

Running head: DIGITAL SKILLS AND RESEARCH METHODS

Topic: The Impact of Virtual Learning Environment

Module: Digital Skills and Research Methods

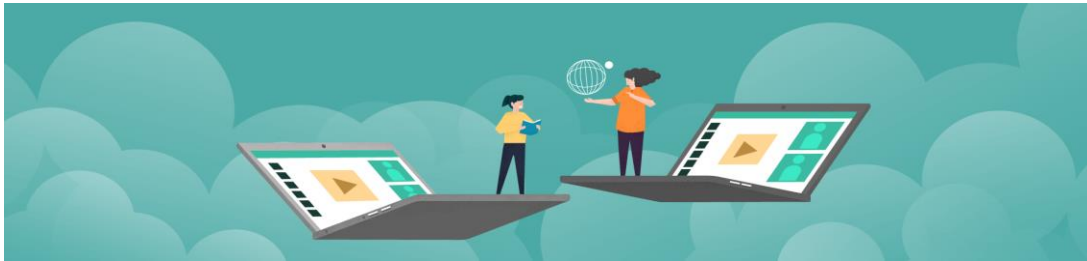
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Abstract:

Through our experience, we aim to encourage researchers to consider various technical and methodological aspects of possible educational research that can be undertaken from a virtual learning environment, defined as a system for delivering learning materials to students via the web. This system includes assessment, student tracking, collaboration and communication tools. Virtual learning environments allow researchers to store various documents easily and efficiently, but to use these data for subsequent analysis, they must conduct a series of operations for transforming and organizing the data. Central to the success of research to be carried out is the choice of analysis techniques and data analysis software. In our case, we considered techniques derived from qualitative content analysis and chose computer-mediated discourse analysis, supported by specific computer software, generally known as computer-assisted qualitative data analysis software. The case that we present here is part of the project titled *Service-Learning Virtualization. Digital Resources and Virtual Learning Communities in the Web 2.0*, which was carried out at the School of Teacher Training and Education in the Autonomous University of London. Data collected from 456 students of two degrees were stored in our virtual learning environment (Moodle) and analysed.

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Introduction:

The learning environment is changing at equally rapid space as the technology is changing however; with the progress of technology can it be said with complete assurance that the quality of learning environment has also improved drastically with the ever growing emphasis on shifting completely to Virtual Learning Environment from the traditional physical learning environment. This document presents the findings and analysis of an in-depth research on the impact of Virtual Learning Environment (VLE). The objective is to understand the impact of VLE on students and the how it is expected to influence the future.

Research question:

The research question to be answered is stated below:

What is the impact of VLE and how the future of education is shaping up in respect of VLE?

Research objective:

The research objective is to conduct an in-depth analysis on the basis of the findings from the survey questions to be asked to the participants of the survey.

Survey questions and participants:

There are 110 participants in the survey to whom both open and close ended questions shall be asked and their responses shall be recorded to be analyzed using mathematical and analytical measures such as mean, standard deviation, coefficient correlation and others to find answers to the research questions (Lacka & Wong, 2021).

Survey questions are as following:

Close ended survey questions:

Questions
Do you feel big change in the virtual learning environment from the traditional physical learning environment
Have you been able to adjust to the Virtual learning environment without any problem?
Do you feel comfortable in virtual learning environment?
Have you benefitted from virtual learning environment?
Does the telecommunication device that one uses plays significant role in the overall experience of learning in virtual learning environment?
Are there any promotional videos or advertisements that interfere during the time of study in case of learning in Virtual Learning Environment?

Open ended survey questions are about scaling the quality of education on VLE, its ability to make students understand and long term feasibility (Omar & Geer, 2018).

