



Digital Skills and Research Methods
BMSW4003

**A research on the impact of Virtual Learning
Environment- Moodle on students learning experience at
the University of Wales Trinity Saint David**

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1. Introduction

1.1. Presentation of the organisation

University of Wales Trinity Saint David is a university that operates in South Wales, but it also has a campus in London and two learning centres in Birmingham and Cardiff. It offers undergraduate and post graduate courses , online and distance learning courses. Their vision is related to the promotion of the Wales heritage, practicing a dual-sector educational system dedicated to learners of “all ages and background” (UWTSD, 2020).

According to their official website (2020) the university is focused on excellent teaching, inclusivity, empowering creativity and employability, collaboration and global citizenship orientation, sustainable development. It is also stated that they aim to offer value through their learning process that delivers distinctive graduate attributes for the professional development of their students.

1.2. Research problem: “A research on the impact of Virtual Learning Environment- Moodle on students learning experience at the University of Wales Trinity Saint David”

1.3. Research objectives:

1. To define the concept of VLE Moodle
2. To identify the University of Wales Trinity Saint David approach to design and customisation of VLE Moodle.
3. To investigate the students perspective over University of Wales Trinity Saint David Moodle

2. Review of the literature

E-learning is the process of learning realised through electronic media support. Many organisations started to use and develop their e-learning systems under the new current circumstances the world faces in the pandemic, but many already had efficient learning management systems to work with (Economic Times, 2020).

The Virtual Learning Environment (VLE) is defined as the learners and tutors “online” interactions through which it can be realised the online learning (Joint Information Strategy Committee, 2001).

The Virtual Learning Environment provides a multitude of tools for students, lecturers and administrators such as admissions applications, students enrolment, course registration and accession, assessments and grade management, communication between parts. To support the teaching process a very important function is the communication hub that incorporates a emailing and chatting. It makes possible for the lecturer to teach the students, to realises assessments and finally to complete the course (Yadar et al, 1998).

The Virtual Learning Environment is used to control this process of learning, fulfilling the educational requirements specific to formal education. The most used Virtual Learning Environment is Moodle. Moodle is a web-based, open source, integrated system that can be utilised by the educators to create personalised learning platforms. Moodle is considered to be one of the best learning management systems for its customisable feature. It can be used for teaching online classes or to supplement face-to-face learning (Cole, 2007).

Moodle’s open interface allows its users to create their own design and functionalities. Moodle presents some limitations regarding to the technical aspects of installation on web servers and require professional expertise who are aware of the numerous plugins to ensure specific functionality (Luk et al, 2018)

Moodle developed over the last two decades and because is a free system it gained popularity. The lecturers were determined to gain new skills to utilise it efficiently, but it covered all their needs for the learning process: categorisation, assessments, communication, quizzes. Many organisations ask for students feedback in order to improve their Moodle efficiency and easy utilisation for their main users (Krasna, Pesek, 2020).

3. Methodology

3.1. Descriptive data collection process

This research selected for case study the University of Wales Trinity Saint David. This research will collect primary data to investigate the research problem. The research method used is a questionnaire as it will support the research with quantitative data which will be recorded in tables and analysed. The construction of the questions was in connection with the secondary data evaluated in the review of the literature.

A sample is the method of selecting the participants and can be realised in three ways: randomly, non-randomly or a mixture of both. When deciding how to select the most appropriate method of sampling depends on the researcher set of criteria and the concrete situation to which has to be applied, but it also has to be in accordance with resources such as time and finances (Statistics How To, 2020).

The selection of the participants was realised non-randomly, with subjective implications as the researcher is studying the course Cert HE Skills for the Workplace at the University of Wales Trinity Saint David. Therefore it was selected a sample of 25 students and it is anticipated to obtain an 100% of answers. The research is realised for academic purposes only and does not involve deception of participants, psychological stress, there are not used any financial inducements and the access to confidential information or other special circumstances is respected.

The questionnaire has a total of 10 questions with two questions on demographic status, an opening question to identify if participants used Moodle before and 4 key questions with single answer selection related to levels of usage and feedback on efficiency. The last three questions offer the possibility of selecting one or multiple answers and were related to the content of Moodle. Through this questionnaire it is intended to measure the impact of Moodle on participants learning experience. The second purpose of this questionnaire is to gather data on participants view on the university approach to design and customise Moodle.

4. Analysis of findings

4.1. Recording Collected Data in Tables

In the Appendices it can be found a summary of the primary data collected from the questionnaire (Table A).

Table 1-Rate of response

Number of questionnaires given	Number of respondents	Rate of response
25	20	20
		80%

Table 1 represents the Rate of response for the questionnaires. The questionnaires were sent through email. There were offered 25 questionnaires and there were received back 20. The rate of response is 80% which is a good rate of response and can be considered to be representative for the research.

