

Expansive learning through high school apprenticeship: opportunities and limits

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This paper examines a high school apprenticeship program with a focus on the opportunities for ‘expansive’ learning within three different contexts: schools, the training centre and worksites. The authors assume that while young people differ in the degree to which they engage in learning within different sites, the institutional arrangements and features of different learning environments significantly influence their experiences and the quality of their apprenticeships. The authors’ analysis of interviews with students and instructors involved in a carpentry program suggests that these sites exhibit several features associated with expansive approaches to workforce development. However, restrictions on learning occurred in schools partly because of the academic/vocational divide in curriculum. In the learning centre, the failure to address tensions rooted in power relations in the workplace limited students’ learning. Similarly, students were confronted with the need to make trade-offs in the workplace that restricted their learning. The authors argue that taking steps to address these issues would enhance workplace practices and learning environments for apprentices.

Introduction

A number of Canadian provinces developed high school apprenticeship programs in the 1990s to address the shortage of skilled trade workers and to facilitate the transitions of young people from school to work. For example, programs in Alberta, British Columbia and Ontario allow high school students to combine their studies with apprenticeship training (Schuetze, 2003). In Ontario, students who have completed grade 10 and are at least 16 years old can register as apprentices (Government of Ontario, 2002; TV Ontario, 2004). Provincial governments have provided funding to promote and deliver these programs although only a small proportion of secondary school students are enrolled (Lehmann & Taylor, 2003; Schuetze, 2003).

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Historically, apprenticeship programs have been described positively in terms of their ability to nurture and develop the knowledge and skills of entrants to the labour market, and less favourably as ‘wasteful exercises in time-serving’ (Ainley & Rainbird, 1999, p. 3). Recent attempts to revitalize apprenticeship in the United Kingdom (UK) have similarly produced advocates who believe that modern apprenticeships potentially provide a structure in which young people can learn, demonstrate their abilities and discover their identity (e.g. Fuller & Unwin, 1998), and critics who are concerned that calls for flexibility and adaptability within apprenticeship potentially lead to a lifelong form of indenture in which mastery can never be attained (Rikowski, 1999). One concern of critics is that the market approaches to vocational education and training (VET) evident in Canada, the United States and the UK place the workforce learning agenda in the hands of employers whose interests are not necessarily consistent with those of workers (Evans *et al.*, 1997; Spencer, 2001; Ashton, 2004).

The purpose of this paper is to examine a high school apprenticeship program in terms of the environments for learning provided in schools, a training centre and the workplace. We assume that while young people differ in the degree to which they engage in learning within different sites, the institutional arrangements and features of different learning environments significantly influence their experiences and the quality of their apprenticeships (cf. Fuller & Unwin, 2003, 2004).

Conceptual influences

We endorse the view that workplace learning must be studied in context to understand the factors that influence the learning environment and possibilities for change (Fuller *et al.*, 2004). Contextual analysis situates empirical examination of individuals’ learning practices within the broader system of VET, the regulation of the industrial sector and occupation, and the organization of work including power relations in the workplace (Ashton, 2004; Rainbird *et al.*, 2004).

Fuller and Unwin (2004) focus on the features of the environment or work situation which influence the extent to which the workplace creates opportunities for or barriers to learning. They borrow from Lave and Wenger’s (1991) ideas about situated learning through communities of practice but give greater attention to the relevance of structural constraints and inequalities in the workplace. They also build on Engeström’s (2001) concept of ‘expansive learning’ in their articulation of *expansive* versus *restrictive* work environments. However, Engeström’s focus on organizational learning is differentiated from their own interest in the features of the organizational environment that are likely to influence individual learning (Fuller & Unwin, 2004). Fuller and Unwin’s (2003) discussion of an expansive–restrictive continuum in analyzing the experience of modern apprentices highlights features related to the organizational culture and the forms of participation provided to workers. The following features are included in their description of an expansive work environment:

- workers are able to participate in multiple communities of practice inside and outside of the workplace;

- there is broad access to learning in terms of tasks, knowledge and location;
- workers experience a gradual transition to full participation with career progression;
- workers have access to a range of qualification, and time to reflect and to learn off the job;
- there is recognition of and support for apprentices' status as learners.

Fuller and Unwin's work is particularly valuable because a number of their empirical studies have focused on apprenticeship. However, other writers add to the conversation about what kinds of workplace practices best support the development of personal and organizational goals. For example, Billett (2001) suggests that structuring workers' activities to provide increasing complexity, monitoring their progress and facilitating their ability to transfer knowledge enhance workplace learning. At the same time, he recognizes that workplace hierarchies, group affiliations, personal relationships and cultural practices influence the 'affordances' or opportunities for workers to learn. Ashton (2002) argues that effective work organizations involve employees in work design; support performance practices such as formal training, structured on-the-job training and mentoring; provide employees with a knowledge of how the business operates; and recognize/reward performance at individual and group levels.

