

# INTRODUCING AN INNOVATIVE APPROACH TO SUPPORTING WORK-BASED LEARNING FOR SPECIALIST TRADE OPERATIVES

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This paper reports on the outcomes of a three year action research project which involved developing a new approach to delivering work-based national vocational qualifications (NVQ) (level 2 and 3) to specialist trade operatives. It reviews approaches to qualifying the workforce and argues that NVQs give greater efficiency in terms of time and cost than traditional college-based training. At the end of the project a culture shift in employer and employee towards formal qualifications was observed within the sample group. In addition, the awarding Further Education College had moved from a position of solely centralised construction training to one which allowed flexibility in its delivery style. Prior to this project an achievement rate of 25% was recorded. At the end of the three year project completion rates raised to above the Learning Skills Council's national benchmark requirement of 75%.

Keywords: action research, learning styles, national vocational qualification, specialist trade operatives, work-based learning.

## INTRODUCTION

The responsibility of ensuring there is an adequate supply of properly trained operatives in the construction industry is split in a tripartite partnership; that of training providers, employers and employees. For most of the traditional crafts such as plastering and bricklaying there is a well established training protocol in the industry, but for specialist trade occupations such as dry-lining and suspended ceiling fixing, which has been in existence only since the early 1970s the situation is very different. The training of these specialist operatives has been largely carried out on a supply and demand market led basis by industry mentors.

As specialist trades have had no history of formal training and assessment, the Construction Industry Training Board (CITB) commissioned a report (Larpent, 1996) on specialist subcontract support within National Vocational Qualification (NVQ) delivery. Its outcome paved the development of a work-based delivery method named 'on site assessment and training' (OSAT). This was introduced by the CITB during 1999 to service the demand for specialist trades operatives. The CITB then ran a pilot test of the OSAT scheme. The outcome, as reported by Billborough (2002), however, was that the strategy had to be changed because of the lack of available assessors. The

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NVQs awarded between 1997 and 2002 only gave approximately 25% achievement from those registered.

The creation of the Construction Skills Certification Scheme (CSCS) and its subsequent adoption throughout the construction industry, supported by the Major Contractors Group (MCG), brought with it another opportunity to engage specialist trade operatives in training as the vehicle to gain the CSCS card is the achievement of an NVQ (minimal level 2) and to pass a designated health and safety test.

This paper outlines research conducted to challenge the approach taken to NVQ onsite training and assessment for specialist trade contractors. The project sought to develop a way forward that would enhance employer awareness of specialist training and NVQ workplace delivery and form employer engagement partnerships between industry and education in the process. In turn, it was hoped, this would raise the NVQ achievement percentage to that required by the Learning Skills Council (LSC) (the government agency funding Further Education Colleges).

The following objectives were used as drivers for the research project.

- To examine student learning styles and explore how teaching styles may be adapted to match.
- To ascertain extrinsic and intrinsic student motivation gauging its impact on formal learning.
- To break-down educational barriers and allay their effects on NVQ achievement in the workplace.
- To determine the existing employer learning culture and its potential to extrinsically motivate its employees.

## **UNDERSTANDING ISSUES OF LEARNING THEORY**

### **Qualifying the Workforce**

NVQs are competence-based qualifications. Much of the learning takes place in the workplace and assessment is normally through on-the-job observation and questioning (QCA, 2008). The NVQ assessment process gives greater efficiency in time and cost when formally qualifying workers. The alternative is normally day release for college attendance that, in most cases, time and distance render impractical. While there are aspects of formal learning (Eraut, 2000; Caley, 2000) in that the training relies on a relationship between a learner and a teacher (or mentor) that is focussed by the award of a qualification, the prime purpose of the learning activity is not enhanced skills or knowledge but authentic work where the task is to deliver the requirements of the employer. There is also a variety of personal routes that an individual can use to reach the qualification. In these aspects it is more akin to non-formal learning. (See Grugulis 2003 for a further evaluation of the contribution of NVQs to skill growth).

