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Enabling team learning in healthcare

George Boak

Abstract

This paper is based on a study of learning processes within 35 healthcare therapy teams that took action to improve their services. The published research on team learning is introduced, and the paper suggests it is an activity that has similarities with action research and with those forms of action learning where teams address collective problems to enhance organisational performance. The paper proposes factors within the teams and in the teams' environments that enabled team learning, in particular, within the team, the behaviours of team leaders to encourage learning, communication, planning, action and review, and in the teams' environments the behaviour of senior managers and other stakeholders in positions of authority, access to effective information systems, and the availability of a modest amount of resource to enable team learning.

Keywords

Team learning, action research, healthcare, service improvement.

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Introduction

Team learning and action learning are activities with the potential for overlap and synergy, with the subsequent potential for practitioners of each to learn from the other. Whilst most action learning may concern a group helping individual members to tackle their problems (Pedler, Burgoyne, and Brook 2005) a certain proportion appears to concern teams working on collective organisational problems (Edmonstone 2011; Rigg 2008) and thus engaging in team learning.

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Research into team learning indicates that it entails shared cognitions about issues affecting the team (Cannon-Bowers and Salas 2001) and collective learning (Akgun *et al.* 2014; Gibson and Vermeulen 2003). It may be undertaken in a context where processes of action learning are ~~is~~ explicitly acknowledged, or its focus may be almost exclusively on everyday team action to tackle particular organisational problems. Where team learning is undertaken to solve complex problems, the cycle of activities is likely to have strong similarities with action research processes. Team learning is held to be likely to be particularly useful when new challenges occur - a common feature in complex work environments - or when there is a need to develop new approaches to old challenges (Edmondson, Bohmer, and Pisano 2001; Ghosh, Shuck, and Petrosko 2012). It is therefore important for team leaders and for more senior managers in organisations to understand what factors encourage and support team learning, and what factors inhibit it.

This paper focuses on factors facilitating team learning in 35 clinical therapy teams in the National Health Service (NHS) in England. The teams were all engaged in the challenge of improving the effectiveness and efficiency of their services at a time of increasing demand

for therapy with no corresponding increase in funding. Most teams were successful in achieving improvements, making changes to their services that resulted in significant reductions in patient waiting times. This paper focuses on the factors that enabled team learning in these cases – factors which may be of relevance where action learning is practised in other work teams in order to tackle collective problems.

Team learning, action research and action learning

In the same way as it has been argued that action learning and organisational development are overlapping fields of practice (Edmonstone 2011), so team learning potentially overlaps with action research and action learning. This section of the paper sets out the foundations of theory about team learning, explores the potential overlaps with action research and action learning, and identifies ideas from previous research about enablers of team learning.

The study of team learning draws on ideas from two main bodies of research – that of team working and that of organisational learning. The functioning of teams or groups has long been considered an important area~~s~~ for organisational performance (Salas, Burke, and Cannon-Bowers, 2000; Savelsbergh, van der Heijden, and Poell 2009), different perspectives have been offered on the characteristics of effective teams (Hackman 2002; Matthieu *et al.* 2008), the actions that team leaders can take to enable teams to be effective (Day, Gronn, and Salas 2004; Zaccaro, Rittman, and Marks 2001) and the environmental factors that may impact on team performance (Senior and Swailes 2007).

One aspect of team working research that is closely related to the study of team learning is the examination of how teams share information (Hoch 2014) process information (Hinsz, Tindale, and Vollrath, 1997) share knowledge (Lee, Lee, and Park, 2014) create

knowledge (Reihlen and Nikolova 2010) integrate knowledge (Gardner, Gino, and Staats, 2012) share cognition (Cannon-Bowers and Salas 2001), or develop team cognition (Cooke *et al.* 2003; He, Butler, and King, 2007) and create shared mental models (Dionne *et al.* 2010). Decision making and problem solving are critical activities for management, professional and project teams, and the development of mutual understanding between members of these teams is considered to be important for team performance (Mathieu *et al.* 2008).

Organisational learning has been defined as ‘collective learning by members of an organisation’ (Yukl 2009, 49). It has been linked with the ability of organisations to adapt to new challenges (e.g. Spender 2008) and with innovation and change (e.g. Greenhalgh *et al.* 2004). Researchers have proposed that organisational learning may be studied at different levels: at the levels of individuals, groups, and whole organisations (e.g. Berson *et al.*, 2006; Crossan, Lane, and White, 1999). Learning within teams has been seen as particularly important by a number of researchers, including Senge (1990, 10), who argued that 'Team learning is vital because teams, not individuals, are the fundamental learning unit in modern organizations'.

