Examination of the socio-learning environment—an intrinsic case study using cognitive maps

Gurmak Singh
Wolverhampton Business School

Background and rationale

The purpose of this project is to explore the learning environment of students studying on on-line programmes. A three-phased approach was used. In the first, an extensive literature review was undertaken to establish the current perspective on the use of technology for teaching and learning.

The second defined the focus of the research and a framework for research was developed. The project focuses on the relationships and interactions the learners develop throughout their learning experience. The three main relationships covered in this project were underpinned by the work of Fowler (1999). The exploratory (or discovery) learning relationship focuses on the descriptive nature of the relationships the learners have formed. Fundamentally, these according to Wenger (1999) define the boundaries and context of the relationship between different groups. The formative learning relationship concentrates on the learner's feedback mechanism to guide them through the learning process. The third type of relationship, comparative, focuses on the relationship once the learner has become accepted as a member of the group. The learner at this stage has positioned himself with existing knowledge sets.

The findings point to the key areas of conflict between the developed on-line teaching and learning systems and the socio-learning environment of the learners. The main contention of the paper is that whilst current frameworks provide useful insights into the socio-learning environments of the learners many important aspects have not been fully explored. The findings support and build on current studies that propose that the level of on-line interaction received by students to be indicative of success of the learning process. Furthermore, the differing levels of interaction aid learners to consolidate their knowledge by communication with academic support groups, tutors, family and friends.

Details of the case

The Wolverhampton Online Learning Framework (WOLF) is a purpose built computer based learning environment developed by the University of Wolverhampton. Through close consultation between academic staff and developers, an integrated system has evolved which enables learners to access course notes, related resources, support materials and collaborative tools quickly and easily.

The WOLF system uses streamed Internet-based technology to bring together a wide range of powerful tools to create a multi-structured aid to learning. One copy of all learning material and associated resources is stored centrally and streamed to any user with access to the Internet, on demand. The key feature here, apart from being available when needed by the user, is the simplicity in updating and amending material, given only one copy is kept. Freeing lecturers from their previous paper chase ensures that all learners on the course have the 'correct' learning and assessment materials. Lecturers are free to keep improving the learning environment and adding to the learning materials. It is based on the simple acceptance of 'Anytime, Anywhere Study'. The development of content involves no programming (HTML etc.), which means that lecturers can update their material themselves or submit it electronically to a course administrator.

Profile of respondents

The respondents were predominantly mature learners: 7 male and 14 females with an average age of 26. They came from a variety of disciplines and possessed a range of educational qualifications. All were studying part-time and most had been with their organisations for just over three years. All had received training of using the on-line system. The study was undertaken in autumn semester 2000 with part-time learners in their final year Business Administration Award.

Students:	On-line students (BABA)
Module:	The Information Age Module (IM3007)
Time frame:	Semester 1, 2000/01

The key issues for the project were:

- How do students learn outside the classroom environment?
- What is the nature of relationships they form with other members of the tutor group, tutors, partner and colleagues at work?
- Implications of the findings for learning styles

Findings

First order relationships: tutor and learner
Whilst the relationship with tutors was considered to be essential for effective learning, respondents claim it varied depending on the teaching methods of the tutor, assessment task and the learning material available. Furthermore, they claimed that, in the majority of cases, the course material available on the system appeared to be designed to replace textbooks and lecture notes. The on-line system provided all the necessary material (module guides, assessment, lecture notes and references to key reading material) in an easily accessible form using this approach. Perhaps surprisingly, learners were comfortable with this approach as it was easier for them to translate their expectations of a traditional approach to the 'on-line' system.

First Level	Second level	Third Level	Fourth Level
Communication *(formative)*	Social environment *(formative)*	Routing information (formative)	Specialist guidance (comparative)
Learning experience *(formative)*	Group Membership (comparative)	Instant access	Use of IT
Feedback *(formative)*	Accountability (comparative)	Focused guidance *(formative)*	Verification (formative)
Variances in approaches	Confirmation *(formative)*		

Table 1: Relationship between social interaction and learning approaches

The tutor-learner communication mainly occurred when the learners needed re-assurances and guidance on the requirements of the assessment. Communication in this context was one-way, static and 'on-demand'. Learners suggested that the tutors replied to their queries in-depth but the response sometimes took over three to four days and by that time the other avenues had been found. Learners suggested that whilst tutors were keen to help them with the assessment task they were not always so forthcoming trying to 'teach across the wire'. The advantages of working in your own time, at your pace, without the need for irrelevant material outweighed the need for learning experience. This 'outcome-based' approach was evident in learners and tutors.

