



DIGITAL SKILLS & RESEARCH METHODS

The Impact of Virtual Technology Environment

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Introduction

Technology has brought diverse opportunities and benefits for people to interact, communicate, collaborate and share opinions from anywhere, anytime (Elmurzaevich-TSPU and Rustamovich, 2019). Besides, the use of technology shaped the educational paradigm and dimensions to magnify learning opportunities. Similarly, the virtual learning environment is the latest concept in 21st-century education for enhancing students' interaction with peers and teachers (Boulton et al., 2018). It is studied that a Virtual learning environment is widely adopted across the globe, which enables the technology-based learning and teaching process. Technology such as computer hardware, software components and the internet is required for this learning environment.

The concept of VLE first originated in 1996 when Glen Jones and Bernard Luskin launched a fully web-based university, where VLE, alongside other online schooling methods, was promoted (Rameswari and Ramar, 2018). The web-based platform facilitates teacher-student interaction by offering diverse opportunities to increase participation, enhance learning, and improve creativity and academic performance. VLE simplifies the learning process and helps students align their leisure activities with the learning schedule for productive results (Ryan and Poole, 2019). It comes with a faster, quicker and simplified process for educational stakeholders. However, many countries are still unaware of VLE, which is why the present research is conducted to shed light on its potential importance and impact on better outcomes.

Background

Services

A Virtual Learning Environment offers the implementation of teaching and learning tools by including computers and the internet to enhance students' learning experience (Chaichumpa et al., 2021). The core components supporting VLE implementation are its curriculum mapping, tracking the student performance, online support for teachers and students, electronic communication, and access to external links (TechTarget, 2022). This further provides additional access and permission for teachers to create or modify curriculum content while limiting these additional rights for students.

Benefits

Since VLE is an excellent addition to the modern education paradigm, it tends to have numerous benefits. Shamir-Inbal and Blau (2021) highlighted that VLE makes the educational process more flexible because of permanent and free access to learning materials, thereby saving time. Besides, it extends accessibility by eliminating the need to attend classrooms (Dung, 2020). The research further mentioned that foreigners often face issues moving to another country to obtain admission to the course, with a hefty fee to pay (Kurbakova et al., 2020). Thus, VLE reduces additional expenditure by providing a cheaper mode of education. The range of online tests, quizzes, videos, presentations, and much more brings a sense of creativity and engagement.

Challenges

The core challenge of VLE is the lack of motivation for people to stay concentrated and learn effectively (Dung, 2020). Many students demand physical supervision, strict rules, and tighter regulations to achieve good academic grades. VLE opens more opportunities to cheat, disrupting self-discipline and motivation. Besides, delayed answers from teachers result in lacked concentration and time consumption which also impact the flexibility of online learning (Veselina and Snejana, 2020). VLE also limits the level of engagement compared to face-to-face interactions, preventing students from developing confidence and promoting communication and conflict-solving skills.

Technology

Different technologies are used for an established virtual learning environment. Flavin and Bhandari (2021) studied that teachers and school administration commonly use video, presentations, and multimedia technologies in the UK to learn in VLE. In contrast, the rise of smartphones has also provided benefits for the learners to set up Virtual classrooms and attend live sessions with their smartphones (Raftery, 2018). Internet and Web browsers are essential for any learner, student, and teacher to ensure connectivity and interaction with the students via a virtual platform.

Risks

Implementing information and communication technology comes with several risks, among which security and privacy remain at the top (Irons and Crick, 2022). Similarly, using VLE

increases the chances of cybercrime due to the vast opportunity for hackers to exploit educational institutions' systems to capture sensitive information. It results in loss of confidentiality and availability, the exposure of critical data, and a bad reputation for the organisation.

Legislation

UK legislation has focused on providing students with diverse and inclusive educational opportunities through supporting tools and technologies. Policy Connect (2022) added that the digital accessibility law helps government and educational institutions to put guidance in place by making VLE a vital tool for all users across the UK. This will support inclusion and ensure enhanced learning for disabled and normal students.

Opportunities

Since the COVID-19 pandemic, the virtual learning environment has opened new opportunities for students to attend virtual classrooms on their schedule (Zou et al., 2020). They are able to learn at their pace, providing a comfortable way to grow and enhance their skill set. Likewise, it provides an opportunity for inclusion, engagement and diversity by extending access to all students, regardless of their disability, which helps improve their cognitive and social well-being (Caprara and Caprara, 2021).

