

Innovation and Culture Change within a Medium-Sized Construction Company: Success through the Process of Action Learning

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Abstract

This paper examines the role of Action Learning in promoting innovation and culture change within one medium-sized construction company. Its adoption by that company – George and Harding – was an exemplary part of a larger study involving a total of 28 construction professionals. This larger study, stimulated by the CIOB's Innovation and Research Committee, was prompted by the desire to encourage the construction industry, especially small and medium-sized enterprises, to engage in life-long learning and implement good practice, without falling into the trap of an unthinking adoption of the latest management fashion. Action Learning has been shown to drive significant and sustainable cultural change in other engineering disciplines, along the lines proposed by both Latham (1994) and Egan (1998). It has also been used with the construction industry in Brazil (Hirota and Formoso, 2000).

Our detailed case study focuses on middle managers from different divisions of the same company who wanted to become more innovative on the one hand and 'leaner' on the other. It shows that Action Learning is able to generate a motivated, committed and innovative workforce, as well as better site management and leadership. Continuous Staff Development (CSD), an in-house training course developed by the company's Action Learning SET, produced over 100 ideas for improving company performance, which are being implemented by many different groups of staff. The Chairman of George and Harding estimates that CSD has given his company a 12-month lead over its competitors. Action Learning gave middle managers "time to think" about strategic issues and empowered them to collaborate with the Chairman in overcoming personal and political barriers to change. Furthermore, as a result of discussions during SET meetings and contact with a consultant from the University of Salford specialising in transparency on construction sites, the managers were prepared to actually implement some of the concepts of 'lean production'. Thus, Action Learning is shown to have helped middle managers overcome any resistance to change, as well as drive innovation and real cultural change within a construction SME.

Introduction

Over the last 50 years, the construction industry, especially its small and medium sized contractors (henceforth called SMCs), has had a poor record of continuous professional development and lifelong learning, especially as it relates to innovation. It became clear to the present researchers, based on the specified demands from Construction Foresight, Latham (1994), Egan (1998), and their own studies for the CIOB, that Action Learning might be a solution to the

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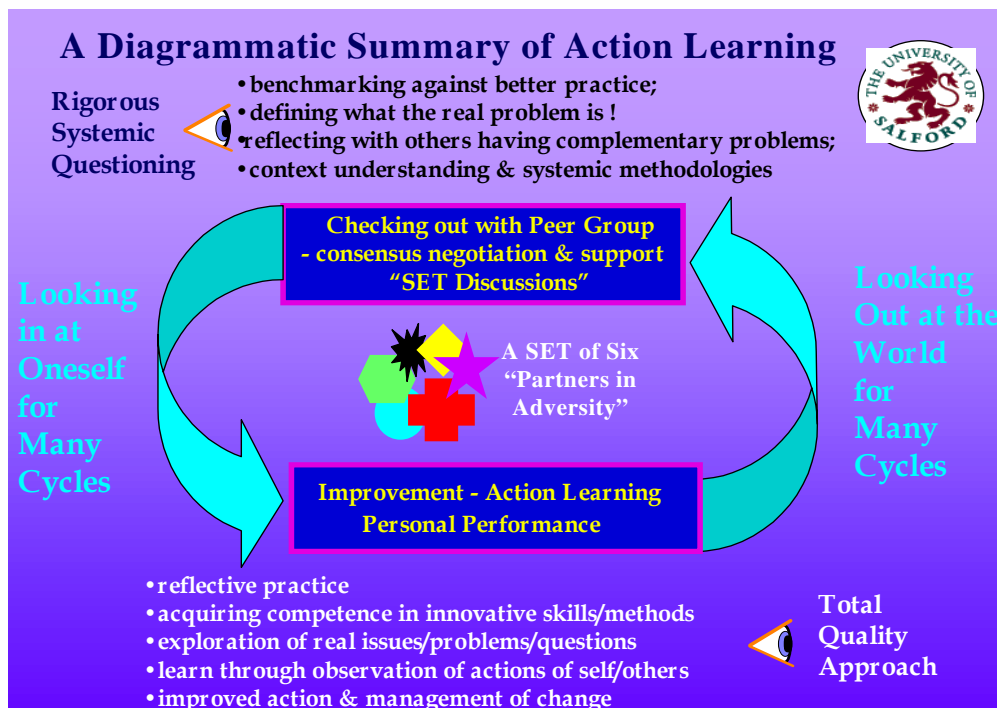
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presently observed cultural lack of creative construction learning, and hence improve working practices. Unfortunately, the construction industry has a tendency to “adopt unthinkingly the latest management fashion in the hope of finding quick solutions to long-term problems” (Green and Simmister, 1999). ‘Lean Production’ or ‘Lean thinking’ is one of these solutions. It is specifically designed to improve value adding activities by reducing, for example, waste, defects and unproductive time (Egan, 1998). However, it presents a real challenge in that it is a Japanese approach which may need to be adapted to the UK context and may be difficult to implement in a conservative or adversarial culture (Hirota and Carlos, 2000). Our objective was to rigorously evaluate the capability of Action Learning in changing construction culture and promoting appropriate innovation, through a series of four case studies. Our research successfully generated innovations within a group of 28 construction professionals, both at an organizational and industrial level. The findings presented in this paper relate specifically to the success of one medium-sized construction company, where Action Learning was used to generate a culture of innovation and continuous improvement.