Our research continues the emphasis of the aforementioned writers on how institutional and organizational factors are likely to influence the experiences and development of workers, in this case, young apprentices. At the same time, we find work that attends to the acculturation process of young people to the workplace to be helpful (e.g. Colley *et al.*, 2003). Our discussions with apprentices suggest the importance of examining how vocational cultures are co-constructed by students, trainers and employers.

The Canadian apprenticeship system

Compared to Germany and other countries known for their corporatist systems of vocational education and training, apprenticeship in Canada is small with only 150 apprenticeable trades and less than 1% of the national labour force registered as apprentices (Schuetze, 2003). At the national level, the Canadian Apprenticeship Forum (CAF), with representatives from business, labour, government, education and equity groups, promotes apprenticeship and brings key stakeholders together to support it across the country (Canadian Apprenticeship Forum, 2003). However, apprenticeship is under provincial jurisdiction and the infrastructure supporting it is described as 'weak' (Schuetze, 2003, p. 83). Provincial governments through apprenticeship boards have responsibility for the regulation, certification and establishment of provincial standards, and therefore apprenticeship systems vary across the country. In 1999, the top two provinces in terms of apprenticeship registrations were Ontario with just over one third of total apprenticeship registrations (close to its population share) and Alberta with just over one fifth (and double its population share) (Sharpe,

2003). Almost two thirds of apprentices were in three major trades groups—metal fabricating (21.6%), motor vehicle and heavy equipment (21.2%) and building construction (20.2%). Women represented only 3.6% of apprentices in Canada in 1999 and were concentrated in trades like hairdressing.

Of the 150 trades, 44 are ‘red seal’ occupations, which are part of the national Inter-provincial Standards Program, and more than three quarters of apprentices are registered in red seal trades (Schuetze, 2003). Apprenticeship registrations have been very cyclical historically, with enrolments fluctuating with ups and downs in the economy. The completion/registration rate (the ratio of total completions to total registrations in a given year) in the Canadian apprenticeship system was 9.8% compared to completion/registration ratios of 22.8% in community colleges and 24.1% in universities (Sharpe & Gibson, 2005). Of the 25 largest apprenticeship programs, the trades with the lowest completion rates in 2002 were carpenter and plasterer (Sharpe & Gibson, 2005, p. 53).

Upon completing their programs, apprentices may write the red seal exams. However in 1999, only around half of those who completed apprenticeship programs received a red seal certificate (Sharpe, 2003). Reasons suggested for the high non-completion rate include: the instability in employment; the lack of compulsory certification in some trades; discrimination in the workplace faced by women, some visible minority groups, Aboriginals and people with disabilities; the cost of programs; and the inadequate skills (e.g. math, literacy) of some apprentices (Canadian Apprenticeship Forum, 2003; Sharpe, 2003).

Although apprenticeship in Canada has potential as a training model, it has not been a major instrument of skill formation or a major transition route from school to work (Schuetze, 2003). As in the UK, a lack of adequate state involvement and the voluntarism of employers are seen as problematic (cf. Evans *et al.*, 1997). Further, groups like the CAF believe that more should be done by stakeholders to increase access and retention in apprenticeship programs of women, new immigrants, visible minority and Aboriginal groups, and people with disabilities.

The carpentry trade

Approximately one in eight employees working in the construction sector was working in the carpentry trade in 2000 (Prism Economics and Analysis, 2000a). Carpentry is a *voluntary* trade and therefore workers are not required to have their journey ticket or to be registered as an apprentice to work on job sites (Tradeability.ca, 2003). The rate of unionization in this trade in Ontario is quite high, particularly in companies of 500 or more employees. For example, 58% of these large companies were unionized in 1997 compared to only 12% of firms employing fewer than 20 people (Akyeampong, 1997). In the unionized sector in carpentry in Ontario, members are for the most part certified, older than their non-union counterparts, more apt to access upgrade training and generally work in the civil and Industrial, Commercial and Institutional (ICI) sectors as opposed to residential construction (Prism Economics and

Analysis, 2000a). The ICI sector in Toronto is around 90% unionized (personal communication, Director of Training Centre, May 2005). The benefits of unionization include lower injury rates, apprenticeship training centres funded by joint union–employer trust funds, higher pay rates and formalized quality standards (O’Grady & Minsky, 1999). Unionized companies do not generally participate in the underground economy¹ (estimated to include 28% of construction workers in Ontario), an economy which arguably reduces adherence to codes, standards and safety regulations; decreases revenues; and weakens the apprenticeship system (Prism Economics and Analysis, 2000b).

