Research learning communities: How the RLC approach enables teachers to use research to improve their practice and the benefits for students that occur as a result

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Abstract

This article explores the research learning communities (RLC) model that the author has pioneered and its potential to be an effective way of fostering and embedding research-informed practice among teachers. The article begins by setting out the origins of the RLC approach and the theoretical and conceptual thinking that underpins the model, as well as the practical elements of how RLCs are run and delivered. It then uses the case study of one teaching school alliance – Excellence Together – to illustrate how the RLC approach has led not only to teachers within this specific alliance engaging in research-informed practice, but also how this practice has begun to transform teaching and improve student outcomes within participating schools. Scales and a methodology for identifying and measuring both research engagement and transformative teaching/improved student outcomes are presented, along with the results for Excellence Together.

Keywords: research learning communities; RLC; research-informed teaching practice; evidence-informed practice

Key messages

- The RLC approach appears successful in facilitating participating teachers to engage with research and to use research evidence to develop research-informed approaches to teaching and learning.

- If research use in schools is to have any chance of becoming a reality, it must be something that school leaders actively believe in. In particular, school leaders need actively to promote their vision for research use within their school, while simultaneously encouraging, facilitating and supporting their teachers to develop and adopt research-informed practices.

- By ensuring that all RLC participants were leaders of one form or another, and by helping these leaders know what is required to deliver change effectively, the RLC model also appears successful in terms of providing participants with the capacity to embed the wider use of the research-informed practices they developed among their colleagues and across their schools.

Introduction

> **Research learning communities**
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> Research learning communities (RLCs) are groups of teachers who come together to engage with research in order to enhance both their practice and also the practice of their colleagues. Each RLC typically comprises 8 to 12 teachers from 4 to 6 schools. Participants are often senior or middle leaders as well as opinion formers. Over the course of a school year, the RLC process involves four whole-day workshops that lead participating teachers through a research-informed cycle of inquiry. In between workshops, participants are expected to work with school colleagues to share research knowledge and to roll out research-informed teaching strategies.

Research learning communities (RLCs) were devised as a way to enable the roll-out of research-informed interventions at scale (Brown, 2015). The product of new and innovative ways of thinking about how research and practice might best be combined, RLCs were first conceived as part of an Education Endowment Foundation (EEF) initiative to improve the use of research by teachers and schools. Originally trialled in some 55 primary schools in England as part of a randomized control trial organized and funded by the EEF, they have subsequently been adopted by a myriad of school communities and alliances up and down the country. They have also expanded in scope from being an initiative designed for primary schools to one that has now also been tried and tested in secondary schools. Not only this, but as the thinking underpinning them matures over time, the approaches and materials used as part of the RLC approach have also evolved; correspondingly, the model has continued to maintain its relevance and effectiveness.

This article will discuss RLCs as a concept as well as examine the effectiveness of the approach by presenting research findings relating to one specific RLC: a teaching school alliance (TSA) situated on the south coast of England (Excellence Together TSA). It begins by setting out the origins of the RLC approach and the thinking that underpins the model, as well as the practical elements of how RLCs are run and delivered. It will then use the case of Excellence Together to illustrate how the RLC approach has led not only to teachers within this specific alliance engaging in research-informed teaching practice (RITP), but also how this practice has begun to transform teaching and improve student outcomes within participating schools. Scales and a methodology for identifying and measuring both research engagement and transformative teaching/improved student outcomes are presented, along with the results for Excellence Together.

The origins of the research learning community approach

In 2014, the Education Endowment Foundation, a grant-making charity whose work centres on identifying and funding promising educational innovations that address the needs of disadvantaged children in primary and secondary schools in England (http://educationendowmentfoundation.org.uk/about), opened a competition for funding for projects with a focus on increasing RITP in schools. Specifically, the EEF sought to fund pilot projects designed to increase current understanding in terms of how schools can be supported in applying existing research findings to improve outcomes and also to narrow the gap in student achievement. To address the EEF's aims I, along with a team of colleagues from the UCL Institute of Education, University College London, developed a proposal for a concept now known as research learning communities, an

approach that draws upon nascent thinking both in terms of effective ways to connect research to practice, as well as how the research-informed interventions that result from this sort of activity might be rolled out at scale.

Underpinning the RLC approach are three core ideas. The first of these is the fundamental notion that educational practitioners do not become research informed simply by being presented with research evidence; instead, two things should occur. To begin with, teachers need to engage in a facilitated process of learning, designed to help them make explicit connections between research knowledge and their own assumptions and knowledge (Nonaka and Takeuchi, 1995; Katz and Dack, 2013). The aim of this process should be to help teachers create new understandings in relation to a given issue or problem (Katz and Dack, 2013). Following this period of learning, which should culminate in the development of new practices, strategies or innovations informed by research and directed at tackling specific issues of teaching and learning, teachers then need to practise using these innovations. As they do so in a variety of situations and contexts, teachers will subsequently develop expertise in their application, beginning to understand how, where and why their use is likely to be most effective (Flyvbjerg, 2001).