Jarvinen and Poikela (2001) conceptualise learning in the workplace as a three phased endeavour. Phase one utilises the learning knowledge and skills accrued by an individual during previous experience. This needs to be made explicit when joining a new company or undertaking a different craft. For example, in this study, novices began the NVQ training by reflecting on their previous knowledge and articulating how it was applicable to the job at hand. Phase two involves sharing knowledge with the peer group. Specialist craft operatives learn from their mentor and peer group and this phase began immediately the new employee started working. Stage three

demands knowledge obtained from outside the peer group. This can be from the organisation or from external training in a college. It was this third stage that this research was working to develop by introducing an external training provider to deliver formal qualifications.

Thus, NVQs have been required to compromise the demands of formal assessment with non-formal learning and NVQ trainers are invariably expected to combine the roles of mentor and examiner. As well as assessing evidence to prove that candidates have the competence to meet the NVQ standards, trainers work with employees to ensure personalised learning. This means identifying their current levels of skills and knowledge; setting goals for achievable NVQ qualifications; analysing individual learning needs and agreeing activities to achieve the individual learning. Good quality provision, therefore, has demanded the professional development of the employer and the trainer as well as the employee. The project sought to develop effective strategies for integrating non-formal learning and work place assessment into company practice and culture in order to raise standards. It was necessary therefore to consider how theories of learning might be used to inform the approach.

### **Theories of Learning**

All learning requires individual action and reflection. It may only be at this stage of reflection that non-formal learning becomes explicit and, therefore, applicable. Reflection allows a learner to transform new experiences into an appropriate form to augment, extend or change pre-existing knowledge. Piaget (1971) explains this as the twin cognitive functions of assimilating new information and accommodating this within pre-existing structures of knowledge.

Similarly, Kolb (1984) explains experiential learning as requiring both acquisition of skills or knowledge, and internalisation of these into individual learner identities. Some researchers have viewed these two essential steps of learning – acquisition and internalisation - as distinct continuums of practice, with a learner's preferred approach to learning distributed between two diametrical ways of gaining and using information or skills. Kolb suggested that effective learning results from a cycle of experience, reflection, conceptualisation and testing those concepts in new situations. The acquisition of new knowledge or skills is a process which needs to encompass all segments from this cycle, but where the cycle begins depends on the learning context. Kolb saw experience and conceptualisation as the polar extremes of the acquisition stage of learning and argued that we gather knowledge either by living the experience or by being told about it. Internalisation of knowledge is achieved either through reflection or active testing. Kolb believed that few people have equal innate skill in all four areas and, hence, individuals develop an orientation towards one of the poles in each dimension. Kolb called these their preferred learning styles.

There have been many efforts to categorise learners into preferred learning types, and to link these particular styles of learning such as that which balances experiencing and conceptualising, with the quality of learning outcomes in different contexts (see Heffler, 2001; Mainemelis *et al.*, 2002). On the other hand, many educators question the trustworthiness of learning style categorisations (Duffy & Duffy, 2002; Henson & Hwang, 2002; Swailes & Senior, 1999; Garner, 2000) and challenge the belief that learning styles should be matched by curricular or pedagogic modifications (Klein, 2003). Klein points out that learning styles are usually assessed through a range of perceptions and skills, including cognitive style which concerns central processes such as reasoning and memory. Most students indicate mixed and inconsistent preferences

depending on the task and Klein argues that almost all learning activities require different quantities of a variety of skills. Swailes and Senior (1999) observe that analyses of learning style profiles in academic settings reveal a dominance of the Reflector/Theorist traits. It may be that a learning style simply reflects the task in hand. Construction workers might, therefore, be expected to favour a style related to concrete experience and practice. However, Swailes and Senior's (1999) findings do not support the four categories of learning style preferred by Kolb (1984). They observe a more generic structure of learning, indicative of a three-stage cycle of Action, Reflection and Planning. This may be more in line with the workplace learning phases described by Jarvinen and Poikela (2001). Further, Säljö (1998) argues that the internal, mental activity of the learner is only one ingredient of learning and Meadows' (2004) explanation of the processes of assimilation and accommodation as an active reiteration rather than a set predisposition seems more convincing. In Meadows' view, the active reiteration gives rise to rules, categories and procedures that individuals use to organise their future learning.