Synopsis of the Underlying Research

Action Learning is a well-used and well-documented approach to experimental management education and development (Botham and Vick, 1998; Mumford, 1985; Pedlar 1996; Revans, 1983). It was developed as a method of enabling managers to both work on real tasks and learn from their experiences. The core idea behind Action Learning is to create small, mutually supportive groups (known as SETs) of people who band together to solve real problems or difficulties which are not solved in current best practice. Members of a SET bring problems, issues or failures from their own work in an attempt to understand them and then try to improve one recognisable quality at a time as they observe their own, and others successes, failures, problems, solutions or weakness during their attempted processes of change. Ideally, SET members try to deal with high priority problems first, then look outside their own knowledge and experience to benchmark themselves against the world's best – see diagram (Powell, 1999).

Operationally, Action Learning is developed by forming a small group of people prepared to



bring with them observations, problems and issues from their own working experience and, by a mutual process of sharing, develop possible solutions to take back to their work, to test in practice. For such a “partnership in learning” to be effective, it needs to be both supportive, deeply caring, and at the same time, challenging and questioning. The processes of engendering Action Learning in any group are simple in principle. However, getting individuals to adopt such an approach is difficult and requires subtle and careful nurturing by a SET advisor (Powell, 1999).

Action Learning is different from other change management approaches such as Organisational Change & Development and Organisational Culture (Davey, 1996), in that SET members work together collaboratively, learning from each other, rather than ‘an expert’ and use their own experience as the basis of action. It is generally used by senior managers, but has also proved successful with front-line staff (Meehan and Jarvis, 1996), probably because it is not a ‘top down’ approach. With the exception of a programme designed to help small firms with their marketing activities (Musschoot, cited by Mumford 1985), Action Learning has tended to be used by large companies from the private sector (e.g. WH Smith and Lever Brothers) and large public sector organisations (e.g. Surrey County Council and Lancashire Hospitals) (Revans, 1986a, b; Weinstein, 1995). Thus, ours is one of few studies focusing upon small and medium-sized enterprises, and the first to apply Action Learning to the construction industry. Despite the fact that SMCs are large in numbers, with over 153,000 recently registered in the United Kingdom, they are a typically neglected target group for support by the industry and its researchers (Batchelor and Parker, 1999; Davey, Lowe and Duff, forthcoming). In addition, the multiple-perspective case study observations made as part of our research, using a combination of ethnomethodology and illuminative evaluation, has enabled the research to better understand Action Learning as an alternative approach to driving improved ways of working (see also Morris, 1994; Vince and Martin, 1993).

