

The effect of using a virtual learning environment on technology students learning experiences: an update

Aidan O'Dwyer, School of Electrical Engineering Systems
DIT Kevin St., Dublin 8, Ireland. aidan.odwyer@dit.ie



Abstract

This contribution evaluates usage of web-based resources within the Webcourses virtual learning environment (VLE), and the linkage between the use of these resources and summative assessment outcomes, primarily for one first year, Level 7 student cohort.

Introduction

There is increasing emphasis on information technology and web-based learning applications in engineering education, driven by:

- The need for students to learn a wider variety of concepts (ideally in a self-learning mode);
- The reduction in class contact time;
- The investment made by colleges in VLE's.



Source: <http://www.blackboard.com/Solutions-by-Market/Overview.aspx>

The development of good quality technology enhanced learning materials takes significant time and effort.

- First iteration: Compile lecture notes in PowerPoint; make the presentation available on Webcourses.
- The online environment is used in a simple way.

Questions

- What is student usage of the web-based resources ?
- Do the resources improve student learning ?

Approach

- Data available in the VLE is used to determine the time spent by students in the VLE, and whether this time correlates with student summative assessment performance.
- Student cohorts: DT009/DT016, Year 1, 2008-9 (n=34); DT009, Year 1, 2009-10 (n=28).

Table 1: Mean terminal examination mark (%), attendance (%), time in VLE (hours): 2008-9

Student cohort	Exam (%)	Attendance (%)	Time in VLE (hours)
DT009 (n=28)	40	46	2.2
DT016 (n=6)	59	62	12.7

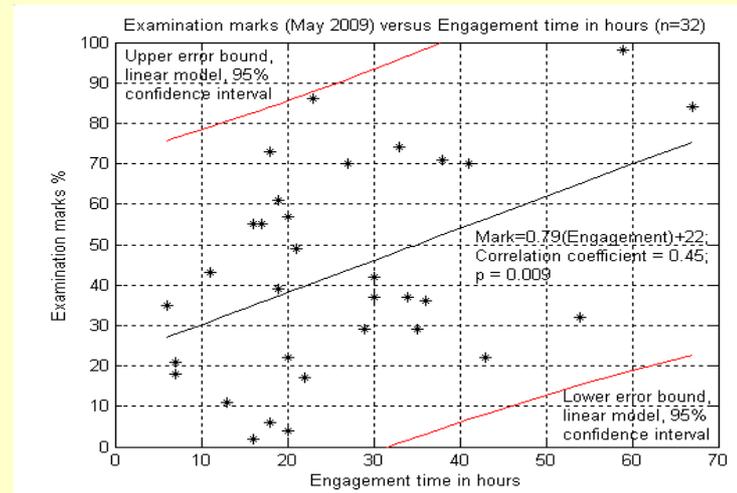
Data suggests that putting lecture material in the VLE does not necessarily cause a reduction in student lecture attendance. However, student use of the VLE is disappointing (Table 2).

Table 2: Student use of VLE - Semester 1. Figures are percentages of the student cohort.

Student cohort	Less than 1 hour	Between 1 to 3 hours	Greater than 3 hours
2008-9	56	30	15
2009-10	50	32	18

Hypothesis

The time spent on the VLE, added to the time spent in lectures, is a simple measure of student engagement. Student terminal exam performance is correlated with this measure of student engagement.



However, other work shows that student semester 1 assessment performance (in 2009-10) is not correlated with this measure of student engagement.

Conclusions

- A knowledge management approach using a VLE has been used to introduce blended learning. From the evidence:
- Only a minority of the students examined are prepared to use the VLE in the way described;
 - Putting lecture material in the VLE does not necessarily cause a reduction in student lecture attendance.

Other work

The author has also used the VLE for submission of research proposals on two Level 9 modules. Students have the option of using the SafeAssign anti-plagiarism tool to ensure that their research proposal conforms to academic standards. The author set up two options on the module home page, labelled "Draft proposal for checking" and "Final research proposal". The "Draft proposal for checking" option could be used multiple times to allow students to use SafeAssign, in formative mode, for checking similarity to other sources and to make necessary changes. The "Final research proposal" option was used when this process was completed to the students satisfaction. Full analysis of this process is ongoing; the 52 students spent an average of 2.9 hours each using the SafeAssign tool.

Some further work

There is a need to consider how to engage first-year students more fully with the VLE. To this end, more sophisticated VLE facilities, incorporating multiple-choice self-tests for example, could add further value to the student learning experience.