Aim and Objectives

This research aims to investigate the impact of virtual learning environments on students, teachers and administration to accumulate the relevant outcomes. The following objectives are considered for further detailed findings;

- To assess the significance of VLE in modern education
- To evaluate the use of VLE, its benefits and challenges in educational institutions in the UK
- To analyse VLE opportunities and strategies to overcome the challenges of VLE.
- To provide recommendations on improving the VLE integration in an educational institution for enhancing learning in the UK.

Methods

The research followed primary and secondary methods to support a mixed-method research design. Sahin and Öztürk (2019) explained that mixed-method design refers to the properties of both qualitative and quantitative research design for formulating the solutions. First, the secondary research approach was used and applied to capture theoretical information as it helps to understand the services available in VLE, technologies required to have VLE, benefits, drawbacks and the challenges faced by university students, teachers and admin. In this case, various books, journals, magazines and articles were referred to and used to collect quantitative and qualitative data. University Moodle was accessed, and other sources available on the internet were used to collect relevant details.

In the next phase, primary data collection was done to gather quantitative and qualitative data by complying with the University Moodle requirements. Therefore, a manual form comprising questions was designed to create a survey with 10 questions related to the university Moodle. Then, it was distributed among colleagues and tutors to get their feedback. The survey was sent by e-mail. Data were collected and stored in tables for the analysis process. 8 multiple choice questions and 2 open-end questions were included in the questionnaire. The analysis was done using charts and graphs alongside thematic analysis that reflected the open-ended responses concerning the objectives. Kiger and Varpio (2020) explained that thematic analysis is highly useful for generating themes by transcribing texts of interview questions.

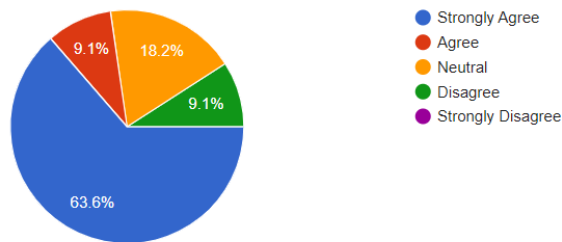
Results

The results section presents key results obtained via survey questions to analyse the output;

Do you think that the use of technology shaped the educational paradigm and dimensions to magnify learning opportunities?

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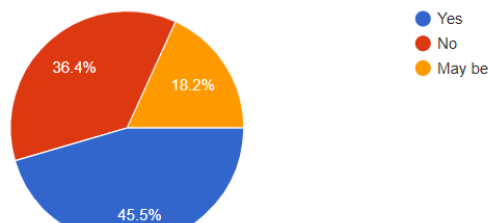
11 responses



Is VLE helpful in learning flexibly?

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11 responses

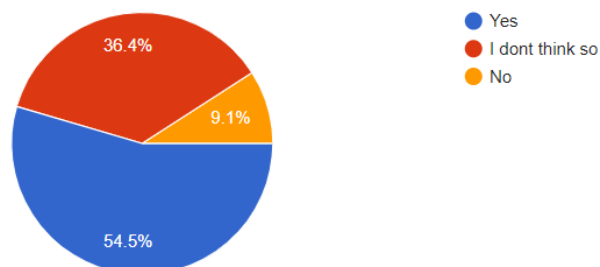


From graph 1, it is found that the majority of the respondents showed Strongly Agree (63.6%), which reflected that VLE amplifies learning opportunities and helps students accomplish critical outcomes across the globe. While chart 2 demonstrated that VLE is significantly helpful in learning flexibly, most of the respondents, a total of 45.5%, answered Yes. This supports that VLE promotes flexible learning opportunities for students.

Virtual learning environment is widely adopted across the globe, which enables the technology-based learning and teaching process?

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11 responses

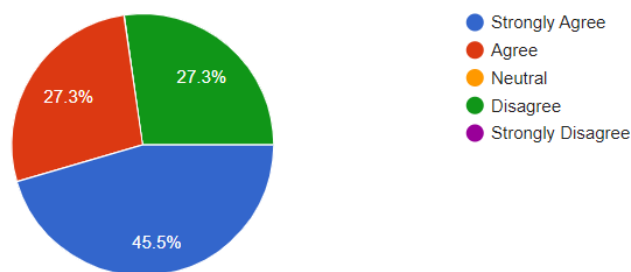


From the above results, it is captured that 54.5% of the respondents believe that VLE is used across the globe due to its unique web-based features that help facilitated robust learning and teaching process. These results showed that students, teachers and administration recognise that VLE is used outside of the UK, which makes it helpful for foreigners to take admission anywhere, anytime.

