

Linking Perceptions of Control and Signs of Engagement in the Process and Content of Collaborative E-Learning

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ABSTRACT

This paper explores various theoretical models relating to control and motivation. Following this, we propose that perception of control is one of the crucial factors influencing motivation and thus engagement with learning. We have focused on individual learners' perceptions of control and how this might be related to their engagement with collaborative e-learning in terms of process and content. To assess this, we have developed a questionnaire that draws on the many factors that could influence control and motivation. Some preliminary descriptive results from a trial of the questionnaire are briefly outlined.

Keywords

Control, Motivation, Engagement, Collaborative elearning, Self-efficacy; Locus of control

INTRODUCTION

For e-learning to be effective, we need learners to engage with the proposed learning activities. To do this, it seems likely that learners will need to be motivated. We propose that perception of control is one of the crucial factors influencing motivation and thus engagement with learning. Within the EQUEL SIG on communication and control, we have focused on individual learners' perceptions of control and how this might be related to their engagement with the learning in terms of process and content. In this case, process is seen as including the use of tools for collaboration to achieve a learning task.

THEORETICAL BACKGROUND

Control and motivation

Drawing from authors such as Deci and Ryan (1991) and Viau (1994), we identify 'control' as 'being in control'. This can be described as individuals feeling that:

- their behaviours are self-determined, that they have mastery over what they do, and that they can make the choices needed to succeed;
- the consequences of their behaviours are dependent on them, there are no other external factors that will interfere with their behaviours to influence the consequences of their actions.

It can thus be seen that synonymous with control are perceptions of autonomy, self-determination, and self-judgement. Ryan and Powelson (1991) see these as the "fundamental needs that energized learning prior to compulsory schooling" along with 'relatedness', or the emotional and personal bonds that exist between individuals in the learning setting and at home. Thus there seems to be a clear link between the feeling of autonomy and motivation. Having autonomy over one's actions and control of the consequences of those actions influences motivation.

Motivation exists in many different forms and at different levels. Thus, while teachers may aim to encourage the development of intrinsic motivation as it reflects the "natural human propensity to learn and assimilate", extrinsic motivation is also likely to be a significant driver in the formal learning setting (Ryan & Deci, 2000). It is therefore important to review whether learners feel that tasks have been forced on them, or if they perform

learning tasks with “an attitude of willingness that reflects an inner acceptance of the value or utility of a task” (Ryan & Deci, 2000).

Ryan and Deci (2000) also highlight the importance of perceived competence, or self-efficacy, particularly in relation to intrinsic motivation. Referring to *Cognitive Evaluation Theory* (CET) they argue “interpersonal events and structures (e.g., rewards, communications, feedback) that conduce toward *feelings of competence* during action can enhance intrinsic motivation for that action because they allow satisfaction of the basic psychological need for competence”. (Although they stress that to enhance intrinsic motivation, individuals must perceive both competence and autonomy.)

These elements or factors are also seen in the work of Viau (1994), whose vision of motivation is based on three factors that are grounded in learners’ perceptions of themselves and their context. Viau highlights the importance of individuals’ perceptions of:

- activity worth (utility, meaning of the activity),
- their own competence to achieve this activity,
- their control over the activity.

Motivation and engagement

As stated by Viau (1994), control is a factor of motivation, and motivation is indicated by engagement. Studies related to engagement are grounded in earlier work that has focused on ‘dropout’ – considered to be the ultimate state of non or dis-engagement (Tinto, 1975). This highlights the importance of taking into account the problem of disengagement in distance education and collaborative e-learning. Developing this area, Willis (1993) proposes to distinguish between institutional engagement (integration of the student in ‘campus’ life) and academic engagement (connected to factors directly linked with learning). He also picks up on, as Viau did, studies of student perceptions about the nature of academic involvement in learning (and not only observable behaviours). Academic engagement is defined as *engaging in the activities of a course program with thoroughness and seriousness*. Indicators of academic engagement are **cognitive** (organising and planning his/her own work, entering deeply into learning on his/her own), **affective** (being motivated, persevering, taking pleasure in the course, being interested), **conative** (giving the necessary energy and time) and **relational**.

Control within collaborative e-learning

The above informed the choice of categories used in the development of a questionnaire to investigate the relationships between control and engagement. Early discussion amongst the authors also highlighted that the underlying tendencies of individuals to take control might be of significance. It was thus decided to apply the concept of locus of control to the collaborative e-learning setting (Rotter, 1966). Locus of control ranges on a scale from internal to external, and varies according to context rather than being a stable personality trait. An internal locus of control attribution is a sign that the individual has internalised the reasons of his actions: the ‘why’ of his actions are situated in his own needs. An internal locus of control attribution for a given task means that the subject has either an intrinsic motivation or an internalised extrinsic motivation.

