Why network? Theoretical perspectives on networking

Daniel Muijs*, Mel West and Mel Ainscow

University of Manchester, Manchester, UK

In recent years, networking and collaboration have become increasingly popular in education. However, there is at present a lack of attention to the theoretical basis of networking, which could illuminate when and when not to network and under what conditions networks are likely to be successful. In this paper, we will attempt to sketch the theoretical background to networking drawing on work in sociology, psychology, and business studies and looking at 4 main theoretical frameworks: constructivism, social capital theory, Durkheimian network theory, and the concept of New Social Movements. We will also explore differences between networks on a number of factors such as goals, activities, density, spread, and power relations.

Keywords: collaboration; networking; effectiveness; improvement; theory

Introduction

In recent years, networking and collaboration have become increasingly popular in education. Local and national initiatives have stimulated a variety of cooperative arrangements, from groups of schools that have volunteered to work together, to groups that have been induced to do so in the context of incentives, to others that have been subject to direct external pressure to collaborate (West & Ainscow, 2006). These many initiatives have not typically been based on a clear understanding and definition of what is meant by networking in education, however. One of the few definitions found in education was coined by Hadfield, Jopling, Noden, O’Leary, and Stoll (2006) on behalf of the National College for School Leadership (NCSL) in England. A network is defined by them as: “groups or systems of interconnected people and organisations (including schools) whose aims and purposes include the improvement of learning and aspects of well-being known to affect learning” (Hadfield et al., 2006, p. 5). This, however, is both an overly broad definition of networking when one is discussing networking at the organisational level, and an overly prescriptive one. On the one hand, it appears to encompass networks of individuals, possibly even within schools, while, on the other hand, it is highly prescriptive in its insistence on one particular goal that would describe all network activity. As we will see below, fruitful forms of interschool networking do not always revolve around pupil learning. We therefore propose a broader definition of
networking as “at least two organisations working together for a common purpose for at least some of the time.” We feel that this definition is better able to encompass the variety that characterises networks in education. The term “organisations” is of some import here, as of course educational networks may consist of a school and one or more other organisations, rather than two or more schools. Collaboration can then be described as “joint activities between actors from different organisations within the network”.

Of course, while networking has recently come to the fore in education, the concept is long established in other fields, with strong roots in social science, psychology, and business studies, and we will draw on perspectives from these fields as well as from education in this paper. Traditionally, in sociopsychological terms, a network has been defined as a set of actors (individuals or organisations such as schools) connected by a set of ties, which can be of a more or less formal nature (Borgatti & Foster, 2003).

As in education, networking and collaboration have become more prevalent and more widely studied in organisations both in the private and public sectors, though certainly in the private sector this move predates that in education, largely due to the less externally regulated nature of private organisations. The roots of the move towards networked organisations are seen to lie in advances in the understanding of organisational learning and especially the perceived advantages of collaborative learning; and, in the private sector at least, from an increased need for innovation stemming from intensified international competition that necessitates flexible networks which can reduce the exposure of firms to risk and uncertainty (Borgatti & Foster, 2003; Cohen & Levinthal, 1990).

Arguably, this need for higher levels of innovation is also present in the education system, as demands on the system have increased due to a greater political interest in education resulting from:

- a perceived growth of the importance of education in the globalised knowledge economy, which requires highly educated citizens; and
- a (perceived) diminution of the influence of politics on the economic sphere in the light of heightened global competition and a broad consensus, at least in the developed economies, around a free market approach to economic policy, which has left education as one of few major spheres which politicians see themselves as able to influence.

The demands for ever higher levels of achievement, intolerance of failure, and, in some countries at least, concern over the remaining inequities that characterise the system, mean that schools are increasingly being set demanding goals requiring innovation. This is especially challenging for schools serving disadvantaged communities, required to show high levels of raw exam performance, while being able to directly affect at most 25% of the variance in pupil achievement, the remainder being down to pupil-level factors (Teddlie & Reynolds, 2000). Furthermore, while both national policies and school improvement programmes and initiatives can show evidence of impact, they have not been able to close the gap in achievement between high- and low-socioeconomic status (SES) schools (Ainscow, Muijs, & West, 2006).

The move towards networks can also be seen as part of a more general realignment of the relationship between central government and both local government and the market, characterised by increasing decentralisation, privatisation, and
collaboration between government agencies, and between government and the private sector. A factor related to this is the erosion of the power of the nation state in favour of complex layerings and networks between different tiers of government (Hadfield, 2005; Hargreaves, 2004). This complexity, characterised by a multiplicity of relationships, can certainly be seen in education, where schools increasingly belong to a variety of structures (such as an Excellence in Cities collaborative, a Local Authority, and a Federation of schools).

**Why network?**

In the light of the growth of networks and the support for networking and collaboration as a school improvement strategy, as found, for example, by West (this issue) in his case studies of improving schools in disadvantaged areas, an important question that needs to be answered is what the theoretical basis for networking is. In other words, why should organisations (and in particular schools) network, and what benefits should, theoretically at least, accrue from this?

**Goals and activities**

The first dimension on which networks can be distinguished is that of goals and activities. In contrast to views of networking as being necessarily concerned with learning and school improvement, other goals are both theoretically possible and present in the education system. For example, a renewed emphasis on full-service schools and multi-agency working has in many countries led to schools collaborating with each other and with external agencies to be able to provide a full service to pupils, addressing the social, health, and psychological needs of pupils in ways that would not be possible for individual schools (Sailor, 2002). Schools can also network, in the way businesses often do, to save material and staff costs and to apply for funding through joint bids (Nooteboom, 2004) or for the provision of more effective and scalable Continuing Professional Development (CPD) activities (Hadfield, 2005). It is clear that a pure school improvement orientation may therefore be too limited a viewpoint when discussing networking in schools. Galaskiewicz (1985) defined four goals of interorganisational cooperation: acquire resources, reduce uncertainty, enhance legitimacy, and attain collective goals, while other research from the business field has defined collaboration as aimed at gaining access to information, resources, markets, and technologies (Gulati, Nohria, & Zaheer, 2000).

