). Such enquiry is " a necessary tool for error detection and correction within an organisation" (ibid, 2007, p. 33). Cleary one level of such learning through 'enquiry' is engagement **in** research, to experiment with new ideas or **with** research, to discover solutions and ideas from outside the local context. If 'enquiry' and formal 'research' are seen as two ends of a continuum, then the organisation need not concern itself too much with this 'academic' distinction. School leaders may, however, wish to think about the relative pros and cons of a more formal approach to investigating an area of school provision. Research can be considered more systematic, imply an element of 'cross-checking', validation, greater depth/length and subsequently greater warrant than 'enquiry'. However, these advantages will be balanced by the amount of time and resources required to pursue formal research and the need for a timely resolution to a pressing school issue.

Professional Learning Communities (PLCs)

Within the more general idea of a learning organisation, which has been applied across many sectors, the focus on PLCs makes sense for schools given that 'learning' can already be seen as the main focus of such institutions, albeit among the students rather than the staff. Therefore, "the most appropriate manifestation of a learning organisation is the school as a *professional learning community*" (Dimmock, 2012, p. 121). This places the locus of responsibility onto the community of professionals within schools, particularly teachers, and sets out a clearer idea of what should be the most appropriate learning goals in such a context. Combining the ideas of learning organisation and also 'community' (e.g. Wenger, 1998), PLCs are "seen as capacity - and culture - building, ultimately having as their aim the promotion of student learning" (Dimmock, 2012, p. 121):

Stoll (2010, p. 153) suggests that analysis of the literature generally leads to five characteristics of PLCs:

Shared values and vision;

Collective responsibility (for students' learning);
Collaboration in developmental activities;
The promotion of group as well as individual learning;
Reflective professional enquiry (Deprivatisation of practice (Louis and Kruse, 1995) through observation, dialogue and trying out new ideas)

As well as re-asserting the centrality of an 'enquiry' focus to professional learning, the above definition of a PLC stresses the importance of sharing, collaboration and collective learning. In a research engaged school, "knowledge is effectively mobilised to underpin professional practice and learning" (Dimmock, 2012, p. 115). Therefore, PLCs address the key issue of knowledge-transfer or mobilisation, which has become a growing international concern (e.g. Levin, 2008; Levin, 2010).

Given the strong body of evidence showing that teacher quality is the biggest single factor that influences student achievement (e.g.Barber and Mourshed, 2007; Hattie, 2003; Hattie and Marsh, 1996), "understanding the means by which learning and development is dispersed through schools has, therefore, been seen as something of a holy grail" (Stoll, 2010, p. 154).

However, knowledge transfer is not possible unless practice is open to others, open to scrutiny and discussed in a manner where levels of trust and collaboration are high. When research knowledge is added to this equation, further difficulties are presented, such as lack of time and funding for teachers to engage in and with research (e.g. Everton, Galton and Pell, 2000; Everton, Galton and Pell, 2002; NTRP, 2011). Accessing research literature and expertise is also problematic if teachers are not enrolled on an accredited programme at a university. Furthermore, research partnerships between university and school staff also highlight differences in working cultures and incentives that make collaboration problematic (Darling-Hammond, 1994, p. 22).

Professional Learning Communities nevertheless provide a mechanism for engendering a cultural change in a school, as well as the kind of interchange of ideas that allows for knowledge to be converted in forms that lead to transformation of practice. Such learning communities can take into account the non-linear and "complex relationship between research knowledge and what teachers do" (Borg, 2010, p. 391). Several suggestions for patterns of enquiry and dialogue within school PLCs can be used, such as Action Learning Sets (e.g. O'Brien, 2010), Takeuchi and Yamanaka's Knowledge Conversion model (1995, p. 61) and Lesson Study (e.g. Muijs, West and Ainscow, 2010).

