



OPINION ARTICLE

# Exploring the current context for Professional Learning Networks, the conditions for their success, and research needs moving forwards [version 1; referees: 1 approved with reservations]

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## Abstract

The emergence of networks within education has been driven by a number of factors, including: the complex nature of the issues facing education, which are typically too great for single schools to tackle by themselves; changes to educational governance structures, which involve the dismantling of old ways of working and the introduction of new approaches with an individualized focus; in addition is the increased emphasis on education systems that are 'self-improving and school-led'. Within this context, the realization of teacher and school improvement actively emerges from establishing cultures of enquiry and learning, both within and across schools. Since not every teacher in a school can collaboratively learn with every other teacher in a network, the most efficient formation of networks will comprise small numbers of teachers learning on behalf of others.

Within this context, Professional Learning Networks (PLNs) are defined as any group who engage in collaborative learning with others outside of their everyday community of practice; with the ultimate aim of PLN activity being to improve outcomes for children. Research suggests that the use of PLNs can be effective in supporting school improvement. In addition, PLNs are an effective way to enable schools to collaborate to improve educational provision in disadvantaged areas. Nonetheless harnessing the benefits of PLNs is not without challenge. In response, this paper explores the notion of PLNs in detail; it also sheds light on the key factors and conditions that need to be present if PLNs are to lead to sustained improvements in teaching and learning. In particular, the paper explores the role of school leaders in creating meaningful two-way links between PLNs and their schools, in order to ensure that both teachers and students benefit from the networked learning activity that PLNs foster. The paper concludes by suggesting possible future research in this area.

## Keywords

Professional Learning Networks, School Leadership, sustainability

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## Introduction

The emergence of networks within education has been driven by a number of key factors. These include: the complex nature of the issues facing education, which are typically too great for single schools to tackle by themselves; changes to educational governance structures, which involve the dismantling of old ways of working and the introduction of new approaches with an individualized focus; in addition is the increased emphasis on education systems that are 'self-improving and school-led'. Within this context the realization of teacher and school improvement actively emerges from establishing cultures of enquiry and learning, both within and across schools. Since not every teacher in a school can collaboratively learn with every other teacher in a network, the most efficient formation of networks will comprise small numbers of teachers learning on behalf of others.

Within this context, Professional Learning Networks (PLNs) are defined as any group who engage in collaborative learning with others outside of their everyday community of practice; with the ultimate aim of improving outcomes for children (Brown & Poortman, 2018). Research suggests that the use of PLNs can be effective in supporting school improvement. In addition, PLNs are an effective way to enable schools to collaborate to improve educational provision in disadvantaged areas. Nonetheless harnessing the benefits of PLNs is not without challenge. In particular, participation in learning networks does not automatically improve teaching practice or student outcomes. In response, this paper explores the notion of PLNs in detail; it also sheds light on the key factors and conditions that need to be present if PLNs are to lead to sustained improvements in teaching and learning. In particular, the paper explores the role of school leaders in creating meaningful two-way links between PLNs and their schools in order to ensure that both teachers and students benefit from the networked learning activity that PLNs foster. The paper concludes by suggesting possible future research topics in this area, where the outcomes of which would enable researchers and school leaders to readily secure the benefits of PLN activity for teachers and students in a more consistent and sustained manner.

## The rise of networks

In his seminal book *Liquid Modernity*, Zygmunt Bauman argues that the challenges of the modern age, both in terms of their sources and their impacts, are global in nature. This means the institutions and governments of individual countries are inadequate: alone they cannot hope to make meaningful or productive inroads into the complex and often *wicked* problems we currently face (Rittel & Webber, 1973). Problems such as human led climate change, the general degradation of the environment and the depletion of the Earth's natural resources, poverty and the huge disparities apparent in the distribution of wealth, or the rising volume of uprooted people - those such as migrants, asylum seekers and refugees, who are seeking a new life (Bauman, 2012).

At the same time Bauman notes that being 'modern' means being subject to constant change and the continuous replacement of the old with the new: 'change is *the only* permanence, and

uncertainty *the only* certainty' (2012: viii: italics in original). The aim and expectation of this change is the continual pursuit of improvement. To achieve it, structures and systems are regularly dismantled and replaced with new ways of working in order to secure better results. Particular casualties of this process in recent years, notes Bauman, have been the social institutions that have typically provided social cohesion: specific layers of government, the trade unions, the church, as well as the provision of universal services such as health. In their place stand deregulation, privatisation and the onus on individual agency over collective approaches; albeit with the expectation that individuals should use their agency to learn from the best practices of others (Bauman, 2012).

It is clear, however that what is and what can be learned by individuals is enabled or constrained by the networks we are immersed in (Castells, 2010). Strong networks between individuals therefore lead to more potent opportunities to learn. Networks also provide an avenue through which collaborative coordinated action can be pursued. Shifting power from institutions and layers of government able to coordinate conditions favourable to the formation of networks is thus seemingly self-defeating. This is because individuals - those currently the beneficiaries of this power shift - lack, when acting alone, the ability to affect changes at meso and macro levels (Helsper & Hummrich, 2006). Correspondingly individuals are not singly able to ensure the existence of that which will enable their agency to flourish: the potential for creating strong networks. Thus, such shifts in power make it even less likely that the wicked problems of the world will be adequately addressed.

## Networks in education

Education - here broadly defined<sup>i</sup> as the collection of institutions (ministries of education, local educational authorities, teacher training institutions, schools, colleges, universities, etc.) whose primary role is to provide education to children and young people - has also been affected by these more general societal trends (Hargreaves & Shirley, 2009). A network in 'education' is generally considered to represent a 'group or system of interconnected people and organizations whose aims and purposes include the improvement of learning and aspects of well-being known to affect learning' (Hadfield, *et al.*, 2006: 5). The emergence of networks within education has, on one hand, been driven by the interconnected and pervasive nature of issues facing education (Di'az-Gibson *et al.*, 2017). Examples here include: providing effective schooling in an age of austerity, which puts pressures on the staff, resource and infrastructure that can be afforded (Brown *et al.*, 2017); ensuring all children realise their potential and are effectively supported to enter society as competent, responsible citizens, irrespective of background and situation (Arkhipenka *et al.*, 2018; Howland, 2015); preparing students of today to be the workforce of tomorrow, when the nature of the work and the skills required to do it are uncertain (Bauman, 2012; Castells, 2010); likewise is the need to ensure teachers have the skills and knowledge to adapt to fast changing

<sup>i</sup> See <https://en.wikipedia.org/wiki/Education>

social and economic related educational imperatives (de Vries & Prenger, 2018). The main focus of this article is networks as centred around schools. With this in mind - as with Bauman's notion of the *liquid* modern age - the nature of these issues means that tackling them effectively is often too great a challenge for individual schools to undertake by themselves (Stoll, 2010). Schools therefore need to be working smarter together - and with others - rather than harder alone, to both learn with and support one another (Jackson & Temperley, 2006).