The context of collaborative e-learning directed the development of the questions themselves. Thus, the focus of questions related to control and:

- the process of collaborative learning activities, e.g. whether learners could make choices about what to do, how to do it.
- the learning context, e.g. the extent of direction and support from tutors, and the influence of their learning group.
- the collaborative tools, e.g. whether learners could choose to use what appeared to them as the best tools.
- any external factors, e.g. the influence of their home environment.

METHODOLOGY

Course context

In the first instance, the researchers investigated a large group of subjects following an on-line course, with a broad range of ages, background disciplines, social situations and computer skills. It was hoped that this would reduce the influence of such context factors within the relatively small set of respondents. Also, since the main interests were to find out about links between engagement, motivation, and control in the context of collaborative e-learning, there would need to be aspects of collaborative work on-line.

The course under study took place between February and June 2003. This is an obligatory course within a programme for individuals training to become secondary school teachers in Belgium. The course was considered appropriate because of the large number of students involved (approximately 200), and the composition of people. The course is intended for students coming from ten faculties with a background in anything from literature to chemistry. This gives a broad range of age, studies, objectives, cultures, occupations and also a very scattered population.

The course is designed in two parts, where the first part (seven weeks) is lecture based, and the second part, which runs in parallel with the lecture component for the first seven weeks, but continues for a further seven weeks, is computer supported collaborative work. This gives students the opportunity to use ICT and to get familiar with online collaboration. There are aspects of deciding on a common theme, producing a collaborative paper and cross-evaluation involved in the 7-week course. The platform is iCampus, which is based on the Claroline eLearning tool developed in Louvain, see Figure 1. The general pedagogical set up is presented to the students during the first week: themes to be worked on, methods, planning, evaluation criteria, etc.

Figure 1 – The opening screen for the ‘aggregation’ course, using the iCampus platform, incorporating a schema of the course timetable. Available at <http://www.icampus.ucl.ac.be/AGRE2221/>

Vous êtes sur le site du cours de **technologies de l'éducation de l'agrégation**. Ce cours présente en sept semaines, différentes ouvertures sur les technologies pour apprendre et enseigner : aspects techniques, aspects relatifs à l'apprentissage et aux dispositifs pédagogiques, aspects d'évaluation. Ce cours, constitué de sept leçons, s'accompagne d'un travail de groupe des étudiants. Le cours est construit de manière à accompagner les étudiants dans leurs travaux.

Un raccourci de la pensée associe rapidement nouvelles pédagogies et nouvelles technologies ... la rime est belle mais qu'en est-il dans les faits. Les nouveaux outils n'apporteront un plus à l'enseignement que dans le cadre de nouvelles pratiques pédagogiques, plus centrées sur la personne de l'étudiant, sur le développement de ses compétences (au-delà de l'accumulation des connaissances), sur l'interaction relationnelle des êtres qui, tour à tour enseignants et apprenants, peuplent le triangle pédagogique.

Quelques idées en quelques mots :
[Un article du Vif-l'Express](#)

Un schéma vaut mieux qu'un long discours (voir consignes) :

Activité	Début	Fin
Inscription au cours	9/2	16/2
Constitution des groupes	16/2	23/2
Thèmes	23/2	29/2
Travail de groupe	29/2	1/4
Dépôt de travail (8 jours) dans "Travaux"	1/4	16/4
Travail critique	16/4	16/4

Constitution itinéraire groupes

Le cours se donnera au Mont02

The questionnaire

A questionnaire was developed to assess students' perceptions of control and provide an indication of level of engagement. The design was based on the theoretical framework explored above; with the hypothesis that "Sense of Control" may be one crucial factor among others that influences student engagement in learning. A number of scales were created to address the constructs identified above. The scales consisted of: Computer

Ease (3 questions); Self-efficacy (3 questions); Motivation (8 questions); Perseverance and Engagement (5 questions); Control over Learning (4 questions); Locus of Control (4 questions); Control and Collaboration (8 questions); External Factors (3 questions) and Value (5 questions). Background demographics were also collected, including variables such as sex, year of birth etc. The questionnaire was developed and piloted in English, since that was the common language of the researchers involved.