In 2001, there were 38,395 carpenters in Ontario (including 1.6% women) (Statistics Canada, 2005). Thirty-one percent of people in the construction trades identified themselves as self-employed in 2003 (Statistics Canada, 2003). In a 1998–1999 workers’ survey, just under a quarter of certified Ontario carpenters had their red seal certification (Prism Economic and Analysis, 2000b). In 1998–1999 Ontario construction workers worked an average of 9.5 months per year, compared to 11.2 in the Toronto area. These numbers suggest that most tradespeople were able to find work in their field. However, about 40% of apprentices were unable to obtain more than nine months of work and half of these reported working part time outside of their trade (Prism Economics and Analysis, 2000b).

In sum, there are aspects of carpentry apprenticeships within the construction sector in Ontario that are likely to enhance training opportunities (e.g. the existence of unions and joint labour–management training centres) while others are likely to pose barriers (e.g. the voluntary nature of certification, the influence of the underground economy, and economic conditions).

High school apprenticeship

The high school apprenticeship program that is the focus for our case study involved students training to be carpenters in an urban centre in Ontario. The key players include four surrounding school districts, a joint management–union training centre, students and employers. In the two largest school districts where the program began, the process worked as follows:

Interested students applied to the carpentry apprenticeship program in their final year of high school. Candidates were interviewed and successful students travelled to a central school district site to participate in a four-week pre-apprenticeship course. They then moved to the joint management–union training centre for eight weeks, where they participated in the first level of apprenticeship training. Students had the opportunity to earn high school credits and to obtain their Basic level (Phase 1) technical training qualification. Instructors at the training centre then placed successful students in their first work placement, where they earned the first-year apprentice rate of pay and cooperative education credits to fulfill the requirements for their high school diploma. Students were encouraged to become union members and to complete their in-school training and the hours needed to complete their apprenticeship.

Method

The research reported in this paper is part of a school–work youth transition case study that is part of The Changing Nature of Work and Lifelong Learning research network, composed of a national survey and 12 case study projects. The purpose of the youth transition case is to inform policy and practice through an empirical analysis of different high school initiatives that aim to facilitate youth transitions to further education and work. Data for the apprenticeship program include questionnaires completed by 60 of the 70 high school students who participated in the carpentry Ontario Youth Apprenticeship Program (OYAP) in 2004. A total of 74 focus groups and individual interviews were also conducted with apprentices from the two largest school districts, parents, educators, trainers and employers in 2004 and 2005.

The majority of these interviews were conducted with 30 apprentices at three different points in time: during the pre-apprenticeship course in school, during the eight-week course at the training centre and once they were out on construction worksites. Initial focus groups were conducted during the pre-apprenticeship course at two schools with six groups of five students. Students were re-interviewed a couple of months later in focus group interviews (10 groups of three students each) at the training centre. Finally, students were visited on worksites and individual interviews were conducted by telephone with students, eight parents and 12 workplace supervisors and owners. Follow-up calls to apprentices have been made approximately every six months since they completed their Basic level training. All interviews were fully transcribed and data have been analyzed using N6 qualitative data analysis software.

Learning in schools

A1:²[I]t's a shame...through high school I think we should be exposed to more practical work. Because the way I see it, I've been sitting in a classroom for my whole life basically and barely doing any shop work and stuff. And I mean, it's a change. It takes you a while to get used to it, and like your skills are [weak]. And I think that it would help definitely in high school if they emphasized [technical courses] as equally as they would like, oh, take sciences and stuff, you know. (F-22)

A2: My old school, when we did the carpentry program we didn't really get a lot of homework, we were more the practical hands-on. We did all the building and any theory we did, we did it in class so there wasn't really homework to the carpentry classes. (F-9)

A3: I was having a little trouble especially with the bookwork because, I don't know, I just found it hard. I had to, like for one answer, I had to read the whole section of the book, and then, like there was a question that I didn't remember the answer. So I had to go back and read all over again until I found the answer. So it would take me like a long time just to do the bookwork [required for Basic level]. (F-32)

The issue of *access to different forms of knowledge* is key to understanding whether schools provide expansive or more restricted learning environments for potential apprentices (cf. Fuller & Unwin, 2003). For example, the above comments suggest that students entering the training centre felt that schools had not necessarily helped them gain knowledge that would allow them to succeed in their carpentry apprenticeship. The first apprentice quoted above had attended a collegiate,³ while the other two

had attended schools with more developed technology programs. Within the carpentry program overall, survey results suggest that students from schools that gave priority to technology areas were overrepresented. However, the association of apprenticeship programs with particular types of schools and students has implications for learning:

First, collegiates' lack of focus on the trades means that students from these schools need to be more decisive and focused in terms of seeking information and opportunities to pursue an apprenticeship. Further, they must resist the college/university bias of their schools. Second, the lower priority given to trades-related technical courses by collegiates suggests that students at these schools may not have access to courses that provide exposure to these vocations. This is important because, in more than one case, OYAP students suggested that if it were not for 'tech' courses, they would not have thought about pursuing an apprenticeship in carpentry. Lack of access to tech courses also means that students do not have equal opportunities to develop the 'hand skills' required for carpentry work through courses. At the same time, students' suggestion that tech courses do not adequately address theory implies that young people who focus on these courses may be unprepared for the technical training requirements of apprenticeship. This is borne out by the fact that the 24% of students (17 of 70) who failed the Basic level technical training in 2004 did so because of weak geometry and math skills.

