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Research topic: Impact of Virtual Learning Environment

(VLE) – Moodle on students' learning experience at the

University of Wales Trinity Saint David London Campus

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1.0 Introduction

In this following research report, the primary concentration will be on how the Virtual Learning Environment (VLE) affects the learning experience for the students. The primary objectives for this research can be seen in the following way-

- ❑ To analyse if problem-based learning helps the students of the University of Wales TSDL campus positively or not in relation to VLE
- ❑ To study if adaptive tools help the process of VLE in any manner
- ❑ To examine if technology acceptance and end-user behaviour under VLE influences the learning experience of the students
- ❑ To attest whether the cognitive acceptance theory is effective on the VLE learning model of the University of Wales TSDL campus

2.0 Literature review and themes analysis

VLE and Problem based learning

Phungsuk et al., (2017), conducted a student-centred pedagogy that allowed them to approach a subject by attempting to understand the solution through open-ended problems. This allowed them to acquire knowledge by exchanging information with others, participate through self-direction for task-centred actions, and apply themselves through a standard virtual learning classroom.

VLE and the availability of adaptive tools for learning

Gedera (2014), in his study, tried to estimate the learning experiences of students, as they were assisted with synchronous educational tools during online university courses. This affected the student's individual knowledge attrition, especially by creating an indifference through their utilisation of elements like virtual classrooms, PowerPoint, and others during virtual learning classes.

VLE and technology acceptance and end-user behaviour

Kurt and Tingöy (2017), found in their analysis that an individual learner's approach towards a technology might vary with regards to country perceptions. Their study in the countries of the UK and Turkey identified how the psychological process mediating observed relationships and its end attitude were defined accordingly. This separated the technology acceptance around the students.

VLE and its impact on cognitive acceptance through learning style

Alshammari (2020), believed in their study that each student possessed a distinctive learning style characterised by affection and cognition. Either the learner recognises and understands

the factors through cognitive styles, or it can decide how the learner can apply the knowledge into different elements of learning around a virtual learning environment.

3.0 Data collection methodology

The researcher has developed a questionnaire based on the level of relevant themes analysed and taken from the secondary data sources. The researcher has formed questions that directly targets the research objectives to gather raw responses from the respondents. The researcher will then use statistical tools in order to understand data significance. The researcher has selected random sampling within the college campus. The researcher has also used statistical application in the form of Excel in order to visualise and interpret the collected data. As per the requirement and the guidelines of the assessment, the entire process has been executed online without any physical contact with the respondents.

4.0 Analysis of both primary and secondary data collected

4.1 Analysis of primary data

Among the 17 students from whom the responses were collected, 11 are male and 6 are female. Among these 17 respondents, 14 have a side profession where the others likely do not to have any. The collection of data has been made through surveys performed online.

Theme 1

The first theme tried to determine VLE and Problem-based learning. The first question tried to determine if problem-based learning is appropriate for their current study. Among 17 respondents, 12 strongly agreed or agreed to the factor that problem-based learning is effective in understanding the problem better and solving the same in an easy manner. From the study of Phunsukh et al. 2017, it can be evidenced that the students are benefited from the techniques like VLE, the students achieved the highest test scores.

The second question aimed to determine whether the model of problem-based learning is applied in the VLE method. According to the 12 responders among the 17, the process of VLE is applied as a result of the method of problem-based learning. From this understanding, it can be understood that a problem-based learning process is applied at the University of Wales.

Finally, the third question tried to know whether the students have seen any changes in the learning process after going through the problem-based learning process. The results which are shown are not satisfactory. 6 of 17 students considered that their learning has been improved from the process where 8 strongly disagreed or disagreed to the factor that the system has improved their learning or there has been any changes in the learning process.

Theme 2

Gedera (2014) have explicitly described the importance of adaptive tools in any given VLE. The questionnaire has followed the standard themes which has been synthesised from this source. Additionally, the application of 'Activity Theory' had also helped to theoretically analyse the concept of adaptive tools. As for the element of 'Subject', the respondents have agreed on their learning process through common tools like Office 365. As for the effectiveness of the current tools used and implemented by the University, the respondents are again in majority supporting positive outcomes. Gedera (2014) suggested a strong link between the subject and the object and in the context of the current study this objective is decided and determined by the University only. Hence the outcomes are not totally controlled by the selections and choices available to the students but also the priorities set by the university. These controlling factors can be easily communicated and elaborated upon in the secondary analysis section. The theme, in general, has suggested that the students, in general, are much more comfortable with the selection of tools at their disposal and they seem to think it is a positive force towards their overall learning experience in their respective studies.

Theme 3

The third theme wanted to know the use of VLE and technological acceptance and end-user behaviour (students). The first question tried to know whether the different VLE technologies like Office 365 video sessions, Mobile virtual reality, Classroom Chat and others are easy to use. After the Covid 19 pandemic and lockdown, the learning has been actually based at home and the students suddenly made to change the learning process. among 17 of the students, 14 strongly agreed or agreed to the fact that the technologies are easy to use. In fact, the study of Gedera, 2014 showed that about 30% of the users stated that the method of Adobe Virtual Classroom allowed them to see and hear the lecture of the teachers.

The second question wanted to know if the acceptance of these tools has been good among the students. In other words, did the student agree to the factor that these processes are easy to use? Among 17 of the responders 13 strongly agreed or agreed to the factor that the use of these tools has been accepted by the students where 3 students strongly disagreed or disagreed with the fact that these technologies are not widely accepted.