Teacher Professionalism:

Evidence-based practice and the research engaged school

One understanding of the term 'evidence-based practice' envisages schools as organisations whose practices are largely or entirely, dictated by externally generated, top-down knowledge. By contrast, in a research engaged school, teachers should be free to use professional judgement based on a combination of tacit and explicit knowledge (Polanyi, 1983). Thus, judgement, intuition and instinct, gained through experience, *as well as* research based data should all be called upon to inform practice. As many have argued, the term 'evidence-based practice' too often suggests an uncritical engagement with supposedly incontrovertible research evidence, based on a prescriptive 'what works' model (e.g. Biesta, 2007). Such a model ignores the complex, non-linear and nuanced relationship that exists between educational practices and research evidence (Borg, 2010)and promotes a narrow, un-empowering, technical-rationalist view of teacher professionalism (Schön, 1983). Biesta (2007) argues that adopting a 'what works' idea of change, elides the important principle that education is not simply an outcome; it is also a process. Contrasting education with medicine, he adds, "being a student is not an illness, just as teaching is not a cure" (2007, p. 8). Others have pointed out the dangers of eschewing the moral purpose of education and overstating the promise of 'evidence' in determining the direction of educational practice (Biesta, 2006; Hammersley, 2005; Simons, 2003).

Therefore, in a research engaged school, the 'evidence base', should be viewed "not as a body of finite knowledge to be prescribed and imposed on teachers, but rather as a living process built around practical experience in classrooms, developed from and adapting to particular teaching and learning settings" (Saunders, 2004, p. 164). Indeed, referring exclusively to 'evidence' also risks overlooking the important role that educational theories or philosophies can play for practitioners (Atkinson, 2000, pp. 323-4). A more apposite term to use than 'evidence-based practice' is 'research-informed practice'. This term suggests educational practice as 'Praxis', i.e. a freely engaged in, reflective action. Seen in this way, practitioners should draw upon each of Aristotle's three types of knowledge: Episteme (scientific knowledge); Techne (craft knowledge) and Phronesis (practical know how).

Teachers as researchers

Despite having a multi-faceted definition of the 'research engaged school', the FLARE report starts with the question, aimed at teachers (in Essex schools initially) "Why research?" (2003b, p. 3), the initial thrust thereby being aimed at encouraging teachers to engage **in** research, very much in the spirit of Lawrence Stenhouse's teacher-researcher movement (e.g.Stenhouse, 1981). His definition of research, "systematic and sustained enquiry made public" is further unpicked thus:

"Systematic and Sustained

- Process of enquiry is conscious
- Enquiry addresses clear questions
- It has a sense of purpose and timescale
- Documentary records are maintained
- The enquiry is linked to relevant research literature
- Attention is given to authenticity and trustworthiness

Made Public

- The enquiry is discussed with colleagues
- It is the subject of contributions to conferences and networks
- Documentary records are accessible
- Reports are made available

 (Wilkins, 2011a, p. 10)

The above description, while helpful, does not entirely clarify the debate about what counts as research; for example what is 'enquiry' and what is 'research'. There are also many problematic issues of quality and validity in relation to practitioner and school-based research (e.g.Anderson and Herr, 1999; Campbell and Groundwater-Smith, 2007; Cochran-Smith and Lytle, 1998; Furlong and Oancea, 2006; Furlong and Oancea, 2008; Oancea, 2005). However, it is clear that the research engaged school movement seeks to promote a *critical engagement with research* (however defined) and one that acknowledges the role of teachers as professionals free to use their own judgement to interpret and incorporate research findings in the context of their practices (e.g. Saunders, 2004; Saunders, 2006). This stance towards research can be seen as an antidote to prescriptive, top-down approaches to evidence-

based education, the latter relegating teachers to 'implementers' rather than 'enquirers'. Teachers in such schools would "be critical of received wisdom, to be sceptical of easy answers, to have a desire for evidence and to foster 'aggressive curiosity'"(Handscomb and MacBeath, 2003b, p. 4).

Teachers' Professional Learning

Students in a 21st century Knowledge Economy (Drucker, 1998) need to learn how to be critical, creative; to have excellent communication skills and information technology savoir-faire. Current modes of passive teacher learning will therefore not suffice. Part of the reason for this is that students' learning tends to 'mirror' the way in which teachers gain professional knowledge (Swaffield and MacBeath, 2006, pp. 206 - 207). The advantage of a teacher engaging in (doing) and/or with (accessing/using) research is that he/she is modelling a researching and knowledge construction approach to learning. Research activity brings out skills of information technology, criticality and networking in teachers that they will need if they are seeking to pass on this way of learning to their students.

For all schools aiming to promote research engagement, it will be necessary to focus on the Continuing Professional Development (CPD) of teaching staff. Layering of additional research duties on top of existing demands placed on hard-pressed school staff is unlikely to yield benefits in the long term. What is required is an integration of research activity into existing systems. One solution is a shift in vision towards a more empowering form of professional learning, one that Cochran-Smith and Lytle term an 'inquiry-stance' (2001) . This proposes a values-driven notion of professionalism, within which teachers' investigate and interrogate their local contexts in order to align their professional values with educational outcomes.

