Community of practice as barrier to knowledge and skills: The case of apprentices' learning

Frank Sligo, Elspeth Tilley, Niki Murray & Margie Comrie

Prof Frank Sligo's research interests are in the knowledge-behaviour gap, and community and workplace literacies including apprentices' and managers' literacy.

Dr Elspeth Tilley researches the discourses that shape postcolonial cultures, including particularly racialised, class-based, and gendered discourses, and their manifestations across fields including literacy, public communication, and popular culture.

Associate Professor Margie Comrie has research experience in communication methods for public consultation and participation in decision-making, adult literacy, media, and journalism.

Dr Niki Murray is the Research Manager for the Adult Literacy and Communication Research Group. Niki's background is in Psychology and she has worked on, and published from, several government-funded adult literacy research contracts since taking up her research management position in 2004.

Abstract

Lave and Wenger in their influential account of apprentices' situated learning argued that "the mastery of knowledge and skill requires newcomers to move towards full participation in the sociocultural practices of a community" (1991, p. 29). However, the limited extent of empirical research into exactly how adults learn (Livingston, 2008) has made such contentions difficult to test. Our research into literacy support provided to apprentices found that a major challenge to apprentices' learning comprised their situation in attempting to enter a trade/ technical community of practice (CoP), while at the same time attempting to come to terms with the expectations and forms of discourse necessary for completing their written apprenticeship curriculum and assessments, which required them to be print-literate. Problematically for apprentices, the sociocultural practices of the trade community that they aspired to enter tended to reject rather than support the practice of literacy at work. The subtle or explicit disconnection between the two different world-views put apprentices in the no-win position of trying to juggle two partly conflicting sets of values. This study contributes to the CoP literature by indicating that apprentices' participation in a given trade community of practice may undermine rather than foster their ability to develop new knowledge and skills, both as neophytes and in lifelong learning.

Introduction

The New Zealand Modern Apprenticeship Scheme was launched in 2000. Administered by the New Zealand Tertiary Education Commission (TEC), it aimed to support young adults to begin and complete formalised industry training. Part of the support was in the form of a Modern Apprentice Coordinator (MAC), often a member of the relevant industry training organisation (ITO). In addition to monitoring and mentoring each Modern Apprentice (MA) (including by a visit to the Modern Apprentice and their employer at least once a quarter), Modern Apprentice Coordinators can, if necessary,

refer Modern Apprentices to literacy support, which is then provided by a contracted training provider, Literacy Aotearoa.

Public and political concerns are often evident about low (or slow) MA completion rates. For example, in April 2009 a Ministry of Education report (Mahoney, 2009) revealed that just one-third of all Modern Apprentices complete their training within five years, though the original intention was that apprentices would complete within four years. Given the cost of the MA programme ($54 million per annum as at 2009), poor completion was likely to attract media attention. The poorest result was in agriculture, with just 9 per cnet of Agriculture, Forestry and Fishing Modern Apprentices qualifying within five years.

Commentary from a farmers' lobby-group was fairly typical: Federated Farmers' Vice President Frank Brenmuhl said, "It requires diligence . . . and academic ability . . . farmers are not . . . doing what they need to do . . . standards have been allowed to slip" (Todd, 2009, p. 10). This one media release achieved the dubious distinction of simultaneously blaming three different players: apprentices (who, it was implied, lacked diligence and academic ability); employers (farmers who apparently were not doing what they should); and the farming Industry Training Organisation (which had "allowed" standards to "slip"). Other commentary at the time was equally lacking in in-depth analysis as to why apprentices' completion rates might be relatively poor.

However, good insights into reasons for low completion rates had been promulgated some three years before, in a report on Modern Apprentices (Jeffcoat & Jeffcoat, 2006). A noteworthy finding of that report was that MAs' biggest self-reported problem in their successful completion was with their required written work. Apprentices reported difficulties both in understanding the teaching and learning materials, and in making time to do the required reading and writing. It is worth mentioning that these issues applied to all Modern Apprentices, including those with good functional literacy in English. So it is not difficult to surmise that challenges associated with required workplace reading and writing would have been especially severe for apprentices with low functional literacy.