In this light, the noted aims and purposes of extant education networks in a general sense, include:

- Facilitating a more willing distribution of professional knowledge (Hargreaves, 2010; Hargreaves, 2012; Muijs, 2015). In other words, networks can be used to foster knowledge sharing, collaboration and practice development across schools. This can be especially useful in plugging 'structural holes' through the access to expertise that is not available in individual schools (Huxham & Vangen, 2005; Muijs, 2015).
- The development of context specific strategies for improvement (Hargreaves, 2010; Hargreaves, 2012; Howland, 2015). For instance, networks might have a focus on addressing challenging circumstances and/or persistent issues of inequity and underperformance (i.e. ensuring all students, irrespective of background, gain the minimum skills necessary to function in today's society (Arkhipenka *et al.*, 2018; Armstrong, 2015; Muijs *et al.*, 2010)). Other focus areas can include students' transition from school to work, or pervasive problems such as childhood obesity (Dí'az-Gibson *et al.*, 2017).
- Facilitating schools and others to share resources more efficiently than they might previously have done, or to achieve economies of scale or reductions in risk from resource pooling (Azorín 2018; Ehren & Godfrey, 2017; Gilbert, 2017; Hargreaves, 2010; Hargreaves, 2012; Howland, 2015; Muijs, 2015). An example here is provided by Dí'az-Gibson *et al.* (2017) who note that austerity driven funding cuts are now frequently resulting in schools and community agencies collaborating in order to meet common educational challenges more efficiently and effectively. In Dí'az-Gibson *et al.*'s (2017) example, the provision of extended educational and social services in low-income communities is seen to represent an approach for addressing complex educational challenges through a strategic use of limited set of educational resource such as money and time.

Simultaneously, changes to educational structures have seen the dismantling of old ways of working and the introduction of new approaches with an individualized focus. Although this is occurring in education systems worldwide (e.g. see Hargreaves & Shirley, 2009; Helsper & Hummrich, 2006), England, which has experienced a recent and sharp decline in the support role offered to schools from both the top and the middle tier of government (Local Authorities), provides an exemplar case of such

trends (Armstrong, 2015; Greany, 2017; Handscomb, 2018). In particular, central government policy makers in England, having lost faith in the postwar 'trust and altruism' model of public service delivery in which Local Authorities ran schools with minimal central oversight, have now devolved multiple decision making powers and resources to schools. Included in this process of devolution is the responsibility for teacher professional development, in the belief that this will improve quality and increase innovation (Greany & Earley, 2018; Howland, 2015). To support schools in making best use of their newly found autonomy, the Education White Paper *The Importance of Teaching* espoused a newly found faith in inter-school collaborative networks. For instance, within the white paper it is stated that: 'along with our best schools, we will encourage strong and experienced sponsors to play a leadership role in driving the improvement of the whole school system, including through leading more formal federations and chains' (Department for Education, 2010: 60).

The commitment established in *The Importance of Teaching* has been described elsewhere as the move towards a 'self-improving school system' (Dowling, 2016; Greany, 2017). The characteristics of 'self-improvement' include that individual schools now have greater responsibility for their own improvement; that teachers and schools are expected to learn from each other so that effective practice spreads; and that schools and school leaders should extend their reach to support other schools in improving (Greany, 2014). Successful self-improvement thus depends on the existence of strong networks which foster learning and the sharing of effective practice. Other policy commitments and levers that have accompanied and support the process of self-improvement in England (e.g. the introduction of *academies* and quasi market pressures within the education system) as well as those which impact on the potential for networks formation and sustainability (for instance approaches to formalized collaboration such as Multi Academy Trusts and the notion of *system leadership*) can be found in Chapter 5, (and in Chapter 6 where I also explore the situation for Germany, the country that provides the comparison to England in this study). The notion of self-improvement stretches far beyond England and Germany, of course, and the recognition that networks and networking might represent an effective approach to educational improvement is evident in a tranche of countries including the US, Canada, Finland, Singapore, Scotland, Belgium, Spain, India, Northern Ireland and Malta (Armstrong, 2015; Boylan, 2018).

At the same time, it has been suggested that the realization of self-improvement will emerge from establishing a 'culture of professional reflection, enquiry and learning within and across schools, [centred] on teaching and student learning' (Gilbert, 2017: 6). In light of this, it is worth reflecting that networks are also viewed as instrumental to how teachers can and should develop professionally. More than ever, it is recognized that teachers must be 'active agents of their own growth' (Schleicher, 2012: 73). To actualise professional growth, teachers need to learn: teachers developing is not enough, rather teachers must be knowledgeable, possess practical expertise, and have the wherewithal to

change their behaviours in order to get different results - they must become professional learners (Easton, 2008). Learning results from effective collaboration with others (ibid). But since the school as a unit has become too small in scale and too isolated in nature to provide rich professional learning environment for teachers (Jackson & Temperley, 2006), successful professional learning activities will typically involve three key principals: teachers collaborating between schools; teachers collaborating over time; and teachers collaborating with external partners (Stoll et al., 2012). Thus, achieving the learning culture required by the notion of self-improvement requires networks of teachers who come together (with other key partners) to learn and to share this learning with others. Since not every teacher in a school can collaboratively learn with every other teacher in a network of other schools, the most efficient formation of networks will comprise small numbers of teachers who learn on behalf of others. Therefore, while described as the self-improving school system, the process of improvement leading to system level change must necessarily come from small numbers of networked teachers (along with other stakeholders) engaged with addressing key issues of teaching and learning and able to lead processes of knowledge mobilization and change within their school.

### Professional Learning Networks

It is this recognition that networks and networking operates most effectively at the level of the teacher that has seen a growing number of school leaders and policy-makers turn their attention to Professional Learning Networks (PLNs) as a way of improving

education in schools and across school systems (Armstrong, 2015). Defined by Brown & Poortman (2018: 1) as ‘any group who engage in collaborative learning with others outside of their everyday community of practice, in order to improve teaching and learning in their school(s) and/or the school system more widely’, a graphical conceptualisation of PLNs is set out in Figure 1 below. Here each black dot or white star represents an individual (e.g. a teacher academic researcher, or other stakeholder). The arrows, meanwhile, represent connections and so flows of information or other forms of social capital that occur between individuals. As can be seen, there are two types of groupings of individuals represented in Figure 1. The first, demarcated by the dotted circles, are everyday communities of practice (e.g. a whole school, a subject department, a university department, etc.: see, Wenger, 1998). The second type of grouping – the mass of black dots in the centre of the diagram – represents a PLN. In the three communities of practice presented in Figure 1, the members of the PLN are those individuals who are represented by white stars. Thus, it can be seen that PLNs are comprised of individuals with connections that stretch beyond the dotted circles and into the network of individuals at the centre of the diagram. At the same time, as the number of white stars indicates, PLNs typically comprise a small number of individuals from each community of practice rather than a whole school approach.