The third question tried to know if the technological preference has changed the learning experience. According to 6 of the 17 respondents, this has changed learning where most of them (9) don't think so.

Theme 4

The 4th theme wanted to know whether the VLE has an impact on the cognitive acceptance of the learning style. The first question tried to understand whether the current VLE process is

preferred by the students over the traditional methods. According to 5 of the 17 respondents, the process of VLE through classroom chats, Adobe Virtual Classroom and others is preferred to learn over the traditional process of blackboard, books and others. But according to 9 of these responders, the traditional methods like learning through books and others are more effective while 3 remained neutral.

The second question wanted to know whether VLE satisfies the learning style of the students through the different processes. According to 6 of the 17 responders, the methods are acceptable for them to satisfy the learning styles where 10 strongly disagreed or disagreed with the factor that these new learning styles have helped them to understand the studies and it has matched their learning style.

The third question tried to determine if the process of VLE has helped to change or influence the learning process of the students. Among the 17 responders 7 strongly agreed or agreed to the fact that the process of VLE has influenced or changed the learning process while 8 disagreed that the process has not been effective in doing so. At last, according to Alshammari, 2018, the process of VLE though effective, cannot replace the effectiveness of the traditional learning process.

4.2 Analysis of secondary data

All the authors conducted an analysis around the respective themes and this can be discussed through the below distribution.

Theme 1

The scholars conducted a frequency test in order to assess the statistical significance around problem-based learning through normal classroom groups and virtual learning. The analysis was conducted on 30 students. The results showed that problem-based learning received a standard deviation of 1.69, whereas the former received 1.14. This showed that problem-based learning was more applicable to normal classroom groups, with a statistical significance of .05. The primary data collected is supportive of the problem-based learning model adopted by the university. The approach of the university, as well as the outlook of the respondent, seems to align up. The applicability of this approach to make the VLE more appropriate for the students is verified and it is established that the university has an understanding of this theory as well. It stimulates stage-wise difficulty which is frequently used in various traditional classes.

Theme 2

Another method used by the author was to conduct an interview between 2 students and 2 lecturers and understand the propensity that facilitates virtual learning capacity among students. That allowed the students to express resentment at classroom activities being analysed through

online platforms and this created a problem for adaptive tools as well. However, the other student considered how the tool was effective in saving the progress of the student's learning through a virtual platform. For the primary analysis, the respondents have supported the concept of learning tools and their availability in the given university setting. Although these tools are seen as frequently used instruments in terms of learning, the facilitation of these tools is a matter of institutional supervision as per the notion of Gedera (2014). His conceptual framework on the same topic has been analysed in the context of the current study with a strong emphasis on the students on their given class tools.

Theme 3

The scholars conducted a regression to determine all aspects of social influence, performance expectancy, effort expectancy, and facilitating conditions that determined the factor analysis of behavioural intention. This intention was mainly focused on virtual learning and was applied to both data sets of the UK and Turkey. With 35% of the variance sample from the UK, and 39% of the variance sample from Turkey. The data set for the UK was 94.27 for the former i.e. $P < 0.01$, while for the latter it is 107.509 i.e. $P < 0.01$. The primary analysis has suggested that as for the concept of technology acceptance the respondents in the majority have supported the core idea of expectancy from the University. The respondents have agreed that the inclusion of a VLE learning environment has definitely helped to make the most out of the opportunity of study. However, they have not supported the idea of the University or the college pushing the tools of VLE upon them with any form of expectancy apart from getting sufficient knowledge of the learning outcomes and deliverables.

Theme 4

The authors in this study conducted the vector space model analysis that tried to identify students with moderate and sensory styles, mild intuitive styles, and moderate intuitive styles. The number of participants being 6 students showed a standard deviation of 967.27 for adaptiveness for the first two styles, while the rest established a standard deviation of 863.490 that showed that learning engagement was enhanced through VLE. The primary analysis of this theme has also supported the objectives positively.

5.0 Conclusion

In conclusion, the study would like to add that the virtual learning environment as practised within the institution of the University of Wales is effective in terms of the students learning experience. Both the primary and the secondary analysis have suggested that the successful implementation of a virtual learning environment is a dependent prospect. It relies on the integrity of the institution to propel positive learning behaviour and expectancy from the students

while at the same time allowing them all the necessary learning tools which support the virtual learning platform full stop it is also a prerogative of the students to make the most out of this opportunity is in order to make the virtual learning environment a success.