In educational practice, network goals as they currently appear to exist can be broadly defined as being about:

- school improvement;
- broadening opportunities (including networking with non-school agencies such as social services or business);
- resource sharing.

As well as having different goals, school networks can be distinguished in terms of the timescale of activities undertaken. Activities undertaken by networks are obviously highly varied. Nevertheless, some key distinctions have been observed in terms of activity timescales. Some network activities are essentially short-term
“fixes”, aimed at immediate issues of concern (such as getting out of special measures), but with little or no potential for longer term impact. Others are intended to bring about much more fundamental changes (e.g., changes in the school’s culture or image), which may take several years to achieve, or lead to noticeable impacts. Many strategies fall somewhere in between (e.g., a co-ordinated local strategy for inclusion or setting up an action-learning set for headteachers), offering some combination of short-term impact and longer term development.

Therefore, networking can be aligned along two dimensions, in terms of goals and activities, as presented in Table 1. Examples of each of these can be readily found in ongoing research on networking, as found in the mainly qualitative evidence of a review of research conducted by West and Ainscow (2006), and one example has been included in each cell. These examples are obviously far from exhaustive and are offered as a snapshot rather than a definitive categorisation of all

<table>
<thead>
<tr>
<th>Goals</th>
<th>Short term</th>
<th>Medium term</th>
<th>Long term</th>
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<tbody>
<tr>
<td>School Improvement</td>
<td>Partner school shares system to target D/C(^1) borderline pupils.</td>
<td>School leaders support each other by sharing data and openly discussing approaches to school development. Leaders are available for support when necessary.</td>
<td>Schools develop joint accountability systems, collegial leadership approaches, and sustained support networks that draw in any new leaders in the network.</td>
</tr>
<tr>
<td>Broadening opportunities</td>
<td>Partner schools put on a joint exam preparation day.</td>
<td>Partner schools develop some shared courses, offering specific vocational courses in each partner school to all pupils in the partnership.</td>
<td>Partner schools develop joint curriculum planning systems, with development done collaboratively.</td>
</tr>
<tr>
<td>Sharing resources</td>
<td>Teacher brought in from other school for Office for Standards in Education (Ofsted) inspection.</td>
<td>Teachers regularly help out in other network schools, with swapping and peer teaching common.</td>
<td>Joint appointments made to the network, schools collaboratively plan recruitment and succession.</td>
</tr>
</tbody>
</table>

Notes: \(^1\)Pupils who are currently working at the level of a D grade but may be able to achieve a C grade in the General Certificate of Secondary Education (GCSE) exams at the end of compulsory schooling in England. This is important for schools, as grades A*-C are seen as a “good” pass and treated as such for accountability purposes.
networking activities that may take place in schools. They are also not intended to be normative. In particular, we do not intend to suggest that short-term activities are inherently less valuable than long-term activities. Dependent on the goals of the collaborative activities (e.g., coming out of special measures), the opposite may be true.

Theories of networking

While the principle of networking in education comes largely from practitioners and researchers with a practical school improvement focus and is lacking a theoretical base in education (which is unsurprising in view of the applied nature of education as a field of inquiry), this theoretical base does exist outside of the field, in sociology, psychology, and business studies. These underlying theories have frequently been described by the shorthand “network theory”. However, four distinct theoretical perspectives can be seen to make up the broader category: constructivist organisational theory, the theory of social capital, the “New Social Movements” theory, and the Durkheimian network theory.

Constructivist organisational theory as a basis for networking

According to constructivist theory, organisations are sense-making systems creating shared perceptions and interpretations of reality. This means that each organisation will, to a certain extent, have its own unique perception of reality, albeit one that is anchored in its context (organisations are thus not free to construct an unanchored reality without failing). This sense-making function is essential for organisations to function effectively but runs the risk of becoming myopic, in that this shared perception of reality may be closed to external influences leading to a disconnection with alternative realities and the organisation’s environment. It is this myopia that can be addressed through networking with other organisations or other external partners that can provide access to a complementary cognition (Weick, 1995). This “myopia problem” also means that the more uncertainty and complexity exist in the environment, the more there is a need for collaboration to ensure that organisations are able to adopt the necessary competence to cope with the complexity that surrounds and impacts on them (Nooteboom, 2004). This would certainly appear to be the case in education, and particularly for schools serving disadvantaged communities.

The constructivist view of the organisation is connected to Vygotskian views of learning. Vygotsky posited that co-operation lies at the basis of learning, through the way in which interaction leads to scaffolding that allows actors to achieve more than they would be able to do individually (Vygotsky, Vygotsky, & John-Steiner, 1978). Knowledge for Vygotsky, like for Piaget (Piaget & Inhelder, 2000), is embodied in actions and interactions with the environment and others. In this sense, organisations are most likely to be effective learners where they form communities of practice in networks or other collaborative arrangements and are engaged in a process of social learning that occurs when actors who have a common interest in some subject or problem collaborate to share ideas, find solutions, and build innovations. This view of collaborative ventures as communities of practice therefore presupposes that new knowledge emerges as groups work together towards the achievement of joint goals (Borgatti & Foster, 2003).
However, as organisations have complementary cognitions and a different sense of reality, collaboration, while often necessary, is by no means straightforward. In order for learning and growth to occur, collaborating organisations need to have sufficient cognitive distance for new insights to emerge but at the same time need to be similar enough for dialogue to be possible and constructive (Nooteboom, 2004). Communication and collaboration between organisations over time will, however, lead to organisations becoming more similar to one another (Brass, Galaskiewicz, Greve, & Tsai, 2004). This could facilitate communication but could conversely encourage myopia in the collaborative.