The questionnaire mainly consisted of structured questions where subjects were asked to rate their agreement with a number of statements from fully disagree (1) to fully agree (4) on a 4-point scale. There was also an option of ticking an "X" for "does not apply". At the end of the questionnaire, three open-ended questions were asked about their feelings of control, their engagement with learning, and other comments.

The questionnaire was posted on the web in December 2003, when students were sent an email invitation, asking them to complete the questionnaire.

Analysis

At the time of writing, the data has been analysed only by looking at frequencies of different aspects of engagement and perception of control from the questionnaire. In a later paper the authors will look at correlations between the different themes by grouping the questions to get a value for each theme and then run statistical analysis in order to examine the interactions across the themes.

RESULTS

Background information

Sixty three completed questionnaires were returned. Of these, 73% were from women. Only half of the respondents were full-time students. Almost half (47%) had studied their course work at home, while 35% studied on campus, 5% at the library, and 13% at work or in some other location.

The following represents a selection of the results relating to the factors described above. Percentage responses are given against the original statements in the questionnaire, where 1 is "fully disagree", 2 "rather disagree", 3 "rather agree", 4 "fully agree" and X is when the statement does not apply.

Computer Ease – Competence

In general	1	2	3	4	X
I feel confident using computers.	0%	6%	37%	57%	0%
I feel confident using computers as a learning tool.	5%	21%	38%	36%	0%

Generally, respondents felt competent in using computers, though this picture was less strong when using computers for learning.

Self-efficacy

Before I started the course	1	2	3	4	X
I felt confident about the topics to be covered.	8%	22%	48%	21%	1%
I thought it would be difficult doing it over the Web.	21%	28%	29%	22%	0%

Compared to computer ease, there is a slightly less positive feeling, though respondents still indicate that their perceptions of self-efficacy in relation to the course content are high. There is, however, a wider spread of perceptions regarding potential difficulties of learning over the web.

Motivation – before, during and after the course

	1	2	3	4	X
Before I started the course, I did not think I would enjoy it.	26%	39%	25%	8%	2%
During this course, I enjoyed the process of learning - it was fun.	19%	21%	39%	19%	2%
After the course, I wanted to learn more.	22%	30%	26%	22%	0%

From these descriptive data, the overall impression is that respondent motivation levels fell slightly from before to during to after the course.

Perseverance and engagement

(Percentage responses are given against the original statements in the questionnaire, where 1 is “fully disagree”, 2 “rather disagree”, 3 “rather agree”, 4 “fully agree” and X is when the statement does not apply.)

During this course	1	2	3	4	X
I often gave up when I did not understand something	38%	32%	8%	1%	21%
It was important to me to do my best.	3%	24%	43%	24%	6%

From the above statements, it appears that perseverance and engagement among those who responded was high.

Locus of control

After the course, I feel that	1	2	3	4	X
Being in control of my learning is important to me.	2%	3%	42%	47%	6%
I expected the tutor (teacher) to lead the course more.	8%	35%	26%	18%	13%

There is a strong indication that respondents felt that being in control of their learning is significant. Yet, how this occurs in the course may be perceived differently among students. The second statement, which suggests that some students expected more direction from the tutor, i.e. that the tutor would take control more, demonstrates this.

Value

It was important to me to take this course because	1	2	3	4	X
Working in groups is a good initiation for team work in society	3%	13%	43%	40%	1%
Learning with technologies is a necessity for lifelong learning	5%	16%	51%	27%	1%

The drivers for taking this course may be indicated in the above statements. It is particularly interesting to see that the respondents place a high value on group work and the use of technology in relation to lifelong learning.

Control and collaboration

Concerning the group work	1	2	3	4	X
I think group work is very useful when it comes to expanding my own thinking about the subject.	0%	10%	52%	36%	2%
I learnt a lot from my peers during the course.	24%	41%	22%	11%	2%

The value placed on group work in the section above is further explored in these statements relating to collaboration and group work. It is perhaps surprising, however, that although the majority of respondents felt that group work improves their awareness of a subject, a large proportion did not feel that they learned a lot from their peers.

CONCLUSIONS

Overall, we can see that there are many factors influencing motivation, and these are likely to be at different levels. For the purposes of this study, we have focused on the factors that appear to relate to the feeling of control in the collaborative e-learning setting. These factors have been explored, and a questionnaire developed to investigate the presence or otherwise of control and engagement amongst learners.

At the conference, the development of the questionnaire, and the model upon which it is based will be further described, along with descriptive findings and initial conclusions. Future work will relate to the testing of more detailed hypotheses in relation to control and engagement.

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