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CHALLENGES IN ADOPTING VIRTUAL LEARNING ENVIRONMENT IN HIGHER EDUCATION INSTITUTIONS

Mohamed Munas[1], Dr. Kuruvikulam Chandrasekaran Arun[2]*

[1*]Asia Pacific University, School of Computing and Technology,Kuala Lumpur, Malaysia.

[2]Asia Pacific University, School of Computing and Technology, Kuala Lumpur, Malaysia.

[1*]munas.niyas@gmail.com,[2]kchandran.arun@staffemail.apu.edu.my

ABSTRACT:
The evolution of technology in the past years, technology is becoming part of human life and people are using technology in every aspect, such as business, medical, and education. There are several technologies used in the improvement of education. The enhancement of technology in education called a virtual learning environment where the educational system interactions happen. This paper focuses on the implementation of a virtual learning environment with the utilization of cloud technology with added advantages. The higher educational universities moving towards the virtual learning environment to reduce operational work and make a flexible learning environment for the students and lectures. The virtual classroom is an interesting development over the internet to provide the lessons without referring to papers. So, the research study aims to examine the factors that could be considered in adopting virtual learning in government universities. And understanding the lecture's and student's perception of moving towards virtual learning for academic activities in higher education. And more importantly to investigate the challenges in adopting the virtual learning environment to provide higher education in government universities.

INTRODUCTION

The technology has created by the human mind and developed different expertise applications and platforms to transform the traditions of human life into digital (Dağhan, 2017). The technology has transformed the human routine by refining the speediness of time (Naikoo *et al.*, 2018).

According to Elsobeihi and Abu Naser (2017), nowadays the technology is merged with human subsists in every angle. So, the use of technology is inescapable from the day to day activities such as business, medical, and education (Dillenbourg, Schneider and Synteta, 2015). So, technology into the

education sector is unavoidable and the technology in the education sector enhanced to the virtual learning environment. AsEl-sofany *et al.*, (2013), stated, in the implementation of virtual learning environment cloud technology has utilized with added advantages.

Cloud Computing

Cloud computing could be defined as, the use of computer resources over the internet with an agreement. Cloud computing could add value and benefits for the business and individuals such as virtualize computers, networks, and storages (Hartmann et al., 2017).Cloud services could be divided into main three categories such as Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). To provide the mentioned services of cloud technology has used different deployment methods such as Private Cloud, Public Cloud, Community Cloud, and Hybrid Cloud (Cunha et al., 2017).

Cloud computing used as an Information Tool (IT) to improve the flexibility to handle the businesses. According to Attaran and Woods (2018), cloud technology provided a high demand for computing, storage, and the services of the business entities. However, cloud technology has been implemented in various other sectors and the education sector is one of the main sectors (Goyal and Goyal, 2017). Affordable products and services are the main intentions that could be benefited through cloud computing (Attaran and Woods, 2018).

Virtual Learning Environment

The VLE facilitate the learning and teaching method accessible online in a wider scale and exchange and collaborate to understand the fundamental goals, functions, adaptability of the concept of the digital learning experience (Fawns, 2019).According to Apuke and Iyendo (2018), virtual learning could be easier with the utilization of emerging digital technology and the improvement of internet quality.

According to the past research conducted by Zuhairi (2019), government universities have continued the enhancement process of implementing the virtual learning environment into the entire academic process of the higher education in government universities for the transformation of the innovative learning environment by utilizing cloud technology.

Virtual Learning Environment in Higher Education

The higher educational universities have moved towards a virtual learning environment, it's because of easy to distribute the learning materials and assignments for students via virtual learning and teaching environment (Mishra et al., 2019). Tracking and grading the progress of the academic activities could also be conducted under the virtual learning environment and desktop browser or the smartphone could be used for access. The classroom app could be launched by Google as a part of Education (Alves, Luísa Miranda, and Morais, 2017).