The second of the core ideas underpinning the RLC approach is that the successful roll-out of new practices is dependent on effective change leadership. In other words, initiating innovation represents the introduction of something new and potentially countercultural. As such, there is a risk that new practices are rejected by those required to adopt them. Correspondingly, the effective scale-up of research-informed interventions will be dependent on there being 'the right people in the room': those most likely to make change happen in schools (those with the influence and authority to lead change). This means that these 'right people' must be identified and selected to take part in activity that connects research to practice, with their participation ensuring that the implementation of research-informed practices is both prioritized and remains top of mind (Southworth, 2009). A related point, however (the third core idea), is that if evidence-informed practices are to spread widely, then those involved in the activity connecting research to practice, as well as having influence and authority, must also have the *ability* to deliver effective change on the ground; that is, they must explicitly know both what is required to lead change effectively and also their own role in making long-lasting change happen. I will now explain these core ideas and their theoretical and conceptual grounding in more detail, before outlining how they were realized in practice and how RLCs operate in schools.

Core idea 1: Learning and practical application

The first core idea can be simply expressed: in order for RITP to become a meaningful way of life, practitioners need to engage with research in an effective learning environment (Brown *et al.,* 2016; Brown and Greany, 2017). Such learning environments would appear to be represented by professional learning communities (PLCs), with increasing evidence suggesting that, when done well, the type of learning that is typically facilitated by PLC activity can lead to improvements both in teachers' practice and in student outcomes (Stoll *et al.,* 2006; Vescio *et al.,* 2008; Harris and Jones, 2012). The nature of this learning activity is encapsulated by the notion of knowledge 'creation' (Stoll, 2008). This concept highlights the ways in which practically useful and contextually pertinent knowledge can result when the producers and users of formal knowledge, who are simultaneously also the users and holders of 'practical' knowledge, come together to share what each group knows. To successfully create new knowledge,

PLC participants need to take part in facilitated 'learning conversations': conversations structured to help teachers make sense of various forms of evidence in order to drive real changes in student learning (Earl and Timperley, 2008: 2).

Research learning communities build on the PLC approach, but while learning conversations in PLCs traditionally have been viewed as an activity that takes place within schools, RLCs employ a networked learning conversation model. Here, participants from a number of schools come together to learn, with this learning focused on tackling common issues related to teaching and learning. The RLC approach is also distinctive in that it maintains an explicit focus on learning from, and building upon, existing academic knowledge. As a result, the knowledge-creation activity within RLCs necessarily has to centre on learning conversations between the practitioner-based knowledge held by teachers from a number of different sites and academic knowledge, with external knowledge/theory bought to the fore and made equal partner with practitioner knowledge.

As well as engaging meaningfully with research to develop innovations or new practices, however, practitioners also need to develop expertise in the use of these interventions. This expertise stems from the application of such practices and, correspondingly, their ongoing trial and refinement. Of particular relevance is Flyvbjerg's (2001) argument that individuals can only become true experts as a result of continuously engaging in 'real life performances'. By this, Flybjerg means that expertise derives from individuals' increasing recognition of different situations and how best to employ new practices or innovations in response (that is, in order to achieve their desired impact). Likewise Nonaka and Takeuchi's (1995) notion of knowledge creation suggests that internalizing new knowledge through repeated use ensures that it becomes tacit, and thus employed more effectively. The implications of both Flyvbjerg's (2001) and Nonaka and Takeuchi's (1995) perspectives are that learning conversations in RLCs need to have included within them strong elements of practical application. In other words, once new knowledge has been created it must be regularly used in order for it to have long-lasting beneficial impact on the way that teachers engage in teaching and learning activity.

Core idea 2: Having the right people in the room

The importance of effective school leadership to school improvement is now undisputed (Leithwood *et al.,* 2004; Leithwood and Seashore-Louis, 2012; Earley, 2013). One implication of this, however, is that for research use in schools to have any chance of becoming a reality, it must be something that school leaders actively believe in. Correspondingly, for RITP to materialize in practice, school leaders need to do two things. First, they should actively promote their vision for research use within their school, while simultaneously encouraging, facilitating and supporting their teachers to develop and adopt research-informed practices (Stoll and Fink, 1996). Second, and perhaps even more importantly, is that school leader involvement in RLC activity is also key. This is because having first-hand involvement and experience in developing research-informed interventions also enables school leaders to 'walk the talk': to both demonstrate their commitment as well as engage in instructional leadership practices such as 'modelling', 'monitoring', 'mentoring and coaching' (dialogue). As a result, school leaders are able not only to showcase evidence-informed practice but also actively to support staff in the adoption of such practices, ensuring wider buy-in and take-up across the school (Southworth, 2009).

Other forms of leadership

> **Opinion formers**
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> Opinion formers are teachers who are often turned to by their colleagues for trusted work-related expertise and advice. Opinion formers may be in formal leadership positions but often they are not. This means that it is important to be able to both identify opinion formers and to involve them in the roll-out of new initiatives.

