

# **The Impact of Virtual Learning Environment on Students**

**Digital Skills & Research Methods**

**BMSW4003 (Task 2)**

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December 2020

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## **Introduction:**

The report presented is about Virtual Learning Environment, (VLE) Moodle.

VLEs are online channels that give students and professors interactive tools to improve learning experience. Unlike a simulated classroom intended to mimic and attempt and replace a physical classroom setting, VLEs are for distance learners, for example in the case of a pandemic such as COVID19, where it is mandatory to stay at home. A virtual learning environment uses technology to try to replace or augment an in-class experience with the power of digital communication and encourage access to, for example, information, photographs, videos or connections.

The purpose of this task is to research and reflect over primary and secondary data collected, about the Virtual Learning Environment. The pros and cons of online learning, as well as analysing the statistics raised by the questionnaire done in class as the primary data collection tool. Therefore, analysed published literature will be used as a secondary data in addition to the use of the feedback given in class, for this second task of the term.

# 1. Research

## 1.1 Research Title

Virtual Learning Environment Research Report

## 1.2 Research Aim

The research aim of this report is, to conclude the impact on students learning experience, through Virtual Learning Environment (VLE), more precisely, Moodle.

## 1.3 Research Objectives

The objective of this research is to collect, analyse and reflect on the overall impact of the VLE, the positive and negative aspects, along with some recommendations if appropriate.

Create a questionnaire regarding the accessibility, functionality, and usage of Moodle. With the results collected by the survey, analyse and reflect about the primary data, represented in the excel table by a graph.

## 1.4 Research Limitations

As it will be possible to evidence, we can consider several limitations, mostly regarding to the research of the primary data, over the fact of personally not knowing other students from the same course due to COVID restrictions at the university and the endeavour to open it. In addition, the lack of colleagues filling the questionnaire in order to execute the excel table statistics graph, derived of no longer attending the current year. With this we can attribute, most of our several limitations to ourselves since we had limited this research to our class – if we had a broader range to reach (even if it was just university wise), we would gather better and more precise data.

## 2. Literature Review

According to Adewale et al. (2012), due to the diverse range of capabilities of Virtual Learning Environments, it has been given all different kinds of definitions. However, Dillenbourg (2000) thoroughly defines Virtual Learning Environments as multiple technologies integrated into one system that provide an information space that is not constricted by space, consequently allowing social interactions and collaborations between students and educators. Building on this Hampel (2014) defends that VLEs help learners improve their knowledge, skills and performance. Besides, Knutsson et al. (2011), note that VLEs give excellent educational experiences suitable for the 21st century.

Demian and Morrice (2012) find that resources used in VLE are crucial for students' learning experience - if the contents or formats do not cater for the learners' needs, the VLE experience will be virtually useless. VLE "should contain just enough information to allow students to reinforce their work in lectures and gain a broader and deeper understanding of the subject (...) preferably through a range of presentational styles." (ibidem, pp.11)

Nowadays, VLEs are well integrated into educational institutions. Consequently, Alves et al. (2017) do not question its recognition, but rather how to turn them into a significant contribution to students' performance.

An essential feature of VLEs, according to Mogus et al. (2012), is student-centred learning - meaning that, the student is responsible for its self-directed learning. Building on this, Baker et al. (2009) note that VLEs help adult students use their previous experience to learn new information. Personalized, social and simulated learning encourages students to use their previous experience to make learning connections.

*"VLEs also provide learners with the opportunity to take assessments. The assessments are essential for learning leaders to evaluate learning objectives, training programs and the learning environment."* (Bashshar, 2017, pp.55)

Nguyen et al. (2017) found that communication and interactive activities, as learning designs, positively impact students' VLE engagement. Building on this Mogus et al. (2012), found a correlation between students' activity logs and their final mark: "the higher the number of activity logs in a VLE the higher the final mark will be" (ibidem, pp.184). The activities with the most impact on students' final mark were "assignment view, course view, forum view and resource view" (ibidem, pp. 184). Mogus et al. (2012) conclude that the activities performed in VLEs impact students' learning goals and their learning effectiveness.