With the aim of discovering how well the programme of literacy support for Modern Apprentices with low functional literacy in English was progressing, the Massey University Adult Learning and Literacy Research (ALLR) group was contracted in 2008 by the New Zealand Department of Labour to undertake a formative evaluation of MAs' literacy tuition. Our contracted research goals were to: (a) review MAs', MACs', adult literacy tutors' and employers' perceptions of the literacy programme; (b) assess the impact of literacy tuition on MAs' progress in their apprenticeship, both in theoretical bookwork and practical on-job outcomes; and (c) assess the merit of the MA literacy-support programme and make recommendations for improvement.

During 2009, the ALLR team worked closely with the National Office of Literacy Aotearoa (LA) (the contracted literacy training provider) and several of its regional entities (each affiliated to Literacy Aotearoa but otherwise independent businesses). Detailed ethics applications were submitted to the Massey University Human Ethics Committee and approved.

This paper reports on 14 case studies, in which we interviewed a Modern Apprentice, his[1] employer, Modern Apprentice Coordinator, and adult literacy tutor. From a total of 46 interviews (some Modern Apprentice Coordinators and employers were involved with more than one apprentice studied), we obtained multiple, triangulated insights into how each apprentice was progressing both with literacy and trade and technical learning. The industries studied included light engineering, building trades, and automotive engineering. Analysis of the interview transcripts identified a wide range of complexly-interconnected challenges that apprentices faced, including functional literacy issues, learning style needs, time and fatigue barriers, health problems, demanding family environments, and transport and remoteness issues. All of these had been noted previously in other adult literacy research (e.g. Sligo et al., 2006) and are discussed in the literature generally.

However, one theme that arose very strongly offered new insights that are not presently explored in depth in the literature. After functional issues, the second most frequently raised issue was a sense of disjunction (for not only Modern Apprentices but all interviewees) between the culture and norms of the workplace and the culture and norms of "being literate" into which adult literacy tutors attempted to induct apprentices. It became evident to the research team that apprentices were essentially attempting to enter two different worlds, their trade/technical environment and a functional literacy context. For this reason we started to explore the possibility of multiple or opposing expectations on apprentices.

Literature Review

In *Situated learning: Legitimate peripheral participation*, Jean Lave and Etienne Wenger (1991) produced an account of apprentices' learning that quickly became influential internationally in shaping researchers' understanding of how apprentices learn their role within organisational contexts. Lave and Wenger argued that "the mastery of knowledge and skill requires newcomers to move towards full participation in the sociocultural practices of a community" (1991, p. 29). Subsequent authors in the field stated the proposition even more baldly—e.g. Sauquet's (2004) argument that members of a community of practice must learn not just to "do", but also to "be".

Yet the limited extent of empirical research into adults' learning (Livingston, 2008) has made such contentions difficult to test. More acutely, do apprentices with low functional literacy have the additional challenge of trying to enter two cultures simultaneously, the worlds of trade and adult literacy? Lave and Wenger go on to say that "a person's intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a sociocultural practice" (1991, p. 29). We began to wonder, though, what the "meaning of learning" might be, in our apprentices' work environments, especially in the light of apparent failure of learning as indicated by the criticism reported above.

As noted, research internationally into apprentices' learning is comparatively rare (Livingston, 2008), though Marchand (2008) points to mounting interest in apprentice-style learning in recent times. Apprentices are often reluctant to be interviewed about their on-job learning. They feel vulnerable to external scrutiny of their learning progress, and such feelings of susceptibility to risk are likely to be exacerbated when

---

[1] There were no female, Māori, or Pasifika apprentices, perhaps reflecting the low numbers of these demographic groups in the Modern Apprenticeship Literacy Programme overall.

there is negative public comment on their progress, as already noted. Employers too, for similar reasons, may demur from researchers examining their workplace practices and relationships. Typically it is easier for them to give the excuse (often accurate) that everyone is too busy to accommodate researchers on the shop floor.