Table 2-Age and gender data

Gender	Age group under 20	Age group 21-25	Age group 26-30	Age group 31-40	Age group 41-50>
Male	0	3	1	3	1
Female	3	1	3	4	1

Table 1 represents the data related to demographic aspects age and gender. It shows that there were 8 male participants and 12 female participants.

Table 3-Existing Moodle knowledge

Answers	Have you used Moodle in previous learning experiences
Yes	20
No	0

Table 3 illustrates that all the participants have no previous knowledge related to Moodle.

Table 4-Students view on how easy is to access Moodle

How easy is to access the learning resources on Moodle?	Answers
Very easy	1
Easy	9
Neutral	9
Difficult	1
Very difficult	0

Table 4 illustrates that all the participants selected only four answers very easy, easy, neutral and difficult and no one selected the very difficult level. 10 participants said that is easy and very easy to access the learning resources on Moodle.

Table 5-Weekly and daily access

Frequency of usage	Answers
1-3 times per week	8
4-5 times per week	11
6-7 times per week	1
0-2 hours per day	1
3-5 hours per day	19
6-8 hours per day	0

Table 5 related to weekly and daily access illustrates that all the participants access weekly Moodle with majority accessing between 4 and 5 times per week. The daily access data illustrates that majority of 19 students spend between 3 and 5 hours per day.

Table 6-Students view on Moodle efficiency

Do you consider that Moodle is an efficient platform for your learning?	Answers
Strongly disagree	0
Disagree	0
Neutral	2
Agree	17
Strongly agree	1

Table 6 illustrates that no participant disagree with the efficiency of Moodle, 17 agreed that is efficient and 2 participants remained neutral.

Table 7-Students reasons for accessing Moodle

What are the main reasons for accessing Moodle	Answers
Student email	7
Learning materials	15
Assignments	19
Library	15

Table 7 illustrates answers received for a question with multiple answers. 7 participants stated they use Moodle for student email, 15 for learning materials, 19 for assignments and 15 for library.

Table 8-Students view on information available on Moodle

How do you describe best the information available on Moodle	Answers
Low volume of information	0
High volume of information	14
Poor quality of information	3
High quality of information	11

Table 8 illustrates answers received for a question with multiple answers. No participants stated that Moodle has a low volume of information whilst 14 said it has a high volume of information. Three participants stated that there is poor quality of information, whilst 11 said it is high quality of information.

Table 9-Students view on their learning experience using Moodle

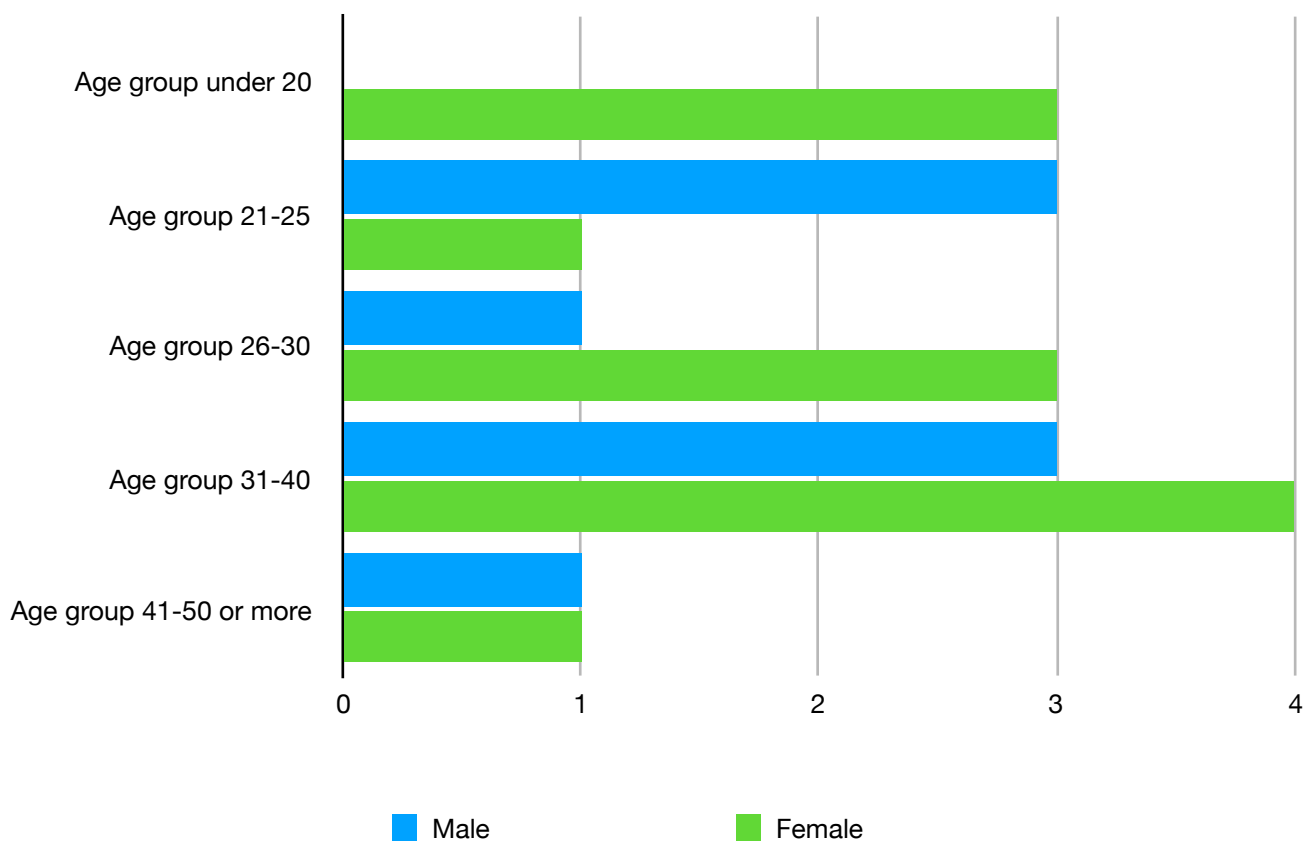
What is your opinion on using Moodle for learning	Answers
I find it incomplete	5
I find it confusing	0
It gives me flexibility	15
It gives me structure	4
It empowers me	2

