11 Motivating Students towards Online Learning: Institutional Strategies and Imperatives

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Abstract

This paper examines the issue of motivation as it applies to online learning. It argues that whilst institutions are currently focussing much effort on the integration and embedding of virtual learning environments, the student perspective is receiving very little attention. Institutional strategies include adopting training and support for academic staff in developing online learning, support for institutional structures to enable the integration of systems and the sharing of good practice and expertise. However, there is very little evidence that institutions are giving enough consideration to the student perspective and in particular the issues of motivation and engagement. The paper begins by examining the characteristics of good motivation and learning approaches that can be characterised as 'open' and 'closed' approaches to learning. It then examines Keller's (1983) instructional design model for student motivation and his four components that contribute to motivation: arousing interest, creating relevance, developing an expectancy of success, and providing extrinsic/intrinsic rewards. The paper then provides key findings from the evaluation studies to illustrate specific instances of how the nature of the learning environment affected motivation either beneficially or detrimentally. The paper concludes with a set of suggested strategies for optimising levels of student motivation towards virtual or online learning in order to ensure that the organisational investment in new approaches to learning will be repaid through high levels of student participation and effective learning. These conclude that virtual learning needs to provide opportunities not available elsewhere; that tangible extrinsic motivators need to built in; that learners must have clear expectations in a virtual environment; specific guidance is needed to exploit opportunities and the level of threat must be managed through support and peer group induction. The paper ends by outlining future work to be undertaken in this area to exploit the ideas further.

Keywords: Virtual Learning Motivation

1. Introduction

The potential of virtual and managed learning environments (VLEs, MLEs) to support new ways of learning and increasingly diverse students is widely recognised and anticipated. The explosive uptake of VLEs at UK higher education institutions over the past few years reflects the drive from governments and institutions to exploit the full potential of these new technologies. A recent UCISA survey (Armitage et al, 2001) reported a 13% uptake of VLEs in 1997 compared to an 81% uptake by 2001. Another more recent survey (Stiles, 2002) of 127 HE/FE institutions found that the vast majority of institutions have selected VLEs for one reason above all others: *'ease of use by staff'*. The UCISA survey substantiates this finding 'the focus of the impact of VLEs on institutions is on *staff* rather than *students*' and concludes that 'VLEs are widely recognised as an important component of an institutional strategy yet is poorly matched by delivery' and 'mature support mechanisms have (…) yet to be comprehensively developed across the sector'.

Clearly, institutions in the UK and throughout Europe are focussed on the key question "How can we make virtual learning work?" Institutional strategies already include training and support for academic staff in developing online learning, support for institutional structures to enable the integration of systems and the sharing of good practice and expertise. However, there is very little evidence that institutions are giving enough consideration to the student perspective. Online learning offers more flexibility and choice to students including the ability to opt out as well as opt in. We therefore need to consider what will make students want to engage with this new form of learning. There appears to be an assumption at present that students will automatically be motivated or alternatively that coercion is a satisfactory. means of ensuring engagement and therefore effective learning.

In this paper we examine the issue of motivation and the highlight the critical factors which emerge for those in institutions who are implementing and designing virtual learning to ensure that students will engage and become effective learners. We begin by considering some theories of motivation in learning in order to understand how motivation might affect the learner. In particular we examine the work of John Keller in developing a model of motivation specifically for instructional design. Findings from two evaluation studies previously undertaken by the authors will be presented to demonstrate some motivational issues students have encountered. We then consider some of the unique characteristics of online learning in order to apply these theories and develop our own understanding of the motivational context for online learning. Finally we present

some strategies resulting from this work which can be adopted by both educational designers and those involved in implementing online learning across their institutions.

2. Theories of motivation in learning

2.1. 'Open' and 'closed' learning

In this section, we consider some theories of motivation in learning which resonate with the concerns and approaches that are particular to online learning. Achievement Goal Theory is a recent development of the goal theory tradition (Ames 1992, Dweck 1986, Urdan 1997, Urdan & Maehr 1995, cited in Covington, 2000). Two kinds of goals are identified – learning goals and performance goals. Learning goals aim to increase competency, understanding and appreciation for what is being learned. Performance goals involve outperforming others as a means to increase status.