Constructivist organisational theory can clearly be linked to moves towards creating schools as learning communities, in that, from the constructivist point of view, this effort may be more successful if carried out by schools collaborating in a network rather than by schools acting alone. School networks can therefore be said to fall within this model when they are formed primarily with the goal of knowledge creation and are constructed in such a way as to allow optimal openness and collaboration. Joint CPD, regular contacts between staff across schools and from all levels of the school hierarchy, and relationships based on the view that all schools in the network have a valuable contribution to make would characterise this type of network.

Creating social capital as a basis for networking

A related theory on the importance of networking focuses on the value of networking and collaboration in creating social capital. Social capital contains three main elements:

(1) resources embedded in a social context;
(2) that are accessed or mobilized;
(3) in purposive action (Lin, 1999, p. 30).

The value of networking in this perspective is seen as lying in its ability to harness resources held by other actors and increase the flow of information in a network. Furthermore, a network can exert more influence on its social and political surroundings than individual actors (Lin, 1999). Social capital can also help spread innovation, which, according to Hargreaves (2004), is best done through bottom-up networks that can both quickly link schools to innovators and may themselves lead to innovations that are more open to change and challenge and less likely to ossify than top-down strategies.

Knowledge lies in different minds, both individual and collective, and therefore networks are needed to increase effectiveness. The value of networking lies in spanning “structural holes” where information or skills are lacking (Burt, 1992). This makes collaboration a potentially fruitful strategy for all actors involved in a network, as each may in theory be able to span structural holes, something which becomes more likely when a network consists of several actors. In this view, networking can be unsuccessful where there is too strong an imbalance between actors in terms of what information/skills they posses or where structural ties can imprison actors in negative behaviour patterns (Borgatti & Foster, 2003).

A key distinction in social capital theory lies in whether the gains from the network accrue mainly to the individual school, the network as a whole, society, or a
combination of these. In the most successful examples of networking, social capital is both an individual and a collective good. This is important, as in cases where the benefits are seen as entirely societal or at network level, the motivation of individual actors (schools) may be limited. On the other hand, purely individual benefits may tempt actors to play zero sum games, thus limiting trust and eventually causing the demise of the network (Lin, 1999). Social capital may itself lie in the extent to which organisations are experienced at working with others. There is evidence from the business field that organisations with more of this experience are likely to form more interorganisational networks (Brass et al., 2004).

Collaborations in this perspective are more strongly driven by clearly worked out self-interest than in the constructivist model. The goals of networking from this perspective would lie mainly in knowledge transfer or the acquisition of increased influence or voice within schools’ (political) community. Where the goal is the former, schools are likely to be working together because of perceived different strengths and weaknesses and may develop specialisms further through collaboration, such as offering courses to their students in different partner schools that have capacity in that area. Full-service extended schools, where schools team up with other providers to offer services they cannot provide on their own, may in many cases be another example of this model.

Creating networks as New Social Movements

“New Social Movements” is a term coined to describe the novel forms of social action (such as the environmental movement) that developed from the 1960s onwards. These are seen as far more fluid than traditional social movements (such as Trade Unions) and are characterised not so much by single insurrections as by a series of events and by organisations/people linked together in various more or less formal and transient patterns. They thus form complex and heterogeneous network structures, in which actors no longer act as individuals but do so in a linked and interdependent way. Actors may have different values and beliefs but share the common goal of their movement. New Social Movements are not built on traditional identities around class, ethnicity, or gender but develop their own collective identity. They are also not constant but leave structures and cultures behind when they disappear. They are often built around and dominated by activist leaders (Diani, 2003; Hadfield, 2005).

Networks of schools can, according to Hadfield (2005), therefore be classified to some extent as New Social Movements, displaying as they do a number of these characteristics, such as transience, complexity, and the need to build up new identities for the network that are distinct from those of the individual schools (which may, for some schools, be a key motivator to become part of a network). The dominant role of activist leaders can likewise be seen in many school networks. However, a key distinction between New Social Movements and school networks would, for most networks at least, appear to lie in the voluntaristic nature of the alliance. While New Social Movements are seen to be formed bottom up, as a result of perceived common interests, this is the case for only some school networks, many of which have been formed at least in part in reaction to financial incentives or to some form of coercion from higher authorities.

This perspective may provide interesting insights into networks that are bottom up and values driven or political in purpose, and the emphasis on the transience of
arrangements, the possibility of multiple linkages, and the realisation that actors within networks may not fully share values but may do so only with regards to the goals of the network may provide useful insights into this form of school collaboration.

While overlaps exist between other conceptions of networking and the Theory of New Social Movements (TNSM), TNSM does have a number of distinctive elements which specifically illuminate the fluidity of networking arrangements, which does often appear to characterise school networks, and the possibility for voluntaristic action. The stronger emphasis on charismatic leadership is also distinctive and has in many cases been seen in educational networks where charismatic headteachers take the initiative to develop and lead the network (e.g., Muijs, 2007).

**Avoiding organisational anomie as a basis for collaboration**

Another perspective on the importance of collaboration is provided by looking at Durkheimian notions of anomie, which can be defined as malaise in individuals, characterised by an absence or diminution of standards and an associated feeling of alienation and purposelessness. Anomie commonly occurs when society has or is undergoing rapid change, and when there is a significant discrepancy between the ideological theories and values individuals and society hold and their actual practices (Durkheim, 1972; Giddens, 1986). According to Durkheim (1972), anomie results from a lack of strong ties and the regulation and integration that they bring. This double source of constraints is seen as positive for the individual if these constraints are balanced with clear benefits and can help the individual’s health compared to a system of no or loose ties (Segre, 2004).

