Learning within different communities of practice: the case of apprenticeships[2]

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Abstract

Notions of complementarity between on- and off-job learning environments is a perennial issue for most forms of education and training - whether professional or trade - and continues to be the subject of much debate. Focusing on apprentices in the building industry, this paper analyses the different perceptions of complementarity held by apprentices, host employers and institute teachers. It strives to understand the diverse meanings of complementarity and discusses the relationship between learning sites and the integration of learning. The movement of learners between different communities of practice is explored. Apprentices' development towards the status of 'competent tradespersons' is dependent upon their individual abilities to integrate and synthesise sometimes complementary but often contradictory messages from their different learning environments.

Introduction

This paper, which emerges from an earlier funded study of apprentice training in Australia (Harris, Willis & Simons and Underwood 1998), is an exploration of the ways in which apprentices in the building and construction industry perceive the differences and complementarity between the two sites of learning they are required to engage with as they move between the work-site and the college. Although the aim of each of these sites is to train apprentices to an industry level of competency, some conflict exists as each site has its own priorities and concerns. On the one hand the formal provider, the college, views the outcome as being of benefit for the individual apprentice and for the industry as a whole. On the other hand the construction site is concerned over survival as a productive business enterprise and will guide the apprentices' practical learning with that in mind. These differing views lead to sometimes conflicting messages for the apprentices who must make sense of these inconsistencies and learn to integrate the various inputs into a coherent whole. The issue of complementarity, or its lack, between the institutional, formalised site of learning, the college, and the practical, informal site of learning, the work-site, is explored in this paper from the perspective of the host employers, college teachers and particularly the apprentices. Thus one of the considerations of this research is whether 'integration' is a useful concept; complementarity would seem to be a more useful and more likely approach. Consequently this research explores the positions of training institutions (in Australia these are mainly located within the Technical and Further Education (TAFE) sector[3]), of host employers and, most particularly, of apprentices to ascertain how complementarity is viewed by each player.

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[3] Although private providers offer similar training, for the purposes of this research, TAFE was the only training provider involved.

Of particular concern for this paper is the notion of 'communities of practice'. Apprentices are in the special position of being members of several communities of practice involved in their learning. They are members of the community of college students, but they must also become accepted as members of several other communities of learning on the various work-sites as they carry out their on-job education. This paper explores the implications of their participation in these different communities of practice and their acceptance as legitimate peripheral participants.

Method

The study focuses on two main learning environments – the off-job (TAFE) and on-job (building site) locations. The building and construction industry was selected as an appropriate case study for investigation because of its long tradition of apprenticeships and economic importance. Further, the concept of complementary training in this industry has yet received little attention by researchers, despite indications from earlier research of training difficulties in the industry: 'There is a real need to address the problems of apprenticeship training' (Snow 1991: 19).

The research agenda was to establish a portrayal of complementary training as experienced and construed by its providers and receivers. From this objective, some basic questions were developed to guide the interviews, for instance: 'To what extent are the two types of learning environments complementary?' and 'To what extent do workplaces and providers share a common understanding of training?' An expressive interpretative approach was adopted and data were collected using interviews, observations and focus group discussions.

A total of 59 semi-structured interviews were conducted, 32 with apprentices, 21 with host employers and six with TAFE teachers, and observations and case notes were made of the workplace contexts in which the interviews were held. Four focus groups were held for each of the following groups: current apprentices, first-year graduates (to provide a retrospective view on issues relating to the training they experienced), host employers and TAFE teachers.

Communities of Practice

'Communities of practice' is an increasingly used theory of learning that has been particularly developed by Etienne Wenger. First mooted by Lave & Wenger (1991) the theory is based upon the premise that all learning is an on-going process and stems from engagement in social practice. We all belong to multiple communities of practice, and are constantly moving from one to another: where we may be central to one we may be peripheral to another, such as team leader at work but minor player at the football club. What is different for the apprentices is that they move between different communities of practice whilst ostensibly learning the same thing, that is, how to be a competent tradesperson. How they negotiate this constant movement is important, both for the way they are accepted as legitimate members of each of the communities of practice, and for the knowledge acquisition in each.