A cooperative education teacher who tried to address the high failure rate of students in the carpentry program when it began in 2001, describes the steps he took to address this problem:

We found that when they came [to the training centre] the biggest problem was math and geometry. So when we established that, I went back and I spoke to my principal, and I said to him that our kids are failing math and geometry. He asked 'What can we do in the school to make it better?' So we called the head of the math department. We showed him the math and geometry specifically that they get at the training centre. He looked at it and said, 'not a problem, we can teach that, but the *ministry won't let us grant a credit on it*. It's not broad enough to meet ministry expectations.'

So when the math department turned us down, I went to the teachers in my tech department and said, 'Ok, we want our students to be successful and if the math department can't do it, we've got to do it ourselves.' In order to do that, we have to give up something else that we're currently teaching. ...[We thought], maybe we want to cut back some in-school practical—*which is away from the whole idea of tech where the kids learn by doing*—cut back on some practical and modify some of the other parts of the curriculum so that we open up time slots so that we can teach math and geometry.

So what happens now in our school is when the kids come to our construction program in Grade 11, we start them looking at [training centre] math for carpenters, and practical geometry. Then we revisit it in the Grade 12. And the way the program works here is we give [students admitted to the carpentry apprenticeship from across the district] a single technical credit before they go to [the training center] in Grade 12. So I get them personally for the month of February and I revisit the same math and geometry again. So before kids from my school ever get to [the training centre] to start working, they've seen the math and geometry three times already. So when they get here it's not new, it's not strange, it's not a major problem. I'm not saying it's much easier for them, but it doesn't scare them anymore. (I-4, emphasis added)

The above quotation suggests that local educators and trainers are required to take on the integration of school and apprenticeship curriculum. However, the lack of articulation of apprenticeship and school curricula appears to be rooted in a dichotomy between academic (abstract theoretical) courses and technology (hands-on) courses within schools that is part of the organization of schooling (cf. Guile & Young, 1999). As a result, neither students who focused on tech courses nor those who focused on academics were necessarily well prepared for work that requires an integration of the two. Students attending collegiates lamented the lack of opportunity to take technical courses to develop their practical skills and the lack of value given to non-post-secondary pathways, while students attending more technically focused schools often felt they lacked the academic skills required by the apprenticeship curriculum. Therefore, although the actions taken by the teacher quoted above are laudable and have arguably improved the outcomes for apprenticeship students from his school and district, there is a need to address the broader issue of the valuing and content of technical knowledge within schools.

Recognizing the lack of value given to technical knowledge and informal learning prompts the question of whether high school apprenticeship programs are sustainable if economic conditions decline. For example, a national survey of 15 year-olds in 2000 found that only 6% listed a trade or vocational certification as the highest level of education they would like to get (Krahn & Taylor, 2005). One reason for this may be that access to trades information and school-to-work transition programming varies greatly across provinces, districts and schools (Stone, 2005). Overall, most provinces have reduced their ability to deliver trade and technical classes because of the cost of facilities, the lack of qualified teachers and the priority given to academics (e.g. within provincial testing programs). Further, in most apprenticeship programs, students are required to find their own work placement and to manage their own training. Access to trades-related knowledge is therefore quite restricted. Similarly, schools tend not to value informal learning. A more expansive learning environment for all students would require that more attention be given to the articulation of academic and technical courses and access to different forms of knowledge.

Learning at the training centre

A1: This is real life. You should put that in your report miss, that this is real life!

A2: I love this! I like this atmosphere more than high school. High school's a pushover.

(F-21)

Most apprentices felt that the training centre was an excellent learning environment. Instructors were qualified carpenters with a wealth of up-to-date knowledge of the trade and industry who were willing to share their expertise. There was recognition and support for apprentices' status as learners in both practical and theoretical training and help was available for students who were struggling. Further, students were invited to enter the union trainers' community of practice—a community that extended beyond the training centre to include employers. At the same time, the learning environment was restricted by the fact that apprenticeship curriculum and

standards were set provincially, the training was compressed leaving little time for reflection or deviation from requirements, and tensions around power relations in the workplace were not addressed. This section elaborates some of these opportunities and constraints associated with learning in the training centre.