The hypothesis put forward by the achievement goal theorists is that learning goals support deep level, strategic-processing of information, whereas performance goals encourage superficial rote level processing which has a stultifying influence on achievement. Covington (2000) also states that learning goal oriented students exhibit "cognitive self regulation", that is being actively engaged in one's own learning. This active engagement in one's own learning has been shown to assist students in monitoring their understanding of what is being learned (Meece & Holt 1993; Middleton & Midgley 1997, Archer 1994, cited in Covington, 2000).

Viewing the same distinction from a psychoanalytic point of view, Bion (cited in Waddell, 1998) describes two possible orientations towards learning originating in the individual's infantile experience of how uncertainty and anxiety was managed for the child and mediated by the carer(s). "K linked" learners are motivated by curiosity about their environment, and derive satisfaction from learning about it, able to manage anxiety about errors and the unknown, to apply learning creatively and to integrate it into the whole personality. In contrast, "-K linked" learners learn about the environment in order to control it and thus reduce the level of unmanageable anxiety. Learning is defensive, treats knowledge as a commodity to be possessed, and tends to be narrowly intellectual.

Although there are differences in perspective and emphasis, these theories all seem to have at their heart the same basic distinction, between learning that has either an "open" or a "closed" orientation, as shown in Table 1.

Covington (1992) in his self-worth theory suggests that the perception of an individual's own ability dominates his/her willingness to learn. As a result he advocates non-competitive learning structures, such as mastery learning, co-operative learning and contract learning (e.g. individual goal setting) in addition to rewards.

A premise of this paper is that in designing online learning, we should aim to engage the learner in an "open" learning orientation in order to encourage personally driven motivation.

Orientation	
"Open"	"Closed"
Learning goal	Performance goal
K learning	-K learning
High self-worth	Low self-worth
Characteristics	
Exploratory	Controlling
Collaborative	Competitive
Motivated by curiosity	Motivated by anxiety
Embraces failure	Defends against failure
Creative	Mechanical
Fluid	Rigid
Self-motivated	Externally motivated
Whole person involved	Mind alone involved

Table 1: Orientation and characteristics of learners

2.2. Motivation and instructional design

Keller (1979) argues that motivation is the "neglected heart" of our understanding of instructional design. Historically this has always drawn upon how people learn but not why.

As part of his theoretical work on motivation, performance and instructional influence which examines cognitive and environmental variables and how they relate to effort, performance and consequences, Keller developed a macro model to demonstrate the different influences that learning designers need to understand and control. Keller's related model (1983) demonstrates the different motivational strategies that can be employed within instructional design: interest, relevance, expectancy of success and developing satisfaction (see Figure 2).

Keller maintains that by arousing and sustaining interest, we can ensure that the learner is engaged. However, this must not be too risky. Keller (1978) has shown that people need to feel comfortable about the consequences of taking risks before they will exercise curiosity.

By creating relevance, Keller suggests that the learning must "connect to important needs and motives" and that unless the learner perceives that these personal needs can be met, they

will not be sufficiently motivated. These include the need to develop trust and affiliation and opportunities for no-risk, co-operative interaction. Salmon (2000) also emphasises this need to minimise risk when beginning to work online and her 5 stage model for online tutoring provides opportunities for "safe" interaction.

Developing an expectancy of success is described by Keller as one of the most difficult strategies to implement although in fact this is probably one of the best developed categories within online learning environments. Keller describes strategies to increase experience of success, ensure the requirements for success are understood, personal control is available and expectancy of success is increased by providing feedback and other devices to connect success to personal effort.

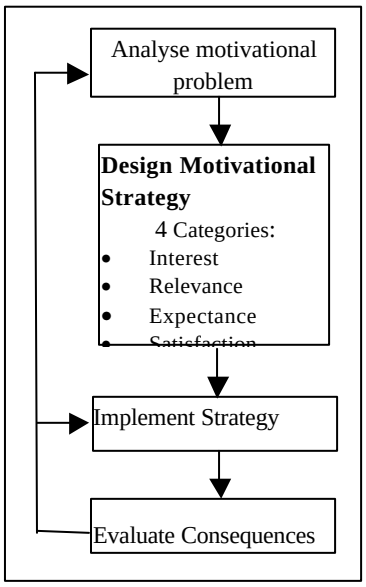

Figure2: A model of designing motivation instruction

Satisfaction, the final category in Keller's model concerns strategies that increase both intrinsic and extrinsic rewards. Keller describes the difficulties of balancing these two, the danger that one may outweigh the other and the need to manage them carefully.