Brown & Poortman’s (2018) definition illustrates that PLNs are focused on driving improvements to teaching and learning, which is the core stuff of education. In reality therefore, this

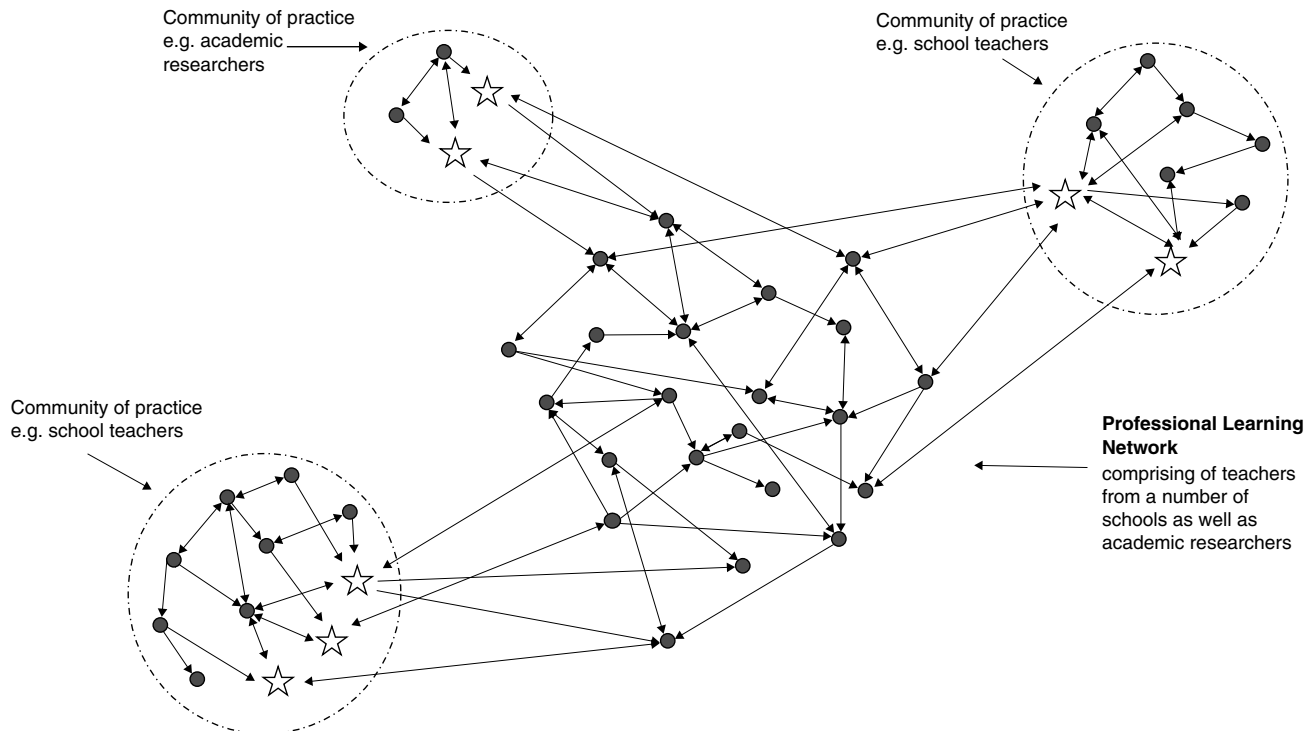


Figure 1. A graphical depiction of PLNs.



means the aims of any given PLN could range from exploring and seeking to improve specific teaching practices and their outcomes, to engaging in a critical examination of the purpose and the aims of the curriculum (as well as a combination of these things). Both the definition and Figure 1 also highlight that PLNs can vary in composition, nature and focus: PLNs may consist of teachers and school leaders from different schools, educators and local or national policymakers, educators and other stakeholders as well as many other potential combinations. Often networks will also form in partnership or involve joint work with academic researchers. Ultimately, however, irrespective of composition or focus, the aim of PLNs is to build capacity, which is defined as ‘the power to engage in and sustain learning of all people at all levels of the educational system’ (Stoll, 2010: 470). Capacity is built first by helping PLN participants to create and share knowledge about specific educational problems as well as innovate (i.e. develop novel responses to these problem). Capacity is also built as PLN participants broker new knowledge and/or innovations to colleagues within their home schools (Hubers, 2016).

### Benefits to this approach

Evidence suggests that PLNs can positively impact on:

- The professional learning of teachers participating within the PLN (e.g. Berkemeyer *et al.*, 2011; Bremm & Drucks, 2018);
- Reflection and inquiry mindedness of teachers within schools connected to PLNs (Bremm & Drucks, 2018). In particular reflection/inquiry mindedness is evidenced through increased motivation to engage in professional discourse and dialogue with colleagues and to share knowledge in effective ways. Alongside this is a more general shift towards a more learning-oriented or enquiry-based culture in schools that have engaged in sustained collaboration (Armstrong, 2015);
- Related to the above is the impact on the innovation potential of participating schools (e.g. Berkemeyer *et al.*, 2008; Bremm & Drucks, 2018; Howland, 2015). In other words, the culture and capacity required to effectively create and spread new knowledge and practice within schools that have connections to networks;
- Improved teaching practice (Armstrong, 2015; Bremm & Drucks, 2018; Darling-Hammond, 2010; Muijs, 2015);
- Student outcomes (e.g. Bremm & Drucks, 2018; Chapman & Muijs, 2014; Hutchings *et al.*, 2012; Muijs, 2015; van Holt *et al.*, 2015); and
- Improving educational provision in disadvantaged areas (Bremm & Drucks, 2018)

PLNs also provide the opportunity to achieve cost effective educational change at scale (Hargreaves, 2010): this is because they only require small numbers of teachers to leave their communities of practice to innovate.