*"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"* (Barker and Gossman, 2013, pp.19)

Nevertheless, it is noteworthy that VLE students also face several challenges as pointed by Bashshar (2017): "(a) competing interest from home, school and work, (b) lack of technical support, (c) expectations not met from faculty, (d) feelings of anxiety, and (e) feeling overwhelmed" (ibidem, pp.48) These factors may have a negative impact on students educational achievements.

In conclusion, well-managed VLE should make it possible for students, with any learning style, to obtain the best possible education.

### 3. Methodology

In order to meet the research purposes, the Research Onion technique was used. Research Onion was firstly described by Saunders et al., as "a way of depicting the issues underlying your choice of data collection method or methods" (Saunders et al., 2007, pp.130)

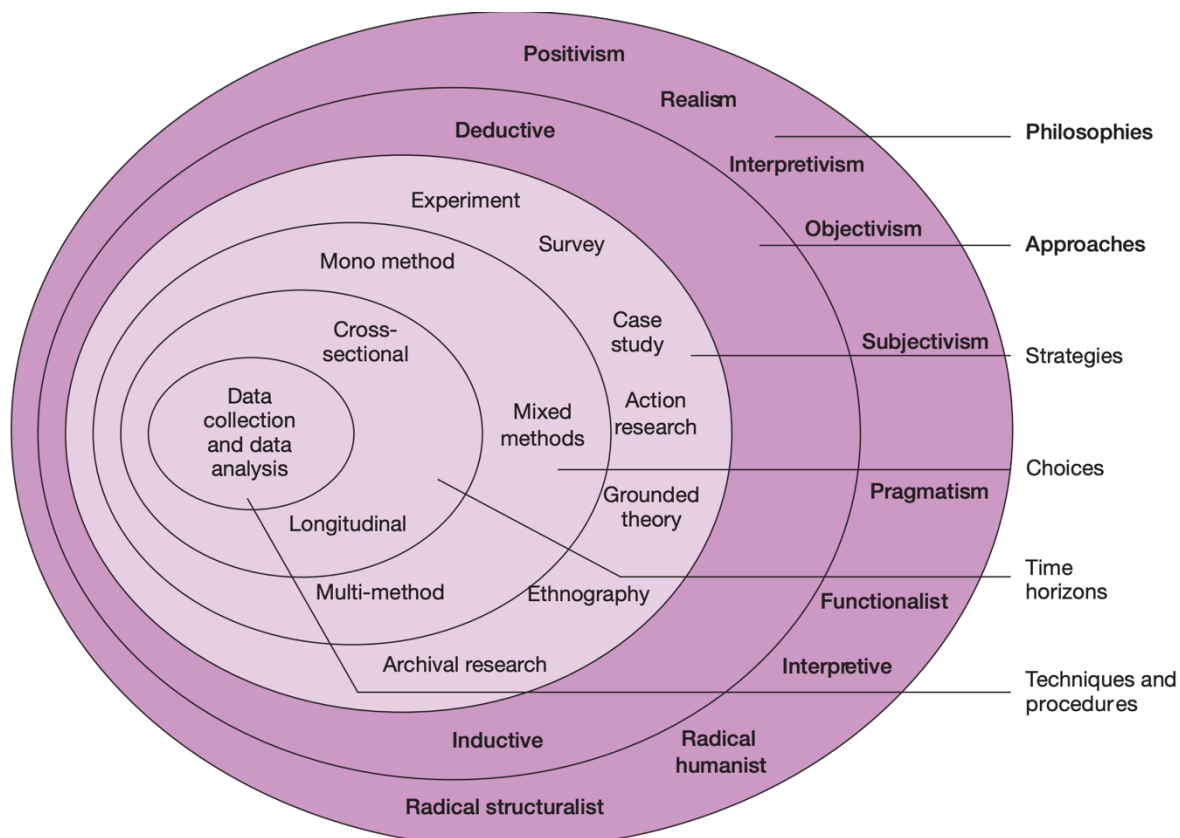


Figure 1 - Research Onion; Source Saunders et al. (2017)

Given that the impact of VLE on students is an observable phenomenon, the philosophical stance adopted was Epistemology and Positivism. This philosophical stance serves for research "working with an observable social reality" (Remenyi et al., 1998, pp.32)

This report also followed a deductive research approach. Meaning that secondary data was first studied - other theories on VLE impacts (as showcased in the literature review); secondly, the primary data were analysed; and only after this, the conclusions were drawn.