Discussion and analysis on the impact of Virtual Learning Environment:

Survey questionnaires and responses of the participants to the survey questions:

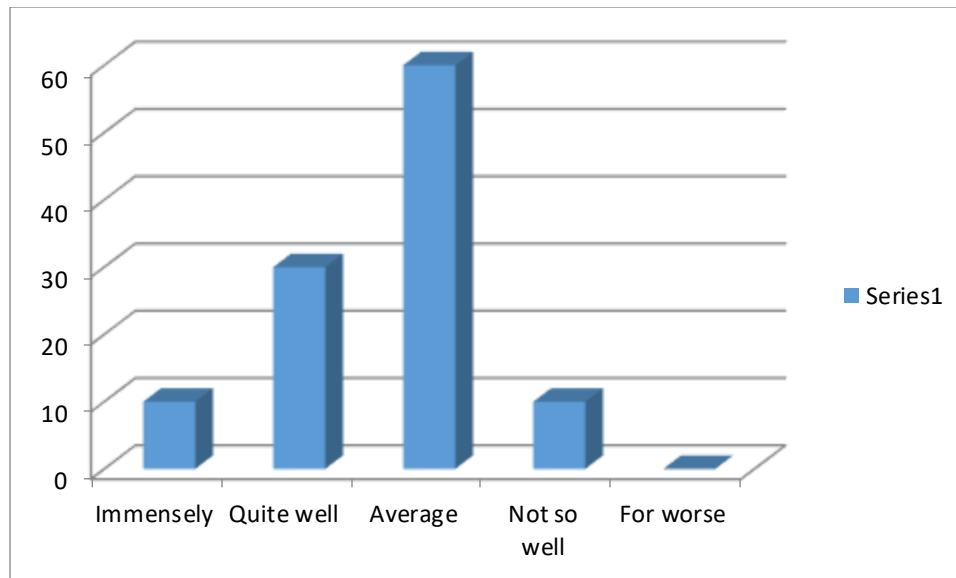
Close ended survey questions and responses of 110 participants:

Questions	Yes	No	Don't know / Not sure / not responded
Do you feel big change in the virtual learning environment from the traditional physical learning environment	80	20	10
Have you been able to adjust to the Virtual learning environment without any problem?	65	40	5
Do you feel comfortable in virtual learning environment?	70	30	10
Have you benefitted from virtual learning environment?	75	20	15
Does the telecommunication device that one uses plays significant role in the overall experience of learning in virtual learning environment?	90	10	10
Are there any promotional videos or advertisements that interfere during the time of study in case of learning in Virtual Learning Environment?	100	0	10

	Immensely	Quite well	Average	Not so well	For worse
How Virtual Learning Environment has improved your engagement and literature skills?	10	30	60	10	0
How Virtual Learning Environment has improved your knowledge and understanding skills?	35	55	20	0	0
How Virtual Learning Environment has improved your cognitive and intellectual skills?	25	40	30	10	5
How Virtual Learning Environment has improved your practical skills?	30	50	20	10	0
How Virtual Learning Environment has improved your transferable skills for life and professional practice?	20	50	30	5	5

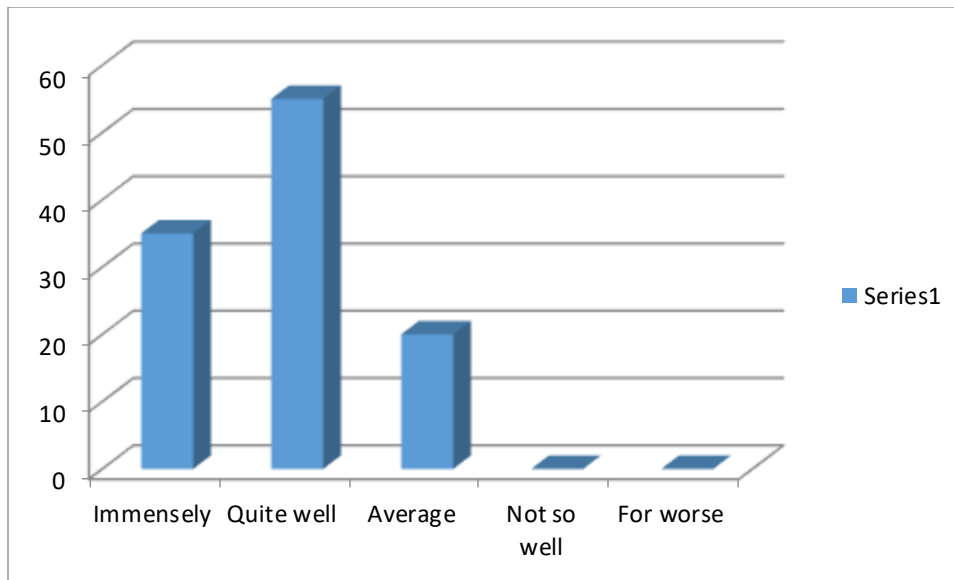
Engagement with Literature Skills:

The engagement with literature skills is one of the most useful curriculum for the students and according to the responses of the respondents to the question how VLE has helped them to understand the engagement with literature skills it can be concluded that the majority of the students have found VLE to be average or below average. The graphical analysis below will further help in understanding the experience of the students as far as the engagement with literature skills is concerned (Boulton, Kent & Williams, 2018).



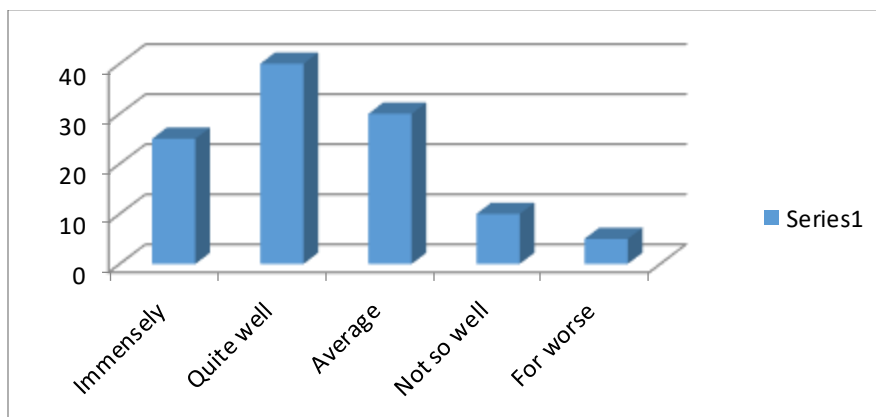
Knowledge and Understanding Skills:

The knowledge and understanding skills is one of the skills which have immensely helped the online applications to grow and the responses of the participants to the survey questions also seem to suggest that they have had great experience when it comes to gathering knowledge and understating different skills. As can be seen from the diagram below that overwhelming majority of the participants have been immensely or well benefitted from VLE to acquire new knowledge and skills (Tuttle & Hansen, 2021).



Cognitive and Intellectual Skills:

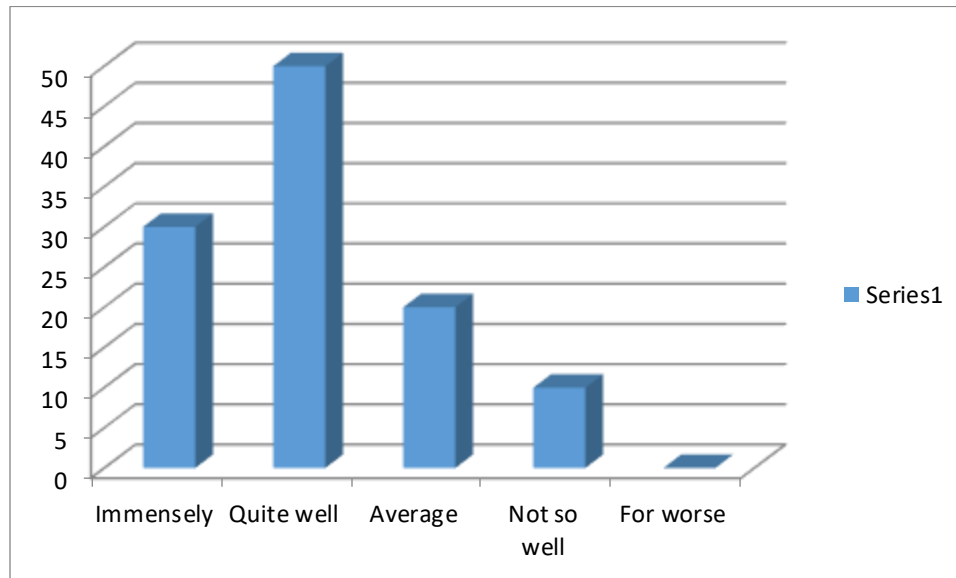
When it comes to cognitive and intellectual skills also the responses from the participants have been overwhelmingly in support of quality VLE. The fact that most of the participants have found the online platform helpful in learning cognitive and intellectual skills is completely clear from the graph below (Ryan & Poole, 2019).