In research into the UK Modern Apprentices scheme, Huddleston observed a dichotomy between the world of practice and that of learning, quoting a young man who "said he had applied for the apprenticeship because he thought it would enable him to practise and develop practical skills; he saw himself essentially as a 'practical person'" (Huddlestone, 1999, p. 183). She then quotes a matching comment from a workforce supervisor who "remarked: 'We don't want graduates, we want practical people'" (Huddlestone, 1999, p. 184).

Lave and Wenger (1991) thought that it is the relational network apprentices encounter that is key to understanding their learning (not the pre- and post- states of individual minds). Further, peripheral participation gradually evolves into more complete or full participation in the community, via access to and membership of discourse communities.

However, questions are now being raised about how linguistic negotiation of meanings encountered in a community generates and constitutes conflict, rivalry and tension (as well as the benign outcomes of collaboration and successful participation in a community of practice, on which Lave and Wenger mainly focused) (Hughes, Jewson & Unwin, 2007). In reality, in workplace or community settings, alternative discourses compete for primacy, status and resources. Then, tensions between multiple or opposing communities of practice "reflect hierarchies of cultural prestige and moral value that are embedded in modes of talk" (Hughes et al., 2007, p. 9).

To date, though, there appears to have been relatively less exploration of this element of oppositions among or within communities than of the kind of collaborative workplace outcomes which Lave and Wenger's book featured. In particular, if learning presupposes belonging and hence the construction of a particular membership identity, there has been little investigation of the consequences for and needs of learners who are expected to bridge multiple sets of values and, hence, perhaps experience multiple and competing claims on their sense of identification.

Lave and Wenger did refer to the "conflict between the forces that support processes of learning and those that work against them" (1991, p. 57), but this was within a context of struggle between newcomers and "old-timers", the latter typically being nervous about being displaced and thus likely to practise forms of knowledge-restriction against newcomers. Hence, the question raised by the present research team about possible tensions between different demands made by varying sets of culture and norms, trade and literacy, does not seem to have a counterpart in earlier literature. Could some aspects of community be antithetical to apprentices' knowledge and skills attainment?

Jewson (2007) noted relatively little analysis undertaken so far in the literature of communities of practice of boundaries within groups. This was relevant for the present researchers, as our previous research (Tilley et al., 2006; Sligo et al., 2007) had provided many examples of barriers to social and work participation for people with low functional literacy.

We were aware of questions about how valid the construct of community of practice might be, with commentators such as Koliba and Gajda thinking that communities of

practice rely "on a largely normative and under-operationalized set of premises" (2009, p. 97). They argued for significant further theory development and testing of CoP assertions in an empirical way, which suggested to us that the present study might make a contribution to the CoP literature in respect of apprentices' learning.

We debated whether those who possessed good functional print literacy could be considered as comprising a "community" in its own right. We were mindful of Lave and Wenger's view of community, including:

> shared goals and values; the transmission of community-specific knowledge and skills . . . supportive practices to assist the transition from legitimate peripheral participation to full community member; and access to information, resources, and opportunities for participation. (as cited in Unwin, 2007, p. 110)

Certainly this characterised what our research told us was occurring in literacy tutoring sessions.

We also noted that Lave and Wenger proposed that the term community does not necessarily imply "co-presence, a well-defined, identifiable group, or socially visible boundaries" (p. 98) and wondered therefore whether a community of literacy could be seen to transcend just the immediate tutoring community itself. Undoubtedly people with good functional print-literacy lack any propinquity in an immediate sense, yet for us a sense of literacy as constituting something in the nature of community broadly defined has been reinforced from our experience of working closely with persons with very low functional literacy in English, who were quite clear in their sense of exclusion from what they perceived to be the community of the literate (Sligo et al., 2007).