Application of Action Learning to a Medium-sized Construction Company

The stages of the company’s development and progress using Action Learning are outlined below.

Motivation for Action Learning

During the summer of 1996, the University of Salford was looking for sponsorship from several small or medium-sized companies to match the funding that had become available from the EPSRC. Colin Harding, past President of the CIOB and Chairman of George and Harding Ltd (a successful construction company based in Bournemouth, with a number of associated businesses) had become interested in the idea of continuing real improvement as a result of the CIOB’s OSTEMS visit to Japan (CIOB, 1995; Powell and Poyner, 1995). As the Chairman wanted his company to gain a lead over local competitors, an in-house Action Learning SET comprising 7 Managers was formed⁵. The Chairman nominated the list of participants himself, deciding to choose Small Works Managers and a Site Manager based at different divisions. The Chairman said that the SET might aim “To seek out improvement in technical and management areas to provide George & Harding with an effective 18-month lead over its competitors.”

⁵ The other 21 construction professionals were organised into three SETs based in different parts of the UK, with two comprising contractors and clients and one comprising contractors and consultants (including competitors). These equally successful SETs are described elsewhere by Davey, Powell & Powell (1999) and Cooper, Powell & Powell (1999).

Barriers to Innovation

In-depth, regular discussions during Action Learning SET meetings allowed its Managers to develop and test new ideas with colleagues from different divisions. They were particularly interested in the company's strategy, structure and procedures. The supportive working environment enabled them to become "Partners in Adversity" (Revans, 1986). With the help of a SET advisor, the quieter members of the SET began to contribute more fully to discussions as time progressed, offering new insights and illustrating the value of ideas generated by colleagues. These quieter members of the SET were then praised by their colleagues. This, in turn, transformed the atmosphere within the SET into one where individuals were highly motivated to participate. Members of the SET also learned to handle early alienation by other employees not included in the experiment by involving them indirectly and sharing the process of personal development with them.

Report for Top Management

In order to demonstrate its progress, the SET prepared a report for the Chairman detailing recommendations for improving the company's structure and culture. To begin with, the Chairman did not entirely agree with its proposals and expressed concern about the reaction of others within the company. Nevertheless, the trust and friendship developed within the SET enabled the SET Managers to understand his aims and develop their proposal to meet the mutual designs of all. Indeed, the open and blame-free dialogue between middle managers and the Chairman was critical to developing a positive way forward for the company. As a result, a decision was taken to develop a training programme to improve performance and foster a culture of continuous improvement.

Learning from Experience

The Small Works Managers began to fully appreciate the value of airing different perspectives and wanted similar opportunities to be made available to others. The SET therefore decided that a training programme should be used to bring together staff from different levels of the hierarchy and provide an opportunity for open discussions about problems and possible solutions with Colin Harding, who chaired every session. It decided to deliver the programme using its own management staff, including SET members, in order to create a relaxed atmosphere. The Managers called the programme '*Continuous Staff Development*' (CSD). It ran as a series of monthly courses, in which solutions proposed to one specific problem were passed on to the next course to continually improve the company's corporate learning plans. About 45 staff, ranging from Estimators, Working Foremen and Joinery Managers to all Directors, were formed into three, balanced groups in order to attend the courses. Every course was run three times and because the quality of the course seemed to improve with each session, it was decided to rotate the order of the three groups, so that for one in three courses each group would experience the best.

Creating a Culture of Innovation

The first three courses from January to September 1998 generated over 100 ideas and action points relating to issues such as health and safety, time management, programming and site supervision. The usefulness of new ideas was judged by observing the consensus reaction of staff. The implementation of the suggestions from Continuous Staff Development was undertaken by small groups of staff, charged with responsibility for a specific area of improvement, and overseen by a member of the SET. Progress was reviewed October to

December 1998, thus ensuring real changes and learning from past experiences. The Small Works Managers believe that Continuous Staff Development has allowed the company to make real changes in terms of professionalism and efficiency, sometimes by taking relatively simple steps such as keeping site offices tidy, installing a site notice-board and improving paperwork, as well as introducing new procedures related to, for example, safety rules and quality assurance. In addition, it has helped the company to involve and harness the potential of its employees and improve morale, especially amongst site managers, foremen and operatives – who offered significant insights into company practices and now feel less isolated from the Office. Continuous Staff Development has become a permanent tool in George and Harding's management training programme; it is linked with ISO 9000 Certification and used as a less bureaucratic alternative to 'Investors in People'.