References

- Phungsuk, R., Viriyavejakul, C. and Ratanaolarn, T., 2017. Development of a problem-based learning model via a virtual learning environment. *Kasetsart Journal of Social Sciences*, [online] 38(3), pp.297-306. Available at: <<https://reader.elsevier.com/reader/sd/pii/S2452315116300613?token=C9248FEEC05DE9BA69891C7B557885FA1C0178106EC94C1B831E138C581A771A36B5F56FA7CF8A7E13DFC5A7F90FE598&originRegion=eu-west-1&originCreation=20210413093627>> [Accessed 1 April 2021].
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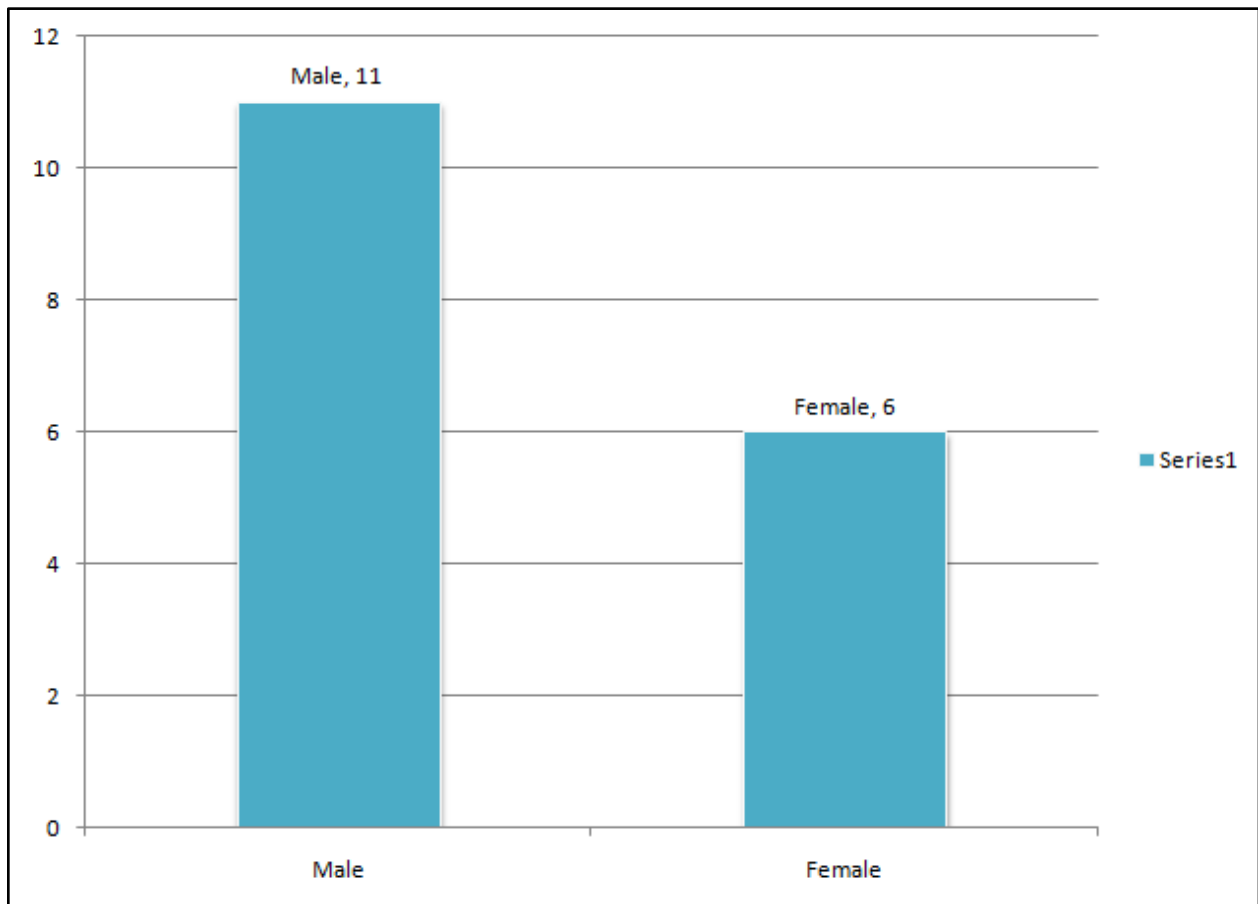
Appendices

Appendix 1: Questionnaire for primary data collection and output

Demographic Questions

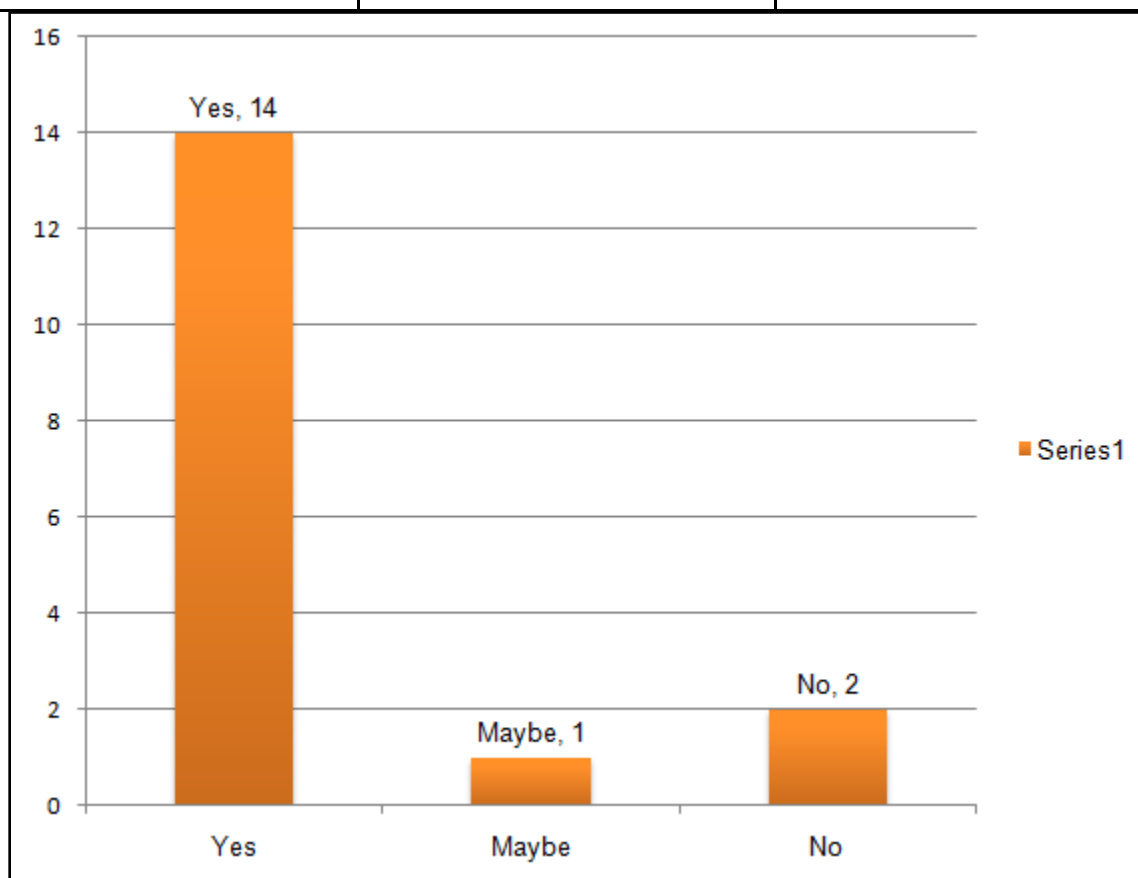
What is your gender?