Following Lave and Wenger (1991), it is clear that both sites of learning, on- and off-job, are of value to the apprentice since, '[i]n contrast with learning as internalization,

learning as increasing participation in communities of practice concerns the whole person acting in the world' (p. 49). One of the outcomes of this participation is that apprentices do not just acquire particular knowledge; as individuals they develop an identity, a sense of who they are and also how others perceive them. But this can only be done in a social setting, not on a one-on-one basis (Wenger 1998:3). They are part of a network of social communities and communities of practice (Wenger, 1998), and it is the relationship between two of these communities and the apprentices' movement between them that is of relevance to this research. As Lave and Wenger (1991) point out, by becoming a 'legitimately peripheral participant', the apprentice brings value to the community he/she is joining. At the same time the apprentices are not just gaining skills, but are developing a sense of identity. Thus their involvement on- and off-site comprises valuable learning experiences, not just from the practical knowledge gained but also from their participation as an active, if peripheral, member of a community. Yet despite this benefit from being a part of the two learning arenas, one of the major problems experienced by apprentices is the apparent lack of complementarity between the various sites of learning. Not only do apprentices move between the TAFE and work-site, but the on-job experience is often spread over a number of different building sites. One apprentice noted the problem of moving from one work-site to another.

> *I think the only problem I had was when I went to different guys, everyone had a different way of doing things ... The first guy I was with for two and a half years so I learnt a lot of the way he did things. Then I got sent off with other people and you'd have to try and forget it all, so that was the hardest part.*

Peripheral participants and brokers

Wenger describes how, through their participation in social communities, every individual creates an identity that is informed by the interweaving of experience and social interpretation (1998 p.151). As a full member of a community of practice, individuals are identified, both by themselves and other members of the community, as being competent in terms of being an active member, understanding the overt and the hidden meanings and practices of the community. Once an individual moves to a new community s/he is viewed as less than competent in these areas. At this stage the participant is 'legitimate', that is s/he is situated as an accepted but not fully competent member, and therefore is also peripheral. For apprentices, their positions in the on- and off-job learning sites are as legitimate, but peripheral participants. Wenger describes how identities form trajectories across the various communities of practice; where the various trajectories intersect he calls the 'nexus of multimembership' (p. 159). Thus identity is highly complex and is bound up with multiple histories of practice. Wenger identifies five distinct (yet possibly overlapping) trajectories, of which 'boundary trajectories' applies most appropriately to the apprentices.

> *Peripheral trajectories.* By choice, or necessity, some trajectories never lead to full participation. ...
> *Inbound trajectories.* Newcomers are joining the community with the prospect of becoming full participants in its practice. ...
> *Insider trajectories.* The formation of an identity does not end with full membership. The evolution of the practice ... create[s] occasions for renegotiating one's identity.
> *Boundary trajectories.* Some trajectories find their value in spanning boundaries and linking communities of practice. Sustaining an identity across boundaries is one of the most delicate challenges of this kind of brokering work.

> *Outbound trajectories.* Some trajectories lead out of a community ... What matters then is how a form of participation enables what comes next. (1998 pp. 154-155)

The constant movement of apprentices from college to building site entailed negotiations by trainees with the various communities of practice and led, in some circumstances, to an identity formation of apprentices as brokers.

Individuals who move across boundaries may find themselves in the role of 'broker' (Wenger 1998), imparting information across communities and creating connections. Apprentices may acknowledge this as a positive factor in their training.

> *Sometimes I could help out [the host employer] and things like that. There are always new things in the building industry coming through and quite often we learn new things at trade school which we can suggest to our bosses that will help our bosses out.*

Knowledge may also be passed on to each other when apprentices come together in their own community of practice as college students.

> *What you learn at work you can really refresh in your memory and actually do it at TAFE. Those who don't know or if things change, or something happens, you can teach others and show them how to do it.*
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> *You meet a lot of people there, a lot of young apprentices there, people your own age, younger or older. You find out what they do, where they've been and what they've done. You compare experiences and get advice from them, because a lot of the time these apprentices can tell you things that they've learnt that your boss might not tell you.*

Many of the apprentices in this research reported passing on information they had learned off the job to their on-job host employer and *vice versa*. Although this was often seen in a positive light, it was not always a welcome innovation, making the movement between the different communities problematic for the apprentices.

> *You come across situations where you may think you have a better way of doing it or you can't understand or try and ask the boss why he's doing it that way, but he won't tell you. You say to him, 'But I'm just trying to make it easier'. But he says, 'I don't care, I don't want to explain things just now'. So that's what you've got to do. It usually gets done a hundred times the same way. You know the easy way, and what's the wrong way and what's the right way. He might get you to do it the wrong way, but he's got reasons for it through what he's been told, just for that specific job.*

As noted, communities of practice may be of different types (Wenger 1998). Mutual engagement is a requirement of all communities of practice, but the engagements may vary. They can be complementary, as with the exchange of knowledge within the TAFE community, or they may be overlapping, as with on-site communities where skills and knowledge are shared and are not necessarily the provenance of each individual. As Wenger shows, it is useful 'to belong to both types at once in order to achieve the synergy of the forms of engagement' (p. 76). Thus the fact that apprentices move between the sites can be viewed as beneficial, but it also gives them a greater burden.