Jewson comments on the difficulty of defining "community" but observes that "in fact the conceptual uncertainties surrounding the term are no greater than those attached to many other sociological concepts, such as class, ethnicity and gender" (2007, p. 70). Lave and Wenger (1991) were able to denote a collectivity of non-drinking alcoholics, despite no propinquity, as one of five communities of practice (midwives, tailors, quartermasters, butchers, alcoholics) in their book. In recent research into communities of practice, other quite encompassing conceptions of the term are evident, such as Beck's (2007) description of German unemployed people as a community of practice, or Vaast's (2004) discussion of virtual communities and networks of practice. After considering such issues, however, on balance we thought that adults with good functional print-literacy in English probably did not constitute a community of practice precisely as Lave and Wenger may have understood it, but nonetheless did share fairly congruent common capabilities in and understandings about how formal written or print discourse among adults was expected to function. In our research we found that literate adults also tended to share a positive value about literacy as a key that opened up other life opportunities, a value many of the apprentices who received literacy training came to adopt. These understandings and values were not, however, commonly found in the established trade workplace communities.

In setting their agenda for future research into communities of practice, Hughes, Jewson and Unwin thought it important to discover "under what circumstances communities of practice defend established truths and under what circumstances some or all of the members come up with novel ideas and procedures" (2007, p. 174). This is quite germane to the focus in the present research on completion rates for Modern Apprentices and thus the state of learning in their trades/technical specialisations. Hughes, Jewson and Unwin also raised the question as to "what would constitute

evidential support for the theoretical model, and, moreover, what kind of methodology would enable us to assess, revise and amend the communities of practice framework?" (2007, p. 176).

Method

In our view, the kind of methodology needed for our purpose had to involve intensive qualitative investigation, so we used one-to-one interviews with apprentices, their employers, literacy tutors and Modern Apprentice Coordinators. In this way we obtained 14 in-depth triangulated studies enabling perspectives on the issues from diverse sources.

While negotiating to hold interviews in workplaces we encountered some refusals on grounds such as "no time" being available to be interviewed, but ultimately the persistence of Literacy Aotearoa's local managers in contacting Modern Apprentices and their employers permitted us to carry out 46 interviews in our contracted 14 case studies. The interviews ranged up to an hour each and were carried out within workplaces, LA-affiliated offices, and homes, with a few by phone. Our typical apprentice interviewee was male, under 20 years of age, spoke English as a first language, identified as New Zealand European, and was likely to be in the first year of his apprenticeship, all of these factors also being typical of the national cohort of Modern Apprentices. In addition, most (10) of our apprentice interviewees had high needs in respect of their functional literacy (assessed by their local LA branch as needing 31 hours of literacy tuition or more), while four had moderate needs (assessed as needing 20–30 hours of literacy tuition).

The university human ethics process required us to first obtain consent of each Modern Apprentice to approach their employer, tutor, and Modern Apprenticeship Coordinator. Given any natural reservations about agreeing to be interviewed, we infer that the 14 Modern Apprentices who agreed to be interviewed might well have been somewhat more self-confident than others. We saw no indications that Modern Apprentices were coerced in any way to participate.

Data analysis

The 46 interviews were recorded and transcribed, and the HyperResearch (ResearchWare, n.d.) qualitative data analysis package employed to analyse them. This approach permitted us to detect themes across our data corpus (as opposed to establishing hypotheses in advance and matching a pre-built coding "frame"). This approach (Glaser & Strauss, 1967; Glaser, 1992) helps to discover unexpected content and ensures that the data (not researcher inquiry or assumptions) shape the findings.

Codes are deduced from the data during multiple close readings in which the researcher maps the overall content by taking notes of repeated or similar ideas, and identifying recurring key words or language patterns. The HyperResearch package managed coding and assisted with collapsing or expanding theme categories until a series of discrete codes and sub-codes was obtained. Each grounded theory code was checked to ensure that it was supportable in reverse; and capable of being illustrated by "extensive amounts of rich data" (Charmaz, 2000, p. 514)—for example, by multiple comments from survey responses that fitted the code description.

Results

The complexity of our respondents' literacy challenges became very evident. Table 1 displays the top nine themes emerging from the interviews, each of which was exemplified by ten or more comments in the interview corpus.

Other less-salient themes including "family background", "transport/ remoteness", "every learner different", "financial", and "missed foundational steps" (totalling 35 comments) were also identified.

