

Learning in practice through a CHAT transformatory lens

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Abstract

This paper examines and compares university students' learning in two sites of practice; the traditional office and a community project. The research draws on activity theory and in particular Stetsenko's transformative activist stance on learning. The research suggests that community work provides students with a rich learning experience because they are able to exercise agency as young professionals. The purpose of the research was to make suggestions as to how the practice curriculum could best be better designed.

Introduction

When students learn at work they are traditionally seen as 'learners' who are learning from more experienced others. Such learning occurs in a structured environment of work within particular systems of rules, norms, tools and roles (Billet, 2002). Student learning through work is potentially seen to be enhanced (as compared to classroom learning, for example) because it is firstly occurring in authentic settings and secondly because students are part of and responsible to the overall functioning of the workplace (Billet, 2009); actions and learning are thus consequential. However, students can experience working life negatively, particularly where uneven or unfair power relations at play, which may dis-incentivise learning.

Where learning at work functions, it can be powerful as students participate in the community of work practice. This is different to learning in the classroom or lecture theatre where learning may be more unidirectional from lecturer/sage to student than active participation in doing something (Billet, 2002). In communities of practice knowledge is not just acquired by an individual but is dialogically structured as an interaction of the individual's knowledge and skills and the language, knowledge, symbolic and other tools of the community (Edwards, 2005).

In activity theory learning is understood at a systems level as both the development of students' knowledge in the discipline as well as expanded involvement in the social field in which the discipline is conducted; learning occurs at both a more individual micro as well as a more social macro level (Russel, 2002). In communities of practice theorization students may begin their work experience as 'peripheral participants', with one foot still in the university system. Over time and particularly with the support of experienced others they may acquire the knowledge, practical skills and cultural norms necessary to be more full, rather than peripheral, participants in the community. There is also acknowledgement, however, that more is happening than just expanded involvement in the work community; Wenger, for example, refers to newcomers entering existing communities of practice as potentially changing the community (Wenger, 1998), though there is not much detail as to exactly how this may occur.

Activity theorists have more precisely identified this source of change as students conceptual knowledge acquired without the physical and social constraints of particular work contexts; in

other words knowledge acquired at university. Students may thus bring fresh perspectives on knowledge and ways of operating with this knowledge to workplaces that, over time, may have become set their ways (Tuomi-Grohn and Engestrom, 2003) and this is precisely because they are still peripheral. Konkola et al. (2007), for example, describe how health students in Finland are able to mobilize new research into brain function to bring into effect new protocols for stroke patients rehabilitation in health centres. Students even though they may be peripheral, may contribute to and hence change the way that the activity systems of health centres function. Students learn by developing their knowledge within the new context and the context (activity system of the centre) also ‘learns’ and undergoes change.

The role of contribution and learning has recently been further theorized by activity theorists. Stetsenko (2008, p. 477) writes from a philosophical position of relational ontology in which learning is ‘situated, embedded, distributed and co-constructed’. Learning in this frame is not about learning structures which are then statically applied to experience, but is rather about an ‘unfolding logic, not constrained by rigidly imposed preexisting rules and scripts’ (Ibid, p. 477); this is especially pertinent in this chapter as some forms of practice-based learning activity may serve to constrain learning. Furthermore, drawing on the tradition of activity theory, learning is always active and involves purposefulness from those involved. Again drawing on activity theory, learning is not just about change and development of people involved in the activity, but also can serve to transform the activity itself (Konkola et al, 2007). Stetsenko draws these arguments together to propose firstly, drawing on Vygotsky’s Marxist roots, that agents come to learn about the world firstly through actively, relationally and purposefully changing it to some better form. Secondly, such activity is simultaneously about identity formation (Stetsenko, 2008, p. 484), which is particularly pertinent to the work presented here which concerns students in vocational learning.

Stetsenko (2008, p. 489) then proposes three metaphors for learning which are pertinent to our discussion of learning in context; acquisition, participation and transformation. Her goal is to accentuate ‘transformation’ of the world as a goal for learning which, even though it is often stated in activity theory, is not sufficiently explained. Acquisition is primarily concerned with the individual learning facts and concepts but having little control over what is learnt nor how such learning may be used to change society. This would refer to much of classroom/lecture theater teaching and learning. The participation metaphor refers to learning as part of a community of practice in which knowledge is ‘discursively structured and drawn upon’ (Edwards, 2005, p. 56), rather than learnt individually. Through so doing, individuals learn the language and culture of particular fields and may, through successive interactions, become recognized as expert/proficient in that field. The focus is less on transformation as on becoming part of the system. Participation would thus be most closely aligned with office work. The contribution metaphor, on the other hand, concerns learning as both a collaborative ‘becoming’ movement – as part of a community – but also an activist movement focused on transforming and improving the lives of others. Improvement becomes a goal as knowledge is developed and put into practice. We believe that this metaphor best captures the nature of learning in community projects.