At the same time, it is clear that leadership, when considered as a process of influence, can be undertaken by more than just those possessing 'formal' responsibility (Ogawa and Bossert, 1995). Consequently, the notion of 'opinion formers' was derived from the idea that, if we explore who it is that teachers turn to for work-related expertise, and then identify which of these individuals is turned to most, we will have likely pinpointed the teacher most able to disseminate research-informed practice to others. What is more, if this individual is also centrally positioned in other areas (for example, in terms of a school's trust or support networks) then they can potentially also galvanize other teachers to adopt research-informed teaching practices. As such, for the purposes of the RLC approach, opinion formers are defined as practitioners who are centrally placed in terms of advice seeking and support, and who can act as conduits for both mobilizing opinion and the adoption of new practices.

Core idea 3: Knowing what is required to deliver change

Stoll *et al.* (2015) observe that school leaders can often be frustrated in their attempts to roll out new practices and innovations to colleagues. In part, this frustration derives from a lack of understanding or even confidence in relation to leading change. But it also stems from the notion that those within organizations instinctively oppose change initiatives that are likely to disrupt current ways of getting things done (Battilana and Casciaro, 2013). As Fullan argues, there is thus a need 'to understand change in order to lead it better' (2001: 34). Stoll and Brown (2015) note that governments internationally have taken seriously this need for teachers and school leaders to understand change better and, as a result, frequently include change management in their leadership curricula. For example, 'Leading improvement, innovation and change' is one of the Australian Institute for Teaching and School Leadership's key professional practices for school leaders. Change leadership is also one of five competence areas for Norwegian school *rektors*. Likewise, in England the National College for Teaching and School Leadership includes leading change for improvement as an elective study module within its professional qualifications and development for middle and senior leaders. Stoll and Brown (2015) suggest that, as part of their work on an Economic and Social Research Council-funded knowledge-transfer project ('Middle leaders as catalysts for evidence-informed change'), helping participants to understanding and apply theories of change was fundamental to the success of these participants in being able to roll out innovations and new practices more widely. Correspondingly, core idea 3 is that as well as having the right people in the room, these people should possess the capacity (the knowledge, skills and confidence) to lead change.

How RLCs operate in schools: The Excellence Together teaching school alliance

The concept of teaching schools was announced in 2010 by England's Department for Education, and forms part of the current UK government's stated policy of giving schools more freedom and increasing their responsibility for managing the education system. Teaching schools have a remit to form alliances with surrounding partner schools and to work with these alliances in order to improve teaching and learning in the round. What is more, teaching schools also have a role in engaging schools within their alliance in research and development activity, requiring them to work with partner schools in order to both define and disseminate effective research-informed practice. The teaching school alliance (TSA) that forms the focus of this project (the Excellence Together TSA) is made up of 31 schools, of all phases, situated in the south of Hampshire. The work of the alliance is coordinated by its director, who made contact with me early in 2015 to seek support as the TSA began to develop its approach to engaging in research and the roll-out of research-informed practice. The RLC model was proposed and agreed upon. The director also canvassed schools within the alliance to order encourage their participation and to ascertain which areas/research base they would like focus on. In total, eight schools expressed an interest in participating (this eight comprising four primary schools and four secondary schools). These schools also expressed an interest in two focus areas: growth mindsets and assessment for learning (AfL). Correspondingly, two RLCs were established (comprising two groups of four schools), with each specializing in one of the focus areas.

In total, 16 practitioners from eight schools were involved in the project. In keeping with core idea 2, this group was made up of eight senior leaders (who were either school leaders/head teachers, assistant heads or the deputy heads of schools) and eight opinion formers. To identify opinion formers, a social network survey was administered to all teaching staff within schools, including school leaders, classroom teachers and instructional support staff. Social network data were initially collected in two key areas. First, we asked participants to assess the *frequency* of their expertise-related interactions with other colleagues at their school. This was assessed by asking teachers to identify names in response to the question 'to whom do you turn as reliable sources of expertise in terms of teaching and learning?', with teachers selecting colleagues from a pre-populated drop-down list. Teachers were then asked to indicate how often they engaged with specific colleagues using a five-point scale ranging from 1 ('one or two times a week') to 5 ('not at all'). In addition to the frequency of their teaching- and learning-related interactions, participants were also asked to assess the *quality* of such interactions by reflecting on their degree of usefulness – the quality of ties were measured using a five-point scale, ranging from 1 ('not at all useful') to 5 ('very useful'). Relationships recorded as being 'high quality', that is more frequent and more useful (Carley and Krackhardt, 1999) were then extracted.

A similar process was repeated to ascertain the value that respondents placed on the opinions proffered by their colleagues. They were asked: 'To whom do you turn when seeking out opinions on new teaching practices?' Here, responses were measured on a yes/no scale. Combining these results, those actors with high scores in terms of both the frequency and quality of their advice-giving relationships with teachers, *and* who were turned to by more colleagues for their opinion, were then highlighted as potential galvanizers in terms of support for new initiatives, as well as those likely to be able to promote the adoption of new practices. More specifically,

it was thought that this promotion would be realized through the dissemination of advice and support in terms of how such practices might best be used.