A range of ideas has developed about what exactly constitutes ‘team learning’ - Decuyper, Dochya, and Van den Bossche (2010) identified 30 different definitions of the term. Some researchers define team learning in terms of outcome (e.g. Ellis *et al.* 2003; Zellmer-Bruhn and Gibson 2006), but it is more common to define it in terms of processes (e.g. Boak 2014; Bucic, Robinson, and Ramburuth 2010; Fisser and Browaeys 2010; Gibson and Vermeulen 2003; Savelsbergh, van der Heijden, and Poell 2010; Timmermans *et al.* 2011). For example, Edmondson (2002, 129) defines team learning as ‘a process in which a

team takes action, obtains and reflects upon feedback, and makes changes to adapt or improve'.

The Edmondson definition aligns team learning with processes of action research (Coghlan 2001; Robson 2011) particularly where the problems the team is tackling are complex ones, and several cycles of action and reflection are necessary. Whilst action research may be carried out primarily by a single researcher, however, working in collaboration with others affected by the project (Bryman 2012), team learning is essentially a collective activity.

Action learning was defined by Revans (1983) in terms of what it is not, rather than what it is, and there are many different views on what constitutes the essence of action learning (Pedler, Burgoyne, and Brook 2005). Similarities between action learning and team learning include: the importance of communication between members of a group in discussing a practical problem; the development of a plan to tackle the problem; and review in the group of progress with the plan. Key differences between action learning and team learning concern the priority placed on individual learning in both processes, and also, in most cases, the ownership of the problem that is addressed and the existence or absence of hierarchy within the group.

The similarities are simple and straightforward: without the contribution of members of the group, neither action learning nor team learning can take place. Where the discussion is dominated by the learning set facilitator, or by the team leader, there is a failure in the process. The cycle of planning and review is also important in both cases. The differences are also reasonably straightforward: it is generally agreed that a key outcome of action learning is

learning for the individual member (Pedler, Burgoyne, and Brook 2005; Simpson and Bourner 2007). Perspectives on team learning generally consider individual learning as a means of achieving collective learning (e.g. Decuyper, Dochya, and Van den Bossche 2010; Edmondson 2002; Gibson and Vermeulen 2003) rather than an important outcome in its own right. In addition, team learning commonly addresses joint problems, organisational issues that affect the whole team; this is the case for some action learning sets (Edmonstone and Flanagan 2007; Marsick and O'Neil 1999; Pedler and Abbott 2008; Rigg 2008; Vince 2004), but these appear to be in the minority: for example, more than 75% of the respondents to the small survey of action learning practioners by Pedler, Burgoyne, and Brook (2005) said that problems they tackled were individual rather than collective. Finally, classic action learning sets are typically non-hierarchical (Simpson and Bourner 2007) whereas team learning in the workplace takes place in the context of pre-existing hierarchies.

As with any partial overlap, there are examples of action learning and team learning that appear completely alien to one another, but there are also some examples where there are many similarities, in particular those cases where action learning is business driven (Pedler, Burgoyne, and Brook 2005; Rigg 2008) and focuses on tackling team projects (Edmonstone and Flanagan 2007; Marsick and O'Neil, 1999).

Action is central to action learning, but researchers into team learning take different positions as to whether taking action, or experimenting, should be included as a team learning process. Some studies concentrate on processes of communication, information exchange and cognition sharing (e.g. Akgun *et al.* 2014; Timmermans *et al.* 2011), whereas others (e.g Bucic, Robinson, and Ramburuth 2010; Savelsbergh, van der Heijden, and Poell 2010) include experimentation, making changes, or taking action, as essential elements of team learning. Edmondson (2002, 133) states that teams she studied that showed reflection and discussion but not action 'showed partial but incomplete team learning'.

Boak (2014) argued, in agreement with this latter view, that taking action was an essential component of team learning, and described the different team learning activities as:

1. Agreeing to examine specific parts of the service with a view to improvement
2. Gathering and sharing information
3. Analysing information to identify problems and opportunities, including making new sense of aspects of the situation
4. Planning different ways of delivering aspects of the service
5. Taking action to change the service
6. Monitoring and evaluating results
7. Making adjustments where appropriate

These were collective activities, typified by a great deal of communication between team members.