Students appreciated the opportunity to make connections between theoretical and practical learning at the training centre. While some continued to resist ‘bookwork,’ the practice of taking ‘some of the geometry out on the shop floor’ was seen as beneficial. For example, two students discussed the usefulness of math as follows:

A1: I don’t know why we need the geometry [at this level].

A2: No, like remember when we were doing the ellipses? And [name of teacher] took us over into the shop and he showed us how to do that.

A1: Isn’t that for, what, the finishing people?

A2: It’s also for rough work, like say cutting a hole on a roof...if you have like a circle, like, you have to put a pipe through and it’s on a slant, it’s not going to be a circle, it’s going to be an ellipse. And you have to know how to calculate that so it fits nicely. (F-25)

Interviews with students suggested that the way they thought about themselves was shifting (cf. Colley *et al.*, 2003). For example, a number who described themselves as apathetic or undisciplined high school students now felt motivated and interested in their learning. A couple realized that they were ‘perfectionists.’ Students suddenly saw a purpose for their learning as a relationship was established between ‘what they learn, its application, and the development of adult identities’ (Fuller & Unwin, 1998, p. 159). These examples suggest that the learning outcomes in this type of program are not necessarily restricted to formal qualifications, but may include ‘self assurance, increased capability, improved attainment, greater ability to exercise control over their situations and environments, and the development of new attitudes toward learning/working’ (Evans *et al.*, 2004, pp. 230–231).

At the same time, some students who had made a shift from reluctant learners in high school to active learners in the training centre nevertheless failed the Basic level of training and there was no formal process for addressing the needs of such students. Trainers acknowledged some of the institutional constraints that contribute to such outcomes, as follows:

I think there’s been so many changes and so much new technical change that some of the people responsible for the decision-making at the different provincial levels fail to recognise the additional workload that is required of apprentices and have failed on several requests to increase the number of days or weeks required to complete the in-school training portion, which in turn results in a lot of failures at the exam. (I-29)

We have eight weeks to cover the curriculum and realistically we need twelve weeks to do it. ...So I personally find it difficult to cram everything in there. I can’t do as good a job as I want to do in certain areas. (I-15)

Inadequate time for training, related to funding constraints, therefore puts additional pressure on instructors and students. Instructors also acknowledged that the sequencing of apprenticeship curriculum may not ‘prepare them for the market-place.’ For example, common placements for high school apprentices involved doing

formwork or scaffolding, neither of which was part of the Basic level curriculum. Restrictions in the training centre learning environment for apprentices therefore relate to control over training, including curriculum content, duration and sequencing. Trainers have tried to work within these constraints by providing some exposure to market-oriented training after the completion of the Basic requirements, providing additional tutoring for students who are struggling and allowing students to retake certain tests. However, since union employers pay for apprentice training through the management–union trust fund, they tend to expect an immediate return on their investment (Taylor, 2005).

Further, although students are invited to enter a community of practice, the training centre arguably acts as a form of ‘anticipatory socialization’ that seeks to ‘promote young people’s adjustment to the general demands of employers for a disciplined workforce’ (Bates, cited in Colley *et al.*, 2003, p. 474). For example, students commented that the training centre experience ‘gets us used to work habits’ such as listening, knowing supervisors have authority over you, being on time and following instructions. Consistent with this culture, the dominant pedagogical approach in training centre classrooms involved transmission of material, and on the shop floor, instructors were perceived as modelling the behaviour of site supervisors. For example, when asked if students had much say in their learning, an apprentice replied, ‘Pretty much none. We do it their way,’ and another added, ‘They’re almost like our employers, right?’ (F-23). Students were expected to ‘leave their egos at the door’ (F-27) and not to challenge instructors.

Interviews with instructors confirmed that they seek to acculturate youth into a community of practice that will allow them to survive and prosper, while recognizing that it is hierarchical and conservative in many ways. The construction workplace is described to students as ‘very similar to the military’ in terms of a ‘chain of command’ with employers and co-workers acting punitively toward those who step out of line. However, instructors occupy a contradictory location in that they are accountable to both employers and the union through the trust fund. They recognize that the interests of these groups can be divergent and that workplace practices are often inequitable and discriminatory.

For example, one instructor comments, ‘when you’re young, you come in and everybody wants you because they want your back. And they’ll use you up and they’ll burn you out’ (I-1). Similarly, instructors warned apprentices that they may be asked to perform unsafe work by employers and need to protect themselves. They⁴ also acknowledge that there are discriminatory practices in the workplace based on gender and race. For example, one instructor observed: ‘quite a few of [the women] get shoe-horned into useless jobs’ (I-19). Another noted that some workplaces tend try to ‘bar all the people who are not in their [racial/language] group’ (I-15).

However, probably because of the tension between a discourse of ‘worker rights’ and a discourse of ‘apprentices as subordinates,’ students expressed mixed messages about how they should conduct themselves in the workplace, as this exchange suggests:

A1: You can refuse unsafe work.