'Pulling' Knowledge and Support

The involvement of Small Works Managers and the Chairman in an Action Learning Programme run by a university provided an opportunity for them to access new facilities and potential contacts. SET members visited a Technology Centre, where they were given a demonstration of video conferencing equipment. The company also employed a consultant from the University of Salford specialising in the improvement of site operations, through the application of the principles of lean production (dos Santos, 1999). He based his observations of one of the company's sites, made recommendations for improving productive time and reducing waste. Although the company did not initially act on his advice, he was later re-employed to investigate site organization and time management under the direction of the SET members and responded to their requests for information and support, thus ensuring the fullest use of his expertise and knowledge.

Beneficial Outcomes

Continuous Staff Development and its Financial Implications

All concerned consider the Continuous Staff Development they developed as the most significant outcome of the SET's activity, mainly because it allowed the company to innovate and improve. As one SET member explains:

“Out of the three courses that we've already run, there's over a hundred positive items of feedback from sources which turned into action. During this last set of meetings, we actually spent the time reviewing what happened at the first three. So, we don't just go blundering on, and say we're going to do this, that and the other and never revisit it to make sure the actions have taken place” (Small Works Manager).

The Managers believe that Continuous Staff Development generated some extremely good ideas, especially in relation to risk assessment forms, as one Manager explains:

“I've just seen them the other day, and they're a million times more workable than the old system, which was thrown together very quickly as a result of some legislation that came in. Now we've had five years to reflect on them, and we hadn't done anything about them for five years, but all of a sudden, CSD comes along, and we look at it seriously, and come up with a bloody wonderful system now” (Small Works Manager).

Most importantly, the initial enthusiasm generated by the Action Learning SET did not simply

dissipate, but led to real and sustained changes, with employees becoming more open to new ideas and committed to change.

According to the Chairman, Continuous Staff Development has given the company a 12-month lead over its competitors. The Small Works Managers believe that implementing recommendations contained in the report on company structure and small works will increase efficiency and improve profits, with other financial gains accruing when the process of organisational change nears completion and wastage on site is reduced.

Long-Term Ramifications

Better Site Management

The Small Works Managers studied now feel more confident and have a better understanding of company policies which, in turn, has improved their ability to manage people, delegate responsibility to subcontractors and use time productively. The Chairman said that all the Managers appear 'bolder' and one in particular has coped well recently, despite being responsible for an extremely difficult project:

"He [name of a SET member] is on an extremely difficult job at the moment... He's carried that extremely well and I think that he feels that he's in control of his site. I think it is the first time he felt that way...despite the difficulties of the circumstances, he knows exactly what is going on and this is all to do with confidence" (Chairman).

Better Leadership, Motivation and Communication

The opportunity to contribute to company strategy has given the Managers a great sense of self-fulfillment and job satisfaction, as well as increased their commitment to the company. As a result of their close relationship with the Chairman, the Managers perceive Top Management as more approachable and in control:

"I would say that he [the Chairman] is probably seen as more approachable. He has really been driving the company over the last two years. He's in the driver's seat, very much in control" (Small Works Manager).

Furthermore, the Managers are more confident when it comes to presenting ideas to individuals at Director level. The Chairman says that the middle managers are now willing to debate matters of policy with him; he greatly appreciates such openness. It also makes it easier for the Chairman to understand the abilities, weaknesses and commitment of his younger, up-and-coming managers and this insight has been used to identify pro-active, strategic thinkers.

