

DIGITAL SKILLS AND RESEARCH METHODS

MODULE CODE: BMSW4003

RESEARCH REPORT

VIRTUAL LEARNING ENVIRONMENTAL

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Background

Virtual Learning Environment (VLE) refers to a website designed software platform programmed to enable teaching and learning using activities, and tools (Mohammed et al., 2019). Learners learning through VLE may be set activities to perform in class or during their own time and locations. The online learning platforms enable learners to participate in synchronous discussions to assist in enhancing their education (Rienties & Toetenel, 2016). Empirical research indicates that the application of VLE greatly impacts learners' achievements, improves the learner's motivation to study, and promotes independent learning (Dotson, 2019). Due to the COVID-19 pandemic, learning institutions have resorted to Virtual Learning Environment as the only way of providing educational activities to students as a measure to curb the spread of the pandemic. Over the years, VLE has been applied to supplement classroom learning activities. However, VLE is currently the only viable learning platform for most learning institutions, leading to the need to analyze the impact of VLE on learners' experiences.

Consequently, this research project assesses the impact of VLE on the education experience of students at the University of Wales Trinity Saint David London Campus students. The project gives an overview of students' perceptions of VLE's application and the impact of the system on their education. The project further provides recommendations for the teaching staff relating to the application of VLE at the university.

Research Objectives

The major objective of the project is to study the impacts of VLE-Module on learners' learning experiences at the University of Wales Trinity Saint David London Campus.

The specific objects of the study are;

- To study whether the application of VLE has a positive impact on students' learning experience.
- To determine if the application of VLE in education assists in developing learners' independent learning.
- To establish if the application of VLE in education improves the learner's motivation to study.

Research Questions

- What are the impacts (positive/negative) of VLE-Module of students' learning experiences at the University of Wales Trinity Saint David London Campus?
- Does the application of VLE in teaching and learning assist in developing learners' independent learning at the University of Wales Trinity Saint David London Campus?
- Does the application of VLE in teaching and learning improve the learner's motivation to study at the University of Wales Trinity Saint David London Campus?

Literature Review

The literature review covers the growth, and background of VLEs to facilitate learning and teaching. The literature review begins with a short historical background of VLE and the impacts of the application of VLE in teaching and learning. Finally, the literature review studies the impacts of VLE on motivation and independent education among students.

The Scope of the Development, and Application of VLE

It is hard to define the use of VLE over time accurately. The University of Wales Trinity Saint David London Campus has utilized computers for teaching and learning activities since its establishment. However, a 'Blackboard' VLE based on commercialized computers was patented in 2000. Towards the end of 2010, over 4000 learning institutions globally had installed Blackboard VLE software in their online learning platforms (Mohammed et al., 2019; Waheed et al., 2020). In 2001, another significant VLE 'Moodle' was designed to assist teachers in generating an online learning program focused on learner collaboration and interaction according to the education content (Rienties & Toetenel, 2016). By 2011, the Moodle had subscribers in over 213 nations with at least 50,000 active websites in 70 different languages (Cassidy, 2016).

A 92% virtual learning environment had been established in the United Kingdom from 2008 to 2009 during the post-compulsory sector (Dotson, 2019; Waheed et al., 2020). This figure

jumped from 58% in the years 2003 to 2004. Children's services and learning in the United Kingdom were transformed in 2005 by the government after they supported the technology for paper harnessing, which placed more emphasis on learning providers and institutions, thus providing better. A report, published within 2005 to 2007, from a portion of 35 schools researching on the impacts of the virtual learning environment on learners, included that a bit more than half the schools sampled supported the impacts of the virtual learning environment on the education system (Cassidy, 2016; Omar & Geer, 2018). On the other hand, within the same time, only 58 of 281 FE colleges surveyed by (Hamutoglu et al., 2020) had a virtual learning environment in their learning system.