A2: They [instructors] tell us you'll probably get fired though after, because they've got to stop and they have to check it out or whatever. Safety inspector comes in.

A1: It's your judgement right? If you refuse to hammer a nail, then obviously you're going to [get fired]. But if they want you to deal with some chemicals, or like a guy died two days ago going in a trench without shoring.

A3: But usually they told us like [the employer] will have to stop all the starts in that area, call in [the inspector], he's got to inspect it, they have to go over the area, and then, you know, they're not going to be too happy with you after, right? And so a lot of times, they say, 'well, you're going to be out of a job.' (F-31)

These comments suggest that apprentices anticipate being placed in 'catch-22' situations where the 'right' course of action is difficult to determine because of their inexperience, and difficult to follow because of the potential consequences.

Further, although instructors eschew discrimination in the workplace, students appeared to feel that they must respond on their own:

A1: Yeah [instructor] said especially for [name of apprentice] because she's a girl, there's going to be carpenters that won't want to work with her just because she's a girl. ...and there's going to be, for instance, I'm Black so there may be racial slurs towards me. ...

So do you have to either put up with it or?

A1: But it's the real world man, you know, it's no different than school. When you're young and you're coming up in grade school people pick on you because you're fat or.

A2: Yeah it's there but it's a different extent, eh.

A1: And it's going to come all over again. You go through high school, right, that segment of your life and now you enter the real world. So you're starting off basically from being in kindergarten again and then all the way back up. That's the way I think of it.

How much should you have to put up with though? You know, are there limits to what you should have to put up with?

A1: Should have to put up with? Um, there is no such things as limits. You just put up with whatever you can.

A2: It all depends on the type of person you are.

If you did get racial slurs, would you be able to do anything about that?

A2: I think we're able to walk off, walk off. I know with the unsafe equipment and stuff, we can walk off the site without them firing us. But with racial slurs I think, I think you'd have to go talk to the contractor and if the contractor can't do anything, I think I don't know what they'll do. Either find you another placement or something.

A1: That's one of those situations, you'd have to cross the bridge when you get there. ...[Y]ou can go, 'well if somebody said this to me I'm leaving,' but you think of how much you're getting paid, and you know what I mean, especially if you've got bills to pay and stuff like that too. And you've got to put up with it sometimes. (F-31)

The comments of these two Black apprentices suggest that they are aware that individual resistance may be ill advised if not futile and are unsure about potential collective responses. Data suggest that VET may play a key role in forming vocational habitus as it mediates between gendered and racialized backgrounds and the demands of the workplace (Bates, cited in Colley *et al.*, 2003). Of the five visible

minority youth (of the 30 that were interviewed), two failed their Basic level at the training centre and one achieved a pass after some remedial work. Further, follow-up calls a year later found that only one of the visible minority students was working in carpentry and the single young woman (of 70 apprentices) had also dropped out of the apprenticeship (Taylor & Watt-Malcolm, 2006).

The tensions apparent in the comments of youth appear to be related to the ambivalence of instructors about whether they should encourage students to challenge problematic practices in the workplace or to conform. As one trainer comments, students 'have to understand there's power relationships.' He adds:

I'd say that for the youth coming up—they're far more vocal. ...They are not prepared to suck it up and do this. And that can be a *positive and a negative*. But in the end, *enough of those people come in and change gets affected*. But initially, when they go out there, I get calls [from employers], 'Don't send me anybody like that.' You know. 'Like what?' 'Well,' they'll say, 'You know that person. The first day on the job he was in there and he was telling me what I was doing was wrong and unsafe.' And I said, 'Oh, was he telling you or yelling you?' He says, 'He was telling me.' I say, 'So he wasn't yelling at you?' 'No.' And I say, 'So what's the problem?' 'Well, he shouldn't do that.' I say, 'Was he correct?' 'Yeah, but that's not the point. I don't want somebody to come in and tell me how it is.' And so we like to tell the [apprentices], it's not what you say, it's how you say it and it's *when you use the knowledge*. And these are very, very fine points. There's nothing in the book. ...All these little nuances are people skills. (I-1, emphasis added)

Instructors are therefore walking a fine line as they try to balance the training interests of apprentices and employers. The outcome for students is that although as newcomers they bring the possibility of engendering change, the cultural processes in the training centre promote mutual reinforcement and cultural reproduction (Colley *et al.*, 2003).

The preceding discussion suggests that the training centre environment has a number of 'expansive' features—for example, trainers are interested in sharing their knowledge and expertise and supporting learners, there are close ties between the centre and communities of practice in the workplace and industry, and technical skills and teamwork are valued. At the same time, there appears to be little space to address tensions related to workplace practices and learning in a critical pedagogical way (cf. Simon *et al.*, 1991; Kincheloe, 1999).