The Views of Clients

The Small Works Managers' confidence and ability to work together was also evident when the SET presented its results at a conference on '*Innovation and Construction*', organised by the University of Salford (1998). Several members of the audience, which included SMCs, clients and academics, commented upon the Managers' performance, saying that they were an excellent advertisement, both for the company and the industry. In addition, after the conference, a manager from a large housing association contacted George and Harding to discuss the possibility of working together on a project based in the South of England.

Conclusions

Implications for Organisational Practice

The SET meetings were the mechanism through which busy managers gained “time to think” and, in collaboration with colleagues, test the validity of new ideas. This apparently simple mechanism proved to be extremely beneficial to the Managers and their supporting staff. The lessons learned were delivered to other employees, and augmented by them, through the company’s training programme “Continuous Staff Development”. The process of Action Learning was successful, in part, due to the SET Advisor, who asked penetrating questions designed to help SET members learn to listen to, value and draw upon the experiences of colleagues. The Chairman too, clearly had a significant role to play in the programme’s success; although his relationship to the SET generated some tension in the beginning, the involvement of the Small Works Managers with him was to the mutual benefit of all. The Chairman’s commitment to the programme and his choice of objectives resulted in a high-profile programme being established quickly and effectively. The Chairman also helped the SET members progress by confirming the need for staff training and encouraging a positive attitude towards consultancy advice. SET members were worried initially about failing to perform to the standards expected by the Chairman and feared being alienated from the rest of the company. The SET overcame the problems by supporting each other, working closely with the Chairman and involving staff in the Action Learning programme through the introduction of Continuous Staff Development. Top Management could be described as demonstrating ‘Active Co-operation’, where individuals go out of their way to support the programme, but do not initially realise that they too are likely to be learners in the process (Revans, 1983; pp7).

Implications for Lean Production

The findings show that whilst being involved in an Action Learning SET provided the motivation and opportunity to consider using the concepts of lean production, there was initially some resistance to implementing the proposals put forward by the consultant. This was perhaps because the consultant’s findings implied criticism of existing practices and thus generated resistance (dos Santos, 1999). As a result of the SET meetings, and the support of the Chairman, the Managers were able to confront some of the issues and ‘reframe’ the findings in a more positive light, that is one which acknowledged the pioneering attitude of individuals willing to change and improve long-established practices.

The need to change attitudes and the recognition that this takes time because some values are deep rooted, perhaps as a consequence of long experience, was highlighted by a Site Manager in a study of Action Learning in Brazil (Hirota and Formoso, 2000). More specifically, it was found that the SET meetings could be used to identify whether managers had an accurate understanding of the concepts of lean production. For example, ‘process’ was a word often mentioned by managers during the SET meetings. However, data recorded during and outside of SET meetings showed that the meaning attributed to this word was relatively vague, despite explanations on value adding activities, conversion and flow activities given by both an expert and the SET Advisor. One of the SET members was at first unaware that he had not fully appreciated the meaning of the concept. He began, however, to critically evaluate his own management style and presented his problem in a wider perspective. As a result of being questioned about the problem and his underlying assumptions, he suddenly began to realise that he had misunderstood the concept of process. Although he admitted in his assessment interview feeling under pressure during the SET meeting itself, he was also astonished and excited with his new insight. He added that he would not have been able to change his attitudes towards

managing if he had not understood the meaning of ‘process’ in Lean Construction theory. This example shows how tacit knowledge guides our actions, although unconsciously, and how difficult it is to change managerial procedures, even when resistance is not overt. Indeed, Nonaka (1995, cited by Hirota and Formoso, 2000) suggests that one of the barriers to innovation is the need to unlearn what is known.

Implications for Industry Improvement

Based on this, and the other three case studies (Davey, Powell and Powell, 1999; Cooper, Powell and Powell, 1999), it would appear that Action Learning is able to create the sort of deep-seated cultural change needed by the construction industry, and especially SMEs, because of the clear value it brings to those participating and their willingness to become involved in the process of change; this is extremely unusual in construction. This has certainly been the case for the Small Works Managers from this medium-sized company, who strongly recommend other SMCs use Action Learning:

“You can stand back, and you can see that all that talk and all that – what would appear to be just hot air – has actually turned into something real. So, far as I’m concerned, Action Learning is definitely, definitely the way forward if you want to improve, and make yourself more efficient, and the only way to do that is by learning from previous experience” (Small Works Manager).