Teacher professional development too often involves passively acquiring skills and knowledge in one-off 'whizz-bang' sessions.

Sachs distinguishes between CPD in schools that is about:

i)   'Re-tooling', i.e. typically involves a visiting consultant or 'guru' who suggests how teachers should go about their business or improve their skills

ii)   'Re-modelling', which "aims to modify existing practices to ensure that teachers are compliant with government change agendas" (p. 158)

iii)   'Revitalising', where the shift is from 'development' to learning, as a reflective practitioner and often combined with a coach and involving collegiality and collaboration in a community of practice

iv)   'Re-imaging', which recognises the complexity of teaching and education and is highly political and transformative of practice. In this view of professional learning, teachers would be positioned as "researchers of their own and their peer's practice" and contribute to "an understanding of the value of practice and the improvement and transformation of practice" (p. 161)

(Sachs, 2011)

Sachs argues that most CPD falls almost entirely into the first two categories, a little into the third and rarely into the fourth. She thus recommends "a range of learning opportunities appropriate to needs and purposes" and for these to be "supported by school cultures of inquiry and be evidence based, where evidence is collected and interrogated.." (p. 163). The third category of CPD can only exist in a climate of professional learning conducive to such reflective, collegial learning. Indeed, while it might seem plain that without such a culture little could be achieved by introducing school-based research, it is instructive to cite findings that show how such research projects can themselves help shift professional learning in this direction (e.g. Lumby and Coleman, 1999, p. 86).

Leadership models and practices for school research engagement:

School leadership and knowledge creation

Linked to the above commitment to a particular model of professional learning is the role of a school leader in nurturing, developing and setting the culture and structures that engender knowledge creation.

Looking at a selection of the features of a knowledge-creating school, the complementarity of a school research-engagement mission becomes evident:

- a culture of, and an enthusiasm for, continual improvement
- high sensitivity to the preferences of students, parents and governors

- decentralisation and flat hierarchies, groups being given the responsibility for scrutinising ideas and decision making within their sphere of action
- informality of relationships among staff who value task-relevant expertise rather than organisational status
- professional knowledge creation as a whole-school process that has to be managed (monitored, supported, resourced)
- provision of regular opportunities for reflection, dialogue, enquiry and networking in relation to professional knowledge and practice
- a readiness to tinker and experiment with new ideas
- a readiness to engage in partnerships, alliances and networks

(Hargreaves, 1999, p. 126)

Research activity provides a framework for achieving much of what Hargreaves' envisioned in his knowledge creating school and is fostered by:

1. Values, leadership and culture supportive of research, enquiry, dialogue and challenge
2. Support systems for research, e.g. making time available, providing mentoring, access to research literature and funding
3. A significant amount of practitioner research activity which should be spread among different areas and levels of staff. This can be supported directly by the school or through accredited programmes.
4. Mechanisms to allow the research to have impact. These include publications, links to external organisations and attendance at conferences.
5. Sustainability. This requires leadership of the school research activity. This is not just about appointing a person to coordinate the school's research but having a system that encourages new uptake of research and the building research of into the schools strategic planning.

(NFER, 2010)

The above features of a research engaged school help set out specific aspects that school leaders can help to configure in their organisation. A powerful way to promote such a culture is the school leader him/her self to carrying out research and modelling the process of learning and enquiring.

The NCSL provide specific guidance to school leaders on the promotion of a research based learning community:

• *When someone makes an assertion, ask them why they think so – what evidence do they have to support their thinking?*
• *Make space for professional dialogue, for example in staff meetings.*
• *Encourage staff to share and reflect on their practice, for example through observation and mentoring.*
• *Demonstrate that you value research yourself: refer to research findings and show that you are using evidence in your own decision-making.*
• *Make a commitment to listen to and act on the results of research, even if they challenge existing views and practices.*
(Sharp *et al.*, 2006a)

Teachers will also need to be supported in developing the skills of research through in-house and externally supported expertise. Such leadership activity can be seen as essentially about capacity building (Dimmock, 2012) in which teachers are encouraged to experiment continuously with locally relevant pedagogy and theories, through school-based enquiry (Tan, 2012). However, in order to achieve this, some thought needs to be given to the types of support that teachers will need to conduct practitioner research. An audit of the existing skills and expertise at the school will help establish strengths to build upon and areas of development, while establishing links with universities and other research-based organisations can be important sources of external support and critical friendship (Swaffield and MacBeath, 2005).