Learning at work

It's hard to tell how your apprenticeship will go, because I mean, they tell us that we might get somewhere and you'll get lucky and you'll find somebody that'll take you under their wing and help you out and teach you things. Whereas I've also heard the opposite way—there's a lot of guys who don't want to teach you anything because they are afraid you'll steal their job from them. ...[And] you have to say, 'I want to learn this.' You have to show that attitude. ...But I think, just from the way I see it, not everyone's going to have the same quality of apprenticeship and right now it's kind of random. (Apprentice, in training centre)

Following completion of Basic level, students were placed in worksites by training centre instructors as jobs became available. The most common placements were in

scaffolding or formwork companies and the process of matching students with jobs was usually based more on practical concerns (e.g. access to a vehicle) than on their career interests. Interviews with employers and workplace supervisors suggest that there was significant variation in the 'quality' of learning sites based on an expansive–restrictive continuum. As mentioned in our earlier discussion of the carpentry trade, institutional factors such as the voluntary nature of certification in the trade influence the apprenticeship experience, as do economic conditions. In the program we examined, the type of work undertaken by union versus non-union companies also had an impact on apprentices' experiences. For example, several students were disappointed with the lack of access to residential work (e.g. house framing) because union companies were primarily involved in the ICI sector. Another feature of the program that impacted the apprenticeship experience was the fact that apprentices were 'indentured' to the union rather than to individual employers.

Employers paid into the training trust fund and the degree to which they expected to supplement apprenticeship training through formal company training varied. Most of the large scaffolding companies provided some in-house training for apprentices and had a clearly structured developmental process for apprentices, as this employer notes:

Basically what happens is when we take on someone that's raw, never worked before, they're basically on the ground and moving equipment. We keep very safe situations. And then as they progress, they start to go basically higher up. But you know what I mean, they're up on the structures and they start to form the steel.

And as you say, some jobs are more difficult to conceptualize and carry out?

Yeah. And basically it's a question of gathering practical experience, they learn from others around them and we have...I would say four key foremen and they're good at that [training]. (I-66)

Scaffolding companies tended to hire a relatively large number of apprentices including OYAP students during their busy period and then try to retain the best employees when the work slowed down. From an apprentice's perspective, work in scaffolding was double edged. It had the advantages of allowing them to gradually transition into more complex work and the work was generally more stable than in other areas of carpentry, allowing apprentices to complete their requisite hours and earn money more quickly. However, the work could be routine and physically demanding, and apprentices did not gain access to learning tasks or knowledge associated with other aspects of the trade.

The value of trade certification was also questionable because of the specialized knowledge associated with this area of carpentry, as an employer remarks:

What we see happening here is when we get a young apprentice and we start training him [*sic*] and we keep him, after about two or three years they kind of realize that this is sort of a trade inside a trade. They don't need to have all that apprenticeship training to be a scaffolder because there's no accreditation for it. So they tend to yeah drop out of the big course because they can focus on just scaffolding. And there's no real need for training. They're not real carpenters but they're still on the list as a scaffolder, so they can make the same amount of money and everything else as a carpenter. (I-63)

However, ‘scaffolders’ then find it very difficult to move out of this area of the trade. Therefore, although most students had been told by instructors at the training centre about the importance of gaining broad knowledge of the trade and completing their certification, labour market realities made this very difficult.

In contrast to scaffolding, other students found themselves thrown into high-pressure workplaces (usually smaller businesses) where they were learning from the owner. For example, this employer, who admitted that apprentices made up approximately 80% of his workforce, commented:

[T]he young generation today is excellent. They’re just under-trained, you know, people are not giving them a chance. And what’s happening to a lot of them is when they go to bigger outfits they end up being the guy getting coffee and sweeping the floors, and they’re halfway through their program and they still haven’t picked up a hammer. ...I put them right into the mix right away. Right away, they don’t have an opportunity to go get coffee or anything, they’re working. ...And I teach them about business, I teach them how to handle the general contractors, every aspect of the program. ...I’m teaching them rigging, we’re teaching them welding, we’re getting them certified for...fork lift, for zoom booms, you know, whatever’s out there I’m getting pushed into them. (I-65)

In terms of a learning environment, this employer appeared to provide excellent access to a range of learning tasks and knowledge in carpentry and other trades (cf. Fuller & Unwin, 2004). Innovation was valued and there was little concern that apprentices would not use their skills. At the same time, there was very little support for apprentices’ status as learners since transitions to full participation were far from gradual. For example, the employer provided incentives for employees to learn and work quickly (e.g. piecework) and there were few journeypersons to supervise apprentices. Further, employee turnover was very high—this employer hired apprentices at a rate of around two per month.