### Conditions for success for PLNs

But the benefits outlined above are not guaranteed. For instance, there are a number of studies suggesting the evidence of networked learning activity on student outcomes is mixed (Armstrong, 2015; Armstrong & Ainscow, 2018); with some studies reporting no association between school engagement in PLN-type activity and outcomes for students (e.g. Sammons *et al.*, 2007; Woods *et al.*, 2006). Furthermore, while there is a drive towards networked forms of learning, it should also be recognised that there is nothing inherently positive or negative about a network: ‘[networks] can be flexible and organic, or rigid and bureaucratic; [they can be] liberating and empowering, or stifling and inhibiting; [networks] can be democratic, but [they] may also be dominated by particular interests’ (Lima, 2010: 2). Moreover, the impact of engaging in a PLN can only be considered sustainable when it results in lasting school wide changes in school policy and practice (Hubers, 2016); with these changes resulting in measurably positive outcomes (Hubers & Poortman, 2018). What’s more, all educators with links to a network should also display ‘agency’. This means that teachers in schools engaged in PLN activity do more than just make lasting changes in their behavior; they should actively try to innovate their practices in an ongoing way (Hubers & Poortman, 2018). Thus, to ensure PLNs are effective, i.e. result in sustained and positive changes in teaching, learning and student outcomes, a number of conditions relating to their nature and functioning need to be met:

The notion of teacher-to-teacher exchange is typically referred to under the broad terms of collegiality or collaboration. As Warren-Little argues, however, such concepts remain ‘conceptually amorphous and ideologically sanguine’ (1990: 509). Warren-little also highlights the widely-held belief that any interaction that reduces the isolation of teachers will contribute: ‘in some fashion to the knowledge, skill, judgment, or commitment that individuals bring to their work, and will enhance the collective capacity of groups or institutions’. At the same time: ‘what passes for collegiality [typically] does not add up to much’, with collaborations often appearing ‘contrived, inauthentic, grafted on, perched precariously (and often temporarily) on the margins of real work.’ (1990: 509-510).

PLNs function through establishing networks of formal relationships (e.g., between schools, hospitals, agencies, etc.) and informal relationships (e.g. one-to-one social interactions), thereby creating an interconnected approach to tackling important and persistent educational issues (Díaz-Gibson *et al.*, 2017). The diversity of knowledge, skills, and capacities that each network participant provides represents an ‘important organizational asset’, that can be made available to others (Díaz-Gibson *et al.*, 2017: 1043). It is **effective collaboration** however that enables the social capital available with networks to be harnessed.

At the same time, there are many ways to collaborate and not all of them are always effective. This means there is a lot yet to be learned about professional collaboration and the conditions under

which it provides benefits for professional practice and student achievement. Hargreaves (2018). What is known, however, is that effective collaboration is that which induces mutual obligation, fosters interdependence, exposes the practice of teachers to the scrutiny of others, and encourages initiative in terms of developing approaches to teaching and learning (Warren-Little, 1990). For instance, Warren-Little posits four ideal types of collaboration which differ according to the extent to which they induce these key factors: storytelling and scanning; aid and assistance; sharing; and joint work. The first, *storytelling* represents the occasional and opportunistic forays undertaken teachers as they seek out specific ideas, information, solutions, or reassurances. At the same time teachers remain autonomous and free to choose which of these stories they engage with or act upon. Within this mode of collaboration, independent trial and error acts as the principal route to developing competence. (Warren-Little, 1990: 514). The second ideal type, *aid and assistance*, reflects the idea that teachers offer help and support when asked, but only when asked. This is because in schools where this mode of collaboration is prevalent, discussions about teaching practice become associated with judgments on the competence of teachers: both judgments of those seeking support and judgments on the competency of those supplying such support (Warren-Little, 1990: 516). Warren-Little's third type of collegiality – *sharing* – spotlights the routine sharing of materials and methods as well as the open exchange of ideas and opinions (1990: 518). Acting in this way provides teachers with an opportunity to learn about others' practices and to compare this to their own. Even so, sharing can be variable in nature: different teachers may engage with more or fewer teachers, their engagement may be fully or only partially reciprocated and teachers may reveal much or little of their thinking, ideas, practice or materials or ideas (Warren-Little, 1990: 518). Warren-Little uses the term *joint work* to represent encounters among teachers that are grounded in 'shared responsibility for the work of teaching (interdependence), collective conceptions of autonomy, support for teachers' initiative and leadership with regard to professional practice, and group affiliations grounded in professional work' (Warren-Little, 1990: 519). Teachers are more motivated to collaborate with one another when the success of their efforts depends on it, and as a result of this interdependence a norm based on the thoughtful, explicit examination of practices and their consequences is likely to emerge (Warren-Little, 1990: 522).

Effective collaboration is also grounded in **trust** existing between participants (Bremm & Drucks, 2018; Howland, 2015): where trust relates to our beliefs regarding the competence, benevolence and the integrity of another (Ehren, 2018). In particular, high levels of trust are associated with a variety of reciprocal efforts, including where learning, complex information sharing and problem solving, shared decision making, and coordinated action are required. This is because in high trust situations, individuals feel supported and 'safe' to engage in risk taking and the innovative behaviour associated with efforts at sharing, developing or trialling new practices (also Bryk & Schneider, 2002; Finnigan & Daly, 2012; Mintrop & Trujillo, 2007). In particular, a trusting work environment is instrumental to the type of 'double-loop' learning that is a prerequisite if teachers

are to openly and collegially challenge and question their foundational assumptions – as well as engage in ongoing and open disclosure about problems and challenges – as part of a process of seeking to continually improve teaching and learning (Argris & Schön, 1996; Bremm & Drucks, 2018). Trust takes time to develop (Howland, 2015) but can materialise more quickly when networking takes place between schools with similar quality features and similar context factors (Bremm & Drucks, 2018): this represents the notion of **homogenous networks**, which contrasts with much of the perceived knowledge of England, where networks can often comprise of high and low achieving schools in order that the latter can learn and benefit from engaging with the former (Chapman & Muijs, 2014; Howland, 2015; Muijs, 2015).

Increasing urbanization indicates that physical proximity appears more important than ever, with communications technology used to link megacities rather than encourage spatial diffusion (Castells, 2010). In physical networks,<sup>ii</sup> **geographical proximity** often serves to act as a delineating boundary for approaches to collaboration and improvement (Armstrong & Ainscow, 2018). Reasons for employing a geographic focus include 'closeness', which makes it easier for participants to physically come-together, but also in terms of shared community, aspirations and needs (especially in relation to demographics) (e.g. Coldron *et al.*, 2014; Duvencek, 2016; Howland, 2015; Tulowitzki *et al.*, 2018). Howland (2015) also suggests that with a shared geography comes a common history and understanding. At the same time networks need to eschew fear of competition, for example competition regarding new ideas in terms of attracting students when in adjacent neighbourhoods (Bremm & Drucks, 2018).