In order to obtain primary data, a survey was used as a research strategy. "It is a popular and common strategy in business and management research and is most frequently used to answer *who, what, where, how much* and *how many* questions" (Saunders et al., 2007, pp. 138)

This survey reflected a mono method research choice of a quantitative data collection technique. Saunders et al. (2007) acknowledge this as the most effective way to treat numeric data, such as questionnaires, graphs or statistics.

In addition, this report adopted a cross-sectional time horizon research method, given that it observes "a particular phenomenon (...) at a particular time" (ibidem, pp. 148)

Lastly, the sampling method used for this survey was self-selection. According to Saunders et al. (2007), self-selection sampling occurs when individuals identify their desire to participate in the research. Therefore, the researcher advertises the need for cases and collects the data from those who respond, which was the case with this survey given the current pandemic restrictions.

In conclusion, the survey consisted of 10 multiple-choice questions. The aim was to question 20 students of Digital Skills & Research Methods course of University of Wales and Trinity Saint David, online from 27/11/2020 until 27/12/2020. Participants weren't given any time constraint to fill in the survey anonymously. Because not all surveys were fully completed, only 18 survey results were included in the analysis.

## 4. Data Collection

**Total Respondents** 18

### Question 1

| Do you have a gadget to access to VLE? | Yes | No |
|----------------------------------------|-----|----|
|                                        | 18  | 0  |

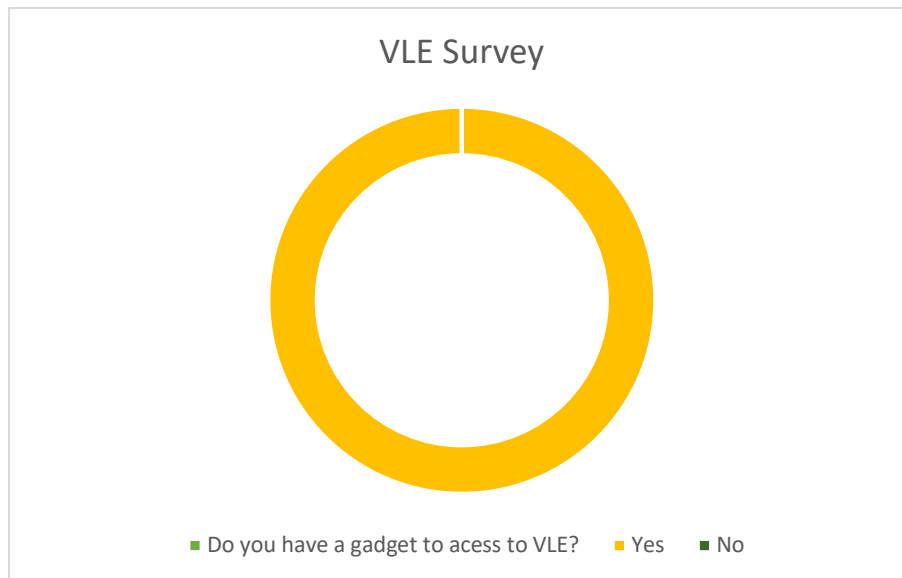


Figure 2

Data-Analysis: We can conclude that everyone owns at least one dispositive to access our VLE system Moodle, since the answer Yes has a percentage of hundred per cent.

**Question 2**

| Do you use VLE? | Yes | No |
|-----------------|-----|----|
|                 | 17  | 1  |



*Figure 3*

**Data-Analysis:** From the graphic above, we can state that the majority of the students uses VLE.

**Question 3**

| How frequently do you use it? | Always | Sometimes | Never |
|-------------------------------|--------|-----------|-------|
|                               | 7      | 10        | 1     |

