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Analysing organizational context: case studies on the contribution of absorptive capacity theory to understanding inter-organizational variation in performance improvement

ABSTRACT

Background

Organizational context is frequently cited as an important consideration when implementing and evaluating quality improvement interventions in healthcare, but limited guidance is available on which aspects of context are most influential or modifiable. This paper examines how internal and external contextual factors mediate organizational-level performance improvement through applying the knowledge-based theory of absorptive capacity (AC).

Methods

Three healthcare case studies are presented. Each case is a UK National Health Service (NHS) organization that had been identified as having performance problems. Qualitative data were collected through semi-structured interviews with general and clinical managers within the organization and members of external teams supporting or overseeing performance improvement (n=22). Interview data were analysed using an existing AC framework from the literature.

Results

The three cases demonstrated differing levels of AC and different trajectories of improvement. The organization with the highest AC showed the quickest and most comprehensive response in terms of performance improvement. Internal contextual factors such as organizational culture, the strategic focus of senior managers, willingness to learn, and structures and processes to manage knowledge were important determinants of AC.

Conclusions

Developing a more detailed and nuanced understanding of how context influences improvement is an important step towards achieving more effective and sustainable quality improvement programmes in healthcare. Absorptive capacity, with its focus on knowledge and organizational learning, provides a useful way to explore the relationship between

context and quality improvement and represents a potentially valuable area for future research and development.

Introduction

It is increasingly recognised that context matters in relation to the success of patient safety and quality improvement initiatives in healthcare. There are well documented variations in the success of the same improvement interventions when they are used in different organizations.¹ Contextual influences may explain such inter-organizational (and in some cases, intra-organizational) variation in performance improvement.²⁻⁴

But what do we mean by organizational context? Why is it so important and how does it exert an influence? Is it internal or external to the organization? Is it context at a micro, meso or macro organizational level? Or do elements of all these operate in an inter-connected way? And are there certain aspects of context that are more or less amenable to intervention to increase the likelihood of success in implementing improvements? These are all important questions to address in order to maximise the impact of time, effort and resources invested into developing and implementing improvement programmes in healthcare.^{5,6}

This paper aims to extend and develop our understanding of how “organizational context” affects the implementation and effectiveness of improvement in healthcare organizations. We focus on performance improvement at an organizational level and on the use of knowledge to inform and implement improvement. Our starting premise is that context matters through determining the organizational capacity to make effective use of available knowledge to improve performance. This line of argument draws on the relevant business and management literature. In particular, we focus on the theory of absorptive capacity (AC), which suggests that contextual factors – both external and internal to the organization – mediate the way in which the organization is able to manage and process knowledge to improve performance.

The paper starts by briefly exploring what is already known about the contextual factors that influence the implementation of improvement initiatives in healthcare and the role of knowledge management and organizational learning in performance improvement. We then describe the theory of AC, drawing on recent debates and applications in the public sector, including our own empirical research in healthcare.

Contextual factors influencing the success of quality improvement in healthcare

Increasing awareness of the variable progress and success of quality improvement initiatives in healthcare has driven interest in trying to understand and explain the reasons for such variation. Whilst some researchers question the efficacy of the improvement interventions themselves⁷, a growing number of studies highlight the influence of context on determining the process and outcomes of quality improvement.^{2,8} Even in projects that can be described as an overall success^{9,10}, variation between individual project sites and teams is not uncommon. In exploring contextual influences, researchers have adopted different approaches, such as systematic reviews of existing empirical studies², in-depth case studies of organizations that have successfully implemented and sustained quality improvement¹¹ and using expert panels.⁴

Ovretveit (p.i18)³ defines context as “all factors that are not part of a quality improvement intervention itself” and various authors have developed taxonomies, theoretical and conceptual frameworks to delineate key elements of context that influence the success of quality improvement initiatives.^{2,4,12} Typical aspects of context highlighted in such frameworks include leadership, organizational culture, teamwork, resources, organizational characteristics, and various external environmental factors. The mechanisms by which such factors exert an influence, and the relationships between different factors, are generally less clear.