The preceding discussion suggests that finding employers with expansive approaches to workforce development in the carpentry trade was difficult, and distinguishing expansive from restrictive workplace practices was not always easy. For example, was the employer who placed great value and demands on apprentices adopting an expansive approach or exploiting his workers? Clearly, managing one’s apprenticeship can be a very challenging task for young workers as they are forced to trade off job stability for broad access to knowledge, and gradual transitions for opportunities to develop and use skills quickly. Youth encountered companies where senior apprentices took an interest in their well-being and provided support, and other companies where the senior workers regarded young apprentices as a burden. But despite differences, construction culture tended to be characterized by hierarchical command and control relationships and little formal appraisal—more than one interview participant joked: ‘you know you’re doing ok if you’re still there the next day.’

Conclusion: promoting more expansive learning environments

The preceding discussion reveals some of the opportunities and challenges related to students’ learning in the different stages of a high school carpentry apprenticeship

program. This program includes several features that promote an expansive approach to the development of apprentices (Fuller & Unwin, 1998). For example, the Ministry of Education paid for OYAP students in this program to enrol in their first level of technical training in the carpentry trade. Schools promoted this opportunity to senior high school students and provided support through a pre-apprenticeship course and the involvement of cooperative education teachers. The training centre provided expert instructors who were willing to share their expertise and invite young people into a community of practice. Additional support was provided to the extent possible for students who were struggling. The union found students their first work placement. Once in the workplace, many students developed good relationships with supervisors and employers. They worked in companies with a strong tradition of apprenticeship and began their transition to full rounded participation.

But interviews also suggest restrictions on the learning environment that need to be addressed in our view to enhance practice. In schools, interviews with educators and students suggest that neither academic nor technical courses appeared to be preparing students adequately for apprenticeship learning despite the best efforts of cooperative education teachers involved in the program. This lack of articulation is arguably rooted in the academic/vocational division in schools whereby ‘tech’ courses are hands-on to the exclusion of necessary theory and academic courses seem to have little connection to the lived experiences of students. The shift from reluctant to active learners which occurred for many students in the training centre suggests that schools should rethink the ideas that the best learning consists of abstract ideas that are context independent, and that learning is individual and replicable (cf. Hager, 2004).

Learning in the training centre was limited by the time provided and relevance of provincially set curriculum content to local labour markets. While instructors made efforts to work within these constraints, we argue that the learning of apprentices was also restricted by a failure to address tensions rooted in power relations in the workplace. As a result, the hidden curriculum of the training centre promoted a gendered, classed and racialized vocational habitus in conformity with the demands of the workplace (cf. Colley *et al.*, 2003).

While we recognize the difficulties involved in challenging employment practices in the field, greater opportunities could be provided for students and instructors to explore contradictions in the workplace. For example, school staff could use part of the time allocated for ‘integration’ of school and workplace learning—a mandatory requirement for cooperative education credits—to address issues around conflict and change in the workplace and underlying systemic issues. Currently, integration is viewed as a bureaucratic requirement by schools and students. If part of expansive learning is to promote the ability to question, criticize and transform practices within the workplace, then pedagogical approaches and strategies need to reflect this. Further, the training centre could take positive action steps for groups of students that are underrepresented in the carpentry trade and are less likely to complete their apprenticeship without additional support and mentorship. Schools and the training centre should address the issue of alternative pathways for students who fail the Basic level in order to facilitate their future growth and development.

Finally, although policy-makers tend to focus on the provision of formal training, our research suggests that workplace change is critical to promoting more expansive learning environments for apprentices. OYAP students were often faced with a choice between accepting more stable and routine work in a specialized area of the trade or taking greater risk with entrepreneurs who provide greater access to a breadth of tasks and knowledge while demanding a higher return on their training investment. In the latter case, the distinction between employee development and exploitation is not always clear. Therefore, while we agree with the young man who observed ‘not everyone’s going to have the same quality of apprenticeship,’ we feel that the overall quality would increase if employers accepted greater responsibility for high school (and other) apprentices, and apprentices were provided with more continuing support (e.g. mentorship opportunities) as they navigate their apprenticeship training.

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Notes

1. The Greater Toronto Home Builders’ Association and Local 183, the largest construction union in the Greater Toronto Area, estimates that there are between 10,000 and 20,000 undocumented drywallers, carpenters, house framers, painters and carpenters building homes, condominiums and subdivisions in the Toronto area (Jiminez, 2003). They earn less than their Canadian counterparts, may be asked to do unsafe work and live in fear of being deported.
2. The notation A1 for apprentice 1, A2 for apprentice 2 and so on is used to indicate different speakers. Similarly, at the end of the transcript excerpt, the notation indicates whether it is from a focus group (F) or an individual interview (I) and provides the transcript number.
3. Although they are intended to be comprehensive, collegiates are perceived to focus more on academic programs than tech-oriented schools.
4. We should note that all instructors involved in the program were white.

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