Practical Application Skills:

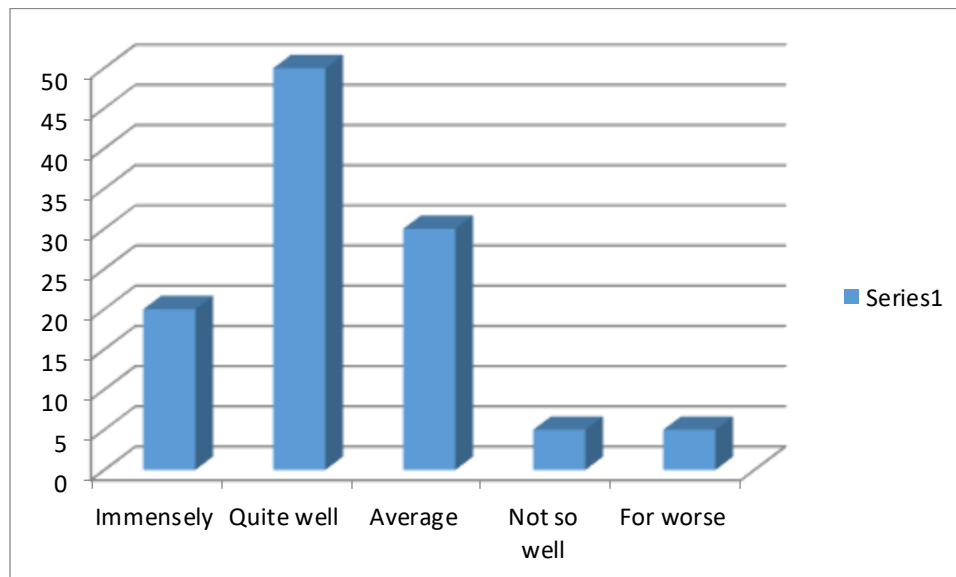
The graph below clearly shows that there may be no stage better than the online tools in VLE to teach practical application skills thus, not surprisingly overwhelming majority of the participants

have given positive feedback to VLE when it comes its contribution in learning practical application skills (Herrera, 2017).



Transferable Skills for Life and Professional Practice:

The graph below again shows that the transferable skills for life and professional practice can be improved significantly in VLE.



Calculation:

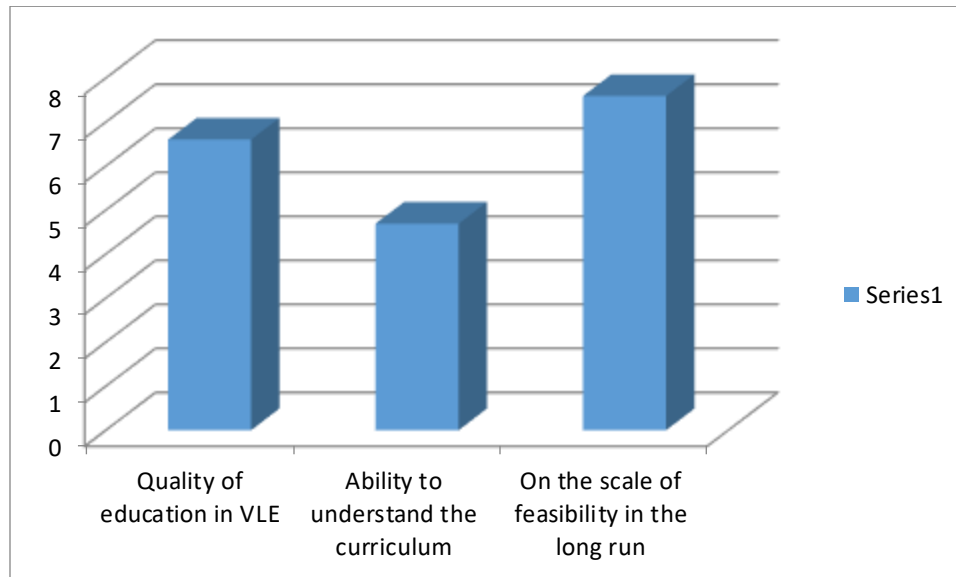
On the basis of the responses of the participants to the measuring scale the mean, standard deviation and coefficient correlation between quality of education in VLE, ability to understand the curriculum in VLE and the feasibility of VLE in the long run are calculated in the table below:

	Quality of education in VLE	Ability to understand the curriculum	On the scale of feasibility in the long run
Mean	6.6	4.690909	7.590909
Standard deviation	1.580849	1.566539	1.522284
Coefficient correlation between quality of education and understanding	0.972088		
Coefficient correlation between understanding and long term feasibility	0.958285		

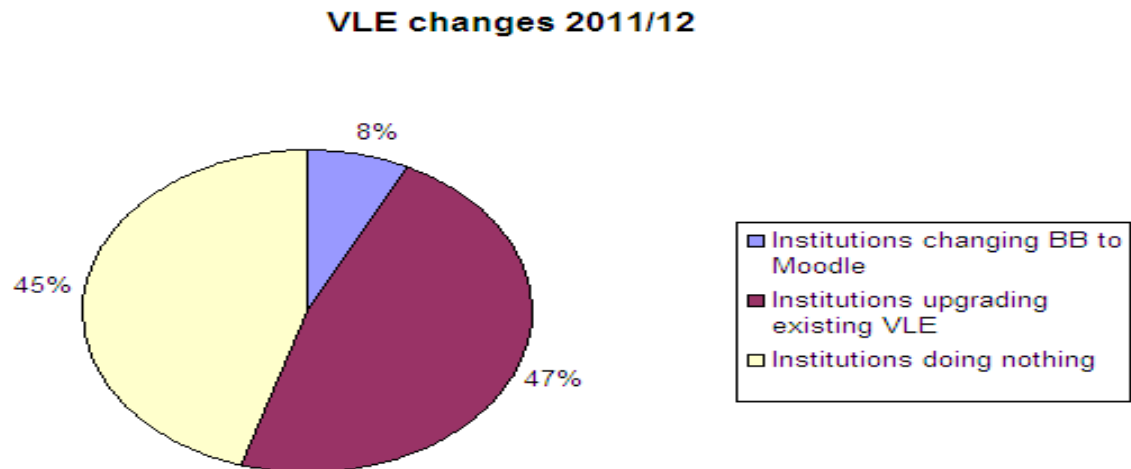
Analysis:

A closer look at the close ended questions can be given with the help of the following table which contains useful information about the percentages of respondents who agreed and percentage of respondents who disagreed with the close ended survey questions (Soon & Kadir, 2017).