Networks must have a **common focus and work on clearly defined topics** (Bremm & Drucks, 2018; Rempe-Gillen, 2017; Warren-Little, 1990). At the level of the PLN, focus refers to having a shared sense of purpose amongst the individual PLN members in relation to the specific goals of the PLN. While every member does not need to share exactly the same goal or reason for participating in the PLN, there should be at least a set of basic priorities or principles that serve to guide the choices of participants (Warren-Little, 1990). The more participant's goals are aligned and the more PLN members agree on the reasons why they are working together, the easier it will be to maintain a conducive and productive environment and to ensure everyone's expectations are met (Hubers & Poortman, 2018). The commonality of focus should also be grounded in a shared understanding on the purposes of education. For example, what conclusions have network members reached in terms of the *antinomy* or tension that often exists between teachers being required to focus on performance in terms of instrumental exam outputs vs. the role of teachers/school in providing support for

<sup>ii</sup> And in this book the principal focus is on PLNs as primarily physical rather than virtual entities. This is not to preclude, however, aspects of PLN activity taking place via social media etc. (e.g. see Rempe-Gillen, 2012) and/or facilitated by transformations in communication technologies (Castells, 2010).

more affective aspects of students lives or their responsibility for students *qua* persons (Helsper & Hummrich, 2006) (beliefs that are driven by perspectives on how to balance and respond to the heterogeneous expectations teachers and schools are confronted with: von Hippel, 2014)? Should views here be fundamentally different, then the network may find itself pulling in different directions in terms of the issues of teaching and learning that need to be addressed and the appropriate learning and action that should occur in response.

The notion of **reflective professional inquiry** refers to the conversations teachers have about serious educational issues or problems. Teachers should be actively and collectively questioning ineffective teaching routines while finding proactive means to acknowledge and respond to them (Hubers & Poortman, 2018). As Warren-Little (1990) notes, we need to ensure collaboration is directed towards the development of well-informed choices, rather than the mutual reinforcement of poorly informed habits. Reaching a situation of being well-informed means engaging with a range of perspectives through open debate and discussion (Bauman, 2012; Stoll, 2010). Explicit attention should also be given to both **individual and group learning**, which too promotes effectiveness. Linking this with the notion of collaboration is the assumption that teachers' understanding of their work will be advanced through time spent with others (Warren-Little, 1990). Thus, individual members' prior knowledge and motivation will influence their own learning, but will also influence the progress of others. However, having individual members with various backgrounds, can be experienced as impeding if some members are (or rapidly move) ahead in their thinking and learning in relation to the focus area, or are generally more motivated to spend time on PLN activity. At the same time any variation in backgrounds can also prove to be an advantage if different perspectives can provide input for discussion and reflection, enabling all participants to learn. In turn, progress made and activities undertaken by the PLN will also influence individuals, leading to self-reinforcing learning loops.

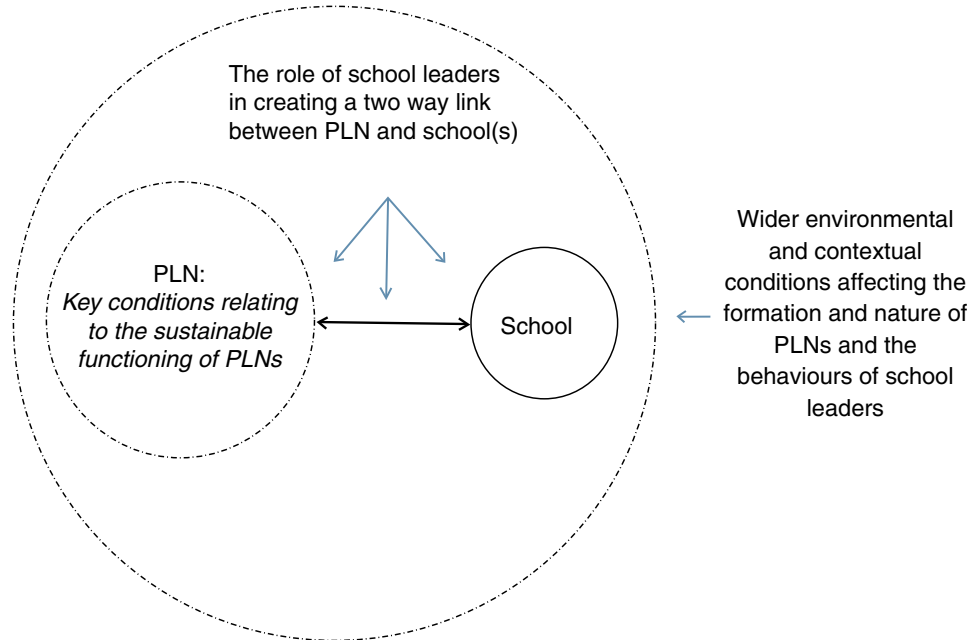
**A need for long term commitment;** Hutchings *et al.* (2012) suggest that it often takes time for the results of networked collaboration to materialize: with three years suggested as the minimum time required to achieve meaningful improvement to children's outcomes (ibid). This means, therefore, that all stakeholders must have this long term perspective in mind and be willing to commit to it along with the resources this requires (although it can also be beneficial if resource can be provided from external sources, such as the middle tier of government: Smith *et al.*, 2012). A long term perspective also highlights the need for network participants to experience **mutual benefit** from engaging: collaboration is unlikely to last if PLN members believe they can achieve the same goals working as individual schools (Muijs, 2015; Warren-Little, 1990). Interim and externally validated short term 'wins' can often therefore be key (Muijs, 2015). At the same time a longer term commitment to PLNs is also likely to be a function of whether school leaders perceive engagement in networked learning activity as 'prestigious' or signify a particular attribute or brand value that is important to the story schools wish to tell about themselves (Brown, 2018; Close, 2016).

Networks can be **formal and contracted in nature** or **informal and involuntary** (Armstrong, 2015; Ehren & Godfrey, 2017). Formal, contracted networks are typically goal-directed and will benefit from more stable patterns of social relations, deliberate interactions and structure in their interactions with organizational arrangements and rules. There is little evidence to suggest however that either formal or informal networks have more or less impact on teaching and learning outcomes than the other: at the same time there tend to be more studies of impactful formalised networks (e.g. see Bremm & Drucks, 2018; Chapman & Muijs, 2014; Muijs, 2015). Likewise, the leadership and governance of networks can vary from **non brokered shared governance** to being **highly brokered by one organization**, and from **participant-led** to **externally led** (Ehren & Godfrey, 2017). It is suggested that highly brokered governance tends to be more effective when networks are larger: here trust, as well as the consensus, regarded the purpose of the network tends to decrease as a function of size; while the time, effort and skill required to coordinate the network increases (Ehren & Godfrey, 2017). Shared governance, on the other hand, is most likely to be effective when trust is pervasive throughout the network and the more homogenous nature of smaller networks provides a strong basis for bottom-up collaboration among network participants (ibid).