The role of knowledge and organizational learning in performance improvement

The importance of knowledge management and organizational learning has been previously recognised in the literature on patient safety and quality improvement.¹³⁻¹⁵ Theories used to frame these discussions and analyses include Senge’s learning organization^{16,17} and Argyris and Schon’s ideas of single, double and meta-loop learning.¹⁸ Studies of performance failure have attributed the root cause of failure to a dysfunction in organizational learning^{19,20} whilst other theories link knowledge and learning to the achievement of competitive advantage. These latter theories, specifically dynamic capabilities and AC, derive from the resource-based view (RBV) of the firm and originate in the for-profit sector. At the heart of RBV is the view that distinctive performance differences between organizations are

determined by the nature and combination of assets on which these organizations can draw.²¹

Defining absorptive capacity

Since early seminal work to describe the concept of AC,^{22,23} it has received considerable attention in the management literature on learning, innovation and performance; over 1200 publications on AC appeared in the literature between 1992 and 2005.²⁴ Lane and colleagues²⁵ undertook a critical review of the literature on AC, describing it as a three-component process of exploratory learning, transformative learning and exploitative learning (Table 1). Exploratory learning is a process through which an organization comes to recognize and understand new knowledge. Transformative learning refers to those processes that affect the way in which new knowledge is assimilated and combined with prior knowledge at different levels within the organization. Exploitative learning is the process by which the new knowledge that has been assimilated is translated into actions that will benefit the organization, for example, through the implementation of agreed plans or policies and the introduction of necessary changes.

Insert Table 1: Defining absorptive capacity

This same review proposed that AC is determined by two sets of antecedents that are external and internal to the organization²⁵ (Figure 1). External factors include the environmental conditions, characteristics of knowledge, and characteristics of learning relationships. Internal factors relate to mental models, organizational strategies, and structures and processes within the organization. Interaction between these factors influences the way in which the organization approaches the key stages of AC; in turn, this determines the performance outcomes of the organization, in terms of management focus, governance and improved services.

Insert Figure 1: Absorptive Capacity Framework (adapted from Lane et al, 2006)

In order to understand how AC can be influenced by contextual factors – and how those factors could potentially be modified to improve AC – it is important to briefly consider how organizations develop, maintain and improve their stock of AC. Key points that emerge from

the literature are that AC is path-dependent and cumulative.²⁶ Consequently an organization that invests in AC is more likely to facilitate further development because it is aware what additional knowledge it needs and how to access and exploit it, and so becomes more effective at anticipating and predicting change. Mechanisms that enable formal and informal exchange of knowledge promote the development of organizational AC.²⁷

Although much of the literature on AC focuses on achieving competitive advantage in industrial and commercial organizations, there is a growing interest in its application to the study of public sector organizations.²⁸⁻³² Market reforms coupled with an increasing focus on external performance assessment and regulation has accentuated the need for organizations to achieve and maintain high levels of quality in an increasingly competitive environment.

Methods

Qualitative data were collected as part of a larger research study examining performance failure in the UK public sector.³³ Ethical approval for the study was granted by Leeds (East) Research Ethics Committee, reference 07/H1306/125.

In this paper, we focus on three healthcare case studies we conducted, two in England and one in Scotland. Each organization had been identified as having performance problems through external inspection or review of their performance data and a formal improvement programme had been put in place. Primary data collection involved semi-structured interviews with middle and senior level managers exploring the history of the performance problem and how it was being addressed. Interviewees included a mix of general and clinician managers and at least one external stakeholder involved in managing the performance of the organization or providing external improvement support. 22 interviews were conducted in total; 7 in two of the cases and 8 in the third case. The interviews were conducted by two members of the research team (GH and PJ) and each participant was interviewed once only.

The interviews were digitally recorded, transcribed and analysed using the Lane et al conceptualisation of AC (Figure 1) as an analytic framework.²⁵ Supplementary

documentation in the form of inspection reports and agreed action plans for improvement was also made available to the research team; this was used to inform the background description of the cases and the organizational response to performance data.