Do you think that VLE increase participation, enhance learning, improve creativity and academic performance.



11 responses

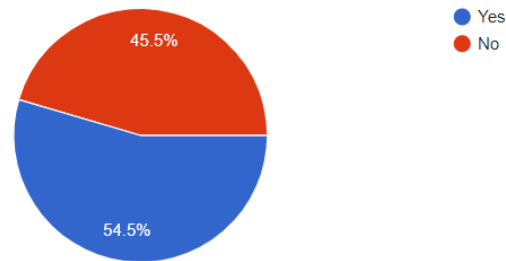


The above results showed that 45.5% of respondents believe VLE increases participation, enhances learning, and improves creativity and academic performance. However, 27.3% agreed and disagreed, respectively. These findings stimulated the idea that VLE is highly effective in modifying learning processes, supporting students with accomplishing good grades and improving academic outlook.

Are there issues of accessing VLE at home or anywhere out of the educational institution?

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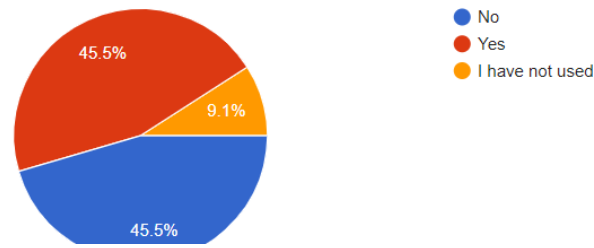
11 responses



VLE is properly legislated in the UK as it promotes inclusivity?

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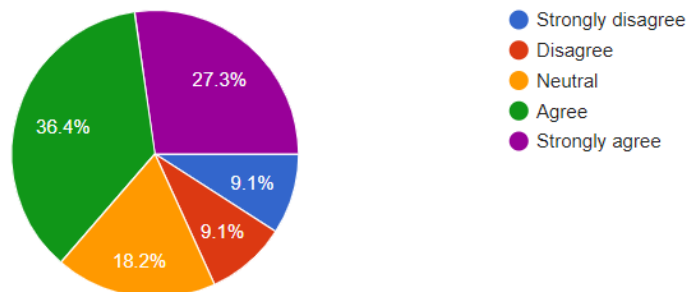
11 responses



The graph in the above picture shows that 54.5% of respondents highlighted that there are issues with accessing VLE at home or any other place. This relates to internet disruption, lack of concentration, and poor devices and gadgets, which hinder the adoption of VLE. While next question indicated that 45.5% of respondents showed that the UK is not properly legislated concerning VLE technology. These findings showed that UK institutions are unaware of or lack legislation specific to VLE, which impacts inclusivity among students and teachers.

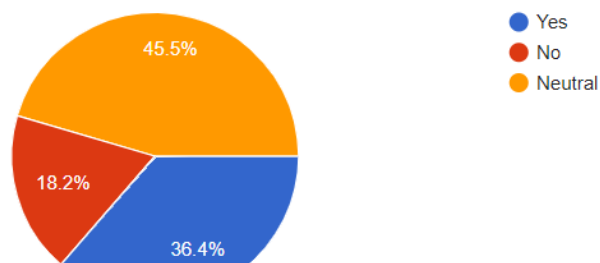
VLE reduces additional expenditure by providing cheaper mode of education through online platforms?

11 responses



VLE limits the level of engagement as compared to the face-to-face interactions?

11 responses



From the graphs above, the first graph indicated that 36.4% selected Agree option on VLE as a cheaper education mode than other traditional methods. It supports that VLE reduces additional expenses and is a cost-efficient technique that helps students pay minimal fees before being physically present in the classroom. Likewise, the last survey question showed that 45.5% stayed neutral on the fact that VLE limits engagement compared to face-to-face interactions. These results reflected that neither students nor teachers feel that VLE does not affect engagement and interaction much.

Thematic Analysis

This summarised that VLE promotes learning space and adheres to the aspect of modern education. It brings opportunities at the forefront for teachers and students to interact, expand knowledge, collaborate, and communicate. In this context, detailed responses were also captured, as shown below, from different respondents;

R1: "I think it is very engaging. I can easily conduct exams, share my thoughts with students, promote inclusivity."

R3: "I love VLE, especially it enhanced our learning during COVID-19. Thanks to this technology".

R5: "VLE supports learning and promote interaction between teachers and students. This helps in building creativity and skillset."