> ### Social networks
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> Social networks represent the connections that exist within a group of individuals, for instance those situated within a school. Social network analysts are often concerned with how networks are used by groups to share and access knowledge, expertise, advice or other forms of social capital. To assess this, they use social network surveys to identify the existence and nature of networks, and how they function. Typically, such surveys will ask respondents to name the colleagues they engage with, to state why they engage with particular individuals and to examine the quality of those interactions.

Employing cycles of inquiry

> ### Cycles of inquiry
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> Cycles of inquiry are often used as part of school improvement processes. They can have a number of stages but usually begin with participants establishing a vision for what they would like to achieve. Participants then set out their baseline – the here and now picture. Following the establishment of vision and baseline, participants then seek to establish a plan for how they can close the gap between the here and now and where they would like to be. In the case of RLCs, this plan is informed by research evidence. The plan is then implemented and its impact monitored, with refinements helping to ensure the plan stays on track to meet participants' goals.

In order to facilitate a process that would enable RLC participants to go through the stages of engaging with research and developing new practices, building their expertise in how, when and why such approaches should be used (core idea 1) and then rolling these out within school (core idea 3), a cycle of inquiry approach was used. In particular, the RLC model involved participants attending four workshops over the course of an academic year (October to June). In workshop 1, participants focused on understanding the research and current practitioner-held knowledge about the specific issues being explored (for example, how to ensure children develop growth mindsets), and also on understanding what impact might look like and how (and what) data to collect in order to establish the baseline (that is, the here and now) picture. In workshop 2, we explored the baseline in more detail, developed a research-informed approach to improving practice within each school and considered how this approach might be trialled effectively. Workshop 3 enabled participants to refine their approaches; this workshop was also used to introduce the idea of whole-school change, as well as change tools and change approaches. Finally, workshop 4 examined both impact and how to share knowledge of impact more widely.

It is also clear, however, that with a networked approach participants within a networked learning community must also subsequently engage in parallel activities within their school, so that the benefits of this approach are achieved at scale. In other words, new knowledge is not just disseminated to colleagues but colleagues are also engaged with so that they can both input into the work of the learning community and also adopt from the learning community to transform their practice (see, for example, Earl and Katz, 2006; Coburn *et al.*, 2010; Harris and Jones, 2012; Penuel *et al.*, 2012). Thus, following workshop 1, participants returned to their settings to share what had

been learnt, refine their research questions and collect baseline evidence; following workshop 2, participants began to trial their approach and collect data regarding its effectiveness, as well as to engage colleagues to share what they were doing; following workshop 3, participants engaged in a setting-wide roll-out of their initiative; and after workshop 4, impact data were shared with colleagues as a way of promoting take-up. In a sense, these intersessional tasks thus represent a 'double helix' of related activity undertaken by participants in between workshop activities, and that reflects and augments what they themselves have experienced. A depiction of the double helix cycle of inquiry is shown in Figure 1.

Figure 1: Structure of the four-workshop approach
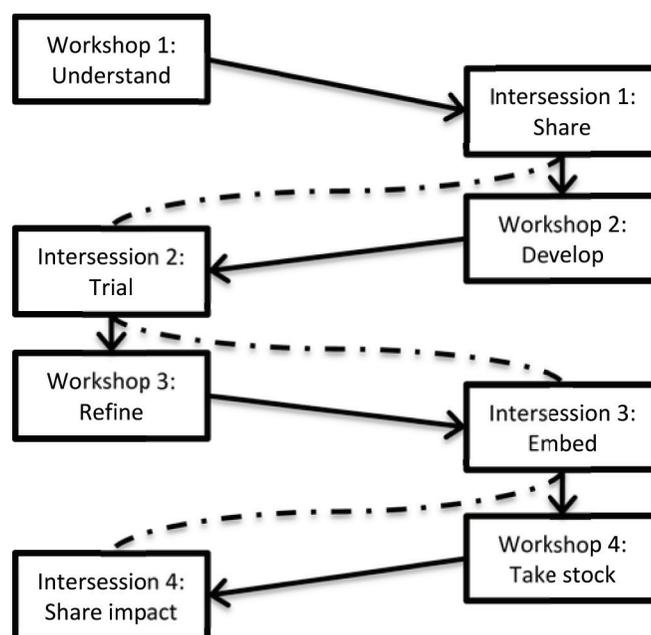
The use of knowledge-creation activity

Knowledge creation

Knowledge creation is a way of bringing together what teachers know – their practical and contextual knowledge – with what research suggests might be effective. Knowledge creation thus enables teachers to combine these two sets of knowledge to create contextually appropriate teaching strategies that build on established approaches, but are also likely to be successful in their school or classroom.

In order to address core idea 1, within the first RLC workshop protocols and exercises were developed to facilitate processes of knowledge creation. More specifically, these protocols and exercises were designed to enable participants to bring together 'what is known' (that is, existing formal knowledge) with what they know about their context, their students and what they currently see as effective practice (that is, their experience and the experience of others). The first exercise was to explore the second of these ('what practitioners know'). Here, practitioners were asked to use a 'data capture' mat to help them consider, discuss and record:

- an aspect of their practice that 'works' in relation to the topic area
- the absolute best practice in their school in relation to the topic area
- the basis for making these statements, that is what is the evidence for their claims?