A final category is **leadership** (Brown & Flood, 2019; Hubers & Poortman, 2018). In the first instance, leadership is required of the networks themselves to ensure that they function effectively (Briscoe *et al.*, 2015; Dowling, 2016; Muijs, 2015). Second however, it is also the role of school leaders to ensure that there is meaningful participation by their teachers in network activity and that this participation makes a difference within teachers' 'home' schools. This is illustrated in Figure 2 where it can be seen that the factors affecting the likely formation and success of PLNs in improving teaching and learning do not only reside within PLNs but also relate to the schools to which they are connected and the contextual and environmental factors within which they are situated.

Of these two aspects of leadership, it is that latter that is explored in this paper. To begin with school leaders must want their school to actively engage with the work of the PLN. In other words, school leaders must want to reach out beyond the boundaries of their schools and for their teachers to engage in collaborative endeavours with others. Effective engagement with PLNs thus requires school leaders to adopt a very external focus and to couple their desire to do the best for their students with a recognition that this can often best be served through collaborative work. Coupling an external focus with their moral driver for their students results in school leaders needing to: 1) sign up to the common purposes of the network and the focus area of networked activity; 2) recognize that, to ensure the successful ongoing operation of the network common resources might need to be established (e.g. new resource generated or existing resourced transferred) and that this resource will need to be maintained over time); 3) acknowledge a moral obligation towards, and an acceptance of collective responsibility for, the outcomes of all children in all schools within the network. In other words schools engage in networks to gain in terms of their teacher's learning but also to support teachers in other





**Figure 2.** Factors affecting the likely formation and success of PLNs in improving teaching and learning.

schools others with their own learning requirements; 4) finally, it is argued by [Díaz-Gibson et al., \(2017: 1044\)](#) that networked leadership represents a form of non-hierarchical leadership, where information and expertise substitutes for authority and the actualization of leading is a self-organizing process. Since network leaders and participants will not necessarily also be formal leaders, school leaders are required to recognize that distributed leadership needs to be enabled to flourish ([Jackson & Temperley, 2006](#)). This means that PLN participants are supported to engage in networked activity and to lead change within their own school. Such an approach to leadership represents a stark contrast to many schools where often the impetus for change and the introduction of new ideas comes from the school leader themselves.

Once prepared to engage in networked forms of learning, specific approaches designed to maximize the benefit to their school are school leaders' functions of *formalizing*, *prioritizing* and *mobilizing* ([Brown & Flood, 2019](#)). First, teachers and schools face a myriad of competing priorities. At the same time school leaders are responsible for direction setting: deciding on the activities that should be focused on and signalling these to ensure common understanding. In this light, the notion of *formalization* relates to the need for school leaders to cement their school's and teacher's participation in the PLN by ensuring that: 1) the activity of the PLN corresponds to the improvement priorities and vision for the school; 2) PLN participation remains a key focus of the school, and that its importance is recognized. *Prioritizing* engagement in PLN activity, meanwhile, concerns ensuring adequate resources exist to allow the work of the PLN to get done. While engaging in learning networks can be beneficial, for this to occur, school leaders must be prepared to provide opportunities for such engagement, and this requires

an intentional commitment of resources (especially *time*). Finally, the aim of the PLN is to engender the development and spread effective practice. It is rare however that new knowledge automatically spread through schools, or innovations immediately adopted by teachers. School leaders also need, therefore, to understand how the knowledge and innovation that emerges from networked learning can be best *mobilized*: brokered using boundary objects so ensuring that other teachers and educators within their school engage with and adopt such innovation - with teaching and learning benefiting as a result.

### Moving forward

Although we know that ensuring a meaningful two-way link between PLNs and the 'home' schools of teachers requires school leaders to engage in acts of formalisation, prioritisation and mobilization; what we know less about are the actions school leaders currently take to address these factors. Also, the success of these actions and the support school leaders might need to engage effectively in PLN activity moving forward. Furthermore, we know PLNs can be especially beneficial for schools in challenging circumstances since they can enable schools to work with and learn from other schools with similar challenges and contextual factors ([Bremm & Drucks, 2018](#)). Again however, what is less clear is how school leaders in such schools can engage effectively with PLNs and what assistance might be required to help maximize the impact to their schools from doing so. As such these issues should be regarded as providing the agenda for research work into PLNs moving forwards, with pertinent research questions including:

1. What actions do school leaders undertake to ensure their school both supports and engages meaningfully and effectively with the aims and purpose of the PLN?

2. How do school leaders support participating teachers from their school to engage effectively in/with PLN activity??
3. What actions do school leaders engage in to ensure all other teachers in their school know about, input into, engage with and embed as well as continue to improve the products and outputs of the PLN?
4. What effect do these actions have on PLNs participants as well as their colleagues in school?
5. What actions can school leaders take to improve the benefits to their school of engaging in PLNs? What support might best help them to achieve this? Are there leadership actions/support that specifically ensure PLNs can drive educational improvement in disadvantaged areas?

By exploring the answers to questions these from within extant successful case studies of PLNs and by developing generalised or 'ideal type' actions that can be adapted and used by other school leaders, we will be in a better place start to realising the benefits of PLNs for teachers and students, in a consistent and sustained basis. Time to take up the challenge!

### Data availability

No data is associated with this article.