Male	Female
11	6



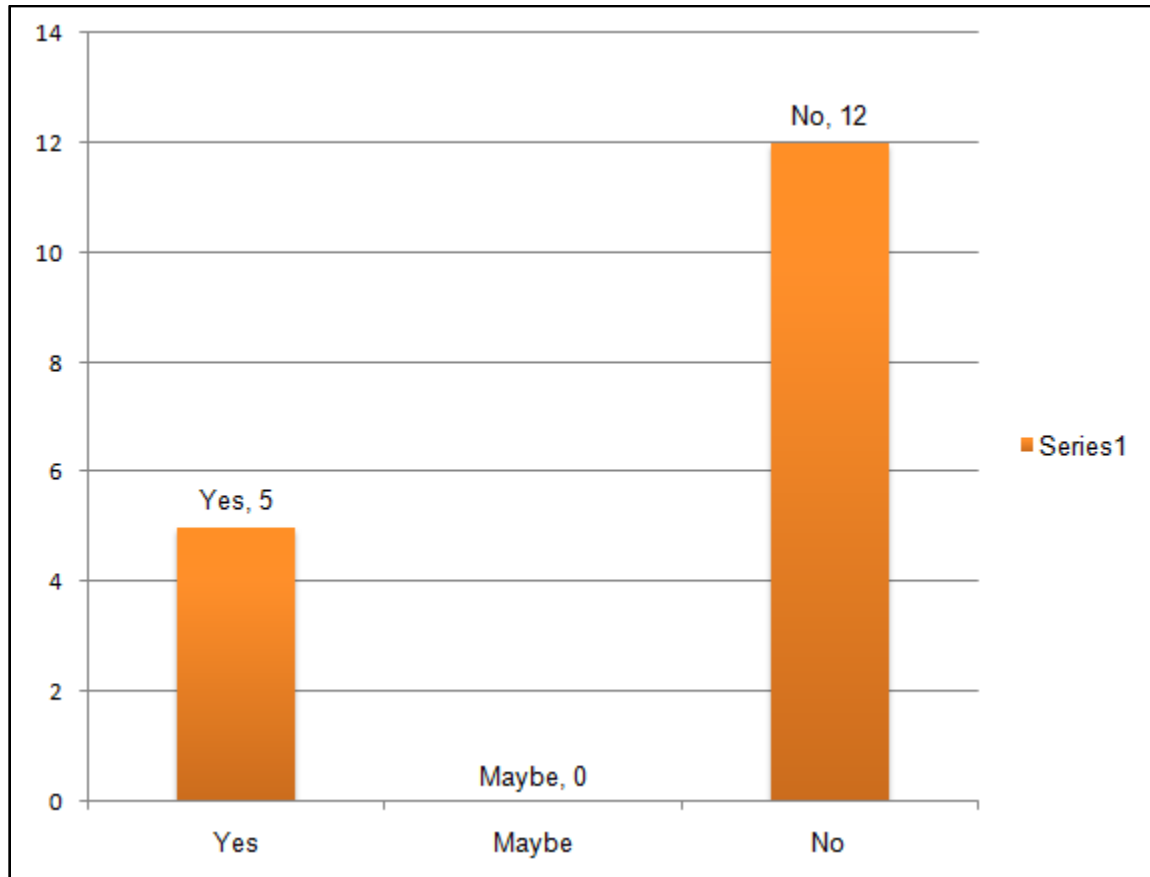
Do you have any profession besides being a student?

Yes	Maybe	No
14	1	2



Do you have previous virtual learning experience?