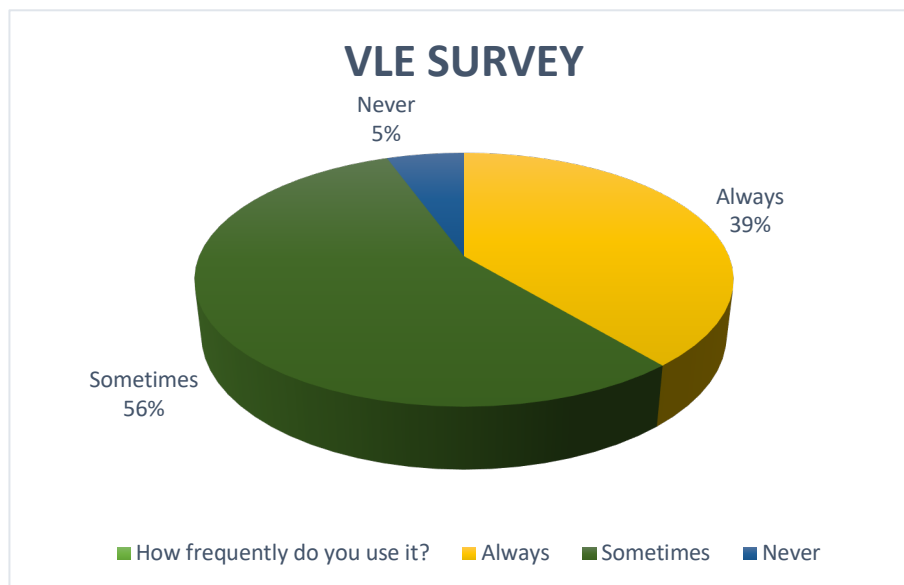


Figure 4

Data-Analysis: The diagram above confirms that ninety-five per cent of the students are frequent users of VLE, with fifty-six per cent being the majority using it often.

**Question 4**

| For how long do use it? | 1 Hour or Less | 2 Hours | 3 Hours or more |
|-------------------------|----------------|---------|-----------------|
|                         | 3              | 13      | 2               |

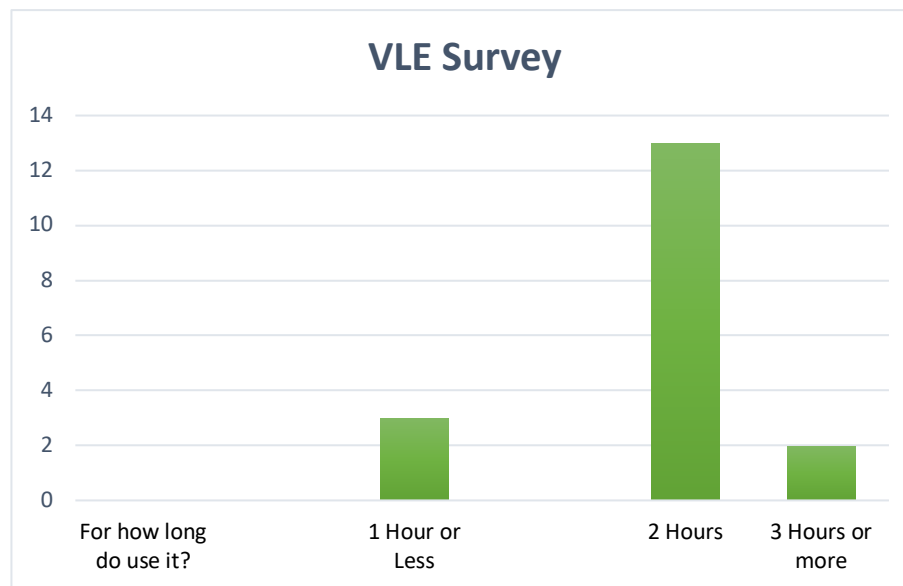


Figure 5

Data-Analysis: With this chart we can conclude that fifteen out of eighteen students spend an average of 2 hours when using VLE.