In order to introduce RLC participants to the research evidence relating to their focus area, we drew upon an exercise developed by Stoll and Brown (2015) as part of an ESRC-funded knowledge transfer project ('Middle leaders as catalysts for evidence-informed change'). Here, rather than ask practitioners to engage with research directly in the form of the literature reviews developed for the project, each body of research was introduced as strips or nuggets of information (that is, the main content of each literature review developed for the RLC groups was turned into 'bite-sized' chunks, with these then printed and cut into strips of paper). This was in keeping with the need to ensure that 'formal' research knowledge is: (1) blended with people's surfaced tacit knowledge; (2) encountered in manageable units of meaning and in accessible formats; and (3) engaged with as part of a social process of meaning making (Stoll and Brown, 2015). Participants were then asked to work in pairs or threes to discuss each strip or nugget, to allocate it a meaning (a theme) and then to iteratively develop these themes as they worked their way through the strips. Following this, participants were asked to complete a 'data capture' mat, a pro forma that asked participants to consider how the research and their resultant themes: (1) connected with their own knowledge and practice (as expressed in the first exercise); (2) deepened their own knowledge and practice (as expressed in the first exercise); and (3) challenged their own knowledge and practice (as expressed in the first exercise). Participants were then provided with overall and individual literature reviews for their topic areas.

Trialling and refining research-informed interventions

In workshop 2, participants were invited to develop innovations or new practices to address their research questions, with a necessary requirement being that these should be informed not only by the research they engaged with in workshop 1 but also their own personal practice-based knowledge and the knowledge of other RLC participants. In order to help participants develop expertise in the use of these practices, they were then introduced to the notion of joint practice development (JPD) (Fielding *et al.,* 2005; Sebba *et al.,* 2012): that is, approaches to the trial and iterative refinement of new practices that involve collaboration with others. Approaches to JPD include 'lesson study', 'learning walks' and 'peer observation' (see Sebba *et al.,* 2012 for further examples and more detail). In between workshops 2 and 3, the main intersessional task for participants was to use one JPD-type approach to help them trial, develop and improve their strategy in response to a variety of situations. The benefit of engaging in JPD activity is that it not only allows teachers to trial and refine new practices through their practical application (meaning that they gain first-hand experience of how and when their application is effective), they also get feedback from colleagues in terms of how their application might be improved further. Thus, the collaborative aspect of JPD means that additional teacher-held knowledge is used to improve the new practices developed. What is more, if the approach also involves the colleagues of RLC members experimenting with new practices, RLC participants are also given further clues in terms of how new practices and approaches might be rolled out more widely.

Learning about leading change

In keeping with the suggestions made by Stoll and Brown (2015), in workshop 3, RLC participants learnt about how to lead educational change in a theory-rich way. In

particular, participants were introduced to frameworks on leading change developed by Knoster *et al.* (2000), Kotter (1996) and Fullan (2001; 2007; 2011). Ideas from other scholars (for example, the work of Day and Sammons, 2013; Hall and Hord, 2001; Kaser and Halbert, 2009; Leithwood *et al.*, 2006; and Stoll and Fink, 1996) were also engaged with and other related concepts such as adopter types (Rogers, 1971) were employed as part of the change leadership capacity-building exercises. In addition, participants were introduced to the notion of theories of action, the 'theory' or story of how organizations intend to make change happen (Hatch, 1998; Earl and Timperley, 2015). The main outcome from the workshop was the production by participants of a change leadership strategy, building on the key change leadership principles they had encountered and presented as a theory of action. The purpose of this strategy was to establish how participants intended to roll out their new practices within their school.

The impact of the RLC approach

This section of the paper seeks to understand whether, and the extent to which, the assumptions underpinning the RLC model have resulted in an approach that has been able to: (1) help participating practitioners engage with research and develop new practices informed by both research and their own practitioner knowledge; (2) enable RLC participants to embed the wider use of research-informed innovations/practices among their colleagues/across their schools; and (3) deliver, via the introduction of research-informed practices, positive changes in the teaching and learning activity that occurs within participating schools.

Measuring the extent to which the RLC approach helped participants engage with research

To examine the effectiveness of the RLC approach in helping participants engage with research, a version of the Knott and Wildavsky (1980) 'ladder of research use' scale was used. A tried and tested approach to measuring research engagement, the scale has been recognized for its reliability as a self-report tool (see, for example, Cherney *et al.*, 2013). The scale was amended to reflect the situation in which it was to be applied, in particular that practitioners were being asked to consider the research they had engaged with in workshop 1 and that they had subsequently used in the development of their RITPs. This resulted in the use of the following descriptor terms, with responses measured using a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree':

1. *Reception*: the research was well communicated
2. *Cognition*: I understood the findings of the research
3. *Discussion*: I discussed with others within my RLC group/activity groups how the research might be used
4. *Reference*: I could relate the research findings to my area of focus
5. *Effort*: I used the research in subsequent exercises (when thinking about the approaches I might use to address my area of focus)
6. *Influence*: I applied the research as part of the interventions I subsequently developed.