Learning in practice in architecture

The first site of learning architectural practice was the building site. Architects learnt by doing, under close supervision of a master and through a process of apprenticeship. In 1670 the first school of architecture, the Académie Royale d’Architecture was established to formalize education and to undermine the Guilds. In 1957 equal numbers of students graduated from full time university study than had worked in offices by “articled pupilage”

and took the external professional exam. However, in 1958 at the Oxford Conference, the University was officially declared the main site of learning through practice.

Many questions are being raised on the relevance and appropriateness of architectural education for architects' practice. Graduates should be better prepared to deal with real life practical problems. Architectural practice is about human existence, about looking forward to what is needed in the future in order to improve the lives of those most in need (Boyer and Mitgang, 1996).

Despite new advances in technology and a rapidly changing world, architectural education has remained mostly unchanged since the early twentieth century. The design studio as re-defined by the Bauhaus has become the Western standard for imparting architectural design knowledge in an academic setting. Given its role and the importance of its task, however, the current model is considered by many practitioners and academics as extremely deficient (AIAS, 2002). It is suggested that, in today's design studio, students seldom learn how to design and construct real, adaptive architecture. More often than not they operate at a distance from any substantive criteria — simply competing for recognition through the manufacture and manipulation of eye-catching forms. The studio component of the architectural curriculum does not address practical issues (such as clients' concerns and needs, costs, safety, regulations, etc.) (UK AERG, 2013).

Stetsenko's description of learning through contribution includes a focus on activism aimed at transforming the lives of oneself and others and of commitment to future change for the better. This has much in common with Architecture's vision of Architects as change agents for the better.

Service learning is a topic examined in this article. Both service learning and work experience in university courses serve to connect learning inside the university to outside society; service learning can thus be seen as a special form of work experience (Stanton et al., 1999). However, unlike work experience in general, service learning focuses on the development of both the student and the client; students contribute to the well being of others rather than just learning for themselves (Stanton, 1999). This resonates with Stetsenko's focus on learning in order to change, knowledge in action, activism and community development. Activity theory and in particular Stetsenko's and others highlighting of the role of contribution and societal/organisational change alongside individual change and learning may well serve to contribute to learning theory in this field; and, flowing from this, allow us to enhance current models of learning through experience more generally.

The actual current qualification description for architecture students is quite different to this more contributory and creative vision, focusing rather on doing and operating at the more administrative level, rather than creating and/or contributing:

A person achieving this qualification will be a competent Architectural technologist who can conduct relevant routine technical research and under supervision perform architectural services in construction, detailing and administration in the public and private, formal and informal sectors in the built environment (outcome statement of the Architecture technology course).

In activity theory terms the technology outcome provides the raw material or object that students will be working on. It could be argued that this more limited administrative role is

more closely aligned to technological/diploma training (being closer to work), and that only at degree level and above should learning through more creative and contributory projects be permitted. However, we would argue that the world of practice, even for technologists, is changing and that the particular practices and knowledge over and above mere technical know how are also needed, for example through contributing to improving people's lives.

Furthermore, we argue from an activity theory perspective that the initial raw material/object of doing architectural work can be changed through students' agency, including their choice of mediating artifacts with which to work on the raw material, and the mediating effects of other cultural and structural aspects, namely: Existing rules and cultural norms, students' relative positions of power and knowledge within the community and the nature of the community as a whole. In other words the 'community' in students' service learning project serves to afford changes in the raw material/object of learning, so that more contributory/creative outcomes are made possible and potentially attained.

It is this particular learning metaphor of contribution which is highlighted in this article as we examine through an activity theory lens students' learning in two sites of practice: The office and service learning projects.

In the office students spend approximately 9 months out of their three year diploma working as an apprentice to a qualified Architect, generally in a medium sized firm. They perform a number of functions but mostly do much of the 'donkey-work' of, for example, completing council drawings. Students are re assessed by the architect who signs off a logbook of tasks completed, which are usually matched to course practical outcomes. They are also visited by lecturers from time, or may return to the university for short periods of debriefing, or even engage electronically with lecturers while they are at work.