Understanding the learning style of participating students in this research formed a critical first step as detailed in the results and discussion section of this paper.

## THE METHODOLOGY

This research adopted a three year 'action research' model (as illustrated in table 1). The origins of action research can be traced back to the late 1940s to the work done by scientists on both sides of the Atlantic (Cohen and Manion 1994). It is concerned with practical issues, problems and needs that arise as a routine part of activity in the real world. Change is regarded as an integral part of action research and changing the way of dealing with practical problems is a means of discovering more about the phenomena. Action research generally involves a feedback loop, in which initial findings generate possibilities for change that are then implemented and evaluated as a prelude to further investigation in a cyclical manner (see figure 1). This allows continual feedback to be introduced in the ongoing research.

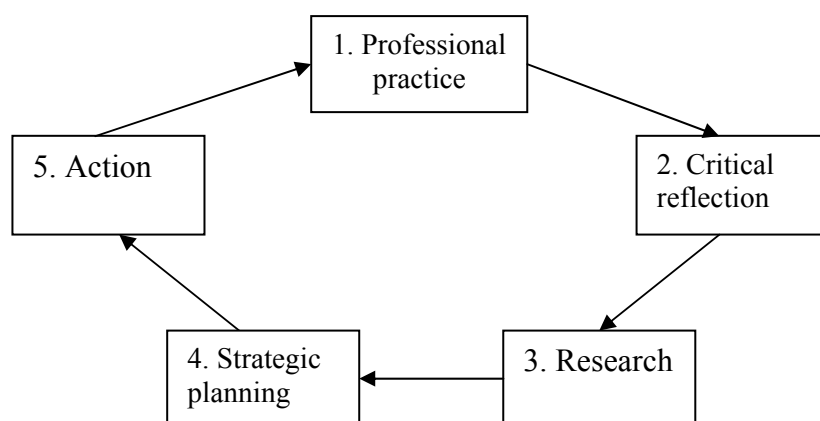


Figure 1: The cyclical process in action research (Denscombe 1998)

In this study, data from pre-research analysis fed into the initial setup cycle. These actions were converted into practice and the output was observed. When reflected on, the output was analysed and informed the action for the second cycle. This system repeated itself for each of the six cycles and allowed delivery changes in the method as required for progression.

It was planned to have two cycles a year throughout the research. A performance review was taken at the end of each cycle to reflect on the effectiveness of the actions completed. This was to enable further progress. The end of academic year was an important milestone date for the FE College and the evaluative details were critical to the continuation of the research. The cycles two, four and six ended on these dates. The intermediate cycles one, three and five end dates enabled changes to be made half-way through the academic year to support needs of the FE College regarding funding targets.

*Table 1: Research cycle timeline*

Phase	Focus for action	Timeline
Cycle one	Initial set up	Sept.2003 – Feb. 2004
Cycle two	Assessor training	Mar. 2004 – Aug 2004
Cycle three	Learning styles	Sept. 2004 – Feb. 2005
Cycle four	Mentoring	Mar. 2005 – Aug 2005
Cycle five	Nurture learning culture	Sept. 2004 – Feb. 2005
Cycle six	Quality standards	Mar. 2006 – Aug 2006

Five employers were selected for the sample group, four from London and one from Nottingham. All requested assistance regarding formal qualifications required for their employees. The sizes of the companies varied from a large specialist contractor employing 500 employees to smaller specialist contractors employing 80. This gave a good cross section of the employers within the interiors sector typifying the type of company within the construction industry (CITB 2002).