This concept can be usefully applied to schools facing challenging circumstances, which may find themselves in situations of considerable stress and change with few links or ties to either other schools or the community, while often struggling to balance values of inclusiveness and social justice with the demands of performativity and competition that are foisted upon them. Networking in this sense may therefore not merely be important for school improvement in the traditional sense but may impact positively on alleviating organisational anomie through providing integration and regulation with partner schools that may share the values and goals of schools facing challenging circumstances. Failing schools may often show strong signs of the anomie described by Durkheim (1972), and their involvement in collaboration may show elements of a wish for increased regulation and integration (see, e.g., the work on Schools Facing Challenging Circumstances by Chapman & Harris, 2004, and the review by Muijs, Harris, Chapman, Stoll, & Russ, 2004). This may be seen in a willingness of such schools to take part in networks even as an unequal partner, supported by perceived stronger schools.

Durkheimian network theory also links to education in its focus on one issue that does not feature strongly in theories prevalent in the business field: moral purpose. Educational research and theory are increasingly positing moral purpose as a key factor in the successful performance of educational organisations (Harris & Lambert, 2003). Durkheim, in his theories of networking, sees moral purpose as playing a similarly important role, in that “moral density”, the taking into account of impact on society of the work of individuals, is seen as key to avoiding anomie (Segre, 2004). This ties in with the views of many school improvers, who posit that effective leaders in education have a strong moral purpose that can enthuse and
permeate the organisation and drive improvement and commitment of staff (Sergiovanni, 1999). We will discuss this further in the section on network density.

This theory would therefore appear to apply to collaborations and networks in which at least part of the motivation for collaboration is based on shared values and moral purpose, often with a strong equity perspective, rather than on more instrumental goals as predicted by social capital theory.

These four theoretical approaches can be linked to both goals and activities, and networks may be classified on this basis. Tables 2 and 3 provide some examples, though need to be treated tentatively, as it is clear that some activities, for example, could be classified in more than one way depending on underlying purposes.

Table 2. Goals and theories.

<table>
<thead>
<tr>
<th>Theories</th>
<th>School Improvement</th>
<th>Broadening opportunities</th>
<th>Sharing resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructivism</td>
<td>Learning communities developed around joint subject groups</td>
<td>Schools work with local businesses and agencies to develop a better understanding of how to jointly address the needs of the local community.</td>
<td>Schools put in place joint professional development programmes, where all schools in the network share the development of training resources.</td>
</tr>
<tr>
<td>Social Capital</td>
<td>Schools develop a supportive leadership network, where heads share their different areas of expertise in finance, marketing, and learning.</td>
<td>Schools collaborate in curriculum provision by using the resources (e.g., industrial kitchen) in one school for courses across the network.</td>
<td>Schools collaborate in hiring external consultants and developers for joint CPD events.</td>
</tr>
<tr>
<td>New Social Movements</td>
<td>Schools come together to develop their own school improvement services outwith the LEA under the auspices of an activist head.</td>
<td>Schools decide to form a network with local businesses and schools from another LEA to develop new curricular offerings.</td>
<td>Schools join to lobby the LEA for additional resources under the leadership of the new head of one of the local schools.</td>
</tr>
<tr>
<td>Durkheimian network theory</td>
<td>Schools serving a disadvantaged community form a network to develop shared working so staff can gain mutual support.</td>
<td>Schools suffering falling pupil numbers develop a joint curriculum in order to avoid closing provision seen as valuable to the community but with small student numbers in any one school.</td>
<td>Schools decide to collaborate with the local church to share the church hall to develop parental outreach outside a school environment.</td>
</tr>
</tbody>
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Table 3. Activities and theories.

<table>
<thead>
<tr>
<th>Theories</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td><strong>Short term</strong></td>
<td><strong>Medium term</strong></td>
</tr>
<tr>
<td>Constructivism</td>
<td>Schools engage in a joint problem-solving day around low performance in maths.</td>
</tr>
<tr>
<td>Social Capital</td>
<td>A curriculum expert from one school helps others develop a new timetable for the academic year.</td>
</tr>
<tr>
<td>New Social Movements</td>
<td>Schools collaborate to lobby their LEA around a common problem.</td>
</tr>
<tr>
<td>Durkheimian network theory</td>
<td>Two schools threatened with special measures decide to hold a common development day on preparing for LEA inspection.</td>
</tr>
</tbody>
</table>

**Why network? Empirical research in education**

Notwithstanding the theoretical underpinnings for networking, the overall evidence of the impact of networking and collaboration on school effectiveness and improvement is limited. Some evidence of impact comes from a systematic review of 14 studies carried out by the Networked Learning Group and the Centre for the Use of Research and Evidence in Education (CUREE, 2005), showing positive impact on pupil outcomes in 9 studies and positive impacts on teachers in 11. Nine studies reported whole-school benefits, such as increased professional development or the emergence of a learning culture, while 9 studies reported positive impacts on parental involvement. Impacts on students were mainly in the areas of achievement of targeted groups such as pupils at risk or pupils with special educational needs, while impact on teachers took the form of gains in teacher knowledge and skills, which were in some cases explicitly linked to changes in behaviour. There is also some evidence from evaluating individual programmes, such as the Specialist Schools Improvement Programme (SSAP) run by the Specialist Schools Trust, which partnered low-achieving schools with “lead” schools that supported them and showed positive outcomes for schools in the study (Chapman & Allen, 2005), and the
Federations programme, where respondents reported positive benefits from their network activities in a number of Federations of schools, though firm evidence of impact on school effectiveness was not universal (Lindsay, Harris, Chapman, & Muijs, 2005). A review of the work of Networked Learning Groups in England found patchy evidence of impact, with examples of improvements in areas such as pupil attainment, teacher motivation, and leadership capacity in networks, but no firm evidence of a global impact (Hadfield et al., 2006).