Keller provides some useful guidance in thinking about motivation in the design of learning, however, he focuses on the instructional material rather than the context in which the learning takes place. When working online, the context is much less controlled than in face to face situations and is likely to be a more critical factor. We will return to this later in this paper when considering motivational strategies for online learning.

3. Evaluation findings

In order to investigate the relevance of Keller's model and the 'open and closed' orientations, two evaluation studies, previously undertaken by the authors, were re-examined to look more closely at the motivational aspects of the findings. The two studies represent the two main ways of implementing online learning, namely for campus-based students and distance learning students. The studies were a TLTP funded project for the Pharmacy Consortium for Computer Aided Learning (PCCAL) and Repromed, an NHS funded evaluation of an Internet based course in Reproductive Medicine. Each of these studies will be briefly introduced, relevant findings will be presented and where appropriate, link these to motivational strategies and theories discussed earlier.

3.1. PCCAL study

The evaluation (Timmis et al, 1998) consisted of 11 separate case studies involving whole year groups of undergraduate pharmacy students at five UK universities and a total of 854 participants. It investigated the effectiveness of courseware modules produced by the consortium and their impact on student learning. There was also a strong emphasis on evaluating different methods of implementing and embedding the material. An illuminative and integrative methodology (Parlett & Hamilton, 1977, Draper et al, 1995) was adopted, using a range of methods including pre and post-tests, classroom observation, questionnaires and focus groups.

The evaluation found that students frequently lacked appropriate learning strategies to help them get the most out of a task. In almost all the studies, it was found that students suffered from a lack of guidance and many of them worked through material sequentially even when they were already familiar with it or undertaking revision. Often they did not progress to the material that was of most use, as these quotes show:

"*Today I started at the beginning and worked my way through but (…) it would have been the third section that would have benefited me the most but I didn't get round to it*"

"We should be told which bits we're concentrating on"

These students' remarks display a measure of anxiety and caution over how to approach their learning and needed more encouragement to adopt a more exploratory, "open" orientation.

Similarly, in observing students in the classroom, it was found that note-taking was influenced by both the tutor's input and by group behaviour. Students appeared to be highly suggestible and either everyone took notes or little or none was observed throughout a session. Furthermore, collaboration and discussion between students was only observed where this had been organised and directed by the tutor, despite the fact that student views supported this approach:

"I think that's helpful (…) working with someone else, sometimes you can understand it better. Whereas in a lecture you can't do that 'cause you can't talk"

Keller suggests increasing the expectancy of success by using instructional-design strategies that indicate the requirements for success and by using techniques that offer personal control over success. We would argue that if these students had been given more guidance on explorative learning strategies and working co-operatively, their motivation and personal success would have been enhanced.

In one case study, students were asked to study in their own time. This was found to have a direct effect on their willingness to learn and overall success. Students were given four weeks to study the package for revision purposes, shortly before exams. The findings were very striking as large numbers of students did not study the package at all. Those that did (only 28 out of 110) spent little time studying and felt very strongly that it had not been scheduled at an appropriate time and the material was too easy.

"We're very pressed for time and it wasn't a difficult area to understand"

"Anything relevant was very easy"

Keller recommends that "to arouse or maintain curiosity, give people the opportunity to learn things they already know about (…) but also give them moderate doses of the unfamiliar and unexpected".

Furthermore, the same students also felt that the task offered little extrinsic motivation.

"If it was part of the syllabus, I think we'd feel more otivated(…) So I didn't really feel like spending much time on it."

As already mentioned Keller is concerned that extrinsic reinforcement will decrease intrinsic motivation and that this may encourage a more closed approach to learning. However, these students could not connect the task to personal needs and motives so both kinds of motivation were absent.

3.2. ReproMED

This evaluation (Jenkins et al, 2001) was of a course in Reproductive Medicine delivered over the Internet to 18 specialist registrars in Obstetrics and Gynaecology. It consisted of 5 monthly case studies, each illustrating a major aspect of the subject. The text of the case study was presented along with questions to which the participants were expected to respond electronically. Evaluation was by interview, questionnaire and logs of server activity.

