

# **Taking without consent: Stolen knowledge and the place of abstractions and assessment in situated learning.**

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**Abstract:** This paper explores the idea of situated learning and the related idea of a community of practice. These ideas have had a seminal influence in the CSCL community, yet they have received little serious attention in refining their use. This paper uses material from a recently completed piece of research to reflect on the educational (mis)use of the idea of situation. It argues that the view of situation popularized in the works of John Seely Brown and others contains a moral imperative. It maintains that a better understanding of situation might be achieved by adopting a stance that does not privilege a certain type of situation above others.

This paper states a case for abstraction and formalization as forming part of the resources from which a community constitutes itself. In this way it resituates learning as both a participation in a community and a transmission of resources.

**Keywords:** situated learning, computer-mediated-communications, qualitative methods

## **Introduction**

The much-referenced account of situated learning by Brown, Collins and Duguid (1989) has had particular importance for computer supported learning as it drew conclusions about collaborative learning. The idea of situated learning has provided one of the core accounts supporting a new paradigm for research in educational technology (Koschmann 1996). This paper tries to examine some aspects of situated learning in the context of a computer conferencing system being used to deliver an undergraduate course with explicitly collaborative intent.

The idea of situation proposed by Brown et al (1989) is summed up in the contrast between 'know what' and 'know how'. Situations are described as co-producing knowledge through activity. The breach between know how and know what is said to be internalized within educational practice in a separation between knowing and doing. Brown et al argue that situations co-produce knowledge so that educational practice would be improved by taking into account the situated nature of learning. The re-conceptualized educational practice advanced in the work of Brown et al is a variety of

cognitive apprenticeship, an approach also to be found in the works of Lave, Wenger and Rogoff (Lave and Wenger 1991, Rogoff 1990, Wenger 1998).

The account they give of cognitive apprenticeship rests upon a distinction between authentic activity and school activity.

"Authentic activities are then most simply defined as the ordinary practices of the culture" (Brown et al 1989 p 34).

Cognitive apprenticeships try to enculture students in 'authentic practices' through activity and social interaction. Authentic practices are ordinary practices as opposed to 'ersatz' activity.

### **The computer conference as a situation**

The idea of school culture is related to the transmissive model, which has been heavily criticised as inappropriate for computer conferencing. Cooperative or collaborative learning is often advocated in contrast to the transmissive model.

"The asynchronous nature of the interaction leads to new paradigms for teaching and learning, with both unique problems of coordination and unique opportunities to support active, collaborative (group or team-based) learning. Collaborative learning appears to be crucial to the effectiveness of online learning environments." (Hiltz and Benbunan-Fich 1997 p1)

In this view computer conferencing has features that both enable the use of collaboration and require cooperation as a guarantee of effectiveness. There is a clear relationship between descriptions of a technological imperative and the requirements of a situated learning approach to provide authenticity in learning.

### **The background to the research**

The research reported here was undertaken at Manchester Metropolitan University between 1994 and 1996 as part of a doctoral programme. The course unit observed was part of the BA in Information Technology and Society Degree (BAITS). The Technology in Communications course was a second year option taught on-line using the FirstClass computer conferencing system. The course was still being run in a slightly modified form in 1998/99. The University recruits students from a wide range of academic and social backgrounds and has a large number of 'home' students from Greater Manchester and the surrounding region.

The approach adopted by the course leader was online working with collaborative working as a natural outcome of using computer conferencing. Assessment on the course unit was 100% coursework; two essays and a final project that counted for 50% of the mark followed an initial skills based module. Module 1 was rated 10%, Module 2 15% and Module 3 at 25%. The marking scheme emphasized the production of group work

but it was the tutor's intention to allocate individual marks. The course structure was devised in such a way as to emphasise the accomplishment of particular tasks. These would provide feedback to the tutor and the students and were also to 'prompt' the students to work online.

An ethnographic methodology was employed to generate a description of a university course transposed from a traditional setting into a computer-based technology using collaborative methods. In this research it was a concern with the social properties of the educational setting that suggested the appropriateness of ethnographic methods. The extensive nature of the final report is a feature of ethnographic description allowing only brief illustrative examples to be included in this paper. Within education the ethnographic approach to research has a long tradition (e.g. Fetterman 1984, Fetterman and Pitman 1986). It has more recently been employed to study distance students using computer conferencing at a US university (Eastmond 1995).