The empirical evidence for the specific value added by networking is not that clear in most studies (CUREE, 2005). However, one of the key advantages of collaborative networks compared to other forms of school improvement, such as externally led school improvement programmes, is that it allows schools to co-construct improvement around individual school needs, rather than buying into programmes that may not be properly contextualised (Datnow, Hubbard, & Mehan, 2003). Similarly, it can help solve the problem of purely internal improvement programmes that may flounder due to the lack of internal capacity in schools (Stringfield & Land, 2002). The fact that networks co-construct their own solutions rather than simply implementing externally developed programmes is advantageous in that it leads to active construction of knowledge and therefore stronger learning than is possible in a buy-in situation. Buy-in is unlikely to generate new knowledge in the way that collaborative learning has been found to do in successful instances (Ainscow, West, & Nicolaïdou, 2005). However, this can also be a slower process than adopting external reforms and can lead to an element of reinventing existing solutions as well as susceptibility to educational fads (Reynolds, 2003).

There is evidence in a number of studies that networked learning can increase school capacity (Chapman & Allen, 2005), can help forge relationships across previously isolated schools (Harris, Chapman, Muijs, Russ, & Stoll, 2006), and can therefore be an effective means of sharing good practice (Datnow et al., 2003; Harris et al., 2006). The extent to which this actually happens in existing networks is variable, however, some studies finding that real sharing of practice can be limited (Lindsay et al., 2005). However, collaborative networks can increase the capacity of groups of schools for organising CPD through the scale advantages that may accrue (CUREE, 2005). Ainscow et al. (2005) report that collaboration leads to teachers viewing disadvantaged pupils in new ways and to less polarisation between schools. However, we need to be careful to easily assume that learning can occur or that competencies can easily be transferred from one school to another. Competencies are both contextual and embedded, in the sense that they are ultimately located in people and culture. This means that ongoing intervention will be required before sharing is possible, and that a shared language needs to be developed between the partners (Nooteboom, 2004).

There is also an increasing body of evidence pointing to positive benefits of networks of schools and other organisations, usually from the social care, youth work, and health sectors. For example, recent research in England showed a smaller gap in attainment between more and less at-risk groups in schools providing extended services in collaboration with other bodies (Cummings et al., 2008), while in The Netherlands positive results are noted for collaboration between schools and external agencies around pupil support and advice (Van Veen, Van den Boogaert, & Van der Steenhoven, 2005). Earlier studies from the USA are also largely positive, though not all such collaborations are successful, not least due to the different outlook of schools and other agencies (Muijs, 2007).
Next to these advantages, networks can sometimes be entered into for reasons that are not related to improving performance. Ego and empire building on the part of senior managers may be one of the reasons for taking on leadership within a Federation, for example, as is the desire for a “new challenge” on the part of managers. Added prestige by allying to another school seen as more successful or with higher status can also be a reason for school leaders to form a network (Borgatti & Foster, 2003), as can external coercion by government or Local Education Authority (LEA).

Research findings taken globally suggest differential effects in different areas and suggest that the evidence is:

- **strongest (but moderate)** that collaboration can widen opportunities and help address vulnerable groups of learners;
- **moderate** that collaboration is effective in helping solve immediate problems; and
- **modest to weak** that it is effective in raising expectations.

**What networks? Further classifications on key dimensions**

Next to these theoretical distinctions, networks can be varied in form and can be categorised along a number of other key dimensions.

*Voluntarism or coercion*

One dimension is the extent to which collaboration has been entered into voluntarily or, for at least one partner, under some form of coercion. At one theoretical end of this continuum, one could find completely voluntary arrangements, whereby two or more schools form a network without any form of incentive. In practice, this type of network will be rare or too informal to be the subject of mapping or research. At the other end of the continuum, we find networks in which two or more schools have been compelled to collaborate with one another by the government or LEA, for example, with one school charged with improving the other. Again, in the English policy context of school-based management, this arrangement will not usually occur in its pure form, though arrangements that are more or less coercive for at least one of the partners (e.g., the “weak schools” in some two-school federations) do exist. Most English examples of collaboration sit somewhere in between these extremes, with certain hard federations tending towards the coercion continuum, while the Leadership Incentive Grants, for example, have led to a number of voluntary groupings, albeit with a financial incentive to collaborate.

Compulsion may, in some cases, be necessary to lead schools to improve and has the advantage of greater control and opportunities for integration. It has clear disadvantages in terms of a likely reluctance of some members of staff in the school to fully engage in the network and in the lack of trust that may result from this. Obviously, the more coercive a network appears to be, the less it will resemble a New Social Movement, and the closer it is likely processes are to resemble social capital reasons for networking.

In Table 4, we give three examples of voluntary, intermediate, and coercive collaboration. Obviously, as mentioned, this classification is a continuum, with many shades of networking in between the two poles.
Power relations

An important dimension linked to the extent of coercion, but not equal to it, is the extent to which relationships between networks are based on equality or on domination by one or more network partners. In theory, relations based on voluntarism should not be dominated by any actor, with partners working together to solve solutions on an equal basis (though issues of personal power, unequal status between partners, or even unequal leadership capacities may modify this considerably), while coercive relations may be less so (although one can imagine coerced equal relationships, this is not a likely pattern).