The employee sample group was taken from the population registered onto the NVQ work-based learning course at the London based FE college. This was 36 in the first year from the FE college OSAT population of 122. To ensure the 36 selected for the sample group comprised a valid sample, dispersion of age and area residency was checked against the population. None of the population had a previous NVQ qualification and all were male.

## RESULTS AND DISCUSSION

Figures 2, 3 and 4 summarises the key evolutionary developments that took place during the research cycles. In this project the action researcher was also the project manager. The role was central to the refinement of the delivery model. The action researcher's input is detailed in the following extract from his reflection diary.

*'My input with the employers was initially high but reduced dramatically after cycle one. Although less, as time progressed, my support continued with writing the yearly training plan and their audit reports throughout the action research. Cycle five highlighted a problem when the numbers of recorded training hours dramatically decreased with one partner, but once a system of policing was set up this issue was alleviated. I also had a high input within the first cycle at the FE College as quality systems were developed. This high level continued into the second cycle, because the college assessor was being trained to deliver NVQ in the workplace; however, once the assessor was trained the needs for my input again decreased fundamentally. The third cycle input was high because of the group development and the new assessor training. Once into cycle four, my input was reduced, because the new delivery system was in place. This enabled the further development of the systems into the assessor training, whilst carrying out more of an observational and management role throughout cycles five and six. My input into the employee support was high in cycle*

one and three because major delivery system changes happened at these stages. Support was also high with the system input into the assessor training in cycle five, but was at a constant during the other stages’.

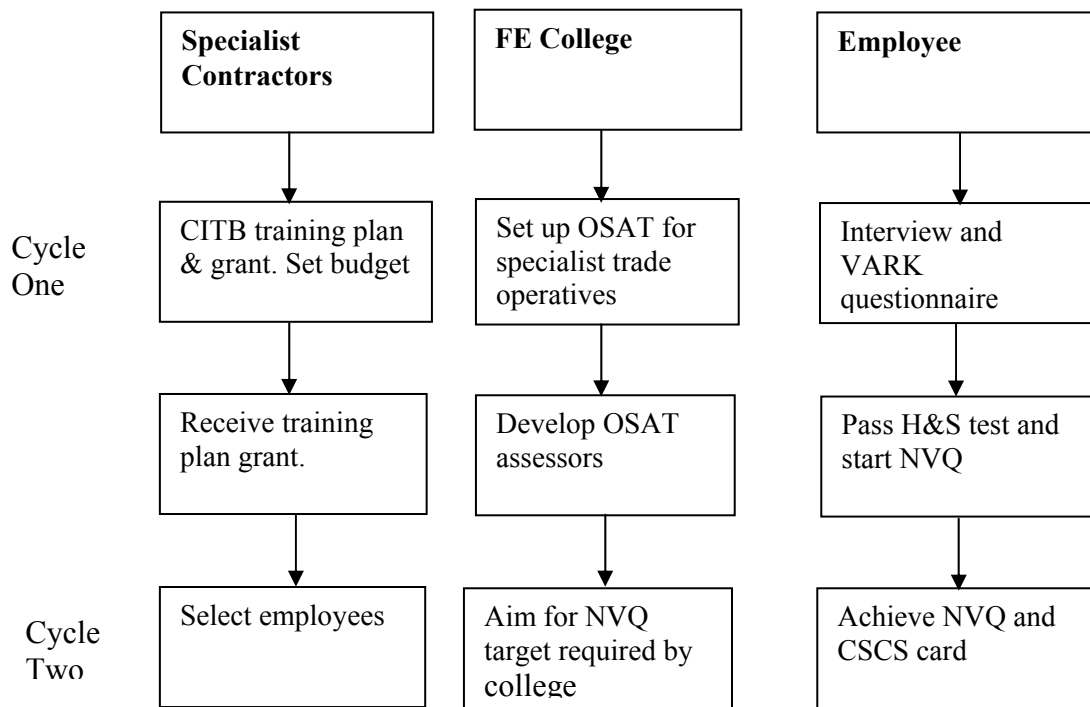


Figure 2: Year one: Initial set-up and assessor training (Cycles one and two)