Examining perspectives on how the RLC approach helped participants develop new practices informed by research and their own practitioner knowledge

To explore participants' opinions on whether the RLC model helped them engage with research, and combine research with their own knowledge and the knowledge of the other participants, participants were asked to consider if and how they felt the RLC approach:

- helped them better understand their own knowledge in relation to their focus area
- helped them develop a better understanding of the focus area based on the knowledge of those in the RLC group
- helped them develop strategies that married the research presented, their own knowledge and the knowledge of those in the RLC group.

Participants were asked to provide reasons or examples to accompany each response.

To collect data on both research engagement and participants' perspectives on the knowledge-creation activity, a self-completion survey was employed at the end of workshop 4 (with the researcher *in situ* while the survey was being completed to allow him to address any questions or queries regarding interpretation). Due to three absences on the day, a total of 13 surveys were returned.

Assessing the extent to which transformative teaching/improved student outcomes result from a wider adoption of research-informed practice

To assess the extent to which the RLC approach helped participants embed the wider use of research-informed practices they developed among their colleagues/ across their schools, as well as to assess the impact of the introduction of these research-informed practices, six in-depth semi-structured interviews were held with pairs of participants (that is, the views of 12 participants were sought altogether). The interviews covered three areas: (1) participants' knowledge and confidence in relation to leading change; (2) the actions undertaken to embed their newly developed research-informed practices; and (3) whether roll-out of these practices had any impact on teaching and learning activity. Beginning with the first of these, it is argued that change tends to be more successful when participants feel they are *able* to lead it (see, for example, Wenger *et al.*, 2011). Thus, to gauge whether participants felt prepared to lead research-informed change, they were asked about both their knowledge and confidence in terms of change management and whether they felt their overall ability in this area had improved as a result of participating in the project.

To examine the actions undertaken to embed their newly developed research-informed practices, as well as whether this roll-out had any impact on teaching and learning activity, an approach developed by Wenger *et al.* (2011) was employed. Entitled the 'value creation assessment framework', Wenger *et al.*'s (2011) model for impact assessment is designed to provide a way of gauging the benefits that accrue from teachers' participation in a given professional development activity. Building on the notion of theories of action (described above), and the sequential pathway that moves practitioners from new learning to new action, Wenger *et al.*'s (2011) approach represents a way of ascertaining from those seeking to influence practice:

1. what the new practices they sought to introduce were and why it was thought they would be successful

2. the activities and interactions related to the introduction and roll-out of the new practices, as well as their aims and how successful they were at meeting these aims
3. the learning that these activities/interactions fostered and why
4. the changes in behaviour and the extent to which these new practices were being used as a result of this learning
5. the difference these behavioural changes made in terms of student learning and outcomes.

In addition to the five areas detailed above, questions were also asked in relation to the role senior leaders and opinion formers each played in the roll-out of change.

Analysis and findings

I now explore whether, and the extent to which, the RLC model provides an approach that:

1. helps participants (a) engage with research and (b) develop new practices informed by both research and their own practitioner knowledge/the knowledge of their wider network
2. enables RLC participants to embed the wider use of these research-informed innovations/practices among their colleagues/across their schools (so achieving change at scale)
3. helps participants deliver, via the introduction of research-informed practices, positive changes in the teaching and learning activity that occurs within participating schools (so achieving impact at scale).

Measuring the extent to which the RLC approach helped participants engage with research

Results from the 13 responses to the amended Knott and Wildavsky (1980) 'ladder of research use' scale are set out in Table 1. As can be seen, responses to the survey suggest a predominantly positive viewpoint, with participants expressing agreement that they had been able both to engage with research knowledge and to use this to develop interventions to tackle key areas of teaching and learning within their schools. In particular, it appears that introducing participants to pertinent research messages via the use of 'strips' or nuggets of information and asking them collaboratively to establish key themes led to participants believing that the research was well communicated (all 13 respondents 'agreed' or 'strongly agreed' with the descriptor for *reception*), to the research being understood (12 of the respondents 'agreed' or 'strongly agreed' with the descriptor for *cognition*) and to its potential use value being discussed (all 13 respondents 'agreed' or 'strongly agreed' with the descriptor for *discussion*). What is more, the subsequent exercises meant that participants were able to relate the research to their area of focus or issues they were concerned about (all 13 respondents 'agreed' or 'strongly agreed' with the descriptor for *reference*), to think about potential strategies to improve teaching and learning (12 of the respondents 'agreed' or 'strongly agreed' with the descriptor for *effort*) and to develop specific approaches to influencing the growth mindsets and learning styles of children and adults or ways in which assessment for learning was undertaken within their school (12 of the respondents 'agreed' or 'strongly agreed' with the descriptor for *influence*).