The service learning period is much shorter, two to three weeks. In this particular research students stay on-site at a rural village. They are tasked with planning and building an addition to a primary school, something which has been requested by the school in order to improve the quality of the learning environment. In this project students are working with experienced Architects, designers and suppliers in building an outdoor classroom at the school.

Method

The research methodology was drawn from activity theory and related to the components of the activity systems under study (community, office). The activity system analysis is drawn from Russel (2002). In short we attempted to gather as much information as we could to populate the activity systems of service learning and work, and the sorts of questions we were interested in are shown in table 1:

Table 1: Interview question guide for the practice sites

Component of the activity system	Research questions to pose in analysing practice
Community	What is the whole environment students are in at each site? Who are all the actors involved in or with an interest in working on the object?
Object	What do students understand as the purpose of being at and SL?
Subject	How do students describe themselves, their interests, motivations and so on;
Tools	What physical objects, knowledge and skills do students pull on in

	order to try to achieve the purpose of the activity? Is there anything they need but do not have?
Rules	What do students understand as the cultural norms and more overt rules they need to adhere to in the practice site? What are the rules of assessment or how do students know whether or not they have being successful?
Division of labour	What roles do students play in relation to supervisors, other students etc. How is knowledge passed on or around? Do students work in groups and if so how are the roles divided up? What affordances are there for students to reach their full capacity? What affordances to exercise decisions and creativity? Is there a distinction between theory and practice? What is it?

In actual practice, we asked students to talk more broadly about their experiences and we sought and followed up any comments which could help us to populate the activity system. The following are examples of the more general questions we pursued:

- How did you find the SL project? How did it compare to what you were doing at the workplace? Did you get the chance to use your initiative?
- What is the community at the SL site? How different is it from the workplace? How did you work with them at both sites?
- How did the office help your SL work and vice-versa? Would SL be better earlier/later?
- How did you manage to do the work in the SL project?
- What do you think you have learnt? Do you feel you know more?
- Do you get the chance to make mistakes? What happens?

Findings

Office

Activity system of the office

Students in the second year complete a 10 month period of work in the office of a registered architectural professional. Employers are required to act as co-educators. Students need to complete a range of tasks recorded on log sheets signed off by the employer supervisor and in addition, the students' office work is monitored by an academic.

Student perceptions of office activity

Work may initially be somewhat bewildering with students not feeling part of the office as a whole. Furthermore students are discouraged from doing learning (for example downloading/learning about a new CAD programme) or project work in the office. They feel they do not like to 'nag' other staff with problems. Students do not generally go onto site but remain working in the office, as such then can feel cut off from sites of practice; when they do something in the office they are not certain 'if or how it will work'.

*The whole year I have been in front of a computer just drawing or on a drawing board
...it is like a disconnection between building and the client*

The sort of work they do can be quite repetitive sometimes dealing with just one function (for example working on ceiling design or 'internal elevations' over and over). Students do not have much control over what they do but are given work. There appears to be a lack of agency and intentionality (Billet, 2009) in the work they do.

You are just sitting there people tell you what to draw.

Students are part of a team at work. They work with more senior colleagues on projects. What students are expected to do is made clear. The aim is to get the project done as best possible and all team members are focused on this outcome. Thus staff help students not because they are necessarily interested in their education, but because they want to get the job done.

Office hours tend to be adhered to and jobs do not seem to generally carry over into after hours work. But this is supported by 'everything working' (here they are referring to printing, copying, internet etc.) and by rules of practice. Productive design working space may be separated off from client space, which occurs in a more central meeting room.

This whole year we have been in front of the computer just drawing.

Community

Activity system of the community

Service learning projects involve students in real design and building work in the community, over a short period of approximately two weeks.

Students' perceptions of the community activity

Students work with the whole and see the project as involving 'more comprehensive planning and oversight'. Students are responsible to the community they are serving and feel a sense of pride of doing a job well and of feeling their work has value and is appreciated.

And they (kids) were happy, they just couldn't wait to see it being done ...

And they are so appreciative, the kids, it is so nice yes... It is such a reward at the end of the day to actually go and do it .

This is not always the case in the office where their individual achievements may not be recognized. Students are also much more in control of the work they are doing than is the case in the office, and can take initiatives. They have to think for themselves as there is less overt instruction than in other sites of practice. There is a shift in the locus of responsibility to the students, and a realization of the potential consequences of their actions.

In the workplace you are regarded as a student... here you make that special bond, there is somebody at the end of the drawings.