Table 1   *Major themes emerging from interview analysis*

Major themes emerging from interview analysis	Number of comments in the 46 interviews
Functional literacy challenges	76
Disconnect between "theory" and "practice"	37
Practical wisdom/learning style	31
MAs' coping strategies	26
Time and fatigue	22
Motivation	18
Health	13
Reactance to failing	12
MAs' organisational/independent study skills	11

Predictably, "functional literacy challenges" (given that all Modern Apprentices had literacy difficulties) was the most-cited theme, being embodied in 76 comments from the interview corpus. However, the two next-largest themes, which we named "Disconnect between "theory" and "practice"", and "Practical wisdom/learning style" gave more subtle insights into the nature of these apprentices' learning: both related to disparate world-views.

Examples from our data of "disconnect" are as follows:

> Years ago we would cut our own roofs . . . We just did it a manual way and it worked. A lot of kids go into doing a trade because they think they're not going to do any writing. (Employer)

> I ask the guys at work . . . and some of them are going "I don't remember this one, why the hang do you need to do it?" (Modern Apprentice)

> You know when I did my apprenticeship, well, you could get by, by doing your practical work. And our name of the game is to get them out there building you know and qualified. The qualification doesn't need to be that high-tech. (Modern Apprentice Coordinator)

> He's actually said, "Once I've done this I don't need to do any more writing again". (Literacy Tutor)

Typical comments from the data about a practical/theoretical learning style disparity included:

> Really good technician, does all the work but fails on the paper side. (Employer)

> MA: By doing it, it's the easiest way for me . . . I find it hard to learn out of a book. (Modern Apprentice)

> Being a [tradesperson] is practical, about having practical skills and [the Modern Apprentice] has done very well with that. Unfortunately . . . there is the theory side of the qualification as well and that's where he's really struggling. (Modern Apprentice Coordinator)

A major finding for us was, therefore, that one of the biggest challenges to apprentices' success had less to do with the literacy support itself than with their position, partly on the periphery of and partly in-between two sets of values about literacy. In literacy learning, Modern Apprentices are entering a one-to-one relationship with a tutor, in which they encounter expectations of both an explicit and implicit kind around performance of print literacy. These expectations of acceptable print-literacy practice

are mediated through the tutor, whose role it is to explain the norms around print-literacy to the apprentices and guide them in their practice.

Then there is an unacknowledged commensal symbiosis between the two sets of values in that entry to the trade/technical world is dependent in certain critical ways on entry first, or in parallel, to print-literacy. Yet this is seen as a new requirement by many already in the trade community who learned under different circumstances, e.g. the employer who described a "manual" way of calculating roof pitch with string ("years ago we would cut our own roofs but . . . I mean we knew our rise anyway so . . . all we did was put a string line up and measure the length, probably didn't use calculators and it worked. We just did it a manual way and it worked"), a Modern Apprentice Coordinator who admitted he found it difficult to help his apprentices with numeracy work because "a lot of us old-school guys have problems with trigonometry", and a Modern Apprentice Coordinator who said that "when I did my apprenticeship, well you could get by. You could get by by doing your practical work". Many other similar comments signalled either a real or perceived change in the levels of integration of literacy into the trade world.

In the following table we tease out some of the key differences between the two world-views.

Table 2   Differences in the worlds which apprentices encounter

	Trade/technical community of practice	Print-literacy
1. Age of community members	A wide range from teenagers to retirement age	Literacy tutor usually much older than the Modern Apprentice
2. Gender of community members	Mainly male	Mainly female in the LA organisation
3. Culture of community	Male-oriented	Female-oriented
4. Nature of participation	Mainly collective participation, with some solitary learning	Mainly one-to-one or solitary learning
5. Nature of the community	Explicit	Implicit
6. Pathway into it	Is evident to the Modern Apprentice	Is less clear and is mediated by the literacy tutor
7. Extent of insider-outsider rivalries	Probably some, in the sense of teasing of new entrants	Probably none, given the highly supportive character of the literacy tutor
8. Social construction of knowledge	Usually exists in a trade/ technical environment	Little or none—basic literacy is largely "received" knowledge
9. Nature of knowledge development	Explicit in the form of study units, and implicit via participation and observation	Mainly explicit