Table 9 illustrates answers received for a question with multiple answers. No participants found Moodle confusing. 5 participants found it incomplete, 15 participants consider it is flexible, 4 participants consider it gives them structure and 2 stated that it empowers their learning.

4.2. Data analysis, interpretation and evaluation

The evaluation of data will be realised using univariate analysis and it will make use of charts and frequency tables for better emphasis of the findings.

Figure 1 Bar chart Age and gender



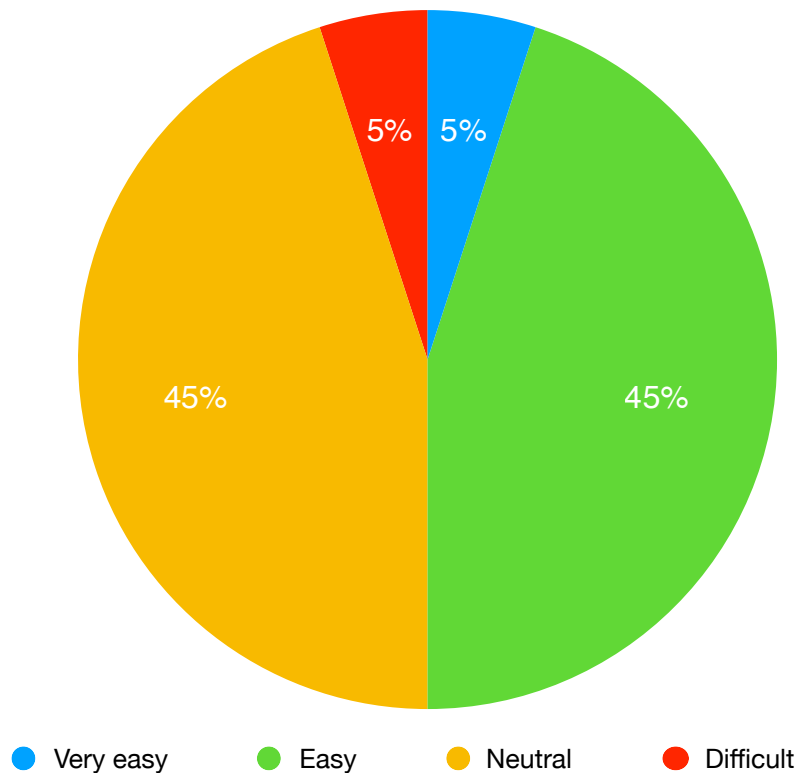
In figure 1 can be observed that the majority of participants belong to the age group 21 to 40. This is in correlation with the secondary data which states that The University of Wales Trinity Saint David supports students of all ages.

Table 10-Frequency table for students previous experience regarding Moodle

Using Moodle previously	Frequency	Percentage
No	20	100%

Table 10 highlights that all the participants did not use Moodle before and have no experience using it with a 100% value. This means that all the knowledge regarding Moodle was gained through this course and that feedback will be strictly related to UWTSD Moodle as they do not have previous knowledge. This will have great contribution to the findings as it will give value to the information.