Positive Impacts of Virtual Learning Environment

A study conducted in West Virginia, United States of America, on elementary learners in the upper grades supported the positive impacts brought about because of using the virtual learning environment (Cassidy, 2016; Omar & Geer, 2018). Students were able to use the software collaboration tools enabling them to communicate online to their teachers, thus developing their analytical skills and understanding. Students using the software performed much better on standardized tests in the language, vocabulary, and reading based on understanding independent thoughts and different perspectives when compared to students who had not used the software. This study showed that the software intensively encouraged progressive student thought, independent thinking, and reflection. Seven research studies performed around West Virginia and concluded that the learners who could access integrated learning systems, computer-assisted instructions, simulation software, design, and programming

software or collaborative networked software all showed significant improvement in researcher-developed tests, national tests, and standardized tests (Cassidy, 2016).

Research carried out in universities into the virtual learning environment was based on two categories of socially working students, the undergraduate, and graduate. This study survey was to determine if the computer-depending technology is based on instructions for disadvantaged older generations and women. Statistically, the results showed a significant number of graduate students had a higher probability of accessing a course even when at home. In contrast, undergraduates showed more interest in learning using technology. This research showed that using technology provides a platform for students who are not traditional in the education social work; furthermore, students' technological quenching relied on utility, access, and exposure with also the vitality of this technology and tools that they use (Hamutoglu et al., 2020).

According to Dotson (2019), in another institution of higher learning based in the city university of Hong Kong, when data which is related to learner and tutor usage is examined in an unrelated discussion in applied psychology within the first semester. The results suggested that introverts based in the classroom when engaging in online conversations are more active than in classroom discussions, hence behaving like extroverts. Further, this research investigated the significance of WebCT on learners' university history to find out if the suggestion that education technology can develop the degree of cognitive achievement and learning. 28% of students preferred the traditional method of learning, while 72% acknowledged that learning via technology brought a significant difference; thus, they grasped more.

Negative impacts of virtual learning environment

According to Hamutoglu et al. (2020), web-based learning does not provide a platform for emotional and social interaction in a traditional classroom (Cassidy, 2016). This event was then expressed through a design of longitudinal experimental, having classes taught through software technology and traditional classes. The participants in software technology gave negative feedback with being dissatisfied with the whole learning process (Tsay et al., 2018; Herrera Mosquera, 2017). The researchers also concurred with learners asserting that there is a lack in the chance and privileges of community sense and structured dialog developed by a traditional classroom when online.

According to Tsay et al. (2018), research undertaken in universities claims to have gained firsthand learners' experience. The team produced two reports; the first was the learner's experience of e-learning and student experience technological study. The first discusses the different subject disciplines when using technology. A research was carried out on four educational academic subjects, medicine academic educational comics, languages, and linguistic and computer science. This study was investigated on over 400 students, which comprises both qualitative and comprise methodology. Also used were 85 audio segments and 14 interviews (Tsay et al., 2018; Herrera Mosquera, 2017). This research identified how students' habits changed priorities on the internet from information investigation to adding personal technologies and owned tools such as mobile phones and laptops.

Study Design and Methodology

The project adopted a quantitative research design. The quantitative study design was performed through an online questionnaire (Survey Monkey), and the data collected analyzed using Excel. The organization and grouping of the research questions depended on the three study objectives. The study requested all 650 third-year students to participate in the e-questionnaire. The researcher informed the participants about the purpose of the study, and that the information collected shall be used for this research only. The respondents were also informed that their information will not be used to discriminate against them in any form and that they have the right to remain anonymous throughout the research. Appropriate data collection permission was also sought from the relevant authorities before participation in the data collection exercise. The research calculated a sample size with a 95% confidence level to determine a minimum representative sample. The study required a 40% response rate representing a sample of 242 to come up with representative findings.

The study re-structured each research question to form testable null and alternative hypotheses. The resulting hypothesis was;

H_1 : Application of VLE has positive impacts on students' education experience.

H_0 : Application of VLE does not have positive impacts on students' education experience.

H_2 : Application of VLE assists in developing learner's independent learning culture.

H_0 : Application of VLE does not assist in developing learner's independent learning culture.

H_3 : Application of VLE for learning and teaching improves the motivation of students to learn.

H_0 : Application of VLE for learning and teaching does not improve the motivation of students to learn.