Getting all the features of a research engaged school in place may take several years and is likely to be a process of continual development. The author's own research (on-going), suggests four stages of development over time, from *emerging*, to *establishing,* to *established* and finally *embedded* cultures of research; this is in broad agreement with other research (Ebbutt, 2002; Wilkins, 2011a). The most research engaged schools had very highly identified leadership support for engagement *in* (doing), and *with* (accessing and using) research; very strong support systems, including mentoring arrangements and training in research skills; a very high amount of research activity, involving a significant proportion of staff (and sometimes involving students); plentiful examples of impact within and beyond the school of the school's research efforts and a strong and well understood research structure. Other schools in the survey with lesser developed research cultures had most, some or only a few of the five features in place. This may have reflected relatively fewer years

of involvement in their strategy; relative degrees of commitment to a particular model of research engagement or, may have been as a result of barriers within the organisation to further development. Further analysis of these case studies forms the second part of this author's research to be described in a later paper.

For school leaders to pursue such a long term strategy, they will need to be less concerned with the oversight of day to day teaching and learning and more with strategies for promoting institutional and professional knowledge creation (Tan, 2012). This is only possible within a framework of distributed leadership (e.g. Spillane, 2012), where the responsibility for defining, implementing and overseeing a school's teaching and learning strategy is taken more collectively by staff at all levels of seniority.

Among staff, teachers clearly occupy crucial roles, since they are the ones that most directly influence the day to day learning experiences of the students. The literature on teacher leadership offers promising insights into the role of practitioner research engagement (e.g.Frost, 2007; Frost and Harris, 2003; Frost and Roberts, 2004; Wilkins, 2003). Rather than it being viewed as the sole purpose of senior leadership to implement (or not) research findings, teacher-led development sees research efforts as being inextricably tied in with the exercise of distributed leadership (Frost, 2007). For this teacher leadership to stretch beyond the confines of the school, into the wider educational ecosystem, the outward looking orientation of the research engaged school plays an important part. For teachers to exercise systems leadership, the school's senior leadership team will need to be supportive. Moreover, structures need to be in place that afford time and space for dissemination and collaboration, such as teachers' contributions to conferences, papers, networks and other external events.

Discussion:

Borrowing Plato's definition of knowledge as 'justified true belief', Nonaka and Takeuchi argue that knowledge creation is "a dynamic human process of justifying personal belief towards the 'truth'" (1995, p. 58). The ecological

analogy, i.e. the growth of a culture as a living organism, within an overall ecosystem, can be understood as an example of 'externalisation', i.e. an attempt to move from a subjective, experiential based knowledge of practice (tacit knowledge) to a rational, objective idea (explicit knowledge) that enables it to be modelled (ibid 1995, p. 67).

For a researching culture in schools to grow, the right conditions must exist. In a laboratory, a particular variety of bacteria can be grown quickly in a Petri dish, using the appropriate agar solution and controlling the temperature and moisture conditions optimally. However, in nature, bacteria only tend to flourish where the right combination of elements come together. School leaders do have a significant influence on their school environments (the mesosystem); they can lead by example, establish a vision and set up the right structures to support the sharing, dissemination and impact of research activity within their school. Other aspects of the wider ecosystem, such as the predominance of neoliberal agendas of accountability and autonomy in government thinking (the exo and macro-systems), may mitigate school leaders' aspirations for a policy of researched engagement.

Equally, Headteachers in some schools may view 'full-blooded' research engagement a step too far, too soon. The most advanced research engaged schools have a strong organisational culture of learning; they encourage collaboration, collegiality, risk taking and enable existing practices to be challenged. School leaders may want to gauge how much they wish staff to use research to question and challenge, and how much autonomy or distributed leadership they wish to encourage. Schools in difficult circumstances may find diverse research projects steer energies and attention away from where they are most urgently needed.