The evaluation found that active participation was very low - only 5 of the 18 registrars posted responses with any regularity. A key reason for this may be that participants were wary of losing face in front of their peers and superiors, exacerbated by the public, written and therefore fixed nature of online text communication. As one participant commented:

"You think, my God, they're going to find out I don't know anything".

In Covington's terms, participants clearly experienced a threat to their sense of self-worth. According to Keller's model, the course did not seem "to satisfy the need for affiliation, establish trust and provide opportunities for no-risk, co-operative interaction".

Not only were the postings few in number, but their style was very formalised, comprehensive and careful. Very few answers were tentative, exploratory or polemical, and this seemed to discourage follow-up comments and discussion. Some participants expressed disappointment with these "exam-type" answers, and the tutors commented that they'd hoped for more discussion. It may be that the unfamiliar format and medium meant that participants did not know what kind of responses were expected and so fell back on what they knew and assumed would be acceptable. The format seemed to engage Bion's -K learning, participants seemed to adopt a defensive approach rather than a more exploratory one. Participants appeared to interpret the task in performance goal terms and felt they were expected to produce a perfect finished product. Keller suggests that educators should "increase expectancy for success by using instructional design strategies that indicate the requirements for success". Perhaps participants felt demotivated and discouraged from participating creatively because they were unsure of what these requirements were. A third relevant finding was that participants who took the most active part were generally those who a) had an intrinsic interest in the subject and crucially b) did not have that interest satisfied by another means. One participant was planning to specialise in Reproductive Medicine, but felt no need to take an active part in the course because he was in regular face-to-face contact with the course tutors. His intrinsic interest in the subject did not translate into intrinsic motivation to follow an online course, whereas another participant who was very active was located over 100 miles away.

Some participants commented that an extrinsic motivator, such a certificate for following the course, might have been effective. However Keller comments that external inducements can have a detrimental affect on intrinsic motivation, which "decreases as the perceived locus of control shifts from internal to external". Nevertheless much learning in higher education is driven by extrinsic factors, largely assessments and examinations, even though these all seem to encourage a performance goal orientation and to discourage exploratory, risk-taking learning.

Both of the evaluation studies provided examples of where the instructional design or management failed to enhance, or even had a detrimental effect upon learner motivation. Keller's model of motivational design, as well as Goal theory, self-worth theory and K/-K theory can contribute to our understanding of how and why this may have happened.

4. Characteristics of online learning

We will now consider some of the characteristics of online learning in order to help clarify the role of motivation and the motivational context for this new form of learning.

Goodyear (in Steeples and Jones, 2002) suggests that one of the unique aspects of networked or online learning is that it is inherently social. "Part of the point of encouraging online communications within a learning group (or 'learning community') is to capitalise on some of the social aspects of learning" (page 51). However, Goodyear also makes the point that we cannot expect learners to be totally compliant no matter how good the pedagogy and educational design. Building a learning community needs commitment from participants, as it is they who will create the community.

A second area to consider is the tasks and activities students are asked to undertake. Spector (in Steeples and Jones, 2002) talks of networked learning as "blurring the distinction between learning and working" (page xvi). This idea is similar to that developed by Goodyear, (in Steeples and Jones, 2002). He uses the term 'working knowledge' to represent active and dynamic knowledge, implying that the learner exercises a degree of improvisation and acts at the edge of their knowledge. This suggests that online learners construct and co-construct knowledge in a proactive, explorative way, resonant of the "open" orientation to learning we introduced earlier in this paper. This kind of learning requires different levels of support and implies a new role for tutors, already well documented by Salmon (2000) with her five stage model for "e-moderating" online.

A third characteristic of online learning is its flexibility of time and place. The fact that students and tutors do not need to meet together in order to communicate has frequently been highlighted as one of the positive aspects of this form of learning. Certainly it features heavily in literature provided by commercial suppliers: " …a personal information source with the most recent and relevant information 24 hours a day." (Blackboard, 2001) Nevertheless, this "open all hours" approach brings its own challenges. Richardson & Turner (2000) and Jones (2000) both highlight the need for effective time management in relation to students' successful use of virtual or networked learning. Furthermore, the flexibility provided by the "any time, any place" medium also means that there is little control over what the student actually does. As Jones (2000) observes in a study of student experiences with networked learning: "The students made selective use of the network technology provided, moved outside its framework and used a variety of other means to achieve their objectives."