Unequal relationships will frequently occur where a “strong” school is paired with one or more “weaker” schools to help these improve, a popular school improvement model in many Local Authorities in England (Lindsay et al., 2005). The advantage of the weak/strong school model can lie in the modelling and sharing of good practice from the “strong” school to the weaker one (Chapman & Allen, 2005), though this can result in resentment and lack of cooperation among staff, with staff in the “weak” school feeling that their strengths are not recognised and that they are being colonised by the stronger partner, while staff members in the stronger school can often be left wondering what the advantages of the collaboration with its increased workload are for them. On the other hand, a risk with voluntarism is the “fat boy in the playground” syndrome, whereby certain schools will end up being seen as unattractive partners for networks, often those that could most benefit from them (Lindsay et al., 2005). While in theory the moral purpose of serving the community may compel headteachers to work with such schools anyway, enlightened self-interest within a competitive and performative framework may in many cases militate against this. Networks consisting of only weak schools, however, often lack capacity collaboratively as much as the schools in the network do individually. Limited evidence suggests that collaborations may be more effective, at least in terms of getting off to a quick start, if they are either truly voluntary or coercive, while attempts to externally engineer communities of practice may be hard to get going (though this says nothing about long-term effectiveness; Lindsay et al., 2005). Incentives to collaborate appear essential within a competitive culture that can otherwise make this problematic (Ainscow et al., 2005).

Where collaboration is voluntary, there is evidence that it is those organisations more similar in status that are more likely to collaborate, though this tends to come from research in business rather than educational organisations (Brass et al., 2004; Chung, Singh, & Lee, 2000). This may be related to the greater homogeneity in understanding as would be hypothesised by constructivist organisational theory.

Table 4. Voluntary, intermediate, and coercive collaboration.

<table>
<thead>
<tr>
<th>Voluntary</th>
<th>Intermediate</th>
<th>Coercive</th>
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<tbody>
<tr>
<td>Schools voluntarily come together to form a network designed to take over some of the functions of a failing LEA.</td>
<td>A government grant for collaborative activity leads the LEA to encourage schools to form a network.</td>
<td>The Department for Education and Skills (DfES) informs a failing school that it will either have to federate with a successful local school or close.</td>
</tr>
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*School Effectiveness and School Improvement* 17
However, whoever is involved in these networks, it is clear that the role of the head in supporting collaborative activity is key (Earl & Katz, 2007). An illustration of the role of power relations is given in Table 5.

### Network density

Networks can differ substantially with regards to their density. One way in which this can manifest itself is in the differential involvement of different groups in the process. As such, collaboration within the network can be largely a matter of heads and senior management, with little involvement (and in some cases little knowledge) of other staff groups (Muijs, 2006). On the other hand, collaboration could involve specific groups of school staff, such as Science departments across schools, with agreement of senior managers but little actual involvement of members of the Senior Management Team (SMT). Theoretically, all staff could be involved through exchanges, visits, and joint meetings, though in practice this is unusual. Maximum density exists where everyone is connected to everyone else.

The question of who is involved is also linked to that of similarity of those involved in network activities. In this respect, there is evidence both that individuals with similar attitudes are more likely to successfully interact and that those individuals occupying similar organisational positions in different organisations are more likely to share similar attitudes, suggesting that working groups are best composed of staff at similar levels in the organisational hierarchy (Brass et al., 2004).

The extent to which pupils are directly impacted by collaborative activities within the network can similarly vary, from a direct impact through pupil and teacher exchanges or lessons followed in other network schools, through indirect impact resulting from good practice developed in network activity influencing classroom practice, to no impact on or involvement by pupils at all.

We can therefore see density as another continuum, where involvement can be mapped out by both number and seniority of staff involved. As we will discuss

<table>
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<tr>
<th>Equal</th>
<th>Intermediate</th>
<th>Domination</th>
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<tr>
<td>Two neighbouring high-performing schools form a voluntary network to develop shared courses.</td>
<td>A popular, high-performing school and a number of less high-performing schools form a network under the auspices of the LEA. While each school retains its head and autonomy, the perceived higher effectiveness of the first school gives that school more clout with the LEA and thus more influence in the network.</td>
<td>A highly effective school is asked to take over a failing school through a Federation. The head of the effective school becomes the head of the Federation.</td>
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</table>
below, for schools in a network higher density is not always desirable due to the increased complexity it entails. There may also be an element of redundancy in having too many contacts, and an element of confusion may occur as a result (Nooteboom, 2004). Some commentators, however, have described redundancy as a necessary correlate of effective networking, as the complexity thereof could otherwise lead to the possibility of breakages in the network(s) (Hadfield, 2005).

Another perspective on density, depth of involvement, can be mapped out according to frequency of involvement, that is, how many contacts are there, and depth of contacts, that is, do contacts consist purely of meetings, or are there joint activities in terms of professional development, teacher exchanges, and so forth. At the extreme, deep involvement could eventually take the form of a merger between schools, as happens in the private sector, although the problem of creating large, impersonal schools, which are often seen as less effective than smaller schools, is one that needs to be taken into account before going down this route (Lee, 2004).

In Table 6, we give some examples of how networks can vary in terms of density of staff and pupil involvement in collaboration.

**External involvement**

An important dimension of educational networks is the extent to which external organisations or partners are involved with the network. This is frequently the case, with many networks formed around multi-agency work involving social and child service agencies, while school improvement partnerships frequently involve LEAs, universities, or external consultants. The extent of involvement of these external bodies can vary considerably, from a purely brokering role at the start of the relationship to being an integral part of the relationship, as is the case for partnerships between child service agencies and schools. In some cases, the external partner can even be the main driving force behind the network, as is the case with

<table>
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<tr>
<th>Low density</th>
<th>Medium density</th>
<th>High density</th>
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<tr>
<td>Headteachers of network schools regularly meet and collaborate, but other staff are not directly involved.</td>
<td>As well as a senior management group, there are cross-network groups of subject leaders and pastoral leaders and some cross-network groups engaged in specific school improvement activities, such as a data group. Not all staff, especially classroom teachers, are involved in collaborative work with colleagues from other schools.</td>
<td>There is a joint senior management group for the network, subject teachers form cross-school networks and regularly teach in each others’ schools, and pupils are engaged in joint activities such as exam preparation with pupils from other schools.</td>
</tr>
</tbody>
</table>
some school reform programmes. It is, of course, entirely possible for networks to exist without external involvement, though in practice some form of brokering will typically have taken place. Community involvement can likewise vary considerably between networks, from none at all in many cases to the community being an equal partner in the arrangement (though this is rare in practice) (see Table 7). A major part of the role of these external brokers can lie in developing a greater sense of shared understanding and bridging gaps of trust between organisations, as would be hypothesised to exist by constructivist theorists, and to identify the structural gaps and complementary knowledge seen as key to networking in social capital theory.