For the entire two years of observation there were many examples of the work that students and the tutor were required to do in order to enable the collaborative work of the computer conference and its educational design to be realised. The work that was done was organised in part on-line though much of the activity was off-line and ratified rather than conducted on the system. Students when working amongst themselves, distributed their work between on and off-line working. A central finding of the research was that all participants in the course had to cooperate together in order to determine just what collaboration meant (Jones 1999). This confirmed a fundamental insight of the situated learning perspective (Jones 1998).

### **The tutor**

Prior to the course running the tutor had identified a potential problem of the course having 'weaker' structures on-line.

"Students are given responsibility to do the work, what happens if they don't work? - therefore deadlines - therefore a schedule of tasks, readings for example, log on, send a message etc." (Interview course tutor 10/94)

Continuous assessment and deadlines set throughout the course were devised as prompts to encourage the students both to work and to work on-line. The emphasis was on the 'flexibility' available for students in terms of when work might be done, and the opportunity for synthesis and reflection. The course outline provided the mechanism for an anticipatory account of the course. It was through the production of this documentation that the tutor was accountable to the students and wider institution for the content and teaching methods of the course. It is through the detailed control of what work is to be done and how that work is done that the tutor uses the resource he/she has provided in the course documentation and planning. The following two examples explore how the collaborative nature of the course emerged and how the assessment procedure developed.

## Collaboration

The tutor made extensive comments on the process of the work done and gave advice for future work. The first part of one message is included below:

Friday, November 3, 1995 10:59:27 am  
TIC95 MODULE 1 Item  
From: J. A. C  
Subject: Pats on the back, advice and a bit of a warning  
To: TIC95 MODULE 1

1 I have been very pleased to see that a significant section  
2 of TIC-95 students are acquiring the on line skills which  
3 we have been discussing over the last few weeks. I have  
4 received a number of replies via my post box to the  
5 queries that I raised on the work for module one.  
6 Furthermore, in at least two of the sub-conferences we  
7 have seen real debate about the constitution of groups  
8 and how marks should be allocated. ....  
15 ..... Some of the messages  
I have  
16 received have avoided the issue of relative  
17 contributions. I don't want to make a big issue out of this  
18 but I do want to award marks fairly so that effort is  
19 rewarded.

The tutor clearly puts a great emphasis on the process of collaboration and use of the system (Lines 1-8). Equally emphasis is placed upon allocating marks to individuals so that 'effort' is rewarded (lines 18-19). This concentration on how the work was done inverted the intention to stress the content of the course not the 'system' or the method of work. It would seem that the day-to-day concerns of the tutor outweighed the original design consideration that the content of the course should not be submerged by the mechanism of delivery. The tutor saw the concentration on the conferencing process as a diversion from the work he intended.

## Assessment

The tutor's comments throughout the course show him to be concerned with academic standards, a defender of course quality. Sections of an extensive message to all students are reproduced below:

5 First and foremost the mark for a particular group has been  
6 determined by the quality of the piece submitted. I have looked  
7 for originality, evidence of research into the topic and the  
8 degree to which the question set has been answered.  
9 Secondly I have looked at the way in which group members  
10 have worked together in constructing the answer and the  
11 efficiency with which material coming from different individuals  
12 has been put together into a coherent whole.

(Tutor to Module 2 23/1/96)

The tutor began by setting out standard marking criteria. Later a plea was made for analysis 'which goes beyond description' dealing with abstract and conceptual issues. The tutor was advising students on how to do academic work and also how to talk about it. The tutor ends by advising students to read two sub-conferences from Module 2 in TiC95 as examples of good practice.

40 As you move to the end of this unit and prepare for your third  
year,  
41 you should be beginning to produce analytical work which goes  
42 beyond description and shows that you can deal with conceptual  
43 and abstract issues. We can learn from one another in this unit  
as  
44 all the work is available on the conferencing system. Please have  
45 a look at other contributions and see if you can find useful  
ideas. I  
46 recommend everyone to look at the report produced in the BLL  
47 group. This was a model of how material should be organised and  
48 how a coherent answer can be constructed. I recommend that you  
49 look in the xxxxx conference to see a good example of how a group  
50 sought to work together and had a good deal of success and some  
51 failures in achieving cooperation.