R7: "It is very flexible mode of learning and we can interact better with just our laptops and smartphones. It promotes knowledge development that help in accomplishing good grades."

While it is also found that VLE distracts students, which affects learning, as recorded below response;

"VLE is helpful but there is difficult to understand as sometime we face power failure issues so I get distracted."

Likewise, it is found from another question that are regulation issues, risks and challenges in the adoption of VLE, which was agreed by respondents as shown below responses;

R7 "Yes we need cybersecurity regulations to regulate the use of VLE."

R2 "Yes internet, power failure, and etc are issues which disrupted adoption of VLE. Definitely we will require some security patches to deal with its maximum utilisation."

R11 "There are security and privacy issues for students and even for us (teachers) so UK government further need to make specific security approach for adoption of VLE."

Discussion

The advancement in communication technologies has shaped the educational sector across the UK. Likewise, a virtual learning environment is the latest concept in 21st-century education for enhancing students' interaction with their peers and teachers (Boulton et al., 2018). VLE implementation's core components are its curriculum mapping, student performance tracing, online support for teachers and students, electronic communication, and access to external links

(TechTarget, 2022). It is also found that VLE extends opportunities for learning for both regular and disabled students, which reflects its accessibility and ease of use across the globe.

Moreover, it is assessed that VLE has benefits such as cost-effectiveness, which helps students stay updated on courses and lectures without attending a physical classroom (Dung, 2020). This complies with the concept that VLE brings opportunities for inclusivity and diversity, which also supports the legislation of the Equality Act and Education Act in the UK (Bhopal, 2020). The adoption of VLE is famous across the globe, but there are disadvantages, resulting in negative consequences for modern education. The literature opined that security and privacy risks hinder the adoption of web-based platforms for learning (Giannakas et al., 2019). This imposes challenges for students and teachers to maximise learning in VLE and maintain interaction.

Since COVID-19, VLE achieved greater recognition due to the remote education (Eliot, 2022). It has opened the door for foreigners to seek online admission and enhance their knowledge and skill set. The diverse opportunity is not limited to foreign students, but the cost-effective solution and flexible learning mode has also helped students in developed areas to acquire VLE. On the other side, students and teachers in low-developed areas of the UK face barriers such as Internet, power disruption, poor devices and gadgets, and lack of training to maximise the VLE utilisation. These findings reflect the need to improve the use of VLE and its regulation across the UK for providing adequate access to poor regions, students and teachers for developing knowledge, training and acquiring all necessary facilities for growth.

Conclusion

The findings concluded that a Virtual Learning Environment offers the implementation of teaching and learning tool by including computers and the internet to enhance student's learning experience. However, many countries are still unaware of VLE, which is why the present research is conducted to shed light on its potential importance and impact for better outcomes. The use of qualitative and quantitative methods was done with survey questions which resulted in different findings. It is summarised that VLE comes with benefits such as cost-effectiveness, which helps students to stay updated on courses and lectures without attending a physical classroom, but poses security issues due to the lack of regulation. Therefore, future research can delve into the idea of protecting VLE for safe adoption. It can include cyber-security aspects for promoting the use of VLE and other online platforms for better outcomes.

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Appendix: Questionnaire

Impact of Virtual Learning Environment

Survey for research purpose to analyse opinion of friends, peers and instructors on the use of VLE and its related aspects and impact;

Do you think that the use of technology shaped the educational paradigm and dimensions to magnify learning opportunities? *

- ☐ Strongly Agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly Disagree

Is VLE helpful in learning flexibly? *

- ☐ Yes
- ☐ No
- ☐ May be

Virtual learning environment is widely adopted across the globe, which enables the technology-based learning and teaching process?

- ☐ Yes
- ☐ I dont think so
- ☐ No

Do you think that VLE increase participation, enhance learning, improve creativity and academic performance. *

- ☐ Strongly Agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly Disagree

Are there issues of accessing VLE at home or anywhere out of the educational institution? *

- ☐ Yes
- ☐ No

VLE is properly legislated in the UK as it promotes inclusivity? *

- ☐ No
- ☐ Yes
- ☐ I have not used

VLE reduces additional expenditure by providing cheaper mode of education through online platforms?

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Neutral
- ☐ Agree
- ☐ Strongly agree

VLE limits the level of engagement as compared to the face-to-face interactions?

- ☐ Yes
- ☐ No
- ☐ Neutral

To what extent VLE is helpful for students, teachers and administration? *

Do you think that there are challenges to the adopting of VLE in the UK? and does it require proper security and safety approach? *