Table 1: Responses to the 'ladder of research use' scale

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Total
Reception	5	8	-	-	-	13
Cognition	1	11	1	-	-	13
Discussion	4	9	-	-	-	13
Reference	3	10	-	-	-	13
Effort	4	8	1	-	-	13
Influence	2	10	1	-	-	13

Did the RLC approach help participants develop new practices informed by both research and their own practitioner knowledge?

Our knowledge-creation activity also comprised activities to help participants surface their own tacit knowledge, as well as activities to enable participants to combine 'what is known' (that is, formal research knowledge) with 'what they know' (that is, their effective practice as well as the shared effective practices of others, along with knowledge relating to the specificities of their context). The aim of combining this knowledge was to enable participants to develop research-informed interventions that built on the best practices that they already engaged in as teachers. To assess the effectiveness of this approach, participants were asked to consider the extent to which they agreed that the RLC approach and activities: (1) helped them better understand their own knowledge in relation to their focus area; (2) helped them develop a better understanding of the focus area based on the knowledge of those in the RLC group; and (3) helped them develop strategies that married the research they engaged with, their own knowledge and the knowledge of those in the RLC group. For all three questions, all 13 respondents 'agreed' or 'strongly agreed' that the RLC approach did this. Participants also provided written comments to explain their responses. Thematically analysing these comments highlighted the importance of the facilitated discussion activities, in particular how these discussions enabled participants not only to think about their own existing knowledge, but also to situate their knowledge in relation to the knowledge and viewpoints of others. This is expressed by the following example responses:

> As always *time* for discussion and consolidation with fellow practitioners with a similar focus has allowed me to consolidate and challenge my thinking. This has been one of the most important elements.
> (Senior leader, secondary school 1)

> Sharing and feedback kept us open to other ways to discuss our focus area.
> (Senior leader, primary school 3)

> Listening to others has encouraged me to reflect on my own practice.
> (Senior leader, secondary school 4)

The discussion activities were also vital for providing a variety of perspectives in terms of how to develop and implement potential research-informed strategies, for example:

Discussion during the 'muddled up' literature review exercise allowed me to think about how the research could be used in real life settings.

(Opinion former, primary school 4)

Discussions within the RLC group have been helpful to develop understanding and discuss most/least effective strategies and ways to implement.

(Opinion former, secondary school 1)

The research group has helped me to really understand what AfL means for early years practice.

(Opinion former, primary school 2)

The research provided stimulus but the discussion helped me hone how to use and implement research-informed strategies.

(Opinion former, secondary school 2)

Did the RLC approach enable participants to embed the wider use of these research-informed innovations/practices among their colleagues/across their schools?

In all six of the paired interviews, respondents indicated that as result of participating in the project they had either set up intra-school learning communities, or had made better use of existing communities. The purpose of such communities was both to establish a supportive culture (thus representing a transformative approach to school leadership; see, for example, Day and Sammons, 2013) and to provide a vehicle through which to facilitate teacher engagement with the RITP developed by participants (representing a learning-centred approach to leadership; see, for example, Timperley and Robertson, 2011). Participants believed that employing learning communities was a direct result of the RLC approach providing them with the confidence and knowledge to lead change focused on achieving RITP. This is illustrated by the following example statements:

[Name of opinion former] now has the confidence to use [the school's teacher learning community] to share resources and engage staff in discussions centred on facilitating research-informed change. We have also been trying to facilitate a culture of trust, encouraging staff to talk openly about mistakes [in using the approaches] and their ongoing learning journey.

(Senior leader, secondary school 3)

We've found the process has informed us in terms of how to refine our approach to leading and implementing change and will continue to do so.

(Senior leader, primary school 2)

What is more, a reflection of this increased knowledge and confidence to lead change could be seen in the roles played by senior leaders and opinion formers. For example, the following statement shows the role played by one senior leader:

[Name of senior leader] is actively promoting a culture to promote research-informed change and for 2016/17 has allocated four INSET [staff training days] to ensure staff do this. We also now have a budget for books and other research resources to help with the continued development of our approaches. She is really walking the talk.

(Opinion former, primary school 3)

Likewise, other senior leaders (in primary schools 2 and 3) discussed how they had ensured that their research-informed strategies were now formally linked to their schools' improvement plans. The interviews with participants from secondary school 2 likewise spotlighted how the head teacher for that school had ensured the focus on growth mindsets was embedded in school improvement documentation and had become an integral part of the school's vision. In another interview, the explicit division of leadership roles between participants was highlighted, showcasing how the role of the opinion former was directed at leading change through the use of influence (see, for example, Spillane *et al.*, 2010):

> While my role is to formally lead change, [name of opinion former] is using our learning community to lead change by galvanizing support [for new approaches to teaching and learning].　　(Senior leader, secondary school 3)

Therefore, it is suggested that the interview data reaffirm the importance of enabling teachers to understand how to lead educational change in a theory-rich way if they are to ensure that research-informed strategies can be rolled out and adopted by others.

Did the RLC approach help participants improve the teaching and learning activity within their schools?