10. Perceived presence of community	Community is embodied within the people encountered at work	Community mainly lacks propinquity
11. MA's autonomy as a learner	High in on-site discovery learning	Relatively low in discovery learning
12. Mode of discourse	Learnt from multiple others	Mediated via literacy tutor
13. Mode of learning	Mainly learning within a group and some sole learning	Mainly one-to-one and sole learning
14. Extent of formal instruction	Low	High
15. Learning tailored to learner's needs	Low	High
16. Social interdependence of community members	High	Low
17. MA's emotional affiliation to the community	High	Low
18. MA's search for mastery	High	Low to medium
19. Instructional relationship between tutor and learner	Less important	More important
20. Systemic tensions between newcomers and "old-timers"	Typically yes	Typically no

Discussion

The findings summarised in Table 2 gave us rich insights into apprentices' situations and valuable perspectives to convey to the research funders. Problematically, dominant discourses within MAs' trade community of practice implicitly challenge and undermine the values tutors hold and seek to share around adult literacy. Our interviews showed that the MAs' determination to enter their trade community of practice was their sole motivator to build their functional literacy, so that their engagement with literacy tutoring was purely a means to an end.

Employers and Modern Apprentice Coordinators often shared this attitude, e.g. employers made comments such as: "It's more practical than theory this job anyway"; "There are no other areas [other than maths] in the industry that I think can be conveyed through the classrooms. It's practical experience is what counts. On-the-job stuff" and "I certainly wouldn't want to be doing them [the literacy lessons]".

Typical MAC comments included, "They're making something, a trade that's simple, categorically simple, complicated, very technical and it's not, building is simple" and "you can have all the written stuff and theory you like but at the end of the day it's the job that they produce is to what they are paid for." Of concern for national aspirations that people at work will engage in formal lifelong learning, the apprentices' trade CoP's

downplaying of functional literacy makes the prospect of life-long learning from textual sources somewhat improbable.

Given that the communities of which people are a part will shape a person's identity as well as their learning, then Modern Apprentices face the challenge of trying to be two different people in order to succeed in their apprenticeship. A comment from a literacy tutor best summed up the idea that apprentices are being expected to be two different "types" of person:

> Some will never achieve the skills for literacy but they are both excellent workers and have great skills with their hands. The majority have excellent memories and are very valuable to their employers. A skilled artisan is equally important as a skilled literacy person; we need all types to make a complete world.

This tutor, although positive about both identities, is akin to many of the employers and Modern Apprentice Coordinators in seeing "skilled literacy person" and "skilled artisan" (tradesperson) as either/or categories. In fact, none of the interviews contained any terminology or category for a person who is developed in both aspects. It is one of the few things that the two communities have in common: each sees the type of person who is successful in their world as one who will likely not be successful in the other context.

One employer said, holding his hands in the air:

> It's very hard to get 100% intelligence and 100% good with these, you know—good with the hands . . . This new kid that we've brought on I think he's good with this [pointing to head] and this [pointing to hand]. You know totally different, and he's probably one in, probably one in 20,000 kids that would be like that.

Especially demanding for apprentices is that not only do their communities see the two sets of skills they must hold as mutually exclusive, but one of the worlds in which they work actively undermines the person they are expected to be in the other. Employers and Modern Apprentice Coordinators were adamant that developing literacy skills did not imply any strengthening of productivity and "we discuss what's going on with the apprenticeship package and we think it's gone way overboard, way overboard, it's got far too high tech". Hence, it is no surprise that many apprentices do not complete successfully.

Livingston has argued that "actual documentation of adults' learning processes has been very partial and fragmented to date" and "analyses of paid workplaces, even in knowledge-based labour processes, have tended to presume notions of learning" (2008, p. 11). The current study of two communities, broadly defined, in a state of only partial engagement with each other, we think, makes a contribution to identifying barriers to apprentices' learning processes. It has also shed some light on the explicit and implicit challenges within the learning, text-based and other, in which apprentices engage.