**Different time frames**

Collaborations can also have starkly differing time frames (see Table 8). Some collaborative arrangements can be intended to be more or less permanent and aimed at fundamental change, as is the case in the “hard” Federations, which are in many ways similar to merger arrangements in the private sector, while others can be very time delimited, such as collaborations around a specific bid or initiative (Ainscow et al., 2005). There are of course a range of shades between these extremes, as well as some fluidity, as initially short-term collaborations may grow into more permanent and lasting links.

In many cases, there is no clarity as to the intended duration of the collaboration. This is problematic, as it is not always desirable to maintain collaborations indefinitely because the same myopia that, according to constructivist organisational theory, afflicts single organisations may end up affecting longstanding networks as well, and severing the link may be a more painful and difficult process where no prior endpoint has been built in.

**Geographical spread**

A lot of the educational literature tends to assume that networking is largely a local affair, situated within local clusters or, at the outset, one local authority. Again, this

<table>
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<th>Low external involvement</th>
<th>Medium external involvement</th>
<th>High external involvement</th>
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<tr>
<td>Schools have formed a voluntary network with minimal involvement of the LEA and no involvement of other external groups.</td>
<td>Schools have formed a network under the auspices of the LEA. An LEA advisor is network coordinator, though this is largely a brokering and administrative role. The network also works with consultants from the local Higher Education Institution.</td>
<td>A charitable trust has invited schools to join in a network led by charity staff, who provide leadership, a full range of advisory services, resources, and data management.</td>
</tr>
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</table>
is but one possible form of networking, as cross-local, regional, and even international networks may and, ever more frequently, do occur as technological advances make this type of networking ever easier (see Table 9). While local networks may have the advantage of being set up to tackle specific local problems through a collaborative approach, they are often set up for purely practical reasons, such as existing Local Authority links. In many cases, a compromise is sought between the practical ease given by proximity and lack of competition that is enabled by schools not serving the same catchment area, leading to networks across different areas of an LEA. Cross-regional networks are more frequently based on shared values or belief systems and may in this respect be more coherent (Hadfield, 2005). In this sense, they may be similar to New Social Movements, often characterised by a broad geographical spread, as is the case with the anti-globalisation movement. Differences in intake and a lack of support for specific local issues may be problems here, however.

A very specific form of cross-local networking is the franchise model, whereby schools collectively deliver a particular branded curriculum model. Private organisations are currently developing such franchised models (such as those currently being set up by the private education provider GEMS education), but the extent to which these can count as instances of networks is doubtful in view of the strong central management involved, notwithstanding the links between schools in these models.

Table 8. Different time frames.

<table>
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<tr>
<th>Short term</th>
<th>Medium term</th>
<th>Long term</th>
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<td>Schools form a network to prepare for the closure of one of four schools in the locality. Once the closure has come into effect, the network will cease.</td>
<td>Schools form a networked learning community working around distributed leadership. Once funding stops, schools intend to continue some form of collaboration, though this is very much a function of the enthusiasm of current leaders and may well cease once the head of one of the schools leaves.</td>
<td>Schools form a Federation with a joint governing body and joint executive head. Plans to locate all three schools on a shared site are at an advanced stage.</td>
</tr>
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Table 9. Geographical spread.

<table>
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<tr>
<th>Proximity</th>
<th>Medium distance</th>
<th>High distance</th>
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<tr>
<td>Two neighbouring schools serving a disadvantaged area form a Federation.</td>
<td>Schools network with schools in a neighbouring LEA, forming a regional network.</td>
<td>A group of schools across the country run by the Jesuit order form a network on the basis of shared values.</td>
</tr>
</tbody>
</table>
As well as varying in terms of their geographical reach, networks can also vary in terms of the extent to which they are cross-phase or not. Some extent of cross-phase collaboration has existed for a long time in education through the feeder school relationship between primary and secondary schools. Most extant collaborations and networks tend to focus on one phase, however, with few going beyond the feeder school relationship as far as cross-phase networking goes.

Density of schools

Networks also differ in terms of the number of schools involved. Interestingly, a lot of the theory of networks seems to refer to dyadic relationships, even though these are by no means the most prevalent in practice (Nooteboom, 2004). It is clear that networks can differ substantially in size and can also expand and contract over time. Contraction usually occurs when certain network members become disengaged from the network and drop out, a particular problem in larger networks where a small core often ends up driving the activities. Scaling up can be problematic, as it represents a fundamental change in the relationship between partners, especially when scale up happens from a low base, as in a change from a dyadic to a triadic network (Simmel, 1950).

