

The Impact Of Learning Environment Moodle On Students

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Abstract

Virtual learning environments (VLEs) are widely used in education, in many sectors, typically to deliver instructional materials and facilitate communication. This article reports on an online survey into VLE use by 248 second year students at an English Sixth Form College (SFC). The survey investigated the reported impact of using the college's VLE (Moodle) on learning, and was based on three research questions which investigated: whether the use of a VLE has a positive impact on student learning; whether the use of a VLE in teaching and learning helps develop independent learning; and whether the use of a VLE increases students' motivation to learn. The statistically significant findings report that the use of Moodle produces improvement in learning and motivation to learn as reported by the student participants. The findings will be of broad interest to teachers as they indicate areas for attention in promoting VLE use to enhance learning.

Introduction

A Virtual Learning Environment (VLE) is a web based software system designed to facilitate learning and teaching with the use of tools and activities (JISC, 2009a). Students using a VLE can be set a 'task' to complete in class or at their own pace, time and location, they can contribute to synchronous and asynchronous discussions to help develop their learning (JISC, 2009b).

Empirical evidence suggests that the use of a Virtual Learning Environment (VLE) has an impact on student achievement, encourages independent learning and increases students' motivation to learn (JISC, 2008). This article reports a study within a particular context, an English sixth form college (SFC), further testing hypotheses related to these claims in a positivistic manner. This study provides a snapshot of students' views about the use of the VLE and its impact on their learning, from which there are recommendations for teachers and teacher educators

Literature Review

This literature review outlines the background and development of VLEs to support teaching and learning. It starts with a brief historical background followed by general positive and then negative impacts of VLE use. The last section examines specific impacts of VLEs on independent learning and motivation. Each section, after the background, relates to the research questions and provides context for this work.

As a result of the UK Government 2005 strategy paper Harnessing Technology – transforming learning and children’s services, which emphasised institutions and learning providers making more effective use of technology (Becta, 2010), Ofsted reported on a sample of 34 schools investigating the impact of VLEs on students’ learning (Becta, 2009). The reports were published between September 2005 and December 2007 and concluded that just over half of the schools surveyed were positive about the impact of VLEs on learning and teaching. In contrast, during the same period 58 FE colleges out of 281 inspected by Ofsted had a VLE and of those three quarters suggested that the use of VLEs were helping learners (Becta, 2009).

General positive impacts of VLEs

Positive impacts of the use of VLEs on student learning are supported by a study (Scardamalia & Bereiter, 1996) in West Virginia, USA. Upper-grade elementary students used a software collaboration tool that enables students and teachers to communicate online to develop their understanding and analytical skills.

Students performed significantly better on standardised tests in reading, language and vocabulary and on measures of depth of understanding, multiple perspectives and independent thought than students who did not use the software (Scardamalia & Bereiter, 1996). The study concluded that VLEs maximise student reflection and encourage progressive thought, and

independent thinking. This research was one of seven empirical research studies.

Primary Research

Research, an art of scientific investigation. It is a methodical search for relevant information or facts on a particular topic. It aims at discovering the answers to questions by applying scientific procedures. It is very helpful in the collection of authentic data. There are two kinds of research, i.e. primary research and secondary research. Primary research is one that involves the gathering of fresh data, i.e. when data about a particular subject is collected for the first time, then the research is known as primary one.

On the contrary, Secondary research is a research method which involves the use of data, already collected through primary research. The main difference between primary and secondary research lies in the fact that whether the research is conducted previously or not.

Methodology

The quantitative research was carried out in the form of an e-questionnaire (Survey Monkey) allowing analysis with Excel. The questions were organised and grouped around the three research questions below (appendix one). All 650 second year students at SFC were invited to complete the survey. The survey was promoted during group tutorials and students were invited to complete it in their own time. To establish a minimum representative sample a sample size calculation was conducted (confidence level 95%). In order to generate representative results a response rate of 37% was required a minimum sample size of 242.

Three research questions (RQ) were posed.

RQ1. Does the use of a VLE have a positive impact on student learning?

RQ2. Does the use of a VLE in learning and teaching help develop student independent learning.

Findings And Analysis

During the two weeks 248 useable questionnaires were completed (155 females and 93 males) representing a 38% response rate from a cohort of 650 second year students. Of these respondents 75.8% accessed the VLE without any problems, 20.6% with 'some' problems and 3.6% had not tried to access Moodle. With regard to the use of SFC Moodle as an integrated part of student learning, 43.2% of respondents (63 female and 32 male) use Moodle to a small extent and 35.9% of respondents (49 female and 30 male) use Moodle to a large extent. A relatively small figure of 4.1 % did not use Moodle at all. 13.6% used Moodle to a very small extent, whilst conversely 3.2% use Moodle to a very large extent.