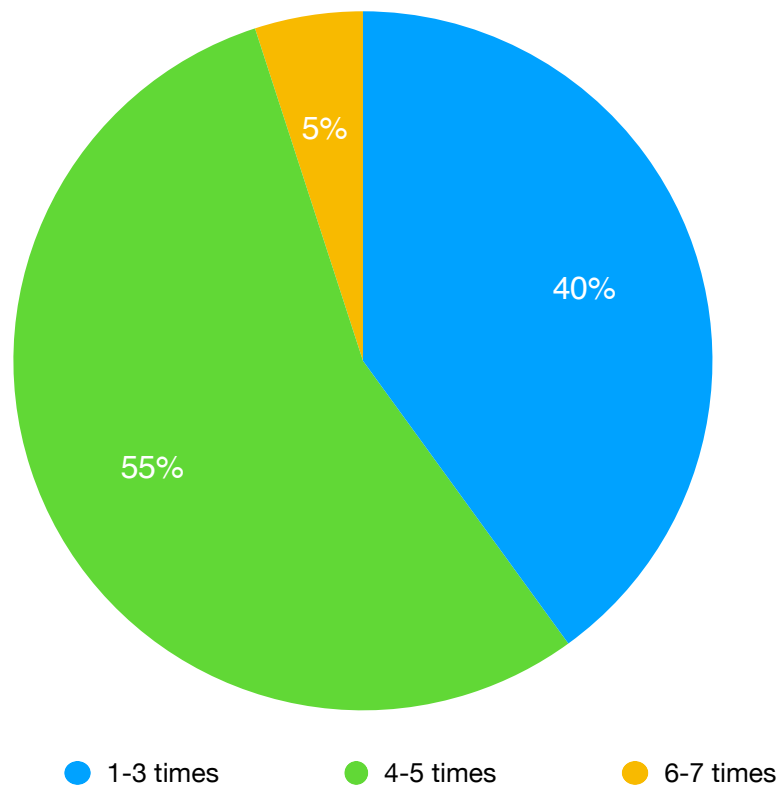
Figure 2 Pie chart for Students view on how easy is to access Moodle



In Figure 2 it can be observed that two segments dominate the pie chart. 45% consider it is easy to access Moodle and 45% choose to remain neutral. 5% said it is very easy to access and 5% said it is difficult. The evaluation of these findings places the university Moodle towards a positive position as 50% consider it is easy and the neutral segment does not indicate a negative value. Only 5% are given a definitely negative value. Despite that the university should create an easier to access interface to

ensure that they have the most efficient platform design. According to Krasna and Pesek, 2020 many organisations ask for students feedback in order to improve their Moodle efficiency and easy utilisation for their main users as researched in the literature review.

Figure 3 Pie chart for Weekly usage



In figure 3 can be observed that the largest segment of 55% access Moodle 4-5 times per week. That is very positive figure for students engagement. That means that the university succeeded to engage the students at very high level as more than half, 60% access Moodle more than 4 times per week. The university states that that they aim to offer value through their learning process that delivers distinctive graduate attributes for the professional development of their students and that is perceived by the students as they are interested to and show high levels of implications.