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## References

- Argris C, Schön D: **Organisational learning II: Theory, Method, Practice, Increasing Professional Effectiveness**. (San Francisco, CA, Jossey Bass). 1996.
- Arkhipenka V, Dawson S, Fitriyah S, *et al.*: **Practice and performance: changing perspectives of teachers through collaborative enquiry**. *Educ Res*. 2018; **60**(1): 97–112.  
[Publisher Full Text](#)
- Armstrong P: **Effective partnerships and collaboration for school improvement: a review of the evidence**. (London, Department for Education). 2015.  
[Reference Source](#)
- Armstrong P, Ainscow M: **School-to-school support within a competitive education system: views from the inside**. Presented at the *International Congress for School Effectiveness and Improvement*, Singapore, 8–12 January, 2018.  
[Reference Source](#)
- Azorin C: **Networking in Education: Lessons from Southampton**. Presented at the *European Conference on Educational Research annual meeting*. Bolzano (Italy). 4 to 7 September 2018. 2018.  
[Reference Source](#)
- Bauman Z: **Liquid Modernity**. (Cambridge, Polity Press). 2012.  
[Reference Source](#)
- Berkemeyer N, Bos W, Manitus V, *et al.*: **"Schulen im Team": Einblicke in netzwerkbasierete Unterrichtsentwicklung**. In N. Berkemeyer, W. Bos, V. Manitus and K. Müthing (Eds) *Unterrichtsentwicklung in Netzwerken: Konzeptionen, Befunde, Perspektiven* (Münster, Waxmann), 2008; 19–70.  
[Reference Source](#)
- Berkemeyer N, Jrvinen H, Bos W: **Unterricht gemeinsam entwickeln. Eine Bilanz nach vier Jahren schulischer Netzwerkarbeit**. *Pädagogik*. 2011; **11**(11): 46–51.
- Boylan M: **Enabling adaptive system leadership: Teachers leading professional development**. *Educ Manag Adm Lead*. 2018; **46**(1): 86–106.  
[Publisher Full Text](#)
- Bremm N, Drucks S: **Building up school to school networks using an evidence-based approach**. Presented at the *European Conference on Educational Research annual meeting*, Bolzano (Italy), 4 to 7 September 2018, 2018.  
[Reference Source](#)
- Briscoe P, Pollock K, Campbell C, *et al.*: **Finding the Sweet Spot: Network Structures and Processes for Increased Knowledge Mobilization**. *Brock Education Journal*. 2015; **25**(1): 19–34.  
[Reference Source](#)
- Brown C: **How social science can help us make better choices: Optimal rationality in action**. (London, Emerald). 2018.  
[Reference Source](#)
- Brown C, Flood J: **Formalise, Prioritise and Mobilise: How school leaders secure the benefits of Professional Learning Networks**. (London, Emerald). 2019.  
[Reference Source](#)
- Brown C, Poortman C: **Introduction**. In C. Brown and C. Poortman (Eds) (2017) *Networks for learning: effective collaboration for teacher, school and system improvement*, (London, Routledge). 2018.
- Brown C, Schildkamp K, Hubers M: **Combining the Best of Two Worlds: A Conceptual Proposal for Evidence-Informed School Improvement**. *Educ Res*. 2017; **59**(2): 154–172.  
[Publisher Full Text](#)
- Bryk A, Schneider B: **Trust in schools: A core resource for school improvement**. (New York, NY, Russell Sage Foundation). 2002.  
[Reference Source](#)
- Castells M: **The Rise of the network Society**. (Chichester, Wiley-Blackwell). 2010.  
[Publisher Full Text](#)
- Chapman C, Muijs D: **Does school-to-school collaboration promote school improvement? A study of the impact of school federations on student outcomes**. *School Effectiveness and School Improvement*. 2014; **25**(3): 351–393.  
[Publisher Full Text](#)
- Close P: **'System leader' consultancy development in English schools: a long-term agenda for a democratic future?** *School Leadership & Management*. 2016; **36**(1): 113–132.  
[Publisher Full Text](#)
- Coldron J, Crawford M, Jones S, *et al.*: **The Restructuring of Schooling in England: The Responses of Well-positioned Headteachers**. *Educ Manag Adm Lead*. 2014; **42**(3): 387–403.  
[Publisher Full Text](#)
- Darling-Hammond L: **The flat world and education: How America's commitment to equity will determine our future**. (New York: Teachers College Press). 2010.  
[Reference Source](#)
- Department for Education: **The importance of teaching: The schools white paper**. (London, Department for Education). Accessed on 16 May 2018, 2010.  
[Reference Source](#)
- De Vries S, Prenger R: **A lesson study professional learning network in secondary education**. In C. Brown and C. Poortman, C. (Eds) (2018) *Networks for learning: effective collaboration for teacher, school and system improvement*. (London, Routledge). 2018.  
[Reference Source](#)
- Di'az-Gibson J, Zaragoza MC, Daly AJ, *et al.*: **Networked leadership in Educational Collaborative Networks**. *Educ Manag Adm Lead*. 2017; **45**(6): 1040–1059.  
[Publisher Full Text](#)
- Dowling S: **Professional development and the Teaching Schools experiment in England: Leadership challenges in an alliance's first year**. *Management in Education*. 2016; **30**(1): 29–34.  
[Publisher Full Text](#)
- Duveneck A: **Bildungslandschaften verstehen: zum Einfluss von Wettbewerbsbedingungen auf die Praxis**. (Weinheim, Beltz Juventa). 2016.  
[Reference Source](#)
- Easton L: **From professional development to professional learning**. *Phi Delta Kappan*. 2008; **89**(10): 755–61.  
[Publisher Full Text](#)
- Ehren M: **Accountability and trust: two sides of the same coin?** invited talk as part of the University of Oxford's *Intelligent Accountability Symposium II*. Oxford, 12 December, 2018. 2018.
- Ehren M, Godfrey D: **External accountability of collaborative arrangements;**