Researchers have sought to identify factors that enable and support team learning and the development of team cognition. A number of factors within the team have been found to support team learning, as well as number of environmental, contextual factors.

Unlike most action learning sets, there is a formal hierarchy in most work teams, and the actions of team leaders in enabling team learning and information exchange have been held to be important by a number of scholars (e.g. Boon *et al.* 2013). In an analysis of team leader functions, Zaccaro, Rittman, and Marks (2001) argued that an important role for team leaders was to 'coordinate the contribution and combination of team knowledge and information resources; where "gaps" occur, they make interpretations and decisions that

move the team along' (464). Sarin and McDermott (2003) found that team leaders could positively influence team learning by clearly articulating the collective goals and the individual goals of team members. Berson *et al.* (2006) linked the intellectual stimulation dimension of transformational leadership to enhanced group learning.

Edmondson (2003), in a study of interdisciplinary action teams in healthcare, identified a number of specific activities that team leaders carried out to support team learning, including engendering a sense of psychological safety in the team, which encouraged members to engage in 'speaking up and other proactive learning behavior' (1421).

Participative leadership has been seen as better than more directive leadership in engaging team members in collective problem solving (Sarin and McDermott 2003; Zaccaro, Rittman, and Marks, 2001) and promoting mental model convergence in teams (Dionne *et al.*, 2010). It has been held that shared leadership within teams leads to increased information sharing (Hoch 2014) increases the absorptive capacity of the team (Lee, Lee, and Park, 2014) and has a positive impact on team learning (Liu *et al.* 2014).

Some studies have identified structural factors within the team as supportive of team learning, including member familiarity (He, Butler, and King, 2007), team stability (Edmondson 2003; Timmermans *et al.* 2011) and interpersonal trust between team members (Akgun *et al.* 2013; Gibson and Vermeulen 2003).

Much of the focus of research into team learning has been on processes within teams, rather than on the impact of the organisational context. Edmondson (2003, 1425), however,

argued that the context of the team can provide resources, and slack in the team schedule, to enable 'practice, experimentation and reflection on what works, all fostering learning and improvement'. She argued that signals of support for team learning from senior management can make 'a change visible' and encourage others to provide assistance. Sarin and McDermott (2003) also identified the availability of resources and slack as important enablers of team learning, and Akgun *et al.* (2013, 40) noted the importance of management actions that could create 'a facilitative climate of support and helpfulness'. Sessa and London (2008) also considered the importance of information management systems and the availability of technical assistance and training.

In the wider literature on team working, Senior and Swailes (2007) note the importance of management support for the team, and Hackman (2002) considers a supportive organisational context to be one of the key factors affecting team performance. Elements of this supportive context include the provision of enough resources and also access to an effective information system: without information about performance, Hackman (2002, 147) argues, a team's actions may be 'more driven by chance than by informed, competent analysis'. Gibson and Vermeulen's (2003) main interest was in analysing processes within teams, but they mention in passing the influence of the team's external leader, the team's level of empowerment, and its access to knowledge management systems.

The research context

Healthcare therapists work in teams in a range of settings, including within the community (in primary care) and in hospitals (secondary care). They provide a variety of specialist therapies, such as physiotherapy, occupational therapy, speech and language

therapy, podiatry and dietetics. In England, practitioners in these therapies are registered professionals, and are known collectively as allied health professionals (AHPs).

There can be long waiting times for therapy services, which can have a direct negative impact on the health outcomes for patients (CSP, 2009). In common with other parts of the healthcare system, managers and professionals are also concerned to improve the effectiveness and the efficiency of therapy services.

In 2010-2011, the Department of Health in England supported service improvement work by 30 therapy teams within the National Health Service (NHS), as part of a national service improvement project (hereafter referred to as NSIP**).** The teams were selected by the Department from a list of 100 applicants, who were each nominated by their local NHS bodies. Twenty-seven of the 30 teams completed the 14 month NSIP project. Twenty-four of these teams made significant improvements in waiting times for access to their services. Metrics of patient satisfaction, and in some cases a measured improvement in clinical outcomes, were provided by some teams to show that service quality was improved or maintained while waiting times were reduced. There were also indications of improvements, and projections of improvements, in productivity, from some teams (Boak, Eastburn, and Parks 2011; DH, 2011a, 2011b).