Figure 4 Pie chart for Daily hours spent on Moodle

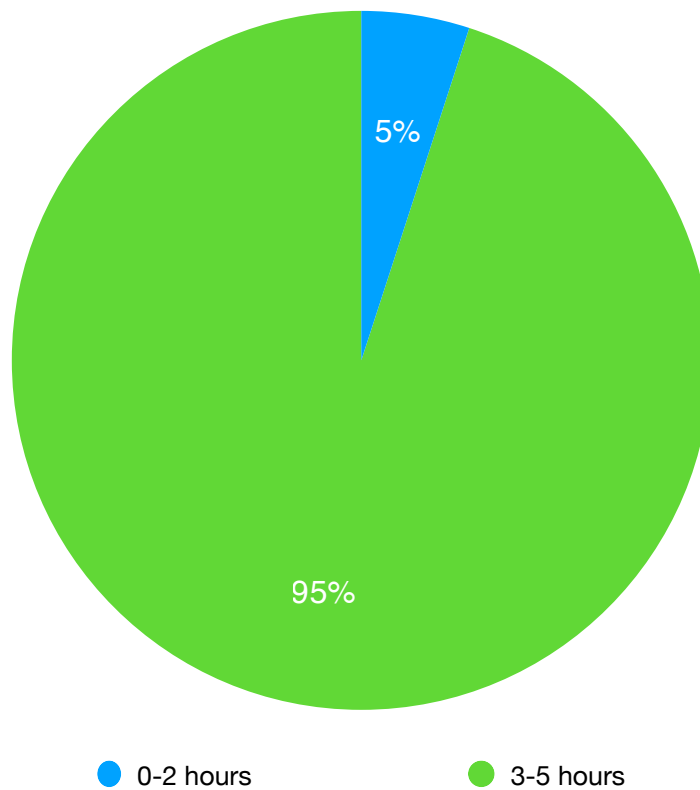
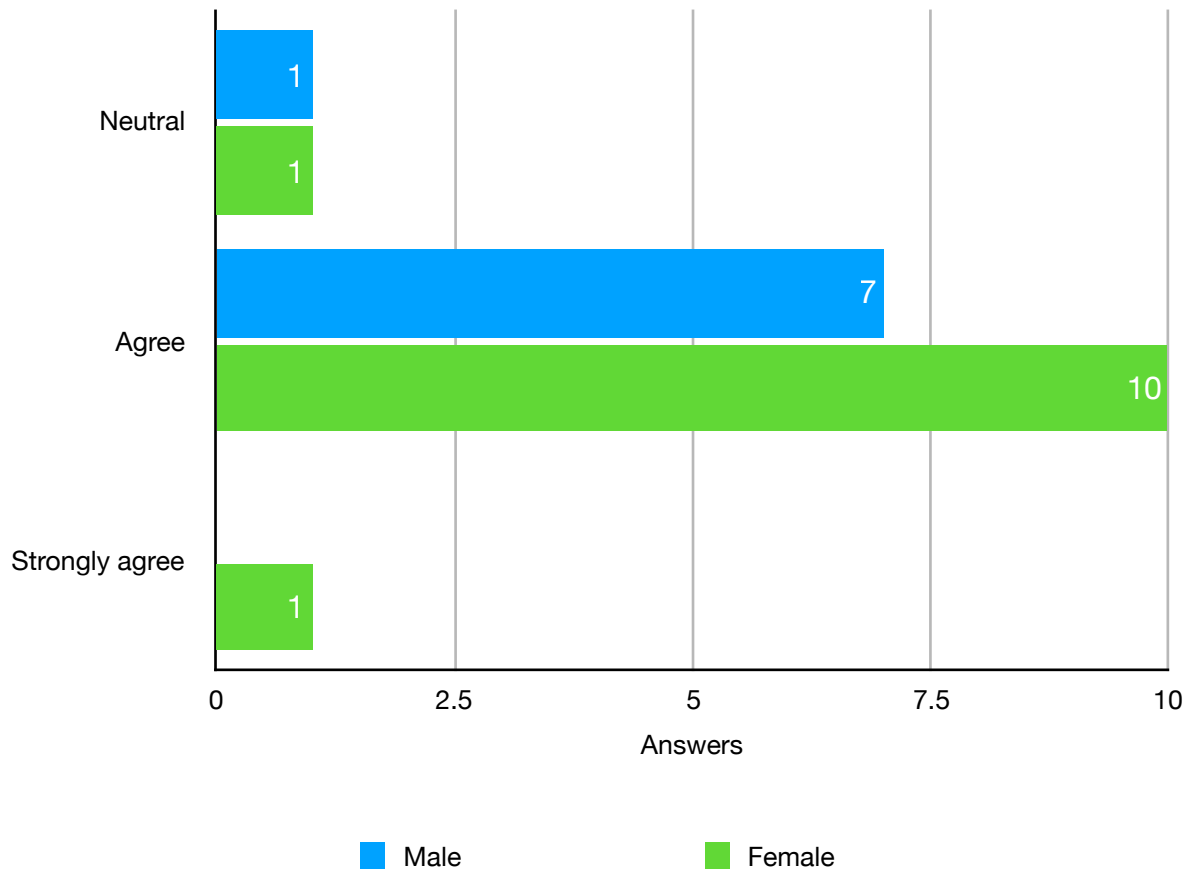
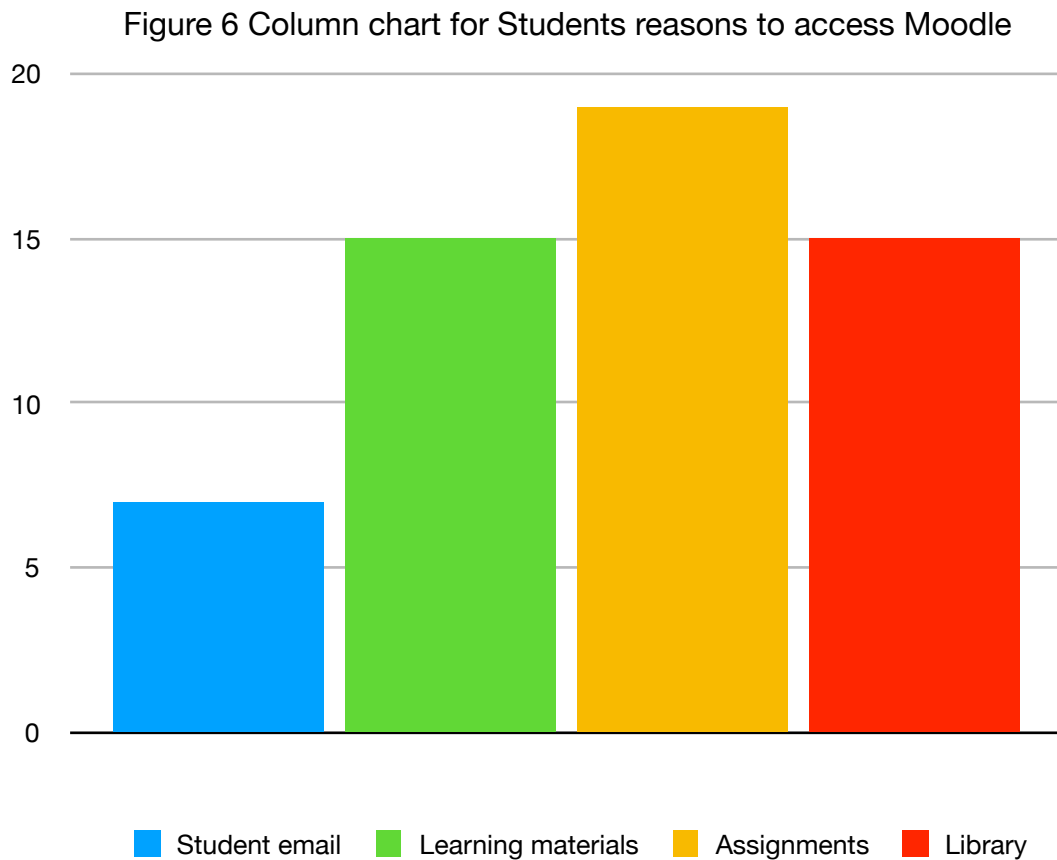