The research team writing this paper noted that uptake was slower than they expected from cases studies in other industries and they have developed a video and training pack to accelerate the process of induction. The video is available for those interested and is included as part of this presentation. We are more than happy for this to be copied and passed onto those who may be interested in this work. The value of IT for remotely supporting such educational change has also been revealed: this has suggested the Internet can be used as an important support tool to cascade Action Learning to a wider audience. As a result, the research team has developed a portfolio of short, benchmark case studies and is now working closely with the UK’s “Construction Best Practice Programme” to extend its existing Learning Bank and to stage manage the Action Learning approach into British construction.

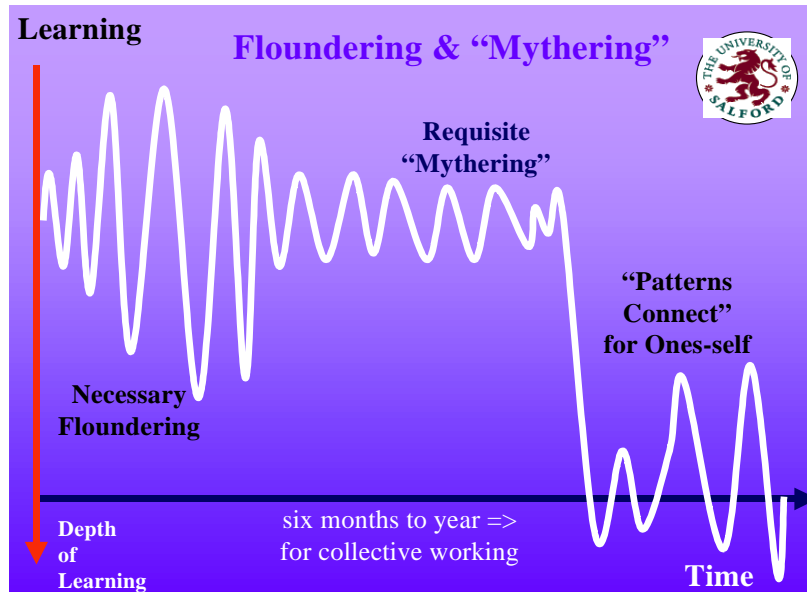
Implications for Theory

The most important milestone in terms of the SET’s development occurred during the fourth meeting of the Action Learning SET when a quiet member of the SET suddenly began to participate. At this point, it would appear that SET members moved beyond being merely acquaintances and began to feel a shared sense of identity, engendered by feelings of loyalty and trust. Thus, the process of development during the early stage would appear to support the view of Revans (1983), who states that SET members become “comrades in adversity” and that this is a process of group and individual development. The second most important milestone occurred during the middle stage of development when the SET started to take action and, as a result, had to learn to cope with the reaction of the Chairman. The dynamics of the SET, which generated support, trust, confidence, insight and access to resources for its members, allowed the SET members to transform the relationship between themselves and their Chairman. The SET underwent similar processes in the late stages of development with regard to its relationship with staff, which was transformed through Continuous Staff Development and its relationship to a consultant, who was re-employed following a site investigation, on terms laid down by the SET members. Thus, it could be said that the outcomes of the SET, especially Continuous Staff

Development, resulted from the SET collaborating with the Chairman, Staff and consultant to overcome barriers to innovation and performance improvement, both on a personal level (e.g. lack of confidence and knowledge) and a political⁶ level (e.g. resistance to change within the company).