Second order relationships: learner and learner
All learners agreed that the majority of their time was spent on completing their assessment through group interaction, even when the assessment was an individual piece of work. The individual tasks offered advantages in that there was no reliance on other group members, however the learners complained it did create a *'feeling of isolation'* and *'working in the dark'*. To overcome this remoteness, the learners chose to discuss their progress with their tutor-group. Initially, the interaction was difficult as the learners did not know each other, but once relationships were built they became vital in all aspects of their study. Initially all e-mails were copied to all group members, but later in the course selective relationships were built. These group members became aware of each other's working patterns and knew when to expect replies to their communications. Learners were prepared to share material that they found, discuss the progress they had made but, not surprisingly, were reluctant to share their final work. Some learners suggested that there was pressure to circulate their work to group members and, in some cases, had done so to remain a legitimate member of the group. Whilst in other groups there was a feeling of shared responsibility to help colleagues; success was measured by group success even with individual assessments. Each member felt they had a role to fulfil within the group in order to justify their position in the group even though this meant taking on extra tasks.

This strong group membership resulted in an absence of clear assessment criteria. The learners came to a consensus and decided themselves the requirements of the assessment. Such group decision-making was seen as vital and the decision reached as the agreed 'absolute'.

Learners did not seem to mind communicating with a few of their colleagues but had experienced difficulties in large groups. Primarily in large groups *'there were too many people to please'* and there was a lack of individual identity. Furthermore, learners selected their own group members. Surprisingly, socio-economic factors such as peers who judged themselves, were encouraging and supportive, tolerated ambiguity and were reliable in completing their work. These characteristics are perhaps no different to any group work, whether it be on-line or traditional teaching method.

Third order relationships: learner and other University units
The designated 'course buddy' allowed the learners to contact a *'human-being'* when problems arose or clarifications were required. The form of communication was informative in that learners required guidance on 'where to get information' and 'who to contact'. The accessibility was the key issue: learners wanted a person on the other end of the phone line 9-to-5. The Course Manager, who was involved in other activities and frequently away from the office, could not provide the service required.

The Learning Centre was a key resource as most assessment tasks required some form of research. Learners suggested that as part-time working learners they did not have large amounts of time to spend seeking information in the learning centre. So, although the learning centre had staff available all the time, it was important for the learners to identify a key person with whom they could build some form of rapport. This would result in a more personalised service where the learning centre staff would recognise them and be aware of their needs without having to repeat the process every time they made contact.

Fourth order relationships: learner and the wider society
Whilst learners were able to share much of the material with their group members they did not think it appropriate to share their final [individual] assessments. Work colleagues who specialised in specific functions, such as IT, Marketing and Human Resources were used to feedback on completed and draft versions. The form of feedback generally resulted in the 'final check' before submission of the assessment. Most learners agreed that they did not receive any extra help from their work colleagues, but their involvement reassured them that they had not omitted any key issues. Many learners also suggested they used members of their family to read through their work.

Discussions and future developments

The learners are perhaps more aware of the change in learning environments when using learning technologies than their tutors. This is not surprising as research suggests that learners select such approaches because the method fits their circumstances and they have the appropriate communication and motivation skills. The issue is three-fold. First, there is a need to raise awareness amongst tutors of where and when learning occurs, certainly not in the classroom and not solely through tutor-learner interactions. The most disturbing finding was that learners adopt alternative learning strategies when the designed infrastructure fails. Second, although social learning research has made significant steps forward, it is in vain unless it becomes an implicit part of the teaching and learning strategies of the on-line systems. Third, the learning technologies are particularly useful for part-time mature learners who are self-motivated and self-disciplined but they need assurances, especially in the early stages, from the human tutor.

The findings suggest that learning may take place in a wider context than suggested by the Fowler and Mayes (1999) model. First order relationships appear to be the most explorative focused where the learners are establishing the boundaries and context of their learning. In this context the relationship between the learner and the tutor is passive, in that the latter provides the information and the former collects as much information as possible. In the second order relationships there is more formative learning between the learners. Initially the relationships are fragmented and cautious but later these become more selective and comparative.

The findings from the project will be significant for learning-technologies research, tutors and courseware developers. The project will also provide basis for three-strand research. First, the implication of the findings on learning styles will enable the gap between learning technologies and pedagogy to be narrowed. Second, the findings will aid tutors to design and deliver on-line modules more effective. Finally, the project will provide foundations to develop guidelines for courseware developers.

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