Data to address study hypotheses

In the following section each of the research questions is addressed. Table one (below) presents the overall results for the question 'Does the use of a VLE have a positive impact on student learning?' (RQ1). The mean of all four questions

Answer Options	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree	Mean Score
a) Moodle has a positive impact on my effectiveness as a student.	(13) 5.2%	(22) 8.9	(71) 28.6%	(123) 49.6%	(19) 7.7%	3.46
b) Moodle is an important and valuable aid to me in my studies	(16) 6.5%	(16) 6.5%	(71) 28.6%	(120) 48.4%	(25) 10.1%	3.49
c) I learn more with Moodle than without it	(18) 7.3%	(34) 13.7%	(72) 29.0%	(107) 43.1%	(17) 6.9%	3.29
d. Moodle improves the quality of my learning	(13) 5.2%	(26) 10.5%	(88) 35.5%	(109) 44.0	(12) 4.8%	3.33
Total Respondents as Percentage of response count	6%	10%	31%	46%	7%	

“was calculated with all reported values above 3.0, the mid-point on the scale.

Aggregated statement responses indicate that 53% of respondents either ‘agree’ or ‘strongly agree’ that the use of SFC Moodle has a positive effect on their achievement with only 16% of respondents ‘disagreeing’ or ‘strongly

disagreeing”.

Results

The results for the question ‘Does the use of a VLE for teaching and learning increase students’ motivation to learn?’ (RQ3) were as follows. Of the respondents 46.8% ‘agree’ or ‘strongly agree’ that being in control of learning, learning at a time, place and pace, increases motivation to learn, 49.5% ‘agree’ or ‘strongly agree’ that the variety of course tools available on Moodle increase students’ motivation to learn, 35.5% ‘agree’ or ‘strongly agree’ that the variety of formats available on SFC Moodle increase students’ motivation to learn and 40.3% ‘agree’ or ‘strongly agree’ that feedback on activities increase students’ motivation to learn. The mean response score for all four questions was to the ‘agree’ side of neutral and aggregated statement responses indicate that 43% of students either ‘agree’ or ‘strongly agree’ that the use of SFC Moodle increases motivation to learn with 22% ‘disagreeing’ or ‘strongly disagreeing’. Each of the three research questions was cross tabulated (and chi-squared tests conducted) with five other questions about VLE use (see table three below). The chi-squared test reports the statistical likelihood of the relationship occurring by chance (Saunders et al, 1997) and the test is based on a comparison of the observed values collected with what might be expected if the two distributions were independent of each other. In all cases in table three where a significant chi-squared statistic was returned (above 0.05 95% *, 0.01 99% **, 0.001 99.9% ***) the possible impact nature of the association (from the cross tabulation) is presented.

Limitations of The Study

Whilst this study suggests that using SFC Moodle has a positive impact on student learning, it would have been interesting to establish if subject disciplines have differing impacts on learning. Equally it would be interesting to research which of the tools in the VLE for example, forums, quizzes, course handouts, have the greatest impact on student learning. This study has limitations due to the time available and the positivistic approach taken, however, the statistical analysis returned significant results but does not, and nor can it, provide depth.

Conclusion

Empirical research reported in the literature underpins the research questions and leads to the development of the hypotheses. This data confirms that use of a VLE encourages independent learning with the opportunity to learn informally at a time, place and pace to suit the learner providing flexibility for students to fit course work around busy lives (see JISC, 2007). The literature review also provides evidence that the use of a VLE increases students' motivation to learn, promotes communication and collaborative learning, via the use of forums, chat and email for discussion and that the direct feedback is highly motivating. (JISC, 2009b). For RQ1, the data suggest that the use of a VLE has a positive impact on student learning. The composite score for question 8 reports that 53% of respondents either agree or strongly agree that the use of SFC Moodle has a positive impact on learning. For RQ2, the data suggest that the use of a VLE helps the development of independent learning. The composite score for question 6 reports that 55% of respondents either agree or strongly agree that the use of SFC Moodle helps to develop independent learning. For RQ3, the data suggest that the use of a VLE for learning and teaching increases students' motivation to learn. The composite score for question 7 reports that 43% of respondents either agree or strongly agree that the use of SFC Moodle increases motivation to learn. discussion via a VLE has

the potential to enhance both collaboration and concept development. As suggested in the literature review it would appear however, that it is the collaboration tools for example forums, which are least utilised and require further development and implementation in order to have a positive.

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Appendix

1.Sex

☐

☐

Male/femea

	Strongly disagree	Disagree	Neither agree or	Agree	Strongly agree
a. Moodle has a positive impact on my effectiveness as a student					
b. Moodle is an important and valuable aid to me in my studies					
c.					

I can learn more with Moodle than without it					
d. Moodle improves the quality of my learning					