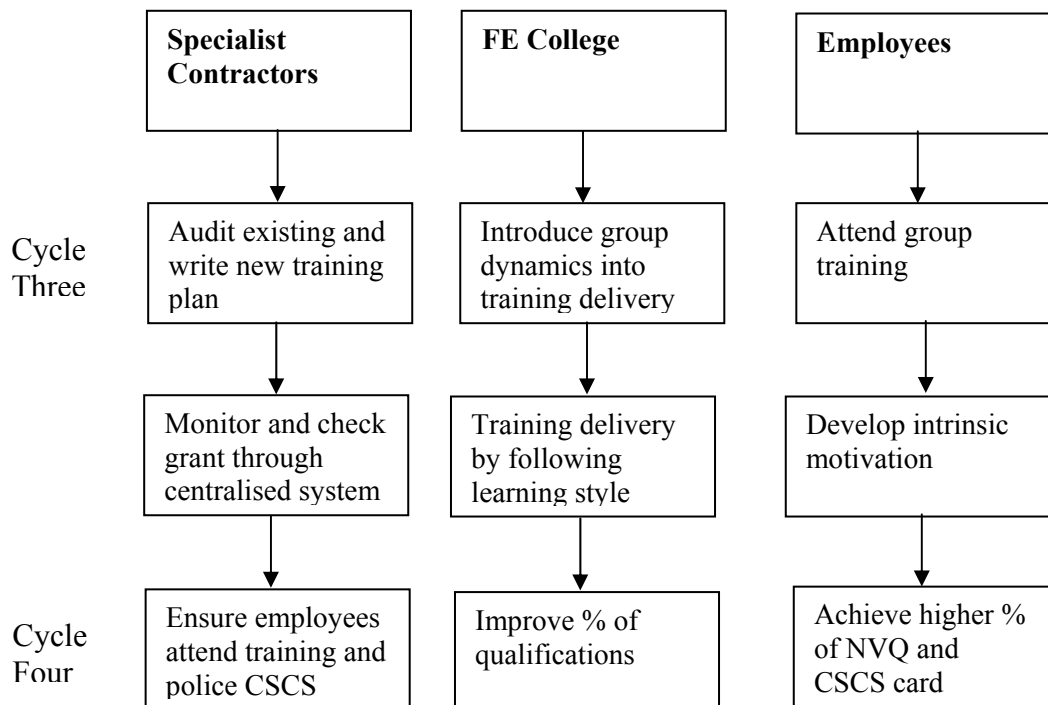


Figure 3: Year two: Learning styles and mentoring (Cycle three and four)