Questions	Percentage of Yes	Percentage of No
Do you feel big change in the virtual learning environment from the traditional physical learning environment	72.72727	18.18182
Have you been able to adjust to the Virtual learning environment without any problem?	59.09091	36.36364
Do you feel comfortable in virtual learning environment?	63.63636	27.27273
Have you benefitted from virtual learning environment?	68.18182	18.18182
Does the telecommunication device that one uses plays significant role in the overall experience of learning in virtual learning environment?	81.81818	9.090909
Are there any promotional videos or advertisements that interfere during the time of study in case of learning in Virtual Learning Environment?	90.90909	0



It is clear from the answers of the respondents to the close ended research questions that overwhelming majority of the respondents to the questions has agreed that they have experienced significant shift and change in the education environment when it comes to learning in VLE with greater majority agreeing that there are disturbing elements in VLE and advertisement or promotional videos in online educational applications and other platforms definitely not help in creating conducive educational environment for learning (Cieslak, 2019). Thus, it is clear from the responses of the respondents to the close ended survey questions that in order to improve the experience of students and others who are opting for VLE that number of changes must be made to improve the experience of the students in VLE. Since VLE is the future hence; it would be essential to deal with the issues of VLE at the earliest to improve the quality of education available in VLE (Bogusevski, Muntean & Muntean, 2019).

**Conclusion:**

Taking into consideration discussion above it can be concluded that Virtual Learning Environment has positively influenced the education environment and it is the future. However; necessary improvements in the future will improve the quality of learning to enhance the experience of the students (Laeq & Memon, 2018).

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1. Are you male or female?

2. Year of study?

3. In your opinion assess your skills in Information and Communication Technology (ICT) (1-low, 5-high), round estimated value:

Operational systems administration (e.g. Windows) 1 2 3 4 5

Text processing (e.g. MS Word) 1 2 3 4 5

Spreadsheets (e.g. Excel) and statistical tools 1 2 3 4 5

Slides editing (e.g. Powerpoint) 1 2 3 4 5

Graphics/image editing 1 2 3 4 5

Navigation in WWW (e.g. MS Explorer, Navigator, Firefox) 1 2 3 4 5

Email (e.g. Outlook Express, Communicator, Mozilla) 1 2 3 4 5

Databases administration (e.g. MS Access) 1 2 3 4 5

Hypertext development (HTML) 1 2 3 4 5

Programming (languages) 1 2 3 4 5

Special scientific tools 1 2 3 4 5

Using learning management systems (like Moodle) 1 2 3 4 5

4. Select statements that describe your state of mind:

- I am not aware of the uses of educational technologies.
- I am aware that technology exists but I have not used it.

- I am currently trying to learn the basics about educational technologies.
- I am beginning to understand the process of using technology and can think of specific tasks in which it might be useful.
- I occasionally use educational technologies and I begin to gain confidence.
- I regularly use educational technologies; I consider it as a tool and am no longer concerned about it.
- I always use educational technologies in educational activities.

5. How often do you use ICT?

- Mostly
- Always, I use ICT as a learning tool.

6. E-learning (1-completely disagree, ... , 5-completely agree)

... is useful for life-long learning 1 2 3 4 5

... is an effective supplement of traditional educational 1 2 3 4 5

... boosts the reputation of the Higher Education Institution (HEI) 1 2 3 4 5

... is useful for graduates 1 2 3 4 5

... is an effective learning method 1 2 3 4 5

... is useful for first degree students 1 2 3 4 5

... is a demanding task and students will fail to meet the requirements 1 2 3 4 5

... is a demanding task and teachers will fail to meet the requirements 1 2 3 4 5

... is not necessary in tertiary education 1 2 3 4 5

... is temporary 1 2 3 4 5

... will become in the future as important as printed books 1 2 3 4 5

... is more time-demanding than traditional educational processes 1 2 3 4 5 7

The use of educational technologies provides richer educational experiences.

yes

8. Do you think that use of educational technologies supplies a solid extensive knowledge compared to traditional education?

yes

9. The use of educational technologies improves student's participation in the educational process.

yes

10. How often are ICT means used in the educational processes conducted by the teacher? •

Always

11. Which ICT means are used:

- Educational systems like Moodle
- Means of demonstration/presentation (Powerpoint lecture presentations)
- E-materials (e-books, e-sites...)
- Educational video/audio materials/Special programmes
- Computer testing
- Online communication (consultations)