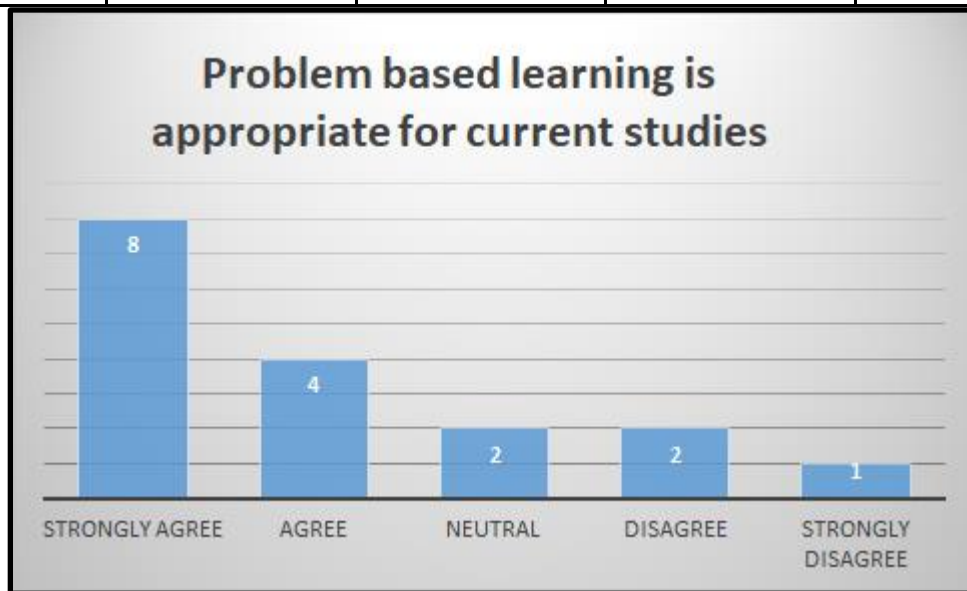
Yes	Maybe	No
5	0	12



Theme 1

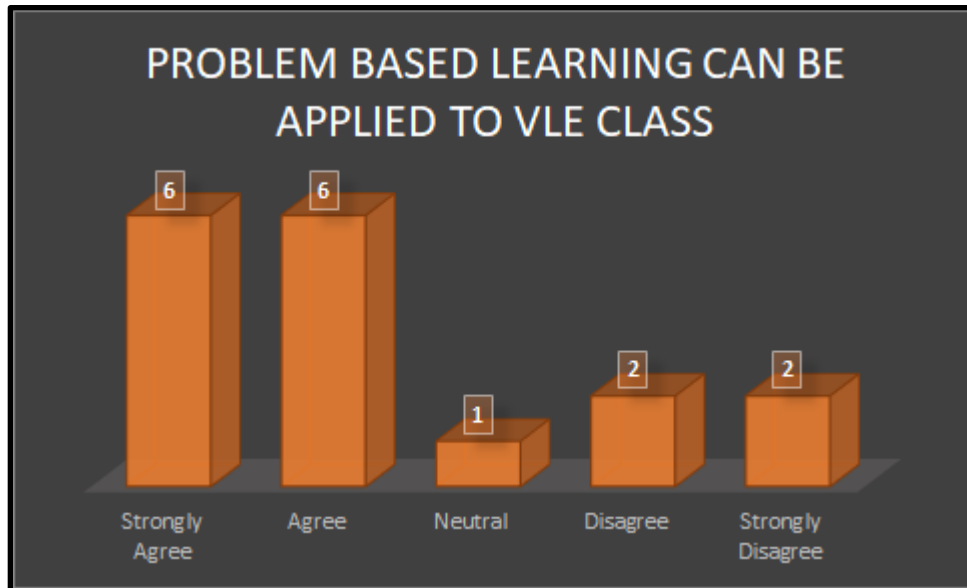
Do you think problem-based learning is appropriate for your current studies?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8	4	2	2	1



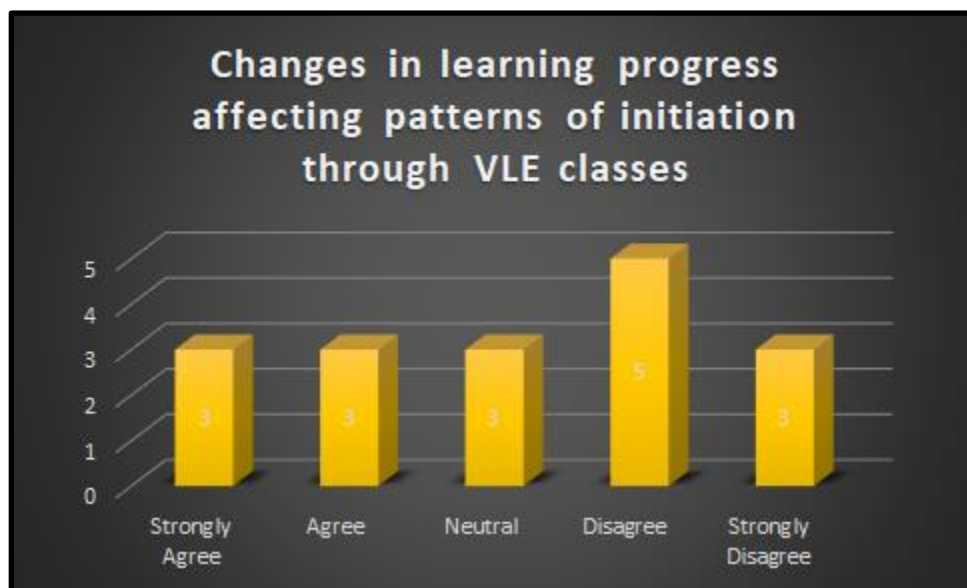
Do you think that problem-based learning is applied in your VLE class model?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6	6	1	2	2



Have you seen any changes in your learning progress or pattern since the initiation of VLE classes?