A policy of nurturing research engagement will thus depend on sensitivity to the current conditions at the mesosystem level; in particular the school's 'growth state'. Strategies that work in failing schools (Type I strategies) may work more effectively than those for low achieving schools (Type II strategies) and good or effective schools (Type III strategies) (Hopkins, Harris and Jackson, 1997). Type III strategies include "give teachers 'space to experiment" and "celebrate and share successes, reinforce the 'appetite for change" (ibid, 1997, p. 409), which suggests that a policy of research engagement would be more appropriate in good or effective (and presumably excellent) schools. Similarly, Wilkins (2011a) describes schools having states of 'failing', 'turnaround', 'fragile

recovery', 'stable-achievement' and finally, 'a reputation for excellence'. Within these overall states, the levels of professional autonomy, collective decision-making, distribution of leadership and inclusivity with research will vary, with the greatest possibilities for collegiality, innovation and systems leadership in the latter (Wilkins, 2011a, pp. 140-141).

The author's own research in secondary schools suggests a wide variation in patterns of research activity, reflecting these growth states. In one school, recently judged to be in need of improvement by Ofsted, the Headteacher set up a series of tightly focused school improvement projects based on a research and enquiry model. In another school, with a reputation for excellence, and a Teaching School remit, the whole of the school's professional development activities were based around collaborative action learning sets. These culminated in freely-chosen teaching and learning enquiries that were shared and discussed at an end of term mini-conference.

The future for research engaged schools
To pursue another powerful biological metaphor; research engagement can be seen as a genetic adaptation. Schools face an environment consisting of harsh external pressures of school accountability imposed through the publication of school league tables; the increasingly stringent demands of a national school inspectorate and a government determined to hold schools responsible for driving up standards of educational attainment in order to compete internationally. Research engagement offers the potential for the school to develop resilience, on its own terms; and to thrive in this 'hostile' environment.

However, just as in nature, where genetic mutation has led to a variety of adaptations through which the fittest survive; school research engagement need not be seen as the only or inevitable strategy to cope with this environment. As Wilkins (2011a, pp. 137-138) remarks, " Any implication of exclusivity – of research engagement being the *only* route to particular benefits – must be rejected even more strongly, as it could so easily be falsified by finding contrary instances". However, adds that, "There is, nonetheless, a definite alignment and compatibility between the kinds of thinking that value research engagement, including practitioner research, and the kinds of thinking that see the educative empowerment of staff and students as appropriate vehicles to use on the school development journey".

If successive governments and education ministers pick up on the research engagement agenda they may be minded to pursue the advice of leading

scholars on how to effect systemic educational change; i.e. through top-down support for bottom-up change. This will involve a long term vision in which the pattern of funding allows for more time and space for teachers to engage in and with research. Teachers should also have access to an extensive database of educational research as part of their professional rights. School leaders and teachers will need further incentives to connect laterally in effective networks of schools and in partnerships with universities. Lastly, a less punitive and more supportive environment is needed that will allow leaders to work together to improve the education system for the benefit of all young people. The latter will require a vision which sees teachers' professional 'responsibility' as being more important than 'accountability' (Cranston, 2013).

Whether the reality will match the potential for improvements in student attainment, a reinvigorated teaching profession and the transformation of practice through a network of knowledge-creating institutions, remains to be seen. A critical mass of alliances of collaborating schools and teachers engaged in research could lead to an irreversible shift in the educational ecosystem. A powerful, research-informed profession, encouraged by school leaders at the mesosystem level, will spread its influence outwards among practitioners and academics, and finally upwards to the macro levels of policy making and thinking about education and schooling in the 21st century. Equally the environmental pressures of accountability and competition could 'tame' these advances. In such a case, an apparently re-professionalised teaching profession may follow a "path of effervescence" (Hargreaves and Shirley, 2009, p. 41) that creates short-term fixes with little reach or impact. As the phenomena of research engaged schools grows over the next few years in England, as it appears set to do, the varieties of ways in which this concept comes to be interpreted and enacted in practice by school leaders will thus become an interesting focus for the educational research community.

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[i] Office for Standards in Education (Ofsted). The national inspectorate body, responsible for overseeing state schools in England

[ii] http://www.ntrp.org.uk/

[iii] The Specialist Schools and Academies Trust (SSAT)

[iv] http://www.educ.cam.ac.uk/research/networks/ ; http://www.thegrid.org.uk/goodpractice/hertscam/about/index.shtml

[v] http://www.challengepartners.org/

[vi] In order for schools to be given the designation of a National Teaching School, they must first have achieved the distinction of 'Outstanding' in Teaching and Learning by the Office for Standards in Education (Ofsted).