Findings

Case A

Case A was a small organization with a small management team, operating within a financially challenged health economy. The organization did not immediately respond to the evidence about the need to improve performance and could best be described as an organization in denial. It had failed an external clinical governance review and not met national response-time performance targets. An external improvement team had been appointed to work with the organization over a 12 month period. The board and senior leaders of the organization initially rejected the evidence that their performance was poor and refused to cooperate with the external improvement team.

From an AC perspective, case A never got beyond the point of acquiring evidence about its performance; this evidence was not accepted, which removed the potential for assimilating and acting upon the evidence to bring about improvement. Case A typified an organization with a low level of AC.

In terms of external contextual factors, there was a history of poor relationships with the local health economy and the local media. Although the performance information from external agencies was rejected by the senior management, staff within the organization identified with it and felt it confirmed what they already knew.

.... when the reports came out I don't think there were any surprises I think people knew it was coming and it had to be managed within the health economy ... We didn't particularly have a good relationship with our health economy partners either which is when certainly the external review side of things when the stakeholders were then given the opportunity to offer their concerns and comments they gave them, quite strongly [Lead Quality Manager]

Internal contextual variables related to the pre-dominant leadership and management style of senior staff, strategic priorities, organizational resources and culture. The external review of the organization identified the management structure and regime as a major problem; it

was perceived as very controlling and top-down. The board was seen to be rather 'out of touch', they were not engaged with the clinical/patient care agenda and did not see issues such as clinical governance to be relevant.

... they buried their head in the sand, I think in the hope that it would go away, they had a management structure with more rank markings than you could shake a stick at really, very hierarchical and a board that I don't think understood what the new world was all about [Member of external improvement team]

In terms of managing performance, senior managers prioritised achieving financial balance and meeting key national targets, but had failed to do this. A number of senior management posts were vacant but a freeze on recruitment meant several people were in acting-up roles. Senior managers did not push for growth or investment of additional funds and staff were not given access to training and development, including some mandatory training. It was not perceived to be a happy organization; staff worked in silos, they did not feel able to question, morale was low and they described feeling downtrodden and disempowered.

oh my goodness the morale was very low, staff wouldn't question just didn't feel empowered to do anything, didn't feel it was their place and were generally downtrodden it was very antagonistic very reminiscent of what I imagine the 70s would have been like, everybody out on strike that sort of thing so it was very difficult and there was a lot of mistrust there didn't appear to be any transparency or openness [HR Director]

The net effect of these external and internal contextual factors was a low level of absorptive capacity, which left the organization unable to improve without external intervention to replace the Chief Executive and Chair and appoint new individuals into these key roles. Once these and other vacant posts were filled, the approach to performance improvement changed considerably. A close collaboration with the external improvement team was established and a range of strategies were introduced to support service improvement and staff and leadership development. Correspondingly, AC began to develop, albeit from a very low starting point:

.... they are engaging with other [NHS] trusts so they are wanting to improve which I guess is the biggest hurdle to overcome. They realise they are not perfect, they are engaged in change, they're open to any suggestion and are willing to have support ... [Member of external improvement team]

Case B

Case B was a recently merged, large acute trust managing complex change, including a new hospital building programme. When presented with external evidence that they had failed to meet national waiting-time targets, the organization was devastated and initially felt it was unfair. They agreed to work with an external improvement team for a year, recognising the value of the help on offer. They began to investigate the performance problem, which was initially attributed to an administrative error, and uncovered other potential mistakes in the wider organization.

.... it was only when we were galvanising to turn over every stone to see what other admin issues there were that we discovered many things that were wrong. I think we are a much much stronger organization as a result of that and we would have been carrying on in blissful ignorance thinking that we were doing fine [Operations Director]

Compared to case A, case B exhibited higher levels of AC. Although the external context presented significant challenges, good working relationships with wider health economy partners were apparent. The organization was committed to using external networks to develop their learning, as evidenced by the establishment of benchmarking visits to other organizations dealing with similar issues and their willingness to work with the external improvement team.