The 27 teams were heterogeneous, providing a range of different therapies, in a variety of different specific contexts. The changes undertaken by the different teams thus varied greatly, ranging from changes to systems within one small team to multi-disciplinary cross-organisational projects. Team sizes ranged from six members, to multiple team projects, where the improvement involved between 30 and 80 professional staff. In one

project, the team sought to improve therapy services provided for no more than 24 patients a year, whereas another project made changes to services annually provided to up to 18,000 patients.

To achieve the improvements, teams typically gathered information and analysed current systems and processes, agreed on changes, implemented them, evaluated the results, and made adjustments. Changes included re-designing systems for making appointments, developing new patient pathways, and introducing innovative processes for providing diagnoses and therapies. Almost all the changes were made without increases to the funding of the service, or with only small amounts of temporary additional funding made available by the Department or from local NHS sources.

Methodology

The aim of the research reported in this paper was to identify factors that enabled team learning in these cases. This was part of a larger piece of research, which included identifying the specific systems changes that led to improvements (DH 2011a, DH 2011b), the processes that supported progress in different projects (Boak, Eastburn, and Parks 2011) and the learning processes undertaken in the teams (Boak, 2014).

The approach taken to ~~the~~ this research was that of realistic evaluation (Robson, 2011; Pawson and Tilley, 1997), acknowledging that efforts to achieve quality improvements in healthcare are complex, and interact with their contexts (Mazzocato *et al.* 2010), such that approaches proven to be successful for one team may be ineffective when applied by another team, in a different context.

Information was gathered and analysed from the final reports from the 27 NSIP teams to the Department, published in month 14 of the project. The length of the reports ranged from about 4,300 to 1,300 words, with an average of 2,057 words. The reports were accessed from the Contact, Help, Advice and Information Network (CHAIN) website (http://chain.ulcc.ac.uk).

Information was also gathered from semi-structured telephone interviews with 13 NSIP team leaders, carried out six to seven months after the end of NSIP (i.e. 20-21 months after the beginning of the national project). Interviews were sought with all leaders of the participating teams; 13 responded, and they were interviewed or supplied information through an exchange of emails. At the same time, information was also gathered from eight leaders of teams of therapists who had achieved improvements over the same period, but had not been part of the NSIP. These teams had applied to be part of NSIP, but had not been awarded a place in the project. They had, however, been among 53 teams who had been asked for information during the course of NSIP, and it was known that 24 teams ~~they~~ had independently designed and implemented improvements (Boak, Eastburn, and Parks 2011); they are hereafter referred to as 'independent' teams. Leaders of 10 of these independent teams were contacted and eight agreed to take part in interviews or provide information by email.

All the interviews were semi-structured, of 20 to 35 minutes in duration; they were digitally recorded and then either transcribed or summarised. In total, 21 team leaders provided information by interview or by email. Some teams were continuing to make progress, even to extend the scope of their original project: however, some teams had been unable to continue. Sixteen months after the end of NSIP, three leaders of physiotherapy

teams, where previously good continuing progress had been reported, were interviewed again (two NSIP team leaders and one leader of an independent team) and they provided information on ongoing progress with the changes.

Table 1 shows the therapy teams that were included in the research. The first column shows the specialty professional therapy (13 project teams involved more than one single professional group). The columns show the location of the service (either in primary care - the community - or secondary care - hospitals - or both) and whether they were part of the NSIP or were independent teams. The final column shows the number of teams that took part in the first interviews.

	Primary care	**Secondary care**	**Primary and Secondary**	**NSIP**	**Independent**	**Interview**
Physiotherapy (11)	7	3	1	6	5	9
Occupational Therapy (4)	4			4		3
Speech & Language Therapy (3)	2	1		3		3
Dietetics (2)		2		2		
Podiatry (1)	1			1		
Orthotics (1)			1	1		
Variety of therapies (13)	6	5	2	10	3	6

Table 1 The project teams included in the research

The information gathered from the interviews and reports concerned:

- what changes/improvements teams made
- what outcomes had been achieved

- how the teams had decided what to do, both at the beginning of the change and as the changes proceeded (for example, how they decided to make adjustments to plans). This part of the information, gathered from the interviews and reports, concerned the processes of communicating information, coming to decisions, making changes, monitoring progress and so forth.
- what factors team leaders (and, in the case of the reports, other contributing team members) saw as important to achieving their level of success

The reports and the interviews were analysed for codes and themes using principles of thematic analysis (Braun and Clark 2006; Bryman 2012). Meaning was developed from this field data, rather than by applying a framework of codes derived from literature: this approach has been described as 'inductive thematic analysis' (Gray 2014, 609). The emerging themes were then compared with ideas from relevant literature.