**Question 5**

| Do you find any difficulties using the VLE on your gadget? | Yes | No |
|------------------------------------------------------------|-----|----|
|                                                            | 9   | 9  |

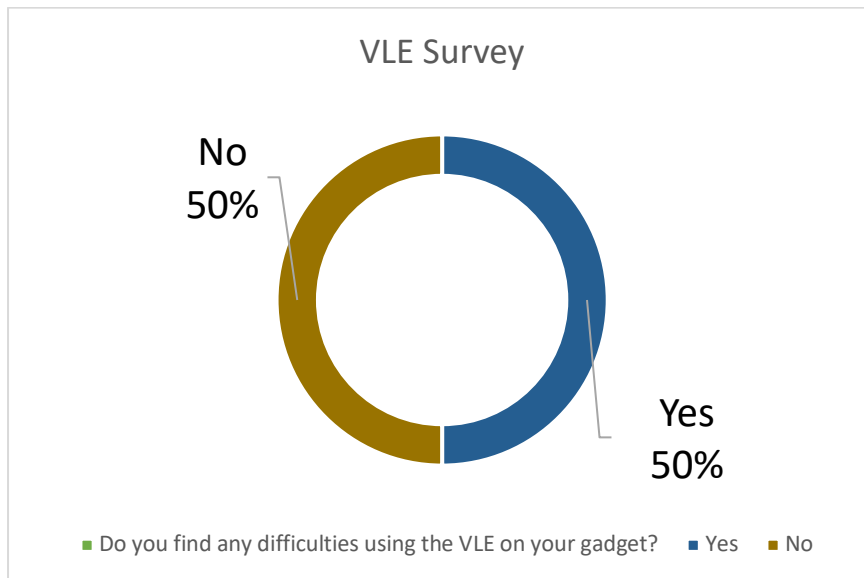


Figure 6

Data-Analysis: Very basic, however very crucial question and the answer could not be any clear. The percentages show us, that although already functional, some issues are still encountered, either from the user experience end or from the engineering side.

### Question 6

| Do you feel VLE is a logical platform to understand? | Very Easy | Easy | Neither (easy/difficult) | Difficult | Very Difficult |
|------------------------------------------------------|-----------|------|--------------------------|-----------|----------------|
|                                                      | 3         | 6    | 5                        | 4         | 0              |



Figure 7

**Data-Analysis:** This pie-chart reveals that none of the students find VLE a very difficult platform. However, they are not in concordance with the fact that VLE is logical enough to capacitate any student an easy access to it.

**Question 7**

| What do you use VLE for? | Study | Research | Materials | Classes |
|--------------------------|-------|----------|-----------|---------|
|                          | 7     | 3        | 3         | 5       |

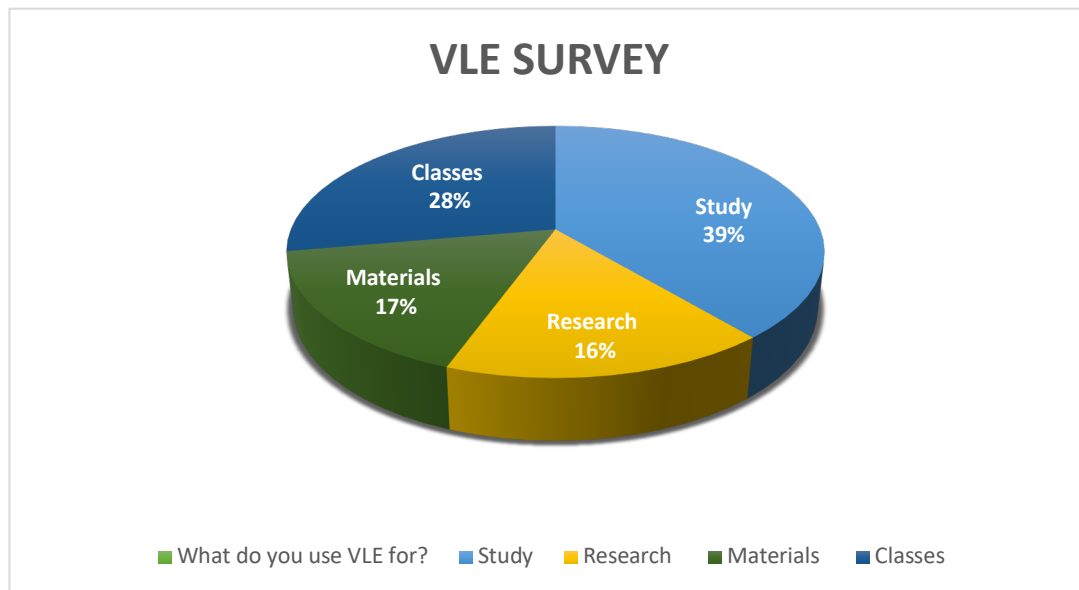


*Figure 8*

Data-Analysis: Here we can find very cohesive percentages, showing us that VLE has all these various areas covered for students, providing a great freedom of mobility and time management.