5. Motivational strategies for online learning

The following motivational strategies draw together our conclusions. They address the specific needs of online learning and are designed to complement Keller's strategies for motivational design of learning.

Virtual learning needs to provide learning opportunities that are not available elsewhere

Whilst there is plenty of evidence to show that students are strongly supportive of learning technologies (e.g. Laurillard, 1994) and virtual learning environments (e.g. Richardson & Turner, 2000), the Repromed study suggests that virtual learning can be perceived by learners as inferior compared with face to face contact except when learning at a distance. Richardson & Turner (2000) also found a similar response amongst campus-based students who saw virtual learning environments as supporting rather than replacing direct contact and who wanted to feel part of a physical group. It should therefore not be assumed for example that in an on-campus setting, learners will be automatically motivated to hold peer to peer discussions online. This does not necessarily mean however that learners will only be motivated to use virtual learning in a distance learning context. Virtual learning does offer its own unique learning opportunities, but these need to be carefully designed to ensure all students have a need to engage.

Tangible extrinsic motivators should be built in to virtual learning

Ideally instructional design should aim to maximise learners' intrinsic motivation, as this is believed to be more powerful than extrinsic motivation, and leads to deeper and longer lasting learning. Moreover, as Keller states, working towards extrinsic goals can shift the perceived locus of control from internal to external, and remove much of the inherent pleasure in learning. However, the current reality is that higher education is largely exam driven and learners are motivated to study what will help them achieve their immediate extrinsic goals.

It must be clear to learners what is expected of them in the virtual learning environment

Learners will be motivated to make use of virtual learning opportunities if they have a relatively high expectation of being able to use them successfully. This will come in part from previous experience of success. In order to maximise their success; learners need to be given strategies that will give them confidence that they can use the environment appropriately. In terms of online communication, this can be done by training learners to use online communications tools in a gradual, structured way progressing from simple factual communication to more sophisticated discussion (Salmon 2000). In terms of using resources such as CAL simulations and tutorials, learners need to be given strategies that will enable them to approach the materials knowing what they want to get out of it and how.

Learners need guidance in how to make the most of the online environment within specific learning contexts

There is a danger that virtual learning will be used as an add-on resource or support or alternatively a universal approach may be adopted with a "one size fits all" philosophy. Laurillard

(1994) emphasises that the learning context is critical to whether learning technologies are successful. Our studies indicate that the way in which materials and learning episodes are introduced can have a far-reaching impact on the motivation of the learners and subsequently the success of the learning undertaken. They show that without clear guidance, students will not automatically collaborate with each other, approach the material selectively or even take notes. A similar view is suggested by McConnell (2000, p 72) when talking about developing online learning communities he states that "working with others in online environments is so unusual that we may have to approach it as if it is a completely new experience. Relying on well born strategies, and working from common assumptions about how groups work in face to face environments, is not always the best orientation to take". Virtual learning needs more, not less introductory and contextual guidance, together with ongoing support and active tutor involvement.

The level of threat must be managed through support, gradual induction and peer group working

McConnell (2000) states that co-operative learning involves learning in public and that not everyone is able to deal with this challenge. According to Keller, instructional design needs to take into account people's need for affiliation with and influence over others, and should therefore offer a no-risk environment where this is possible. It might be argued that the relative anonymity and lack of status signals available with virtual learning helps to reduce risk. However it also offers the learner far less feedback than a face to face situation about how his/her contributions are being received. Strategies such as having people meeting face to face or even by videoconferencing before interacting online can help to overcome this. Working in small groups in separate areas away from the evaluative purview of the tutor may also help.

6. Conclusions

In this paper, we have explored the way in which motivation in online learning can be understood and optimised. We have identified some specific strategies for designers and tutors to build upon to ensure that motivation is not assumed but planned for and that the "neglected heart" that Keller refers to will become an essential element in the design of online curricular. Future work in this area will focus on developing a model of the motivational aspects of virtual learning by further exploring what is unique about this new form of learning and how this will impact on motivation. Observing and talking to students about their experiences will also help to inform and develop this new area of understanding and allow us to develop practical as well as theoretical tools to support this.

Acknowledgements

The PCCAL evaluation study was funded under the Teaching and Learning Technologies Programme of the Higher Education Funding Councils of the United Kingdom.

The Repromed study was funded by the National Health Service of the United Kingdom.

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