Presentation and Analysis of Data

The study invited all the 605 third-year students to participate in the Survey Monkey questionnaire, and out of the study population, a sample of 242 respondents were considered representative. The sample consisted of 140 females and 102 male students. Out of the sample, 70% had previously accessed VLE Moodle successfully, 25% had experienced difficulties accessing the Moodle in the past, and the remaining 5% had not tried to access Moodle in the past. Concerning the application of VLE as a critical part of students' learning, 70% of the respondents gave a verdict that they use VLE Moodle to a larger extent, with the remaining 30% reporting that they use the Moodle to a smaller extent.

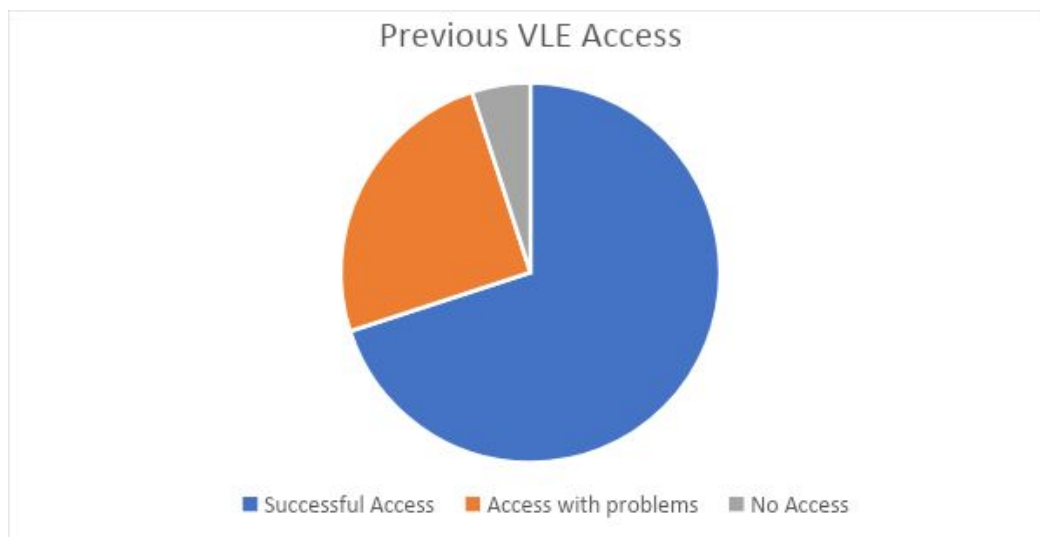


Figure 1: Students' Previous Experience of VLE