Figure 4 has only 2 segments as the findings illustrated that students do not spend more than 5 hours per day on Moodle. A minority of 5% spend between 0 and 2 hours, but a majority of students 95% spend at least 4 hours per day when they access Moodle. This findings are connected with the data evaluated through figure 3 and it can be considered as positive results for the university efforts to engage their students in the e-learning process and as identified in the literature review the E-learning is the process of learning realised through electronic media support.

Figure 5 Bar chart for Perception on Moodle efficiency

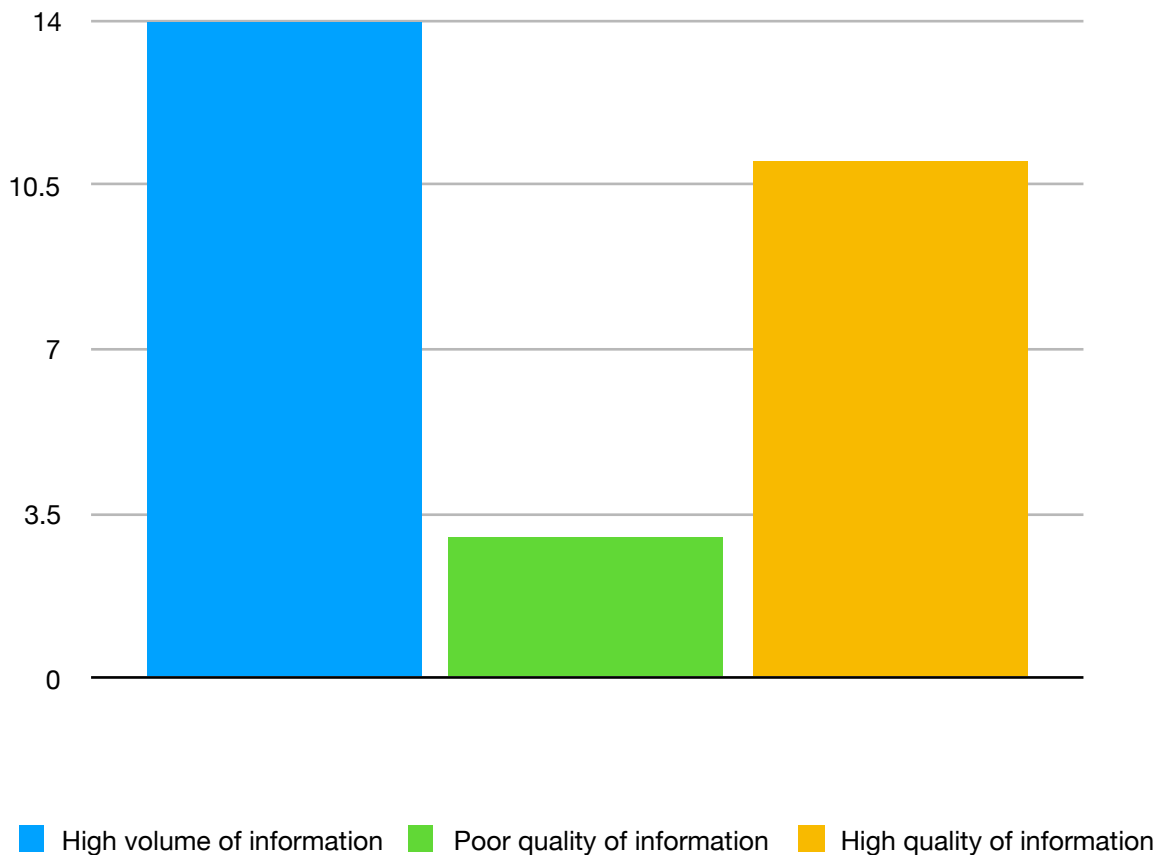


In Figure 5 it can be observed that majority of students a number of 17 agree that Moodle is an efficient platform which represent 85% of the participants. Evaluating this finding it enhances the positive impact of Moodle on students learning experience as a large majority considers it is an efficient platform for their learning both female and male participants. According to Cole (2007) Moodle is considered to be one of the best learning management systems for its customisable feature and it can be used for teaching online classes and that is in correlation with the primary data findings. According to Yadar et al (1998) VLE provides a multitude of tools for students, lecturers and administrators such as admissions applications, students enrolment, course registration and accession, assessments and grade management, communication between parts which incorporates a emailing and chatting. The evaluation of the findings are in correlation with the findings from literature review.