Project work exposes students more to judgment and decision making (reflection in action) than is the case in the office where work is much more formal and structured. Students often have to try a method out, for example fitting stairs in place, within the context of the whole structure. Students work with 'snags' and use 'trial and error' methods to find out what works best; they learn through experience.

I think the responsibility in the workplace is a lot watered down to what we have been experiencing here because in the workplace you are still regarded as a student ...

When I am given a task and I do not have outside instruction and i have to try to think of a way of doing this, previous experiences play a role and my own initiative.

Such decision making is generally distributed as students problem solve with their peers. In addition, students on projects must interact with a whole range of professionals who contribute to the project, for example professional architects, landscapers and suppliers, as well as with the ‘clients’ (teachers and schoolchildren), which is not necessarily the case in the office.

Principles that have been learnt in the office and at university can now be applied and, importantly, adjusted to suit the needs of the site of practice. The project site is thus, according to students, a potent learning space.

Discussion

Both office and SL sites of practice provide students with rich exposure to the practice of Architecture. However, service learning provides a different and perhaps more full exposure to ‘becoming’ an architect. Students experience a full range of community, including access to clients and suppliers. The roles that students fill are different from those of the office. They act as quasi professionals, problem solving with one another, developing ‘rule of thumb’ approaches and with a sense of responsibility and consequence of the work they are doing; these are quite different rules as compared to those of the office. Their roles are less well defined than in the office, affording opportunities to exert agency. All in all the students, through engaging in service learning, develop the object of the activity to something more closely resembling work that is “intrinsically tied to human existence and the lived experience”. See table 2 for an analysis of the two sites of practice through an activity theory lens.

Table 2: learning at two sites of practice

Element of the activity system	Activity system of the office	Activity system of the community project
Community – who else has an interest in the object of the activity	Architects, lecturers	Architects, lecturers, teachers, pupils, other students, suppliers and landscapers
Subject – from whose perspective is the activity being examined	Students having weak agency	Students having strong agency
Object of the activity – raw material or problem space students are working on which is transformed	Doing office work, mainly council drawings	Building an outdoor classroom
Mediating artefacts – what the students mobilize to work on the object	Curriculum and studio project work, architects, internet and CAD-like programmes	Curriculum and studio project, office experiences, peers and various experts on site
Rules – overt and tacit norms of practice	Instructed rather than initialized work, speed and accuracy important, follow drawing conventions, critique, behavioral rules	Responsibility to community, mutual accountability, sustainability, rule of thumb.
Divisions of labour and roles	Well-defined apprentice/draughtsman roles, junior in work team, focus on	Student as professional architect, student as expert, collaborative and distributed

	specific task (rather than integrated)	roles, integration of practices and theory
Outcome – what emerges as students work on the problem space?	Skill at doing council drawings	Giving to the community, changing pupils lives, improving conditions, i.e. contributing to the community.

Current theory of service learning hints at the possibility for such learning opportunities, but is by and large undertheorised as to how it contributes to professional development. Through analysing students' service learning experiences through an activity theory lens, this contribution can be more clearly shown.

Practical implications

Students' Contribution and hence impact on change in organization/society happens where workplaces create affordances for this. Such affordances involve, we believe, students understanding themselves as having some power and influence within the community, as occupying a niche of relative expertise. Even if there was recognition that they could not know everything and that knowledge and skill was distributed amongst the other peripheral 'experts'. This particularly perception of division of labour was further supported by how students understood the cultural norms of the project, particularly; a sense of responsibility to peers working on the project and responsibility to members of the community they are working for. The object of learning through building a classroom is transformed into learning through contribution and in so doing taking on something of the professional identity of becoming an Architect. In so doing service learning projects can go some way towards realizing Architecture's role in improving people's lives through work which is both practical as well as ethical (UK AERG, 2013).

Thus the learning through contribution metaphor of Stetsenko (2008), drawing on activity theory, resonates well with the important level of learning and identity formation that can occur through community work:

This is not to say that learning and identity formation do not occur in office work, which can be identified as residing in more of a participatory learning metaphor. Here students are 'learning the ropes' through interaction with real work and experts and focusing on knowing their world as it currently is. However, the power of contributory learning is that '... people come to know themselves and their worlds and ultimately to become human in and through the processes of collaboratively transforming the world in view of their goals' (Ibid, 471). It can be suggested that work office practice as a means to develop professional identity and learning in the field of architecture, could benefit from the inclusion of learning events designed to promote a more activist and transformative stance to learning (Stetsenko, 2008).

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