Wenger (1998) has noted the particular problem that newcomers experience as they enter a new community of practice. Apprentices entering the work-site must "...get enough attention and create enough relationships with busy old-timers to gain access to the community and its practice. Only then can they start to become full

participants" (Wenger 1998:100). To themselves become a part of the community, the apprentices must have enough legitimacy for informal communication with other members to take place. It is only from a point of legitimacy that an apprentice's mistakes and misunderstandings will be recognised as a part of the learning experience, rather than as a cause for dismissal (Wenger 1998:101). So the constant movement from one site to another can hinder the development of this legitimacy, creating problems for these apprentices that others in more permanent placements may not experience. This problem may be compounded by the often lack of complementarity between the two learning environments (college and the work-sites).

Complementarity or integration

One of the primary objectives of this study was to explore how the workplace and provider environments might best complement each other to meet the vocational needs of apprentices. Fuller and Unwin (1998) have argued that the key problem with traditional apprenticeships is the 'dualistic conception of theory and practice where theory is what is learned at college and practice is what apprentices do at work' (p. 163). The two learning environments, whilst each having the aim of producing competent tradespeople, nonetheless approached the education with differing perspectives, thus reproducing Fuller & Unwin's 'dualistic' notion of learning. Current research is moving to address this dichotomy (Ainley & Rainbird, 1999; Dymock and Gerber 2000; Strickland, Simons, Harris, Robertson and Harford 2001; Schofield 2001), and this paper adds to this literature. It attempts to redress the 'dualistic' position noted by Fuller and Unwin, by responding to the question: How do college teachers, work-site trainers and apprentices understand the notion of complementarity within apprenticeship training?

The notion of complementarity

Apprentices

The degree of complementarity perceived by apprentices was influenced by their interpretation of the notion of 'fit'. Some apprentices viewed 'fit' as a matter of *timing*; the coincidence of the learning at work with the modules covered during a particular period in their off-job learning. As this type of fit was more likely to happen more by coincidence over a period of time than by planning, the on- and off-job environments were perceived to rarely complement each other. To other apprentices, 'fit' was the degree of *relevance* of one to the other, most often the relevance (or lack) of off-job learning *to* on-job learning. Relevance was deemed least in the early stages of training, where the off-job curriculum focused more on the use of basic tools and skills. Another interpretation of the notion of 'fit' was the degree of *utility* of the learning undertaken in one environment for the other. This manifested in opportunities to put into practice basics learnt off the job, apply such basics to variations of tasks on-site, and an ability for apprentices to work more effectively with their host employers.

In some instances, the two environments were seen as complementary in that one provided the theoretical knowledge (the 'why'), whilst the other the practical 'know-how'. In another case, 'fit' was exemplified by the *opportunity to share* off-job learning with their host employer. For about one third of apprentices, however, the two environments were described as comparing 'apples with pears'. This difference

was attributed to a number of factors. The sequence in which the learning takes place in the two environments was often perceived as problematic. It was suggested by one apprentice that trade school would be more beneficial if it started with 'the basics' and worked through in stages. Another problem noted was the absence of some on-site experiences from the off-job site, with a concurrent complaint of the limited scope of work available on-site. Other problems cited were the difficulty of leaving the host employer on-site and the unpredictable nature of the on-job work.

Host employers and college teachers

The notion of complementarity through the eyes of host employers was generally problematic. They perceived the two environments dealing with different methods, brought about by the pressures of the 'real world' of work. In their view, on-site work methods were more up-to-date and job-specific, though often less correct than those taught off the job. Many trainers saw the two sites as quite separate and even contradictory, with some methods taught off-site being quite different from the practices on-site. Some experienced difficulty in responding to questions about the extent of complementarity, because of lack of communication between the two environments. One host employer expressed his frustration: '*I can't really answer that because ... I can't contact them at all, you never get anything from them*'.

There was equal frustration from within the teaching community. When asked how well the on-job environment fits with their constructed off-job environment, one college teacher declared that '*in some cases it doesn't*'. The reason given was that '*outside, there are too many people that have picked up the tools and have actually done no apprenticeship, no formal training whatsoever*'. Another teacher attributed lack of complementarity to the diversity of industry – '*different employers have got different ways and different methods of doing things, ... different amount of fittings, different amount of power tools ... so it is a big range*'. However, in the view of one teacher, given these circumstances, on-job learning '*really does complement and work well*' and allows the apprentice to proceed at a faster rate of learning.