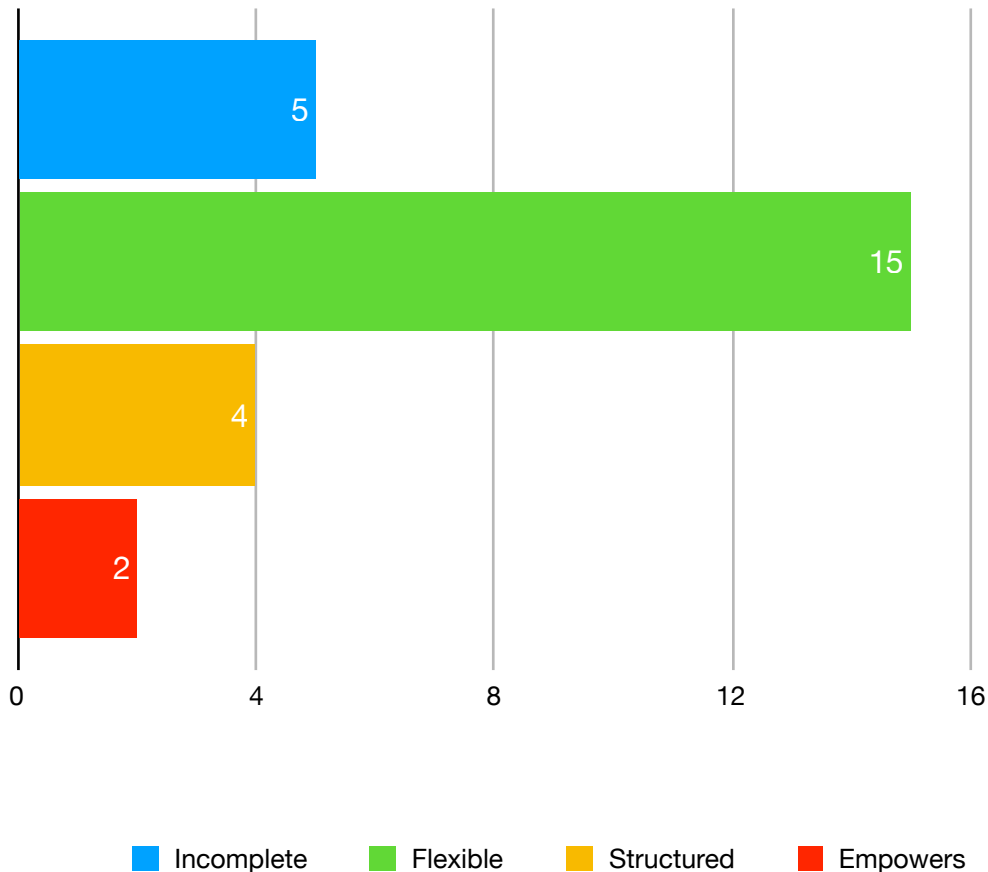
In figure 6 it can be observed that students use Moodle mostly for assignments with the tallest column followed by learning materials column and library column which have the same values. The smallest column is the student email, which means that students do not use as much the student email. Probably they still use their personal email or the group chat. Their main interest is the assignments which is relevant as passing the assignments helps them to complete the course, but with high values for learning materials and library it means that students understood that in order to pass their assignment they need to study and the learning materials and library helps from Moodle helps them to touch their goals.

Figure 7 Column chart Information on Moodle



In figure 7 the presented findings highlight that many students consider that there is a high volume of information with high quality of information represented by the highest columns. Despite this positive values there is a number of three students that consider that Moodle has poor quality of information. Therefore the information on Moodle should be evaluate to ensure high quality levels of information as stated in the secondary data research which states that the university is focused on excellent teaching, inclusivity, empowering creativity and employability, collaboration and global citizenship orientation, sustainable development (UWTSD, 2020).