The two dimensions of literacy and trade had what we have described as a commensal symbiotic relationship but were also mutually uncomprehending of each other to some extent. As mentioned, in the present study some employers and Modern Apprentice Coordinators were dismissive of high literacy and considered bookwork just as a set of routines which needed to be performed but which were not really at the heart of the trade. This is along the same lines and further indicates the practice-learning divide referred to (above) in the United Kingdom by Huddleston (1999).

For their part, the literacy tutors were not usually part of the trade/technical community of practice and typically had not previously experienced and did not

understand the technical language of their MA's particular trade. Often the Modern Apprentice would have to explain the meaning of everyday trade terminology to their literacy tutor, which may well have been good for the MA's communication skills, but indicates the two communities not really working in tandem for the benefit of the learner.

Lave and Wenger believed that "the mastery of knowledge and skill requires newcomers to move towards full participation in the sociocultural practices of a community" (1991, p. 29). This assertion has not been rigorously tested to date; however, the present study seems to contradict Lave and Wenger to some extent, and makes a different case—that, in our instance, the sociocultural practices of the MAs' trade communities were in some ways antithetical to mastery of knowledge and skill.

It could even be said that, as Modern Apprentices manage to increase their participation within the trade/technical community of practice that they so much yearn to join, the more influenced they become by the anti-literacy or aliteracy perspectives of community members, and lessen their capability to build their knowledge. It has been argued that aliteracy (where members of a given community show indifference to literacy) may be as problematic as sentiments opposing literacy (Sligo, 2008). Conceivably, instead of accepting them, Modern Apprentices might well have to reject the sociocultural practices of their trade community to some extent if they were to optimise their chances to be sophisticated in their technical learning from textual sources, both immediate and lifelong.

Insights of this nature then, we think, interrogate and problematise to some extent the so-far untested assumptions in Lave and Wenger about the confluence of knowledge and workplace practice.

Further research

How best to reduce stereotypes within trades and their undermining of the desirability of literacy skills, where literacy attainment is seen as not desirable? And how might the two worlds of literacy and trade/technical be closer aligned? At the level of apprentices' learning, possibly a tutor from the trade/technical world could be trained in literacy teaching, or else a literacy tutor be supported by the relevant industry training organisation in the specialist trade language and assumptions, both with the aim of bridging the gap. In our assessment various kinds of bridging are needed, as the social expectation that apprentices with low literacy will adopt two sets of often-conflicting values simultaneously is simply too demanding. The difficulties facing apprentices should occasion no surprise, in our view, that MAs' completion rates are relatively low.

Fuller and Unwin in discussing the UK Modern Apprentices scheme (launched in 1994) were of the view that:

> Modern apprentices should have the opportunity to acquire the range of competences and depth of understanding that will enable them not only to belong to the relevant community of practice but also to shape it in the light of rapidly changing technological and organizational requirements (1999, p. 161).

The present study in its assessment of the New Zealand MA program attempted to identify some deeply-rooted impediments to apprentices actually achieving a high level of capability. Until apprentices' relevant communities' values are more congruent with each other, in our estimation, significant and intractable difficulties will be present in

building high-level capabilities that equip apprentices well for complex technological futures.

References

Beck, V. (2007). Unemployment as a community of practice: Tales of survival in the new Germany. In J. Hughes, N. Jewson & L. Unwin (Eds.). *Communities of practice: Critical perspectives (*pp. 144-155). London: Routledge.

Charmaz, K. (2000). Grounded theory: Objectivist and constructivist methods. In N.K. Denzin & Y. S. Lincoln (Eds.). *Handbook of qualitative research* (pp. 509-535) (2nd edn.). London: Sage.

Fuller, A. & Unwin, L. (1999). A sense of belonging: The relationship between community and apprenticeship. In *Apprenticeship: Towards a new paradigm of learning* (pp.150-162). London: Kogan Page.

Glaser, B. (1992). *Basics of grounded theory analysis*. California: Sociology Press.

Glaser, B.G. & Strauss, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research.* Chicago: Aldine.