This approach gathered information about the teams' actions at different points in time, and was thus able to follow the progress of changes and the actions that brought them about over the course of several months. A limitation of the approach was that it drew information almost entirely from team leaders (in three cases the team leaders involved other team members in the interviews). Gathering information from more members of each team might have provided a richer and more complex account of events. In addition, the NSIP final reports were written by the teams for the Department of Health, primarily for purposes of project management reporting, and thus have the usual limitations of secondary data.
A further limitation was that detailed information was not gathered about behaviours within the team (as is the case in studies by Savelsbergh, van der Heijden, and Poell 2009 and

Wilson, Goodman, and Cronin 2007) and so direct comparison with these studies is not possible.

Findings

The focus of this paper is on the factors that enabled team learning in these groups. Information about these factors was gathered at the same time as information about the results the groups achieved and the activities they undertook to achieve these results, and it is worth pausing for a moment briefly to consider these two areas.

As noted above, 24 of the NSIP teams made significant improvements in waiting times: for example one team reduced waiting times for routine appointments from 17 months to two weeks, another from 26 weeks to one week. Measures of patient satisfaction, collected by some teams, showed that service quality was maintained or improved through the changes; some teams also provided information about actual or potential improvements in productivity (more details are in Boak, Eastburn, and Parks 2011; DH 2011a, 2011b). The independent teams had also significantly reduced their waiting times by between 40% and 80%, and had similarly maintained or improved quality; some indicated they had also made productivity gains.

The processes by which teams achieved these results included a variety of changes to specific systems, and a cycle of activities associated with team learning and action research: agreeing on an area to improve, gathering and analysing information, agreeing on action plans, taking action, monitoring results, agreeing and implementing changes to the plans. The

changes sometimes worked well at first implementation, but more often involved adjustments, improvisations and further experiments.

Whilst all the teams engaged in discussions, joint analysis and collective problem-solving as the changes progressed, and team leaders talked about their own personal learning and learning achieved by the team, none explicitly claimed that action learning had taken place.

Descriptions of the different factors that enabled team learning to take place were conceptualised as themes of a) processes within the teams, and b) contextual factors outside the teams. In realistic evaluation terms, the processes within the teams were viewed as the *mechanisms* by which teams achieved team learning (which led on to other outcomes, expressed as specific changes and subsequently service improvements) while the *contextual factors* outside the teams interacted with the mechanisms (Pawson and Tilley 1997) affecting the success, or otherwise, of the actions.

Processes within teams

Certain processes within the teams appeared to be significant contributors to learning. The actions of team leaders in facilitating these processes seemed to be important in all the teams (see Table 2). Leadership roles varied between the teams. Particularly in the larger teams, there was not one team leader but leadership responsibilities were distributed among a number of team members. In larger projects the team leaders or managers formed project groups or boards in order to discuss and agree on direction and to review progress.

Processes within the teams that contributed to learning:	**Facilitated by team leaders (singular or plural)…**
All, or the majority, of team members show willingness to consider how to improve services	winning the commitment of members of the team to engage in learning
Team members engage in team discussions to analyse services and develop plans	making time available for team discussions
Objectives and plans for change are agreed, put into action, and progress is monitored and reviewed	facilitating the development of clear objectives and plans for making experimental changes, and organising monitoring and review of progress
Plans are amended where appropriate	showing a willingness to experiment and make changes in the plans, while at the same time ensuring there was an overall structure and discipline to the project
Changes are coordinated with relevant stakeholders outside the team	engaging and communicating with people outside the team whose contribution would be important to the success of the change

Table 2: Processes within the teams that enabled learning, and team leader actions to facilitate them

Team leaders uniformly spoke of the importance of the commitment and contributions of their team members. Several team leaders said that there was widespread agreement among team members on the need to find ways of improving the service; however, others described how they needed to 'sell' the project, or to draw some less enthusiastic team members along. For example, contemplating an expansion of the change, after the end of the NSIP, one team leader estimated that 90% of the therapists who would be affected were in favour, while 10% were opposed. All the team leaders of successful projects needed at least a majority of team members to engage in the changes, and to participate in the discussions about what to change, and how to do it, but as information from this study was gathered mainly from team leaders themselves it is not possible to say with confidence whether common styles of influence were employed in order to achieve this.