(Tutor to Module 2 23/1/96)

There were two related standards being applied, a common academic standard of intellectual discourse and a more specific injunction as to how to work within the conferencing system. This displayed an orientation in the conference through which the tutor was encouraging the social process of doing conferencing as well as providing academic guidance.

### **Students' talk**

Students came to the course with a variety of orientations and approached their work in a number of different ways. Despite this divergence the messaging displayed a predominantly functional tone. Messages were largely organizational dealing with how to organize the work, arranging meetings or delivering sections and drafts. Those students who got beyond this basic level, swapped drafts of work and commented on each others contributions. Nevertheless students generally confined themselves to 'doing the work' and did not indulge in wide ranging discussion of the subject under consideration.

The examples below are from a project sub-conference in TiC94. The sample of messages were sent one month before the completed project was submitted and comprise a string of messages concerning the first of three drafts which were produced before the final submission.

Wednesday, May 3, 1995 6:37:09 pm  
Satellites Item  
From: laura m. murrell  
Subject: third bit finalise  
To: Satellites  
Cc: vera stewart  
ANTHONY P. RICHARDS  
1 I will put some thing on tomorrow for my third bit.  
2 Maybe we can fianalise on line as it is difficult for  
3 anthony to get in to college or vera and i could get  
4 started tomorrow. Vera's idea to scan something in is  
5 a good one so we can try that tomorrow  
6 laura

Wednesday, May 10, 1995 6:17:30 pm  
Satellites Item  
From: vera stewart  
Subject: Re: Editing bits  
To: Satellites  
Anthony  
7 Laura and I will do the introduction and conclusion  
8 when you have finished editing.  
9 I think Laura has done some more work.  
10 Do you think we have done enough? There are so many  
11 areas we could cover it's impossiable to include them  
12 all.  
13 We will make the introduction and conclusion quite  
14 long and we still hope scan an image in.  
15 Vera

Wednesday, May 10, 1995 7:44:37 am  
Satellites Item  
From: ANTHONY P. RICHARDS  
Subject: Editing bits  
To: Satellites  
Cc: laura m. murrell  
vera stewart  
16 i have downloaded all the sections we have written so  
17 far and will edit them for a first draft which i will  
18 put on the system at the weekend. If you have written  
19 any more, can you let me know so i don't miss out any  
20 work.  
21 Anthony

The messages show an orientation to the goal of completion. The significant point in the three messages comes when Vera asks; "Do you think we have done enough?" (line 10). All three messages are designed to draw the work together into a coherent whole, and display an inclination to the sorts of course requirements outlined in the tutor's messages. They show a local negotiation of the contingencies of interaction, "it is difficult for anthony" (lines 2 and 3), "I think Laura has done some more work" (line 9) and "if you have written any more" (lines 18 and 19). This is set within the overall context of doing 'enough'. Vera notes that because there are so many areas the task is impossible (lines 10 and 11). Thoroughness is linked to bulk and Vera adds, "We will make the introduction and conclusion quite long" (lines 13 and 14) and Anthony is concerned not to "miss out

any work" (lines 19 and 20). It is clear from these concerns that 'enough' is connected to assessment rather than completeness. The aim for students is to comply with the course deadlines, meet the assessment criteria by doing what is sufficient. Sufficiency is not a clearly identifiable outcome and requires negotiation as to how much is 'enough'.

Overall the type of talk found in both student and staff 'talk' in the system is organized according to a common understanding of a task. That task is the completion of individual modules and of the course. The outcomes of the course are apparently issued from the top down but it is in and through the interactional specifics of their implementation that they are achieved. It is not clear to either the student or the tutor exactly what in each particular circumstance counts as a sufficient answer. The students are concerned with what is 'enough', while the tutor offers examples of good practice to illuminate the formal requirements of the course.

## **Discussion**

The institutional position of the tutor is exhibited in the production and use of the course aims and objectives. The tutor controls the definition of what counts as success within the conference. Assessment confirms that the tutor is in the position of holding specialist and superior knowledge. Despite the equation of computer conferencing with collaborative learning and the shift from knowledge giver to facilitator, the wider educational context remains one of assessment and accreditation. The tutor is the first line of that institutional system of accreditation of knowledge, determining what counts and how much is enough.