Huddleston, P. (1999). Modern apprentices in college. So what's new? In *Apprenticeship: Towards a new paradigm of learning* (pp. 176-190). London: Kogan Page.

Hughes, J., Jewson, N., & Unwin, L. (2007). *Communities of practice: Critical perspectives*. London: Routledge.

Jeffcoat, S. & Jeffcoat, M. (March 2006). *Evaluation of the Modern Apprenticeships Programme*. Wellington: Tertiary Education Commission.

Jewson, N. (2007). Cultivating network analysis: Re-thinking the concept of 'community' within 'communities of practice'. In J. Hughes, N. Jewson & L. Unwin (Eds.). *Communities of practice: Critical perspectives* (pp. 68-82). London: Routledge.

Koliba, C. & Gajda, R. (2009). 'Communities of practice' as an analytical construct: Implications for theory and practice. *International Journal of Public Administration, 32*(2), 97-135.

Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Livingston, D.W. (2008). Part 1: General perspectives on lifelong learning and work. In D.W. Livingston et al. (Eds.). *The future of lifelong learning and work* (pp. 11-12). Rotterdam: Sense Publishers.

Mahoney, P. (2009). *Modern Apprenticeships completion analysis*. Wellington: Ministry of Education. Retrieved from http://www.educationcounts.govt.nz/__data/assets/pdf_file/0017/40247/Modern-Apprenticeships---Completion-Analysis-final.pdf

Marchand, T. (2008). Muscles, morals and mind: Craft apprenticeship and the formation of person. *British Journal of Educational Studies, 5*(3), 245-271.

ResearchWare. (n.d.). HyperResearch. Retrieved February 9, 2010, from http://www.researchware.com/index.html

Sauquet, A. (2004). Learning in organisations: Schools of thoughts and current challenges. In J. Jaap & M. Boonstra (Eds.). *Dynamics of organisational change and learning* (pp. 371-388). Chichester: Wiley.

Sligo, F., Watson, B., Murray, N., Comrie, M., Vaccarino, F. & Tilley, R. (2007). *Lifelong literacy: Issues of strategy*. Retrieved from Department of Communication and Journalism, Massey University, New Zealand website: http://www.massey.ac.nz/massey/fms//Colleges/College%20of%20Business/Communication%20and%20Journalism/Literacy/Publications/Lifelong_Literacy_Issues_of_Strategy.pdf

Sligo, F., Tilley, E., Culligan, N., Comrie, M., Vaccarino, F. & Franklin, J. (2006). *Tipping points: Nodes of change for adult literacy and employment.* Retrieved from Department of Communication and Journalism, Massey University, New Zealand website: http://www.massey.ac.nz/massey/fms//Colleges/College%20of%20Business/Communication%20and%20Journalism/Literacy/Publications/Tipping_Points.pdf

Sligo, F.X. (2008, February 1). Students' illiteracy or teachers' aliteracy? *New Zealand Education Review, 13*(3), p. 7.

Tilley, E., Sligo, F., Shearer, F., Comrie, M., Murray, N., Franklin, J., Vaccarino, F. & Watson, B. (2006). *Voices: First-hand experiences of adult literacy learning and employment in Wanganui*. Retrieved from Department of Communication and Journalism, Massey University, New Zealand website: http://www.massey.ac.nz/massey/fms//Colleges/College%20of%20Business/Communication%20and%20Journalism/Literacy/Publications/Voices_First-Hand_Experiences_of_Adult_Literacy_Learning_and_Employment_in_Wanganui.pdf

Todd, R. (2009, April 24). Many apprentices never qualify. *The Press.* Retrieved November 3, 2009 from http://www.stuff.co.nz/national/education/2364822/Many-apprentices-never-qualify

Unwin, L. (2007). English apprenticeship from past to present; The challenges and consequences of rampant "community" diversity. In J. Hughes, N. Jewson & L. Unwin (Eds.). *Communities of practice: Critical perspectives* (pp. 109-119). London: Routledge.

Vaast, E. (2004). Oh brother, where art thou? From communities of practice to networks of practice through internet use. *Management Communication Quarterly, 18*(1), 5-44.