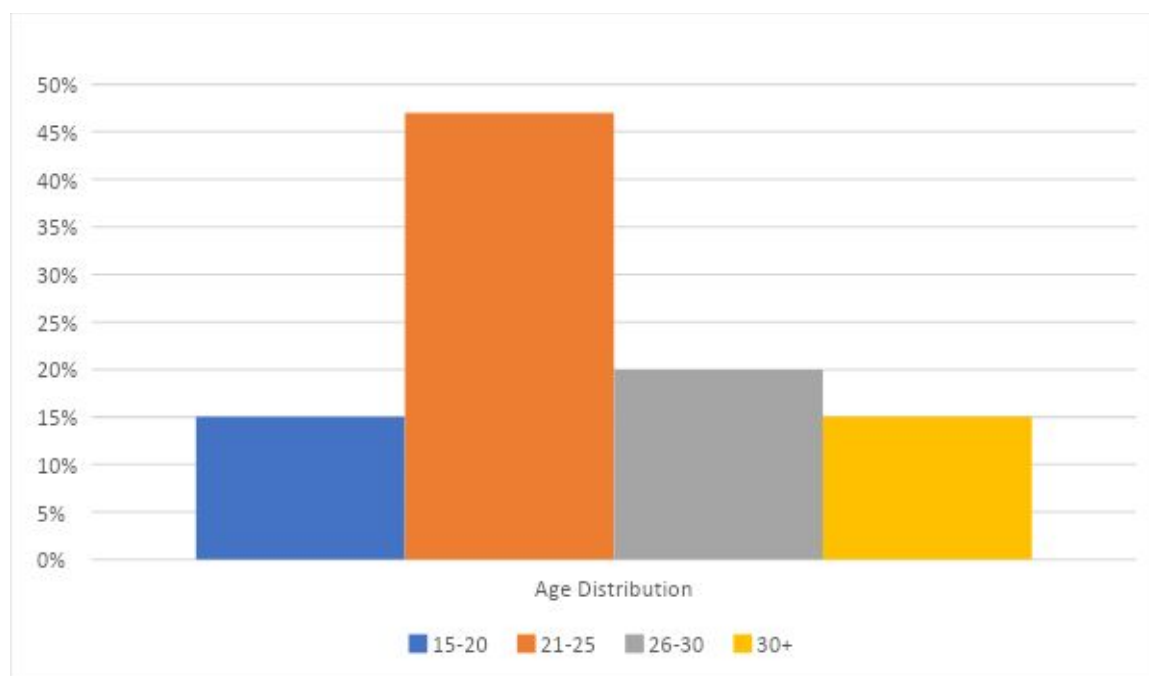
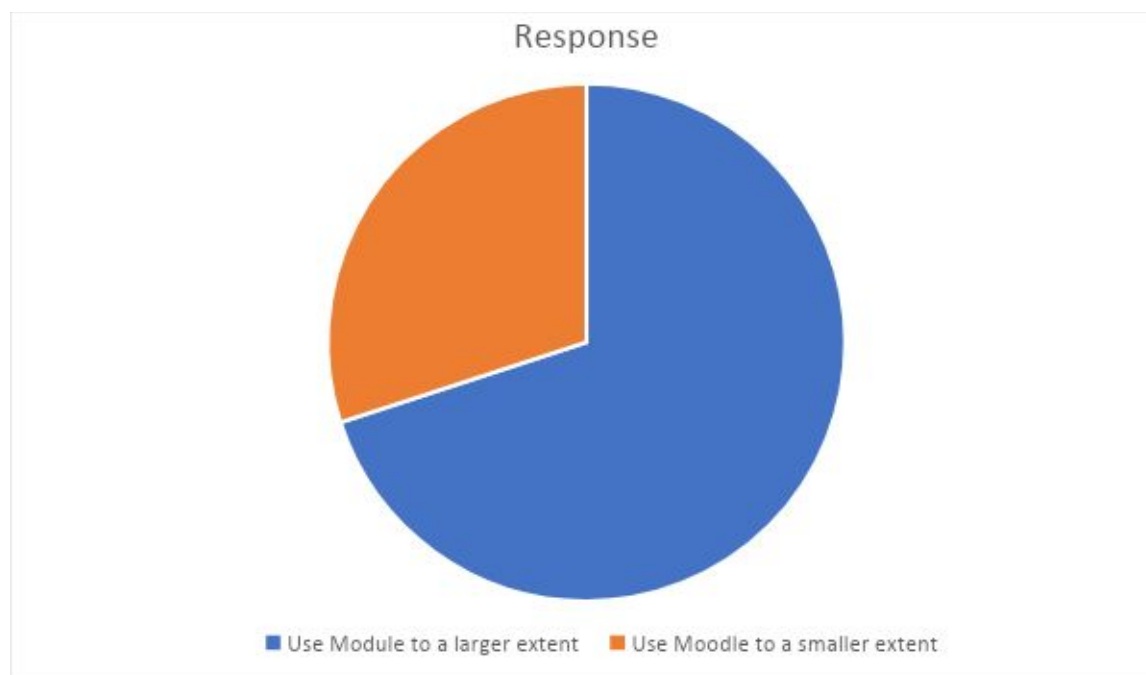


Figure 2: Age distribution

Response on the use of VLE



Does the application of VLE in teaching and learning assist in developing learners' independent learning?

Statement	Response				
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Learning through Moodle encourages me to study independently	1%	5%	1%	30%	63%
The organization of subjects through	0%	1%	3%	50%	46%

Moodle encourages me to study independently					
Activities on Moodle encourages me to engage with other students	1%	2%	0%	60%	37%

Table 1: Response to the impacts of VLE in developing students' independent learning skills.

To what extent do you agree or disagree with the following statements that the use of Moodle has a positive impact on your achievement?