A potential barrier to team members contributing and engaging was a concern that the motive behind the change was essentially managerial, i.e. to cut costs or improve efficiency in other ways, rather than clinical (i.e. of demonstrable benefit to the patient), and some team leaders were explicit about the importance of establishing clinical benefits. As one said, commitment from participating clinicians had been achieved when they realised: 'it is clinically the right thing for us to be doing for this population'.

Team discussions were regarded as very important elements of the process. Whilst no team leaders talked of using action learning approaches, all spoke of the importance of having discussions in situations away from the daily pressures of practice, where problems could be analysed and ideas exchanged. One team leader arranged two day-long meetings of the service team, whose members were spread over a wide geographical area, with the idea that members would learn from each other's view of practice. Not all teams took so much concentrated time out from practice in order to analyse the service and share information, but for all teams a basic enabler of learning was making some time available for this discussion. This is not always easy to achieve in situations where clinician time is intensely scheduled to provide hands-on patient care, or where clinicians work across a wide geographical area. Team leaders needed to find some slack in the system, to 'set time aside' as one said. As the projects progressed, discussion of progress could in some teams be included in forums that were already established (such as monthly team meetings); in other cases teams organised special project steering boards, or organised special meetings or conference calls.

Action plans with clear objectives were widely regarded as an important element of the process. Some team leaders reinforced the objectives by including them in the team's formal business plan. One NSIP report talked of the importance of ‘Taking time to define the exact

focus and establishing a clear time line' (Carey 2011, 4); another talked of 'The importance of having a clear action and implementation plan for each stage' (Brotherton and Porter 2011, 4).

Team leaders also organised monitoring and review of progress, in some cases setting up special project meeting groups, and arranging feedback on progress to the whole team.

A number of team leaders said that when difficulties arose with the changes the teams were attempting, they felt they needed to balance a willingness to make amendments to plans with a concern to continue the forward momentum, to 'keep things on track' as one said. Another team leader said: 'Part of it [my role] has been to keep things moving, to agree that, yes, you can change the details if you need to make it work in your area, but the thing is that we [will] make it work.' This theme of combining determination and flexibility over the many months of the project was expressed by a number of team leaders in interviews, and was indicated in some of the project reports, for example:

> *It has been important to be **clear about what we are trying to do** and why and repeat this message frequently and loudly.* (Speake 2011, 4 – emphasis in original.)

> *Other teams can achieve what we have achieved by…Acknowledging that there is no 'right time' to make changes but that this needs to be a continual process and requires leadership and responsibility at all levels to achieve step change.* (Williams 2011, 4.)

Team leaders also undertook or organised communication with others outside the team, in order to support or progress the changes. This work included actions such as creating patient liaison groups, dialogue to agree ways of working productively in cooperation with others (such as GPs, other clinicians, professionals in social services or education departments), and presenting evidence-based data to inform and persuade about the progress of the change.

Contextual factors

In these cases, certain contextual factors – elements of the team's environment - appeared to influence processes of team learning. The main factors were:

- actions of senior managers and other powerful stakeholders
- membership of the NSIP
- information technology resources
- availability of information about the workings of the wider system
- the degree of financial and organisational stability

The extent to which teams had the support and cooperation of senior managers and other powerful stakeholders varied greatly from project to project. In one case, the organisation's chief executive chaired the project board that had been established to oversee the change and he took an active interest in the project. One team leader took the view that 'without support from senior management, drastic improvements would not have been possible'. Several team leaders said that senior managers had made it possible for clinicians and managers to take time to work on the changes away from the day-to-day pressures of the workplace. But whilst

some teams benefitted from the visible support of senior managers, others were less fortunate. One team leader said: 'It's very, very hard to get senior managers in my organisation to understand what we are doing'. Another said that ‘the hierarchy doesn’t quite get what we do. Much as I have tried, I’m not sure the light has gone on’.