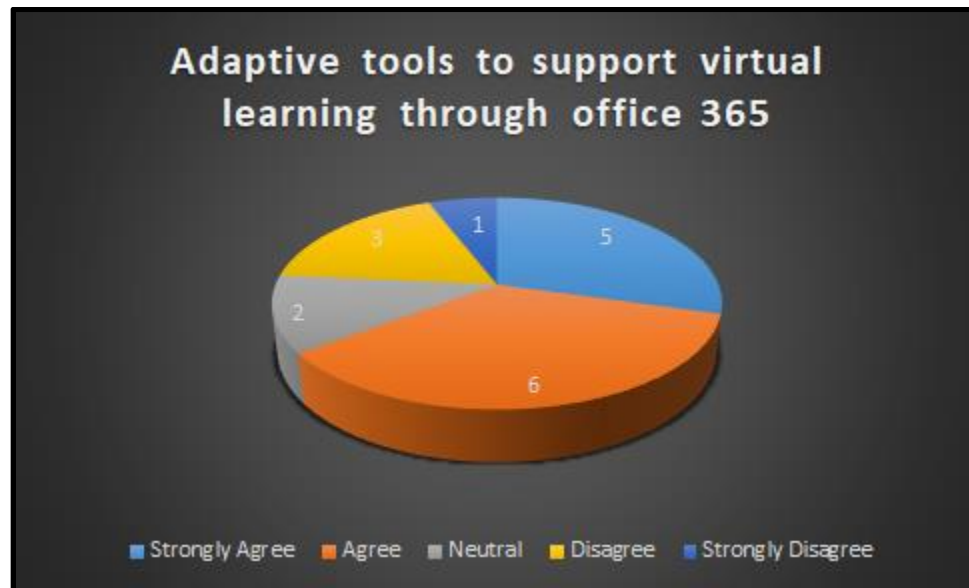
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3	3	3	5	3



Theme 2

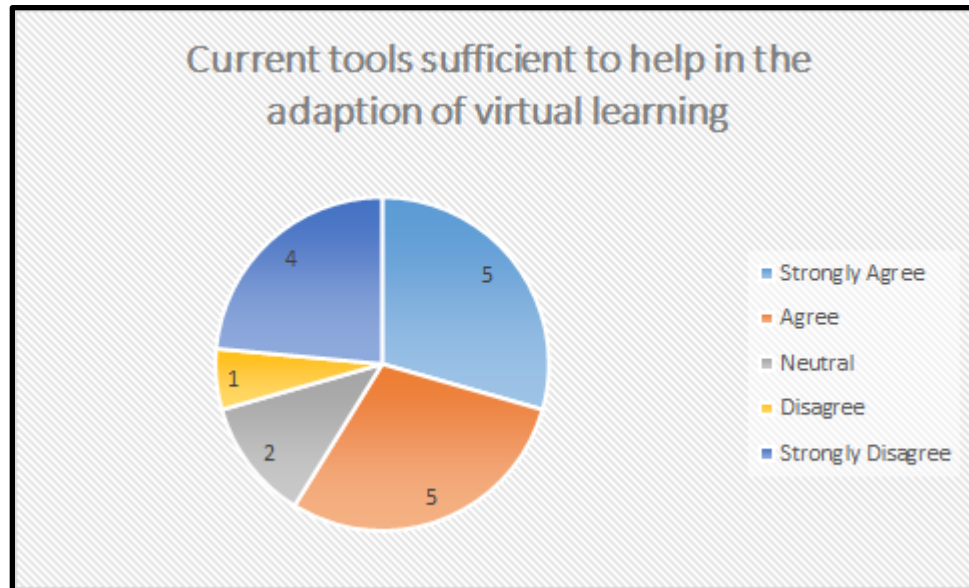
Are there enough adaptive tools for virtual learning through Office 365?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	6	2	3	1



Are the current tools sufficient to adapt to virtual learning?

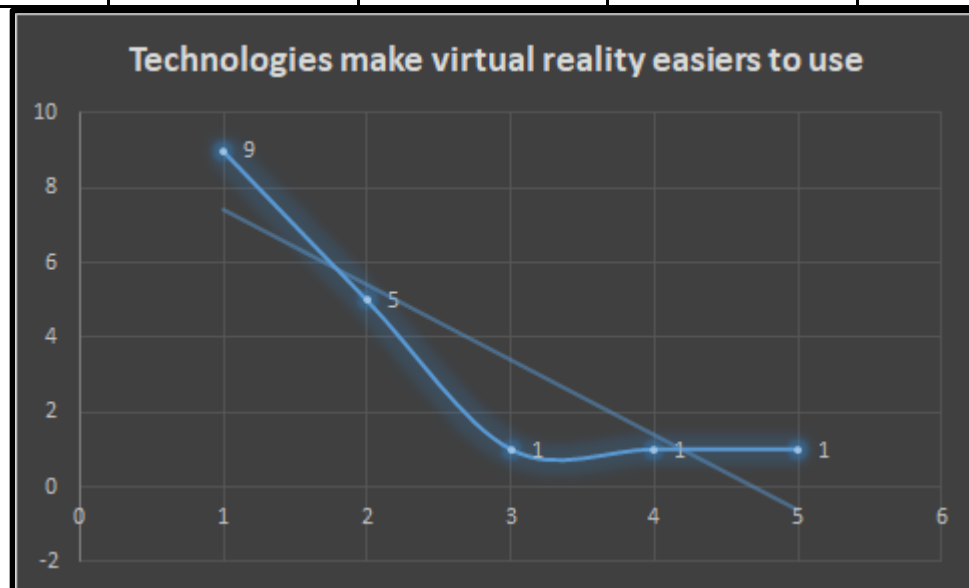
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5	5	2	1	4



Theme 3

Are the technologies like Classroom Chat, Mobile virtual reality and others easy enough to use?