There is of course a second sense in which the tutor remains in command of superior knowledge despite no longer delivering lectures. The tutors are likely to know the answers to the questions they have set. Even when relying on the students' own experience, the arbiter of the validity of these experiences remains the tutor, who is assumed to have a superior subject knowledge to the student.

For Brown et al (1989) the idea of situation is a means to distinguish authentic and inauthentic settings. Thus, in their paper their position is made clear at the outset:

" Many methods of didactic education assume a separation between knowing and doing, treating knowledge as an integral, self-sufficient substance, theoretically independent of the situations in which it is learned and used." (Brown et al 1989 p32)

They argue that the primary reason for learning failure is to do with the abstract approach to cognition taken in schooling and advocate a variety of apprenticeship, whereby learning takes place in a 'real world' context as more appropriate and effective. This use of apprenticeship can be taken to imply that authenticity in learning varies according to how situated the learning is.

In a powerful analogy Brown and Duguid (1996) liken learning to theft. Knowledge is 'stolen' and a particular example is identified in the driving of a car.

"Cars are socially so well integrated that the learning becomes almost invisible. The success of learner drivers - with or without instruction- should undoubtedly be the envy and object of many who design far less complex consumer or workplace appliances. " (Brown and Duguid 1996 p51)

The link between cars and stolen knowledge, brings to mind juvenile car theft, a practice known in the United Kingdom as "twocing" (pronounced with a hard c), taking without consent. Juveniles take and drive cars, often at speed and in competition with police drivers. There is clearly an aspect of driving which is common social knowledge that can be informally appropriated. However I and presumably many of the readers of this paper do not wish to encounter a stolen car driven by an untrained driver. The driving of the occupants may or may not be particularly skillful. The driver might observe common road conventions, or they may not. In short the driving of a car taken without consent is unaccredited and the quality of the basic skills and knowledge of the driver are not assured. One of the obvious features of the educational setting observed was how much of the work conducted was oriented towards the documenting and authorizing of the practices of the participants. Educators and the students exhibit in their activity an orientation towards achieving not simply knowledge but accredited knowledge. Stolen knowledge is uncertain knowledge. Knowledge and learning are socially acknowledged in and through the practices of accounting and audit within an educational setting.

The use of the idea of 'stolen' knowledge highlights the idea of explicit elements of practice. Brown and Duguid emphasize that a great deal of what comprises a web of practice cannot be made explicit. The problem they claim is not abstraction *per se* but the detachment of abstraction from the practices in which they play a part.

"Abstractions *detached from practice* distort or obscure intricacies of that practice" (Brown and Duguid 1996 p59)

I would argue that this formulation of the problem and hence the juxtaposition between schooling and apprenticeship is mistaken on two counts.

Firstly it misunderstands the use to which formalisations are put with the definitions themselves. In many 'authentic' situations formal definitions, manuals, instruction sets etc. form a part of the situation. They are not self-contained though they are abstractions. In order to drive knowledge is required of a variety of abstractions, a Highway Code (in the UK), a vehicle manual and a variety of driving examination documents and a formal written test. These documents are part of the formal 'school practices' of learning to drive rather than the 'authentic' practices of driving. This is surely a 'know what' abstraction rather than 'know how' practice, but it illustrates the common use to which abstractions are routinely put. The social requirements for learning to drive rather than driving without consent acknowledge the distinction between accredited performance and informal practice.



Secondly the contrast depends upon the natural or 'authentic' setting appearing more efficient in educational terms, yet education depends for its existence on the acceptance of the view that natural settings do not suffice to educate. In their 1989 paper Brown et al use an extended analogy taken from Miller and Gildea (1987) that contrasts 'normally' learned vocabulary with use taught from dictionary definitions and exemplary sentences. They conclude that teaching using definitions and abstracted sentences is slow and unsuccessful. Elsewhere Brown and Duguid suggest that:

" rather than deciding ahead of time what a learner needs to know and making this explicitly available to the exclusion of everything else, designers and instructors need to make available as much as possible of the whole rich web of practice - explicit and implicit, allowing the learner to call upon aspects of practice, latent on the periphery, as they are needed." (Brown et al 1989 p54)

Making available a wide range of resources, the 'rich web of practice', without an explicit aim might seem to many educators a waste of valuable time. The idea of providing abstractions and formalizations in many educational settings is to provide scaffolding for learning, so that the natural process is rendered less opaque and the time spent deciphering a complex situation is reduced. Abstraction and formalizations cannot be contrasted to an authentic situation as they form part of it. The appeal being made here is to describe empirically situations for learning rather than to artificially divide them between school and authentic practices.