Other powerful stakeholders included the clinicians who referred patients to the therapy services, and those individuals and committees authorised to make decisions about funding the services. Some of the changes contemplated by the teams concerned altering the ways in which patients were referred to the therapy service. Changes to systems for making initial appointments, however, required authorisation by local GPs. In some cases, the local GPs were persuaded by the therapy teams to allow changes, but in other cases they prohibited experimentation with the existing systems.

Membership of the NSIP conferred a number of advantages. Teams that had been chosen to take part were provided with advice, support and training in analytical tools used in service improvement, as well as a small amount of funding, which enabled the release of team members from some clinical time in order to plan or review the change, or paid for staff time to gather and analyse data about progress. In addition, membership of NSIP gave each team a heightened local profile, and most team leaders said that it had a positive effect on the motivation and morale of the team members. The obligations of membership also reinforced the objectives set for the change, and the reporting requirements led teams to evaluate the improvements that they made in more detail: on the whole, NSIP teams produced more information than the independent projects about their quality and productivity gains. An added benefit reported by team leaders in the NSIP project was the networking and mutual support provided by colleagues in other teams.

Information technology resources available to the different teams varied in their scope and quality. Whilst some teams had the benefits of systems that provided integrated real-time data, and thus could quickly review figures such as waiting times, others were not so fortunate. The availability of accurate, current information about patients and processes enabled teams to undertake relevant analyses, and to monitor the effects of changes and quickly consider adjustments. In the absence of good information systems, teams might be making decisions based on speculation, or anecdote, or at best on old information, and would be evaluating progress on the same basis.

One NSIP team leader explained how, at the start of the project, she engaged a data analyst to research and provide detailed factual data about the differential delays experienced by patients at various stages in their treatment pathway. This proved to her team members that there were anomalies and inequities in the way the service operated. The availability of this factual data stimulated the team’s motivation to learn and to experiment. Data analysis was used throughout this project to monitor the reduction in delays.

However, one team leader described the systems available to her as 'awful, dreadful'; another said, 'the patient databases we are asked to use...always seem very cumbersome and very restrictive.'

Changes in therapy services can impact on other parts of the healthcare system, but information about the nature and extent of the impact was uniformly difficult to obtain. Improved physiotherapy services may mean fewer patients need operations – an outcome of benefit to the patients and also a saving in surgical resources. Changes to systems for making

appointments with therapy services may save the time of GPs, and therefore result in a cost saving for the system as a whole. However, without a special effort to gather relevant data, and without the cooperation of the other parts of the healthcare system that hold the information, it is not possible to know the system-wide effects of a change. This was discussed by a number of interviewees. It seemed there was potential for greater learning about causes and effects, but the information required was out of reach.

Major organisational changes affecting the NHS in 2010-2012, including financial cut-backs, had an impact on some of the projects after the formal end of the NSIP. Some teams were simply unable to continue to provide the changed services they had developed. In one case, when the authority for funding therapy services changed, the new commissioners of services refused to allow the change the NSIP team had introduced to continue. In another case, the contract for providing the service was put out to tender, and the NSIP team was not successful in winning the contract. A number of other NSIP team leaders lost their jobs.

Other teams were hindered by recruitment restrictions brought about by financial belt-tightening, so that it was difficult or impossible to replace staff who left. The picture was far from uniform, however, with some team leaders able to extend the changes they had brought about, or to apply the skills they had developed into other contexts: in one case the team leaders of an occupational therapy service were asked to develop similar improvements in the organisation's physiotherapy services.

Discussion

A number of factors appeared to facilitate team learning in these therapy teams. Some of these factors which have been identified as supporting team learning in other situations. However, this paper has identified a more extensive range of interacting factors enabling collective learning in work teams than any previous research.

Within the teams, certain processes of communication and decision making appeared to be critically important factors. In all the teams, the actions of team leaders appeared to be important in encouraging learning and communication. Power in these AHP teams was more widely dispersed than in the surgical teams Edmondson (2003) studied; here the key contributions of team leaders appeared to be less about overcoming barriers to 'speaking up' and more about winning commitment to begin the processes of learning and change, and then facilitating regular communication, action and learning over a period of months as the projects progressed. Key actions included encouraging the participation of team members in ongoing discussion and action, establishing project teams, organising meetings, inviting contributions, and managing information about plans and progress, and also (as in Sarin and McDermott 2003) focusing the energies of the team on collective goals and individual contributions to them.