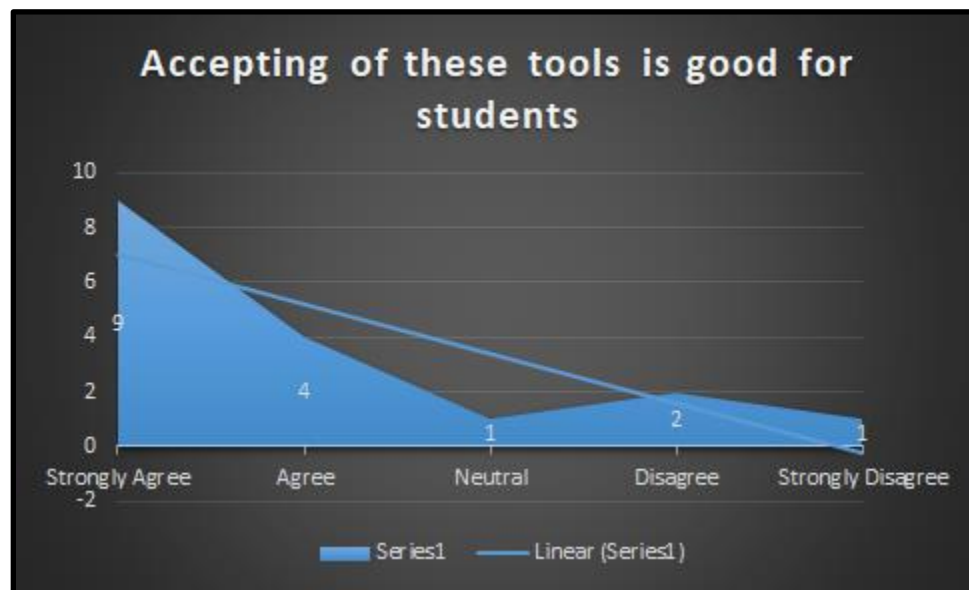
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
9	5	1	1	1



Is the acceptance of these tools good among the students?

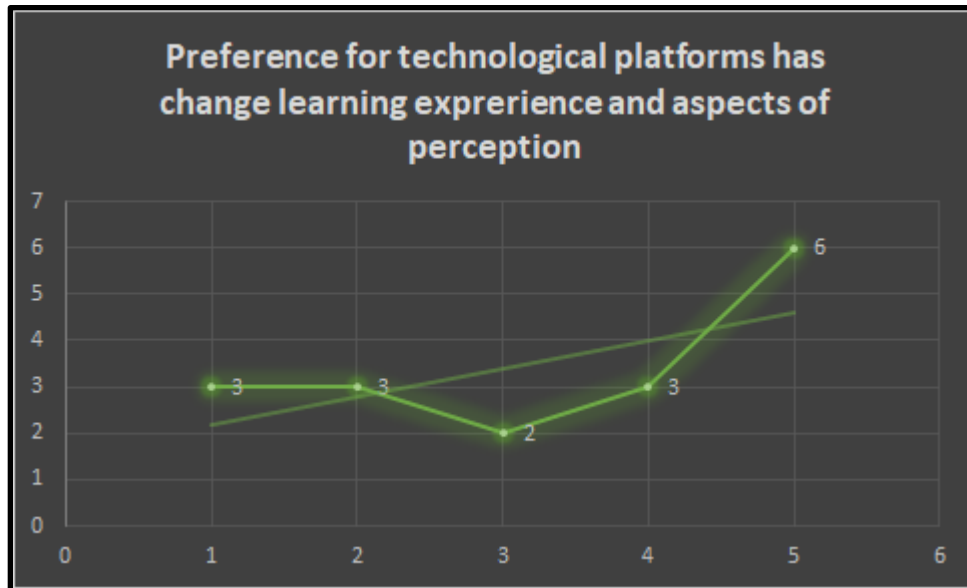
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

9	4	1	2	1
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Do you think your preference for technological platforms for study purposes has changed your learning experience?

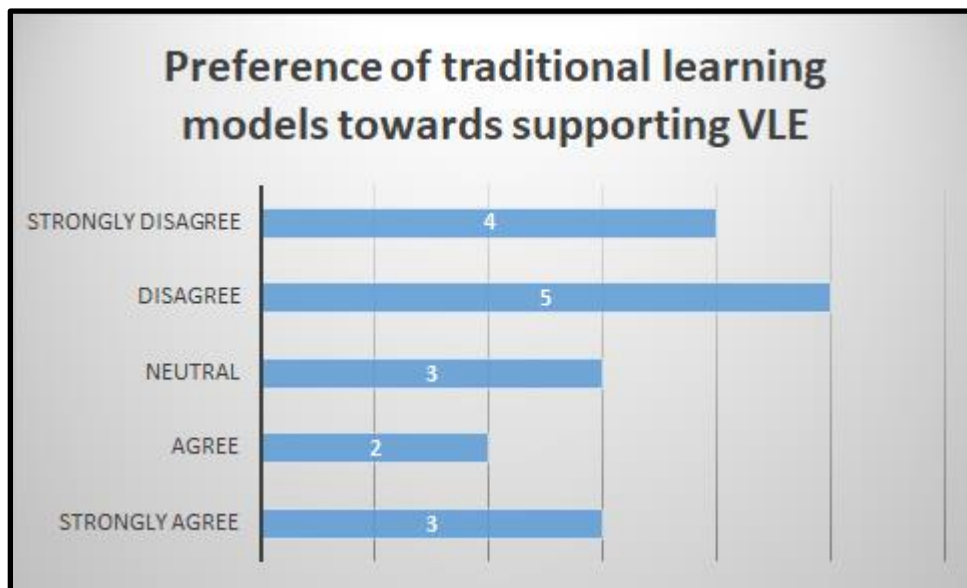
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3	3	2	3	6



Theme 4

Do you prefer VLE to the traditional learning model for your current course?