[The external intervention team] ... worked collaboratively with us and they were a resource and we used them Although it was a very uncomfortable process, if you use them constructively and say OK these are people that are going to focus on this and do this and we are going to get a project plan and get some structure into it we want to improve anyway this just gives us an added chance with some other people to help us with keeping focused on what we have got to do to achieve it [Medical Director]

Internally, the management took steps to investigate the quality problems that had been identified, despite their initial feelings of shock and disbelief. They started to develop structures and systems to manage information more effectively and as a result reported they felt they were no longer jumping into solutions without adequately understanding the problem.

I think what it probably highlighted was issues around how performance management information is recorded and understood at the highest level and it probably highlighted that in a really large complex organization like this one not

bringing that information together into a single place where problems could be identified and deficiencies in systems anticipated and overcome was really what let the organization down [Divisional Manager]

This illustrates the steps the organization took to improve their AC through introducing internal systems and processes to address the assimilation of new knowledge and its application. This was supported by other internal factors such as development programmes for staff to support the changes that were being introduced and new communication systems to disseminate information from the Chief Executive to staff throughout the organization. Over a relatively short time frame, this resulted in a clear improvement in organizational performance.

Case C

Case C was the largest health organization in the country. It had recently been created from the merger of a number of smaller organizations, which left it with a significant financial deficit. When the national government introduced standards for cancer referral and treatment, the organization failed to meet the standards across a wide range of cancer types. Achieving the required standards presented the organization with significant challenges. However, the organization considered itself to have a 'can do' culture, a philosophy driven from the top of the organization. The targets acted as a catalyst and focus for improvement and meeting the cancer targets was seen to be an absolute priority.

I think the organization is a can do. I think the directors are all generally quite driven people who wanted to make service improvement and who recognise their obligations.... [The] Chief executive is of that nature. I think underneath that, our service managers and general managers do want to make things better, do understand that and have got a kind of can do attitude [Clinical Director]

Of the three cases studied, case C demonstrated the highest level of AC, immediately recognizing the evidence that it was failing to meet external standards and initiating a concerted effort to address the underlying issues. Help from an external improvement team was readily accepted; this team was seen to bring useful learning and experience from outside the organization, enabling them to draw on best practice from elsewhere.

We need to be receptive to best practice, you know, if they're doing it well somewhere then we don't want to reinvent the wheel. I think we do not need

to be insular.... we need to be absolutely receptive to how others do things and I'm trying to encourage my team at the moment to go out [Clinical Director]

Numerous changes were introduced in an effort to meet the cancer targets.

Multidisciplinary teams were established as a vehicle for change and clinical nurse specialists took on a key role as facilitators of change. In lieu of an adequate IT infrastructure, a team of 'trackers' was appointed to manually manage the process from referral to treatment whilst the organization invested in a new IT system to improve data management. Escalation policies were developed to deal with blockages in the system, accountability and reporting systems were put in place and significant energy was invested into getting clinicians on board through promoting the patient-centred benefits of the changes.

We were very clear about what the main objective was that this was about improving access for patients and shortening their journey there was actually a patient gain and if they were to put themselves in the shoes of patients and their families they would see where it's not reasonable for us to not have planned processes that allow patients to fall through the net. [General Manager 1]

As a result of this package of changes, the organization witnessed improvement in achievement of the targets; rates increased from less than 50 per cent to over 90 per cent within 12 months. The prevailing view was that the improvement programme had sharpened the organization's thinking about the need to 'drive a process', rather than 'letting the process meander around', which in turn created organizational learning beyond cancer services.

Discussion

The cases demonstrate how varying levels of AC resulted in different processes and outcomes of improvement; they also begin to shed light on how contextual factors can influence the improvement trajectory. All three cases experienced a challenging external environment with financial constraints and changing external conditions. Cases B and C had both experienced recent mergers, resulting in larger, more complex organizations, bringing together different cultures and different ways of working. Yet these two organizations

displayed higher levels of AC than case A, suggesting other external and internal factors exerted a more significant influence on AC (Figure 2).

Insert Figure 2: Summary of cases from an AC perspective

In case A, most of the internal and external factors inhibited the development of AC. In a challenging external environment, the organization had poor external and internal relationships, a closed culture, an autocratic style of management, and high numbers of management vacancies. Equally subject to difficult environmental conditions, cases B and C displayed contextual factors that promoted AC, including a willingness to engage in learning and external partnerships, management commitment to improve, investment in better IT and communication systems and support for staff engagement and development.