Macbeth (1996) makes the point that while the situated character of sense, meaning and social action stands as a fundamental insight, the argument Brown et al advance rests on a distinction between 'the ordinary practices of a culture' and classroom tasks taking place 'in the culture of school life itself'. Situatedness does not separate tasks within the classroom from those without as both are authentic in their own right neither more nor less situated. The moral question of the choice of schooling or apprenticeship styles of teaching becomes hidden. Macbeth recommends an alternative analysis that is both more and less than that offered by Brown et al:

"It is 'more' in that by the fullness of the concept we come into possession of an analytic commitment to describe the local, embodied, situated practices of teaching and learning in classrooms and elsewhere. It is 'less' however, in that this situatedness promises nothing to projects of ordering and / or reforming the affairs we study." (Macbeth 1996 p 281)

I would argue that the observations recorded here would support Macbeth in his contention.

In terms of computer conferencing it could be suggested that there is nothing to suggest that computer conferencing *in use* escapes the 'school culture'. It has been argued that examinations and testing are themselves both a test of the students and a test of the acceptance of a 'body of knowledge' (Kvale 1993). School culture is about passing on a

formalised and relatively fixed set of items to the student, a form of instruction. Universities at undergraduate levels are generally about the transmission of existing knowledge rather than the invention of new knowledge. The course unit observed was organised around group sub-conferences. Teaching was accomplished without a formal structure of lectures and tutorials and there were no examinations. Nonetheless the tutor assessed students for their understanding of existing knowledge.

Both staff and students oriented to this and made efforts to achieve assessable texts and visible processes so that the tutor could accredit the work done. The computer conference exhibits in its interactions 'school culture'. In this respect the assumption that the flexibility of computer conferencing can provide for collaboration in a way in which the classroom cannot is undercut by the wider institutional framework to which the participants clearly orient.

## **Conclusions**

The situation of learning can be anywhere. The insights of the situated learning model were a corrective to those that emphasized abstract 'canonical practices' to the exclusion of the hidden work enshrined in informal practices (Brown and Duguid 1991). They have since been taken up widely alongside other related theories to develop into a formalization of their own. Situated learning is taken to be an approach to education. This paper has tried to reflect on a situation of learning that has been proposed as a prime site for the development of some of the features of a situated learning model. Computer conferencing and CMC in general has been heralded as requiring cooperative and collaborative approaches. The tutor is said to be more a facilitator and a guide than a 'sage' imparting truths from on high. The most arresting feature of the computer conferencing setting observed was the pervasiveness of the assessment and accreditation procedures.

It was striking that for many observing educational settings as 'learning' the most characteristic element of education in practice had disappeared. This has echoes of Button's comments with regard to the sociology of technology where in a similar manner theoretical approaches rendered the particular features of the object of study invisible (Button 1993). A situated view of learning needs to describe just what it is in those practices identified as sites for learning that make them 'just that'. Learning as a social practice can be seen in this example to be produced in and through all its interactions, including the production of formalizations, canonical practices, assessed and accredited performances and artifacts. Many of the documents and formalizations produced can be seen as part of the 'technology of accountability' (Suchman 1993). They do not stand independent of the setting but are used as resources such that the work of accounting, in the sense of giving a reasoned explanation, can be done.

The nature of collaborative effort was oriented towards the expectations embedded in the course structure. How these expectations were achieved was subject to ad-hoc and mundane interventions. Collaboration was not something that could be pre-planned, either by good software design or by the pedagogic design of the course unit. It relied

upon in situ day-to-day management by and for the members of the conference. Similarly assessment, though specified in course documentation, was a persistent problem for the tutor in day to day management of the course. Collaboration and assessment are in this sense the common accomplishment of the members of the conference. This conclusion points towards the understanding of planning for educational applications as 'situated action' (Suchman 1987). However the observations recorded here tend to support the view that *all* educational practices are situated and that collaborative or co-operative methods are no more or less situated than traditional methods.

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