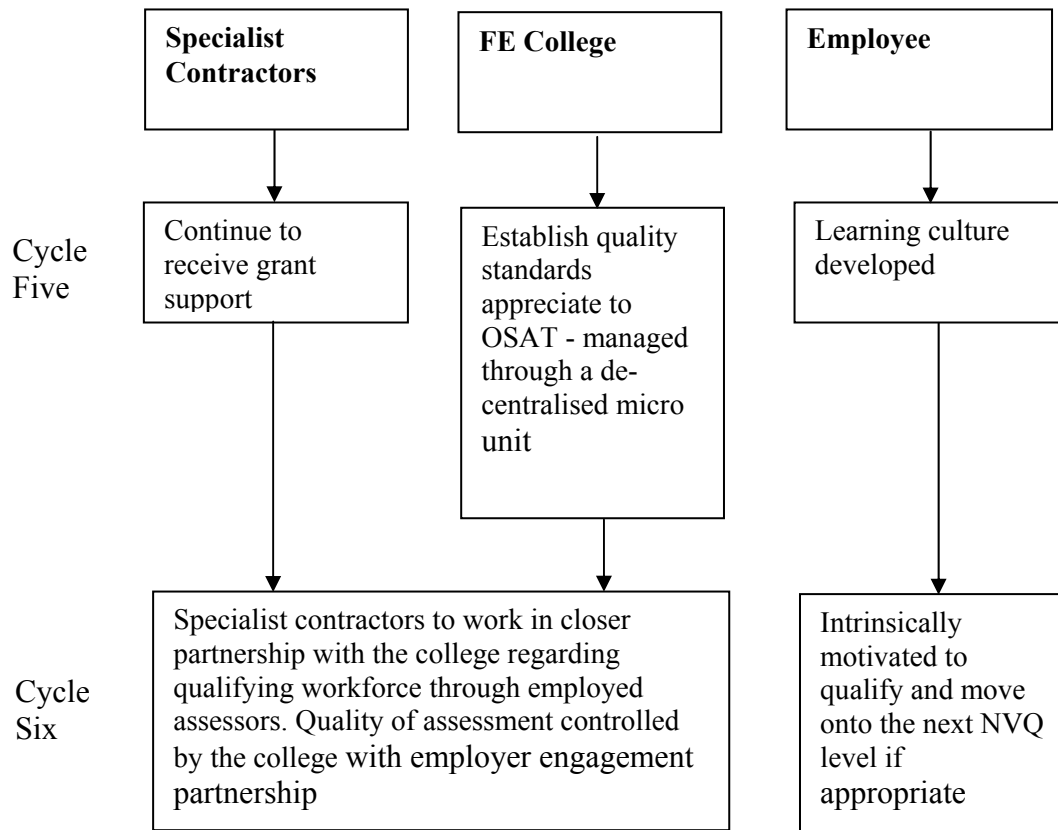


Figure 4: Year three: Nurturing learning culture and quality standards (Cycles five and six)

Employers were extrinsically motivated towards a qualified workforce by the CSCS card. This commitment to the CSCS forced the NVQ onto the employees. The employees initially did not feel comfortable with this pushed learning approach. By understanding the learning styles of the learners (the visual, aural, reading and kinaesthetic (VARK) questionnaire was used to define the actual learning styles of the employees (Flemming 2001)) it was possible for the action researcher to formalise an approach to their learning which cultivated an intrinsic learning motivation. This outcome reflected the results of Santos and Powell 2001. The change of learning mood, in turn, produced achievement rates above the Learning Skills Council's national benchmark requirement of 75%.

Perhaps the biggest challenge in this project was determining how a centralised FE college could work in a more flexible style with the industry to offer work-based NVQ assessments. Prior to this action research all training within the construction division was carried out at the FE College in a combination of workshop and classroom teaching. The solution proved to be the establishment of a de-centralised micro-unit which was able to match the organisational structure of the specialist contracting companies which had the flexibility to delivery qualifications by the method similar to the informal training delivered previously. In addition, it was necessary to merge trained industry and college based assessors so they were both competent to assess to NVQ quality standards.

The other complex factor was the need to guide the specialist contractors in embedding a training strategy into their management systems. Each employer needed

a centralised information system if they were to receive a CITB grant for CSCS card and NVQ assessment. It was found that many organisations had a lack of knowledge of training opportunities and a poor understanding of the CITB grant system.

## CONCLUSION

The project has presented an example of how OSAT may be successfully undertaken for specialist trade contractors from within a traditional FE College setup. It has shown that a de-centralised micro-unit within the FE College can be created to form a bridge between the very different training styles of FE and industry. The project also has demonstrated the importance of using an experienced project manager (the action researcher) with an understanding of both industry and FE college organisational structures to set up and to mediate between the two factions.

For the specialist trade operatives, this project has shown how the perceived barriers towards education can be identified in individual learners by establishing their learning styles and managed through the careful composed of group teaching techniques. The initiative was refined during the three year project to produce a formalised approach to their learning which cultivated an intrinsic learning motivation within the receptive individuals.

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