**Question 8**

| Do you feel VLE is a useful platform? | Extremely Useful | Very Useful | Somewhat Useful | Not so useful | Not at all useful |
|---------------------------------------|------------------|-------------|-----------------|---------------|-------------------|
|                                       | 3                | 10          | 5               | 0             | 0                 |

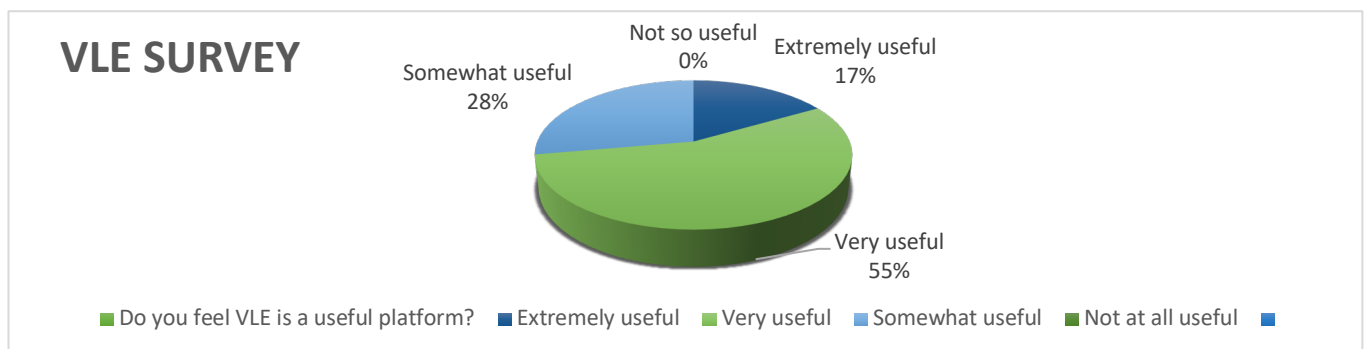


Figure 9

Data-Analysis: The pie-chart perceives the positive impact of VLE on students, given that the options *Not So Useful* and *Not at All Useful* had no percentages assigned to them, what reveals the value of a platform like this.

**Question 9**

| What do you like the most about VLE? | Library | Moodle | Students Hub |
|--------------------------------------|---------|--------|--------------|
|                                      | 3       | 14     | 1            |

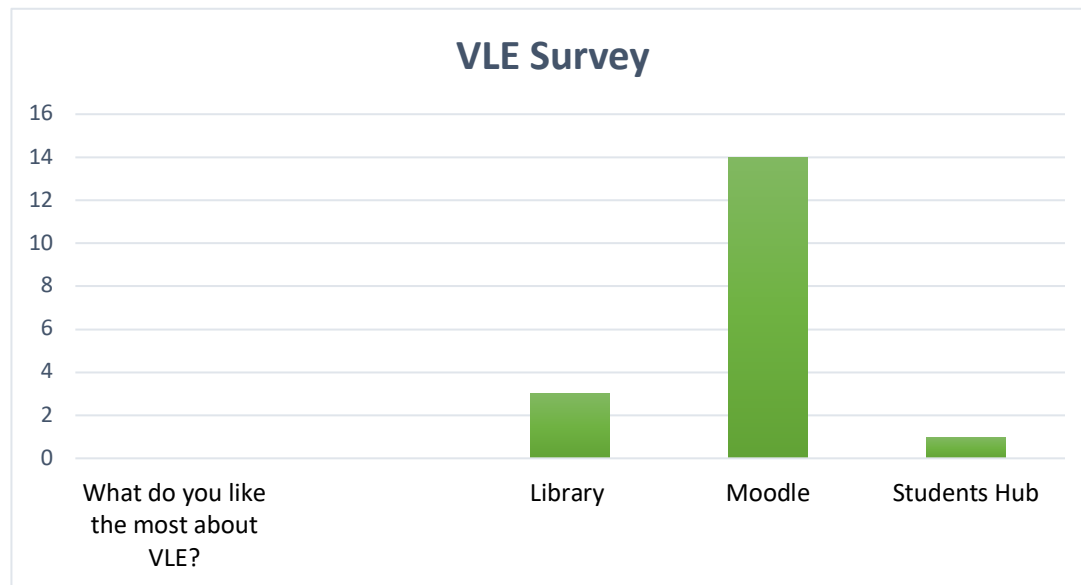


Figure 10

**Data-Analysis:** In the units per option shown above, we are able to speculate over the fact that students have low engagement with the other components of VLE. Meaning that, these components might need improvements.