Therefore, a difficult or challenging external context is not in itself sufficient to limit or inhibit the development of AC. Rather, a number of other internal and external factors can create and enhance higher levels of AC. Important internal contextual factors include the strategic focus and priorities of senior managers, the organizational culture and willingness to learn, the establishment of systems and processes to more effectively manage information and communication within the organization and attention to necessary staff support and development processes. In turn, these impact upon external factors such as the extent to which organizations engage with wider stakeholders and are willing and able to make use of knowledge from external sources.

It follows, therefore, that efforts to increase AC need to assess and then address the internal and external contextual factors that influence the processes of knowledge acquisition, assimilation and application and consider the order or sequencing in which specific issues are addressed. For example, if an organization displays significant internal contextual barriers to AC (as in case A), then providing additional external information or access to external networks and expertise is unlikely to have much impact. Attention to the contextual factors within the organization is a necessary first step to building AC and improving performance. This highlights the need for detailed assessment of organizational capacity to improve, and tailoring interventions appropriately, rather than seeking a generic solution to the issue of organizational improvement in healthcare.

Developing our knowledge and understanding of AC in relation to performance improvement could help to build a more detailed picture of how organizations, and sub-units within organizations, make use of available information to achieve and maintain more effective improvement programmes, including assessment of the contextual factors that influence AC. A possible way forward could be to produce self-assessment diagnostic and evaluative tools for use by senior leaders and managers within the organization to review the level of AC and identify important areas for future development and on-going vigilance. Within this agenda, a closer examination of the relationship between leadership, AC and context would be worthwhile, building on related research in this area.^{34,35} AC does not include a specific focus on leaders as agents of improvement; however, the case study data highlight the central role they played within the internal context.

At an external/regulatory level, thinking about improvement from an AC perspective could enable those charged with performance management or supporting external improvement interventions to establish a more nuanced understanding of performance related issues within the organization and target interventions more appropriately. We see these as promising areas for research and development in the future.

Equally, it is important to acknowledge the limitations of our research, which largely relies on interviews at a single point in time. Longitudinal observation of organizations as they attempt to manage and improve performance would provide richer data and help to further refine our understanding of AC.

Conclusion

A better understanding of the relationship between context and quality and safety is an important priority on the agenda to learn from failures and both scale and speed up the implementation of effective improvement in healthcare. Better understanding of the contextual factors and processes involved in managing and improving organizational performance is important for a wide range of stakeholders throughout the healthcare system, including patients, clinicians, managers, policy makers and regulators. In this paper, we have discussed the application of a knowledge processing theory, AC, to analyse the

concept of organizational context and its relationship to performance improvement. In doing so, we hope that we have contributed to the debate on why context matters in healthcare. We believe that by adopting a knowledge-centred approach to organizational learning for improvement we can move beyond the acknowledged view that 'context matters' to develop a deeper, more rounded picture of why performance varies within and between organizations and, more importantly, what can be done to facilitate improvement.

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Contributions

All authors contributed to the conception and design of the paper. GH prepared the initial draft and coordinated the process of editing and revision. All authors were involved in the reviewing process and read and approved the final manuscript.

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<p>Knowledge acquisition</p> <p><i>Exploratory learning</i></p>	<p>The process by which the organization recognises and understands new knowledge. The prior knowledge of the organization will be important, because the functioning of existing mental models within the organization will influence value judgements about any new knowledge that appears externally</p>
<p>Knowledge assimilation</p> <p><i>Transformative learning</i></p>	<p>A process by which valuable external knowledge is assimilated at multiple levels within the organization, involving several processes that shape the way that newly acquired knowledge is combined with existing knowledge</p>
<p>Knowledge application</p> <p><i>Exploitative learning</i></p>	<p>The process by which the knowledge that has been assimilated by the organization is transformed and used to produce changes which benefit the organization's performance.</p>