The SET underwent six stages of development (see diagram): -

1. The SET members became ‘partners’ as a result of sharing information, fears and ideas on a regular basis, with the support of the SET advisor. Powell (1999) has called this early stage of development “necessary floundering”, as SETs provide a formal setting for learning by reflecting on routine business with colleagues (see diagram);



2. The early discussions seem to provide the foundation and motivation for action by some individuals within the SET. Powell (1999) describes this as a process of “requisite mythering” at any problem. This is where SMCs have “time to think” and, though questioning of each other, SET members learn to understand and define some of their problems more specifically and pick out issues which might be open to some experimental action. Cooper, Powell and Powell, (1999) demonstrate that this form of penetrating questioning does not necessarily increase in depth, nor focus, over the course of the meetings, but appears to “skim the surface” of many topics and results in participants understanding the problem more systemically and contextually. They become motivated to act through the process of “airing and sharing problems and solutions”;

⁶ Politics relates to the power structures within organisations and society, rather than simply the attitudes, values and practices referred to within the concept of organisational culture.

3. The actions gave rise to some problems and the SET pulled together in an attempt to find a way forward, thus illustrating that they had truly become ‘partners in adversity’;
4. The SET worked to develop solutions considered appropriate by both the Managers and the Chairman. Powell (1999) describes this as “transferring and transforming problem ownership”. He suggests SET members gain a systemic confidence of any new construction tasks in front of them and hence become more innovative and creative in their every day actions;
5. The SET implemented its Continuous Staff Development Programme, thus transforming its relationship with staff; and

6. *The SET ‘pulled’ information from the University of Salford throughout the duration of the process, and later transformed its relationship to the Consultant offering ‘expert’ knowledge.*

Stages of SET Development

(1.)	(2.)	(3.)	(4.)	(5.)	(6.)
<i>Necessary foundering</i>	<i>Requisit mythering</i>	<i>Experimental actions & Adversity</i>	<i>Work together to solve problems</i>	<i>Implement new solutions</i>	<i>Gain feedback from experts</i>
↓	↓	↓	↓	↓	↓
Partners	Understanding the problems	Partners in adversity	Problem ownership	Shared commitment	‘Pull’ knowledge
			↓	↓	↓
			Transforms Relationship to Chairman	Transforms Relationship to Staff	Transforms Relationship to Consultant

Revans (1983) also suggests six sequential stages of development: - (i.) analysis, which is a process of questioning; (ii.) development, where reports are produced; (iii.) procurement, where contacts and resources are gained; (iv.) construction, where resources are marshaled; (v) application, where plans are set into motion; and (vi.) review. Our findings, to a large extent, mirror the intellectual processes defined by Revans, in that the SET discussed issues, wrote a report, attempted to communicate proposals, reviewed plans and applied new ideas. We would nevertheless agree with Vince and Martin (1993), who suggest that such descriptions fail to capture the psychological, emotional and political aspects of Action Learning.

In terms of psychology, the major difference between Action Learning and traditional approaches relates to the dynamics within the SET, which encourage ownership, engagement and participation or, as suggested by Morris (1994), a sense of purpose and the strong feeling necessary for self-directed action. On an emotional level, Action Learning develops individuals’ ability to listen and give praise, but, more importantly, it also generates “feelings” of friendship and trust. These positive emotions help overcome anxiety arising from the uncertainty of engaging in a new, risky activity and being on the ‘edge of change’, both personally and organisationally (Vince and Martin. 1993; pp209). The fact that Action Learning feels different

from traditional change programmes generates commitment to the approach and its participants. As Vince and Martin say, these shared feelings of uncertainty, risk and struggle have the potential to engender a sense of empowerment and authority, as well as the emotional energy to attempt to implement new ideas. Politically, SET members who decide to risk ‘taking the lead’ (Vince and Martin, 1993; pp209) are in a position to challenge and, potentially, change existing ideas and structures, as well as demand additional resources and responsibilities. The political aspects of the process are particularly pertinent when, as in this case, middle managers use Action Learning to achieve continuous improvement. Indeed, the research team doubts whether middle managers, as opposed to senior managers, would have been given the opportunity, or have been as successful, in bringing about cultural change within a traditional change programme.

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