Interview data from all six discussions also suggested that the focus on achieving research-informed improvements in teaching and learning was having a positive impact on teaching practice. For example, the focus of participants in primary school 4 had been on improving teachers' understanding of the effective characteristics of learning, and understanding whether this approach might positively impact on writing outcomes for summer-born children (which are typically lower than those of their older peers). Changes in teacher practice noted here by participants included: 'changes to teachers' planning activity to move away from curriculum specific foci'; that 'learning values are now driving teaching practice [rather than end-of-year goals]'; that teachers were 'more actively looking for effective learning behaviours'; and that across the school there was a more general focus on 'getting children to use the language of learning [so reflecting on their own learning]'.

In another school (primary school 1), participants had been working with teachers to help them use students' mistakes as a way to enhance learning outcomes. It was noted by participants that, as a result, teachers were now effectively evidencing students' mistakes as well as helping students explicitly to consider their thinking processes as a means to learn from mistakes. Likewise, these participants were now regularly observing teachers in the school praising effort and perseverance rather than simple achievement (or criticizing the lack thereof). They also noted that teachers were now regularly sharing their experiences as well as the impacts and benefits that had resulted from using the mistake typology, in order to maximize its effectiveness across the school.

In addition to changes in teaching practice, participants from three of the schools could also provide detail on emerging impacts on student learning that had resulted from these research-informed changes. For instance, one primary school respondent noted how:

> At the beginning of the project we met with a group of mixed ability children and asked them to complete a problem solving task. Using our observation schedules we found that they literally asked no open or probing questions.　　(Opinion former, primary school 3)

As a result of this initial investigation, participants from this school devised approaches to help teachers develop children's questioning skills and worked with teachers in their school to ensure these strategies were used effectively. The results have been positive:

> The children demonstrate an understanding of the importance of questioning and are now using questioning themselves to reflect upon and assess their learning.   (Opinion former, primary school 3)

As touched on above, participants in primary school 1 had sought to develop a 'growth mindset' among their students by introducing children to the idea that making mistakes forms an integral part of the learning journey. They explored with children the notion of a mistake 'typology', one that differentiated between different forms of mistakes, so highlighting which mistakes were most likely to lead to enhanced learning and progress (and, correspondingly, which mistakes could and should be eliminated through due care and attention by children to their work). Having succeeded in ensuring that all teachers in the school also regularly and consistently used the mistake typology as part of their teaching – as well as treated specific forms of mistakes as an acceptable way to learn – respondents noted from their interviews with children, and via the scrutiny of student's work, that:

> Children are starting to understand in more depth how mistakes are part of the learning journey and are demonstrating more confidence in using mistakes. It's no coincidence that they are attempting more challenging tasks.   (Opinion former, primary school 1)

The focus for primary school 4 was on improving writing among summer-born children, as this group are much less likely than older children to meet mandated progress targets during their first year at school. Participants illustrated this issue with the school's writing data for 2015, which highlighted that only 60 per cent of summer-born children met their Year 1 early learning goals for writing in comparison to 83 per cent of autumn-born children. Having engaged with both the research base and the knowledge-creation activities, these participants came to understand that Year 1 represents the first time that children are measured against a curriculum-specific expectation rather than one related to age. In turn, that this meant that Year 1 teachers were focusing on and rewarding performance in relation to specific curriculum areas rather than in terms of how children approached their learning in the round. It is noted above that this understanding, combined with the development of research-informed strategies for how writing outcomes could be improved, subsequently resulted in participants instigating a number of changes to school practice, with these changes reflecting a shift in emphasis towards teachers valuing the process of learning and rewarding the learning values exhibited by children, and a move away from focusing on curriculum-related progression. Participants argued that these strategies worked extremely well, ultimately leading, they suggest, to a rise in the number of children meeting their writing early learning goals in 2016 to 86 per cent: an improvement of 26 percentage points on the year before.

Conclusion

From the analysis above, subject to the limitations of relying on self-reported data, it would seem that the RLC approach has been successful in facilitating participating teachers to engage with research in relation to two specific areas of teaching and learning. The RLC approach also appears to have enabled participants to marry this

knowledge to their own practical knowledge in order to develop research-informed interventions, with the aim of these interventions being to improve particular aspects of teaching and learning activity in their schools. Perhaps more importantly, however, is that by ensuring that all participants were leaders of one form or another, and by helping these leaders know what is required to deliver change effectively, the RLC model has apparently been successful in providing participants with the capacity to embed the wider use of the research-informed practices they developed among their colleagues and across their schools. In addition, and while still in its early days, we also have some evidence to suggest positive impact resulting from the introduction of these research-informed practices, both for teachers and for learners. Revisiting the perspectives that were set out at the beginning of this article, I argue that the impact of the RLC model is most likely due to the assumptions underpinning the approach (the three core ideas), which appear to encapsulate what is required for schools to become research engaged at scale. Likewise, the activities and exercises used within the project were apparently effective in enabling these assumptions to be realized. What is more, it is hoped that, in providing substantive detail on the RLC approach as well as in showcasing its effectiveness, this article will serve as a resource for policymakers and educationalists seeking to understand and adopt successful approaches for encouraging research use at scale across schools through the use of networked approaches.

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