Statement	Response				
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Learning through Moodle positively impacts my effectiveness as a student	2%	2%	0%	40%	56%
Moodle encourages me to perform further study research, and exercise	1%	2%	1%	30%	66%

I study more with Moodle than without it	0%	2%	1%	55%	42%
Moodle enhances the quality of my studies	1%	2%	1%	40%	56%

Table 2: Response to the impact of VLE on students' academic achievement

Does VLE in teaching and learning improve the learner's motivation to study?

Statement	Response				
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
The ability to access my learning materials through Moodle increases my motivation to learn	1%	0%	1%	50%	28%
The various learning materials available on Moodle increases my motivation to learn	0%	2%	2%	51%	45%
The various virtual learning materials available on Moodle increases my motivation to learn	2%	1%	1%	60%	36%
The frequent feedback, and engagements through Moodle increases my motivation to learn	0%	1%	1%	55%	43%

Table 3: Response to the impact of VLE on students' motivation

Conclusion and recommendation

The findings confirm the null hypothesis that VLE Moodle has a positive impact on students' academic achievements. The findings also confirm the null hypothesis that learning through VLE motivates students to study. Finally, the findings confirm the hypothesis that teaching and learning through VLE help develop students' independent learning skills. These findings agree with the findings of (Cassidy, 2016; Omar & Geer, 2018) that students were able to use the software collaboration tools enabling them to communicate online to their teachers thus developing their analytical skills and understanding. Also, students using the software performed much better on standardized tests in language, vocabulary, and reading based on understanding independent thoughts and the different perspectives when compared to students that had not used the software. The findings also agree with Dotson (2019), that the results suggested that introverts based in the classroom when engaging in online conversations are more active than in discussions in the classroom hence behaving like extroverts. Further, this research investigated the significance of WebCT on learners' university history to find out if the suggestion that education technology can develop the degree of cognitive achievement and learning. 28% of students preferred the traditional method of learning, while 72% acknowledged that learning via technology brought a significant difference; thus, they grasped more.

However, the findings acutely disagree with Hamutoglu et al. (2020). They argue that web-based learning does not provide a platform for emotional and social interaction that occurs in a traditional classroom (Cassidy, 2016) this event was then expressed using a longitudinal

experimental design, having classes taught using the software technology and traditional classes. The participants in software technology gave negative feedback with being dissatisfied with the whole learning process. The researchers also concurred with learners asserting that when online, there is a lack in the chance and the privileges of community sense and structured dialog developed by a traditional classroom.

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Appendix: Questionnaire

1. Sex? Male ☐ female ☐

2. Age Distribution (In Years): 15-20 ☐ 21-25 ☐ 26-30 ☐ 31 and above ☐

3. Have you tried to access Moodle from home?

Yes-no problem ☐ Yes-but have had problems ☐ No ☐

4. Besides the teacher's instructions, how often do you access Moodle outside the classroom?

Never ☐ Rarely often ☐ Often ☐ Most Often ☐

5. Since the outbreak of COVID-19 pandemic, how have you used the Moodle for learning purposes?

Yes ☐ No ☐

6. Overall for my subjects Moodle is used: small extent ☐ large extent ☐

7. To what extent do you agree or disagree with the following statements about the use of Moodle to encourage independent learning;

Statement	Response				
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Learning through Moodle encourages me to independently study					
The organization of subjects through Moodle encourages me to independently study					

Activities on Moodle encourages me to engage with other students					

8. To what extent do you agree or disagree with the following statements that the use of Moodle has a positive impact on your achievement;

Statement	Response				
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
Learning through Moodle positively impacts my effectiveness as a student					
Moodle encourages me to perform further study research, and exercise					
I study more with Moodle than without it Moodle enhances the quality of my studies					

9. To what extent do you agree or disagree with the following statements that the use of Moodle increase your motivation to learn:

Statement	Response
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	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
The ability to access my learning materials through Moodle increases my motivation to learn					
The various learning materials available on Moodle increases my motivation to learn					
The various virtual learning materials available on Moodle increases my motivation to learn					
The frequent feedback, and engagements through Moodle increases my motivation to learn					

10. Any other comment:

THANK YOU FOR YOUR PARTICIPATION