Integration of learning

Although complementarity between the two learning sites is the focus of this paper, the notion of integration is not without some relevance. The data indicate that the apprentices were constantly being challenged to use and make sense of their learning, involving an active engagement with the ideas and experiences from both environments resulting in a final process of integration by the apprentices themselves. Even though some college teachers and some work-site members expressed the idea of integration of the two learning sites as an ideal, it was rarely envisaged as a full integration, nor was there a strong belief in its feasibility. The collusion of the two sites in a complementary manner was voiced as the best viable option, and it was the apprentices who were left as the medium for the integration of the two forms of knowledge.

Apprentices

A number of apprentices reflected on integration of their learning through the process of having to (re)-evaluate some of the habits acquired on a given worksite. As part of

a group training arrangement, apprentices were required to negotiate working and learning in a variety of environments which often had little in common. Some found their knowledge ('what I thought I knew') challenged, and reported confusion at being expected to 'forget what the last carpenter taught you'. If the apprentice departed in some way from the work practices of a new host employer, they were often told they were 'doing the wrong thing'. Responding to this required flexibility, with the concomitant opportunity to find out why they might be wrong and the reasons for having to learn alternative practices.

Working with different host employers provided some apprentices with welcome opportunities to increase their skill and efficiency. For example, one said: '*...if I have to learn it another way to make it better, I will*'. Whilst some apprentices related to the idea of 'forgetting' old ideas, many held the view that integration could best be described as a transformative rather than formative process. It required the apprentice to be able to analyse and judge alternative points of view, and come to a conscious decision to work in a certain manner deemed most appropriate given such factors as the orientation of the host employer and the work context: '*There are a number of different ways of doing anything in life and you just work out the best way at the time*'. Some apprentices saw this transformative process as vital to developing their own ways of working: '*... you take bits out of what everybody has taught you and you make up your own way.*'

Host employers and college teachers

A small number of host employers actively encouraged their apprentice to integrate their off-job and workplace experiences: '*...from what he picks up from there [off-site], I will be interested to see what he can apply at work. That will be a gauge as to whether or not he understands it.*' Some host employers encouraged their apprentices not just to implement ideas and approaches from their provider, but to pass these ideas and approaches on to them, '*because I might learn something as well*'. However, the more common view was simply to tolerate the off-job training of apprentices, with the required absences on block release: '*...a lot of the time I prefer him in a way to forget outside forces that he has been learning, because I like things done in a certain way*'.

Although there was much support from the off-job college teachers for the notion of complementary training, complementarity was presently being left for apprentices to develop by default. The main barrier to active collaboration was the minimal extent of the teachers' contact with sub-contractors or host employers: '*now and again I speak to some of the actual people*'. Visits to workplaces were almost non-existent, and any contact was almost solely through the medium of the apprentice. In fact, their reasons for making contact at all tended to focus on the negative, such as 'problems with a student' or the need to 'find work for our kids'. This minimal contact was attributed to lack of time and funding. The common belief was that host employers were too preoccupied with work to make contact themselves.

The college teachers did offer some suggestions for complementing on- and off-job learning. One suggestion related to the provision of more holistic training:

> *What I would like to see is for the housing industry to put aside houses in certain areas where they could be grouped together or something like that and have an on-the-job training area ... There is no reason for us not to go out there and teach them*

> *on the site how to do it. You could have four or five houses going up and you could have a classroom out there...*

Another suggestion involved the freeing of time for college teachers to visit industry:

> *I would like to be able to say to our management, 'We need time to have site inspections with employer groups,' mainly to keep up with (a) communication with industry and (b) the thoughts of training within the industry. They can give the input to us that we can bring back and then implement...*

Overall then, collaboration between the two learning environments is generally viewed as an ideal rather than as a fact, and to some, is barely seen as a possibility.

Conclusion

As we have shown, the notion of communities of practice is a useful one for explicating the role of apprentices as they negotiate the move between the various sites of learning. Apprentices' position as peripheral, yet legitimate participants in the various communities they must engage with must be constantly negotiated. As they do so, the apprentices develop an identity, both self-consciously and through the identification by others; this identity may include the role of 'broker' between the two learning sites. As broker, apprentices pass on knowledge between the college and work-site, which may be well accepted or not, dependent upon the recipient of that knowledge. So the role of broker is both 'delicate' and 'challenging' (Wenger 1998 p. 154). Nonetheless, it is through this role that apprentices may best be able to integrate the learning that they receive in each of the sites of learning, for, as outlined above, complementarity between the sites is a rare occurrence. Despite this, from the research done here it becomes apparent that complementarity of the two learning environments is an ideal worth striving for. Overall, what is needed are greater efforts in building 'learning communities', where all learn from one another and are pro-active in learning. There were glimpses of this occurring in this study, as in cases where apprentices were informing on-job host employers about what they had learnt at the off-job training, but there is still a lot to be done to maximise complementary interaction between the two learning sites.

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