Other studies of team learning have found that participative leadership styles are more effective at encouraging team learning than directive ones (Dionne *et al.* 2001; Sarin and McDermott 2003; Zaccaro, Rittman, and Marks 2001) and that shared leadership has a positive impact on team learning (Hoch 2014; Lee, Lee, and Park 2014; Liu *et al.* 2014). In this study it was clear that leaders of successful teams succeeded in achieving participation in

team learning from at least a majority of their team members, but without independent information from team members, or the benefit of observing team leaders in action, the extent to which all team leaders exercised a participative style is not clear. However, it is evident that the actions of team leaders stimulated problem solving activity as part of team learning (as in Berson *et al.* 2006) and that, as in Zaccaro, Rittman, and Marks (2001, 464) a key role was to 'coordinate the contribution and combination of team knowledge and information resources'. It seems very likely that these processes will be important where action learning sets tackle similar issues in comparable circumstances: where groups tackle business driven (Pedler, Burgoyne, and Brook 2005) jointly-owned issues, there will be a need to provide these organising and reviewing functions, and to encourage action. Edmonstone (2011) writes of the importance of developing and maintaining relations with the world outside the action learning set.

Key contextual factors, in the environment of the teams, which influenced learning were the actions of senior managers and other influential stakeholders, who had the power to support or limit a team's ability to take action. In the case of senior managers, their attention and interest could act a motivator for team action, as well as unlocking resources and support. A lack of interest by senior managers did not prevent teams taking action and learning from it, but represented an absence of a potential positive force. Although these particular contextual factors are noted by scholars in the wider field of team working (Hackman 2002; Senior and Swailes 2007) they are rarely discussed in research into team learning (Edmondson 2003 and Akgun *et al.* 2013 are exceptions). In action learning literature, the support of senior managers outside the group has been noted as an important factor by a small number of writers, for example by Olsson *et al*. (2010), and Pedler and Abbott (2008).

The availability of some modest resources – including 'slack in the schedule' to enable experimentation and reflection – was an enabling contextual factor (or a limiting one, where such resources were not available, or ceased to be available after NSIP project ended). This is a contextual factor noted by Edmondson (2003) and Sarin and McDermott (2003).

In this study, access to information systems that could provide accurate, current data on performance was identified as an important contextual factor. Sessa and London (2008) note that this can be so, and Gibson and Vermeulen (2003) mention this in passing, but it is not widely identified as significant for team learning. Hackman (2002) identifies the importance of information systems for planning and team performance, and in this study those teams able to quickly call up accurate, detailed data had a clear learning advantage over those that could not, both at the outset of the project and as it progressed. This may have been particularly important for these teams because of the complexity of the environments in which they are operating.

This research found that a combination of these internal and external factors influenced the capacity of the teams to engage in collective learning. Teams strong in all the enabling factors appeared well equipped to undertake collective learning and to achieve sustainable improvemente in their services. Weaknesses in some of the factors reduced the ability of teams to engage in learning and successful improvement. Where factors changed – such as when powerful stakeholders made decision to limit experimentation, or when reorganisations affected team resources, or when the prestige of being a member of the national project wore off – the capacity for learning and improvement also changed. Such changes were not always negative – one independent team only became able to experiment with change when a powerful role within the team was occupied by a new incumbent, who – unlike the previous job holder – was positive towards experimental change.

Conclusions

In this study, common factors contributing to team learning were the willingness of team members to engage in learning and change, and the organisation of collective analyses, actions and reviews. The actions of the team leader(s) appeared to be important enablers of team learning in every team in this study, although leadership patterns in the different teams varied, with shared leadership particularly evident in larger teams.

Contextual factors that had an impact in supporting or impeding team learning included the attitudes and actions of more senior managers and other stakeholders in positions of authority, the availability of effective information systems, and the access to a modest amount of resources to support learning. The impact of contextual factors such as these has rarely been examined in team learning studies. Further research should be undertaken into how particular environments can be made more conducive to team learning to enable service improvements.

This paper has concentrated on enablers of team learning, in situations where the participants were focused on solving organisational problems, and worked collectively to do so, without considering that they were engaging in action learning. It is very likely, however, that each of these same factors would have influenced the processes if the teams *had* explicitly embraced action learning, and therefore it is not unlikely that these factors may impact on the success of action learning programmes elsewhere, where the sets consist of work teams, and the problems they seek to tackle are collective ones. However, it would be very interesting to see research into this specific area among suitable action learning sets.

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