Table 1: Defining absorptive capacity (after Lane et al, 2006)

Figure 2: Summary of cases from an AC perspective

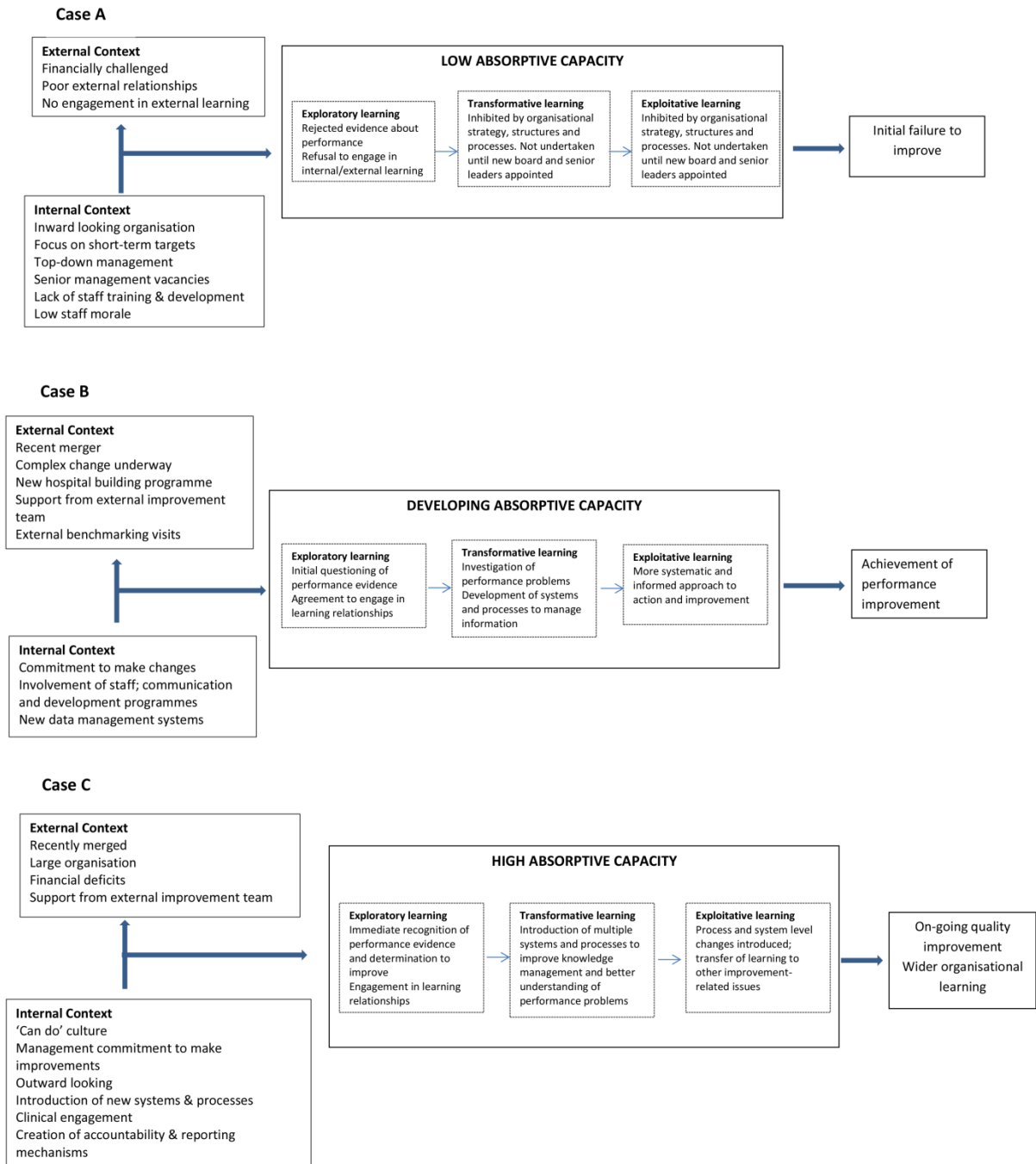


Figure 1: Absorptive capacity framework (adapted from Lane et al, 2006)