Figure 8 Bar chart for students learning experience using Moodle



In Figure 8 it can be observed that majority of students appreciate Moodle's flexibility. According to findings in secondary data Moodle can be used for teaching online classes or to supplement face-to-face learning (Cole, 2007). UWTSD Moodle is used at the moment for online classes, but when face to face teaching is possible it can be used to supplement the in-class learning. This figure presents a concerning finding of 5 students considering that Moodle is incomplete and that should be looked at by the university. This is connected to previous primary data analysed above where a small segment stated that there is poor quality of information and the student could mean that is incomplete and that determine them to appreciate it that way. Only a small segments feel empowered by using VLE Moodle in their learning experience and that should definitely be improved.

5. Conclusions and recommendations

The research achieved the proposed objectives it defined the concept of VLE Moodle, it identified the University of Wales Trinity Saint David approach to design and customisation of VLE Moodle and investigated the students perspective over University of Wales Trinity Saint David Moodle.

The evaluation of the findings identified that VLE Moodle has a positive impact on Cert HE Skills for the Workplace learning experience at the University of Wales Trinity Saint David.

The recommendation for the University of Wales Trinity Saint David is to assess their Moodle interface, to evaluate the content of the information related to the learning materials as it might be incomplete and determine students to find the information of low quality.

Another recommendation is also related to the content which should give more empowerment to the students in order to be aligned with university's vision and values.

6. References

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7. Appendices

Questionnaire

Topic : The impact of Virtual Learning Environment Moodle for University of Wales Trinity Saint David students regarding their learning experience

Please select one of your answers

1. *What is your gender?*

- A. Female
- B. Male

2. *What is your age group (years)?*

- A. Under 20
- B. 21-25
- C. 26-30
- D. 31-40
- E. 41-50 (or more)

3. *Have you used Moodle in your previous learning experiences?*

- A. Yes
- B. No

4. *How easy is to access the learning resources on Moodle?*

- A. Very easy
- B. Easy
- C. Neutral
- D. Difficult
- E. Very difficult

5. *How many times per week do you access Moodle?*

- A. Between 1 and 3 times
- B. Between 4 and 5 times
- C. Between 6 and 7 times

6. *How many hours per day do you spend on Moodle?*

- A. 0-2 hours
- B. 3-5 hours
- C. 6-8 hours (or more than that)

7. *Do you consider that Moodle is an efficient platform for your learning?*

- A. Strongly disagree
- B. Disagree
- C. Neutral
- D. Agree
- E. Strongly Agree

Please select one or multiple answers

8. *What is/are the main reasons for accessing Moodle?*

- A. Student mail
- B. Learning materials
- C. Assignments
- D. Library

9. *How do you describe best the information available on Moodle?*

- A. Low volume of information
- B. High volume of information
- C. Poor quality of information
- D. High quality of information

10. *What is your opinion on using Moodle for learning?*

- A. I find it incomplete
- B. I find it confusing
- C. It gives me flexibility
- D. It gives me structure
- E. It empowers me

Thank you

Table A Primary data summarised

No.	1	2	3	4	5	6	7	8	9	10
1	M	21-25	No	Easy	4-5	3-5	Agree	B,C,D	b	3
2	M	41-50>	No	Easy	4-5	3-5	Agree	A,B,C,D	b,d	3
3	M	21-25	No	Neutral	1-3	3-5	Agree	A,C	c	1
4	M	31-40	No	Difficult	1-3	0-2	Neutral	C	c	1
5	M	31-40	No	Neutral	4-5	3-5	Agree	B,C,D	b	3
6	M	26-30	No	Easy	1-3	3-5	Agree	B,C,D	d	3
7	M	31-40	No	Neutral	1-3	3-5	Agree	B,C,D	b	1,3,4,5
8	M	21-25	No	Easy	4-5	3-5	Agree	A	c	1
9	F	31-40	No	Easy	4-5	3-5	Agree	B,C,D	b	3
10	F	26-30	No	Easy	4-5	3-5	Agree	B,C,D	d	3
11	F	<20	No	Easy	4-5	3-5	Agree	B,C,D	b,d	3
12	F	31-40	No	Easy	4-5	3-5	Strongly agree	A,B,C,D	b,d	3,4
13	F	<20	No	Neutral	4-5	3-5	Agree	B,C,D	b,d	3
14	F	26-30	No	Neutral	1-3	3-5	Neutral	C	b,d	1
15	F	21-25	No	Easy	6-7	3-5	Agree	A,B,C,D	b,d	4,5
16	F	41-50	No	Neutral	4-5	3-5	Agree	A,B,C,D	b,d	3
17	F	31-40	No	Neutral	1-3	3-5	Agree	A,C	b	3
18	F	<20	No	Very easy	4-5	3-5	Agree	A,B,C,D	b,d	3,4
19	F	31-40	No	Neutral	1-3	3-5	Agree	B,C,D	d	3
20	F	26-30	No	Neutral	1-3	3-5	Agree	B,C,D	b	3

M- male F- female

A- Student email
 B- Learning materials
 C- Assignments
 D- Library

b- High volume of information
 c- Poor quality of information
 d- High quality of information

1- Incomplete
 3- Flexible
 4- Structured
 5- Empowering