Within large networks, density of collaboration can differ in terms of the number of connections between schools within the network. Again, maximum density occurs where all schools are connected to one another. It has to be pointed out here that, while high density may appear desirable in terms of deepening the collaboration and maximising opportunities for collaborative learning and cultural change, overly dense collaboration can be problematic, due to the increased complexity of managing them. Indeed, given that the maximum number of direct connections is $n(n-1)/2$, the complexity of the network rises with the square of the number of participants (Nooteboom, 2004). There is therefore a balance that needs to be struck between the desirability of high levels of connectivity and the increased complexity of managing these. Once networks become large, a centre-periphery model tends to emerge, where certain organisations form a core driving the network, while others are more peripherally connected to it. Coordination becomes ever more important, and centrality of the organisation in the network starts taking on a greater significance as it leads to power and control of the information flow. Density is not a requirement for the development of social capital, as weaker ties can also be effective as long as they plug the structural holes in actors’ knowledge and skills.

According to Lin (1999), dense ties are more effective for preserving and maintaining resources, as a denser network allows more chance of mobilising many others to help defend the threatened resource, while more flexible and weaker links may be more effective for obtaining new resources. While multiple partnerships may be desirable, a surfeit of networks may be problematic for schools in that it can hinder clarity and purpose (Lindsay et al., 2005). No relationship between density and impact was found in the CUREE (2005) systematic review.

Durkheim (1972) makes an interesting distinction between material density, which can be characterised as similar to the concept of density presented here, and moral density, which he characterised as occurring when social actors doing their specialised work interact with and take into account their collaborators, while being aware of the consequences of their actions for society as a whole.
In practice, the smallest networks obviously consist of 2 schools, while the largest networks we are aware of contain no more than 15 schools, though larger networks are theoretically possible. An intermediate network would then consist of between 5 and 10 schools.

**Concluding comments**

Networking and collaboration have become increasingly popular in education recently, as the limitations of individual organisational approaches and external interventions become ever clearer. Many initiatives are currently taking place that encourage schools to develop networks, and activity in this area is growing strongly. Up to now, however, this movement has been largely unreflective. Networking is generally seen as a “good thing” in itself or at best as potentially leading to rather nebulous “learning communities”. What research exists on the benefits of school networking is largely a-theoretical and evaluation based. Outwith education there is, however, quite a substantive theoretical base for networking, which could inform and deepen our understanding of educational networks and collaborations.

In contrast to views that wish to reduce all educational networking (and all other activity in schools, such as management) to learning in a rather simplistic manner, in practice and in theory networking differs in terms of goals as well as activities and can usefully be defined along this axis. Taking into account more fully the different goals educational networks may have will help us to come to more valid findings on the impact and effectiveness of networking.

Theoretical perspectives on networking, drawn from sociology, psychology, and business studies, as well as education, can be categorised as belonging to four main perspectives: constructivism, social capital, New Social Movements, and the Durkheimian network theory. All can shed light on the forms and likely effectiveness of networks by illuminating the circumstances in which networks can be expected to succeed or fail (e.g., the need for sufficient similarity in worldviews), though they appear to relate to different goals and activities in terms of their validity as explanatory mechanisms in education. Tentatively, we would suggest that some perspectives describe current networking activity in education better than others. The constructivist and social capital perspectives appear to describe quite a lot of educational networking activity, such as the creation of shared learning and teaching approaches and the development of joint curricular offerings. Social movement and Durkheimian notions, while important, appear to have more limited currency. Social movement theory can, due to its voluntaristic assumptions, only be applied to a subset of actual networks, many of which are at least partially coerced or have come into being as a result of external (government) initiatives. Durkheimian notions of anomie appear particularly relevant to schools facing challenging circumstances, which appear to experience many of the conditions from which anomie would be expected to result.

School networks can, of course, be classified on a number of other dimensions. Issues such as network density, extent of voluntarism and coercion, time frames, and spread are all important to understand the functioning of networks, and a better understanding of these issues could help us to develop networks that are fit for purpose, as well as providing us with the possibility of a certain level of prediction of likely network success.
Both the theoretical perspectives and the empirical research discussed here give us some indication of the circumstances under which networking is most likely to enhance school effectiveness and improvement. Firstly, in this respect, there is some evidence that networking is differentially effective in meeting different educational goals. The evidence is strongest that networking can help to widen opportunities and help address vulnerable groups of learners, moderate that collaboration is effective in helping solve immediate problems, and modest to weak that it is effective in raising expectations and pupil performance. Where improvements in pupil performance have been seen, this is often where more effective schools have paired with less effective schools to help them to improve, where leadership has been strong and supportive of networking, and where the number of schools involved has been limited. External support may also be helpful in cases where internal capacity or trust between schools may be lacking. The extent to which other factors, such as the voluntary or coercive nature of the network, affect outcomes is less straightforward or clear.

Generally, research has not kept up with the pace of policy and implementation in this area, and it could be said that implementation, in turn, has proceeded without sufficient attention to whether networking is the most appropriate solution to solve the particular goals of schools in particular contexts and without enough attention to the conditions that would make particular forms of networking more or less effective in particular circumstances. Too often, networking is presented as the latest “panacea” in school reform, even though what evidence there is shows mixed and differential impacts, much like many previous reform efforts have (Ravitch, 2000; West & Ainscow, 2006). This is an unsatisfactory situation, as, while the potential of networking appears to have theoretical grounding, continued inconclusive findings on its effectiveness as a strategy may lead to this reform falling out of fashion in a similar way to previous reform movements. Building research and practice on a more sound theoretical basis may help us to better understand the source of the differential impact of networking, may help us to decide when and when not to network, and may even help us design networks that are better suited to reaching the diverse goals that schools pursue through working together. There is also a clear need for more quantitative research in this area, both to ascertain with more reliability the impact of networking and collaboration on outcomes and to look at factors that mediate that effect. As well as this, there is a need for research that specifically interrogates factors that can aid network effectiveness in some detail. Greater use of comparative research designs would be helpful in this regard.

References


Centre for the Use of Research and Evidence in Education. (2005). *Systematic research review: The impact of networks on pupils, practitioners, organisations and the committees they serve*. Nottingham, UK: NCSL.