- a case study of a Multi Academy Trust in England. *Education Assessment Evaluation and Accountability*. 2017; **29**(4): 339–362.  
[Publisher Full Text](#)
- Finnigan KS, Daly AJ: **Mind the gap: organizational learning and improvement in an underperforming urban system.** *Am J Educ*. 2012; **119**(1): 41–71.  
[Publisher Full Text](#)
- Gilbert C: **Optimism of the will: the development of local area-based education partnerships. A think piece.** (London, London Centre for Leadership in Learning). 2017.  
[Reference Source](#)
- Greany T: **Are we nearly there yet? Progress, issues and possible next steps for a self-improving school system.** (London, IOE Press). 2014.  
[Reference Source](#)
- Greany T: **Karmel Oration: Leading schools and school systems in times of change – A paradox and a quest.** Presented at Australian Council for Educational Research (ACER) Research Conference, Melbourne, Australia, 28–29 August, 2017. 2017.  
[Reference Source](#)
- Greany T, Earley P: **The paradox of policy and the quest for successful Leadership.** *Professional Development Today*. 2018; **19**(3&4): 6–12.  
[Reference Source](#)
- Hadfield M, Jopling M, Noden C, et al.: **What does the existing knowledge base tell us about the impact of networking and collaboration? A review of network-based innovations in education in the UK.** (Nottingham, UK: National College for School Leadership). 2006.
- Handscob G: **Improving the System.** *Professional Development Today*. 2018; **19**(3&4): 4.
- Hargreaves A: **Foreword.** In C. Brown and C. Poortman (Eds) (2017) *Networks for learning: effective collaboration for teacher, school and system improvement.* (London, Routledge). 2018.
- Hargreaves D: **Creating a Self-improving School System.** (Nottingham, National College). 2010.  
[Reference Source](#)
- Hargreaves D: **A self-improving school system: towards maturity.** (Nottingham, National College). 2012.  
[Reference Source](#)
- Hargreaves A, Shirley D: **The Fourth Way: The Inspiring Future for Educational Change.** (California, CA Corwin Press). 2009.  
[Publisher Full Text](#)
- Helsper W, Hummrich M: **Changes in the relation of education systems and youth in the horizon.** 2006.  
[Reference Source](#)
- Howland G: **Structural reform: The experience of ten schools driving the development of an all-age hard federation across a market town in northern England.** *Management in Education*. 2015; **29**(1): 25–30.  
[Publisher Full Text](#)
- Hubers M: **Capacity building by data team members to sustain schools' data use.** (Enschede, Gildeprint). 2016.  
[Publisher Full Text](#)
- Hubers M, Poortman C: **Establishing sustainable school improvement through Professional Learning Networks.** In C. Brown and C. Poortman (Eds) (2017) *Networks for learning: effective collaboration for teacher, school and system improvement*, (London, Routledge). 2018.  
[Reference Source](#)
- Hutchings M, Greenwood C, Hollingworth S, et al.: **Evaluation of the City Challenge programme (Research Report DFE-RR215).** (London, Department for Education). 2012.  
[Reference Source](#)
- Huxham C, Vangen S: **Managing to Collaborate: The Theory and Practice of Collaborative Advantage.** (Abingdon, Routledge). 2005.  
[Reference Source](#)
- Jackson D, Temperley J: **From Professional Learning Community to Networked Learning Community.** (Nottingham, National College for School Leadership). 2006.  
[Reference Source](#)
- Lima J: **Thinking more deeply about networks in education.** *Journal of Educational Change*. 2010; **11**(1): 1–21.  
[Publisher Full Text](#)
- Mintrop H, Trujillo T: **The practical relevance of accountability systems for school improvement: A descriptive analysis of California schools.** *Educ Eval Policy Anal*. 2007; **29**(4): 319–352.  
[Publisher Full Text](#)
- Muijs D: **Improving schools through collaboration: a mixed methods study of school-to-school partnerships in the primary sector.** *Oxf Rev Educ*. 2015; **41**(5): 563–586.  
[Publisher Full Text](#)
- Muijs D, West M, Ainscow M: **Why network? Theoretical perspectives on networking.** *Sch Eff Sch Improv*. 2010; **21**(1): 5–26.  
[Publisher Full Text](#)
- Rempe-Gillen E: **Technologies in mathematics teacher cross-phase and cross-school collaborative professional development.** PhD Thesis, University of Leeds. 2012.  
[Reference Source](#)
- Rempe-Gillen E: **Primary school teacher experiences in cross-phase professional development collaborations.** *Professional Development in Education*. 2018, 2017; **44**(3): 356–368.  
[Publisher Full Text](#)
- Rittel H, Webber M: **Dilemmas in a general theory of planning.** *Policy Sci*. 1973; **4**: 155–169.  
[Publisher Full Text](#)
- Sammons P, Mujtaba T, Earl L, et al.: **Participation in network learning community programmes and standards of pupil achievement: does it make a difference?** *School Leadership & Management*. 2007; **27**(3): 213–238.  
[Publisher Full Text](#)
- Schleicher A: **Preparing teachers and developing school leaders for the 21<sup>st</sup> century: Lessons from around the world.** Paris, Organisation for Economic Co-operation and Development. 2012.  
[Publisher Full Text](#)
- Smith R, Aston H, Sims D, et al.: **Enabling school-driven system leadership.** Slough, NFER. 2012.  
[Reference Source](#)
- Stoll L: **Connecting learning communities: Capacity building for systemic change.** In A. Hargreaves, A. Lieberman, M. Fullan & D. Hopkins (Eds.) *Second International Handbook of Educational Change*. Dordrecht, Springer. 2010; 469–484.  
[Publisher Full Text](#)
- Stoll L, Harris A, Handscomb G: **Great professional development which leads to great pedagogy: nine claims from research.** Nottingham, National College for School Leadership. 2012.  
[Reference Source](#)
- Tulowitzki P, Duvencek A, Krüger M: **A professional learning network for the entire local education system: Educational landscapes in Germany.** In C. Brown and C. Poortman (Eds) *Networks for learning: effective collaboration for teacher, school and system improvement*. London, Routledge. 2018.  
[Reference Source](#)
- van Holt N, Berkemeyer N, Bos W: **Netzwerkarbeit und Schülerleistungen.** In N. Berkemeyer, W. Bos, H. J. J. v. rvinen, V. Manitius and N. van Holt (Eds) *Netzwerk-basierte Unterrichtsentwicklung, Ergebnisse der wissenschaftlichen Begleitforschung zum Projekt 'Schulen im Team'*. Münster, Waxmann, 2015; 119–152.  
[Reference Source](#)
- Von Hippel A: **Program planning caught between heterogeneous expectations – an approach to the differentiation of contradictory constellations and professional antinomies.** *Edukacija Doroslych*. 2014; (1): 169–184.  
[Reference Source](#)
- Warren Little J: **The Persistence of Privacy: Autonomy and Initiative in Teachers' Professional Relations.** *Teach Coll Rec*. 1990; **91**(4): 509–535.  
[Reference Source](#)
- Wenger E: **Communities of Practice: Learning, Meaning and Identity.** (Cambridge, England: Cambridge University Press). 1998.  
[Publisher Full Text](#)
- Woods P, Levacic R, Evans J, et al.: **Diversity and collaboration? Diversity Pathfinders evaluation. Report, (826).** London: Department for Education and Skills. 2006.  
[Reference Source](#)

# Open Peer Review

Current Referee Status: ?

Version 1

Referee Report 31 January 2019

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**Paul Wilfred Armstrong** 

Manchester Institute of Education, University of Manchester, Manchester, UK

This is a timely article in respect of the increasing tendency towards organisational collaboration as a means of educational improvement, notably within the English school context, but also further afield in other school systems internationally. The author is an established scholar in this area of the field, specifically the growing body of work he is developing within school and professional learning networks (PLN). As such he is well placed to reflect on the notion of PLNs and the conditions that facilitate and hinder how effective they might be.

I have a small number of relatively minor suggestions that the author might consider to develop the article further:

- The author draws, predominantly, on literature and evidence from the English and German contexts by way of comparison. It would be helpful if this comparative approach were introduced or signposted much earlier in the article (in the abstract and introduction for example) rather than partway through the section entitled 'Networks in education'.
- Within this section, the author also talks about 'chapters' and a 'study'. These references need to be removed and the paragraph in which they can be found reworded.
- The contrast between homogenous (Germany) and hierarchical (England) networks is interesting. It would be useful if this contrast were explored further. For instance, why have networks tended to evolve in these different ways across these two different contexts?
- Related to the above point, the author might also point to the tensions within the English school system that remains a highly competitive arena and therefore one in which collaboration does not always sit comfortably.
- The author acknowledges a number of important factors that influence the success of networks. One notable omission is the historical context (i.e. whether and the extent to which organisations and individuals have worked together in the past.)

I enjoyed reading this piece. The suggestions I have put forward should be interpreted constructively.

**Competing Interests:** No competing interests were disclosed.

**Referee Expertise:** School collaboration

**I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.**

Author Response 31 Jan 2019

**Chris Brown**, University of Portsmouth, UK

Thanks for reviewing this - these are all helpful and valid points. As other feedback comes in I will respond to them and revise the article accordingly.

***Competing Interests:*** No competing interests were disclosed.