**Question 10**

| Do you find it visually appealing? | Above average | Average | Below average |
|------------------------------------|---------------|---------|---------------|
|                                    | 1             | 15      | 2             |

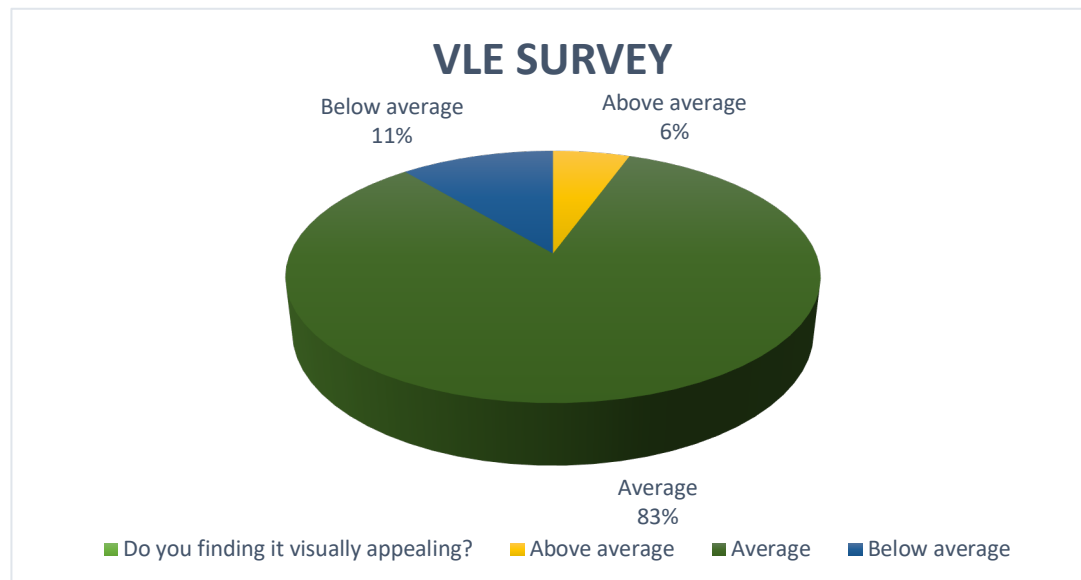


*Figure 11*

Data-Analysis: Based on the question itself in addition to the percentage of the average option, we can accept that there is still room from improvement from both engineer team and university lectures to make a more engaging study platform.

## 5. Conclusion and Recommendations

After further analysis of the primary data, we can sense that there is still plenty of room for improvement for the Virtual Learning Environment as of the areas mentioned in the data analysis throughout the survey. Nonetheless, a lot has been accomplished so far with the current platform. As per the secondary data we can state that VLE was essential to develop various skill sets in this term, such as Word, Excel, Power Point, Survey Monkey, Moodle, etc. After acquiring the data necessary we can conclude that everyone owns at least one dispositive to do university work, or at least access our VLE system Moodle, however it would be recommended that the professors incorporate the library and the student hub further into the term tasks for a more balance engagement in all the areas of VLE .

It can be concluded with this research, that there are both positive and negative aspects to the VLE; however, VLEs have been proven to reveal itself has a tool of great utility when well learned and properly applied. The findings of the Limnious and Smith study showed that the learners believed that the VLEs presented them with an ability to engage more directly with online learning. Limnious and Smith (2010) study have showed that learning views and behaviours in the VLEs were strongly dependent on their understanding of the effectiveness of the VLE to help them accomplish their learning outcomes. The results of this study confirmed the observations of Hung et al. (2015) and Mohr et al. (2012) on the adoption of technology.

As such as

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