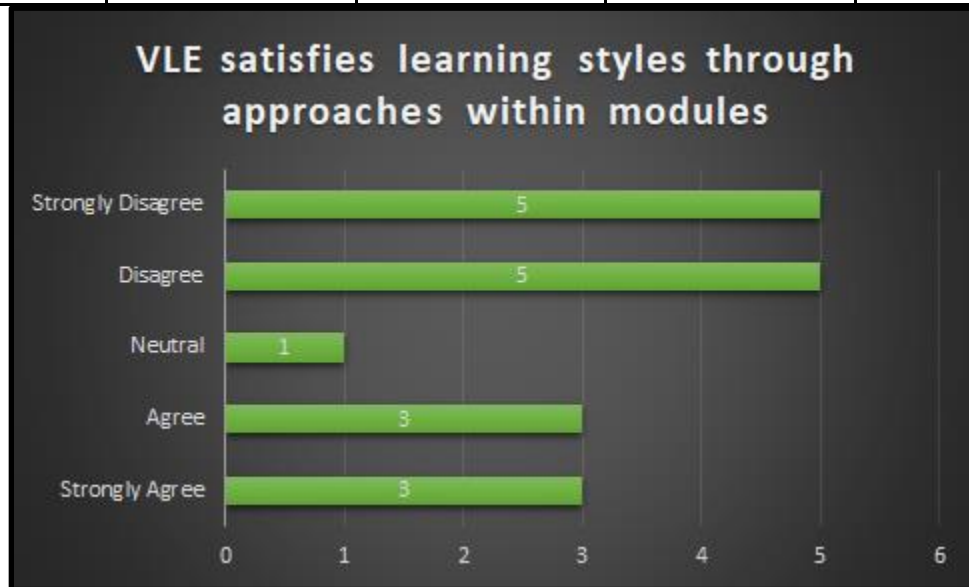
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3	2	3	5	4



Does VLE satisfy your learning style through its approach to modules and classes?

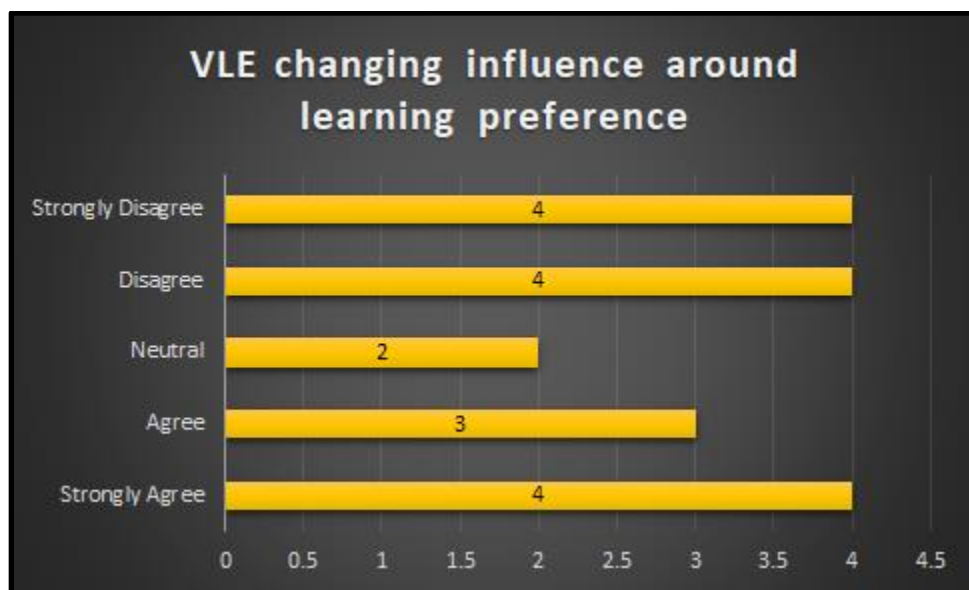
Strongly Agree	Agree	Neutral	Disagree	Strongly
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				Disagree
3	3	1	5	5



Did VLE change or influence your learning preferences in any way?

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4	3	2	4	4



Appendix 2: Secondary data sources

Name of the Author	Research Title	Journal Name	Data collection	Themes analysed	Conclusion
Phungsuk et al., (2017)	Development of a problem-based learning model via a virtual learning environment.	<i>Kasetsart Journal of Social Sciences</i>		VLE and Problem based learning:	
Gedera, (2014)	Students' experiences of learning in a virtual classroom: An Activity Theory perspective	<i>International Journal of Education and Development using ICT</i>		VLE and the availability of adaptive tools for learning	
Kurt and Tingöy, (2017)	The acceptance and use of a virtual learning environment in higher education: an empirical study in Turkey, and the UK.	<i>International Journal of Educational Technology in Higher Education</i>		VLE and technology acceptance and end-user behaviour	

Alshammari, (2020)	Design and evaluation of an adaptive framework for virtual learning environments	<i>International Journal of Advanced and Applied Sciences</i>		VLE and its impact on cognitive acceptance through learning style	
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