There is an emergence of the massive opening of online courses due to the introduction of the virtual learning environment. Those online learning courses are easy and affordable by the students and such courses provide better knowledge and training for the students (Aparicio et al., 2018). So, the VLE could include four major segments and tools such as resources, administerial tools, assessment tools, and communication tools.
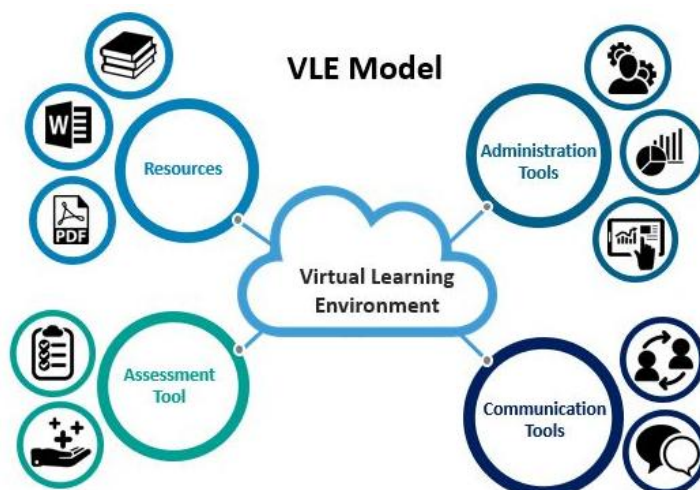

Figure 1. The Model of Virtual Learning Environment
Source: (Kanimozhi, 2018).

Though the virtual learning environment is developed for global learning, it could be practiced in every university and higher education centers to improve the educational performances (Shuja et al., 2019).

LITERATURE REVIEW

Technology has invented by humans and established the different technology applications and tools to transform from the normal ways of human life (Dağhan, 2017). Technology has revolutionized the human lifestyle by improving the speed of time (Naikoo et al., 2018). As Elsobeihi and Abu Naser (2017), that, now the technology is blended with human lives in every aspect. So, the utilization of technology is unavoidable from the day to day activities.

Several technologies have been used and selected technologies play a vital role in terms of speed, cost, secure and ease of use such as cloud computing applications with the use of internet which could be changed the way learning and teaching has been progressed (Stosic, Barakoska, and Stosic, 2017). The internet has become one of the important methods to implement cloud computing.

According to Attaran (2017), the concept of internet-based computing where the computer resources could be shared such as infrastructure, software, and other applications is cloud computing.

Use of Cloud Computing in Education Industry

Cloud computing combines values and benefits with various unique services to users than the normal computing experiences (Chen, Chuang, and Nakatani, 2016).According to the statement by Müller, Holm, and Søndergaard (2015), cost-effectiveness is the key benefit of cloud computing which reduces the cost of the start-up investment and the operation, depending on the type of cloud computing. According to the research findings by Attaran and Woods (2018), cloud computing could be cost-effective for small scale organizations than the large scale organization because of the public cloud options,the large scale organizations mostly adopt to the private cloud which won't make much difference in the cost.

Cloud computing provides other advantages to end-users such as scalability and availability. As stated by Chen, Chuang, and Nakatani (2016), the scalability of cloud computing incorporates computer resources flexibility, operational administrative flexibility, and flexibility in sharing computer resources. Organizations and users face several challenges and risks in the utilization of cloud computing.According to Kazemi and Boostani (2018), One of the main challenges and risks in cloud computing is the security issue.
According to the statement by Kushwah and Bajpai (2017), most of the higher education universities are facing difficulties keeping up the hardware, software, and IT staff.Therefore, the virtual learning environments in higher education could enhance the education system with the cloud-based system. Cloud computing has become a priority to conduct the virtual learning process.

Advantages of Virtual Learning Environment
The VLE is created with the set of tools which has integrated to facilitate the different learning and teaching experience to the students and teachers. According to the viewpoint of Arkorful and Abaidoo (2014), the internet-enabled model which is a system to mainly facilitated and distributed learning by electronic medium.

A view pint ofAlves, Miranda, and Morais (2017), the VLE means any learning method which could be enabled by electronic means learning-driven through the use of digital technologies. As Alves, Miranda, and Morais (2017), states that VLE includes the use of the essential technologies to generate learning materials, digital mediums to deliver the materials and standardize structured to enhance the learning experience. The VLE is a concept which involves a range of applications, methods, and processes for learning and teaching with enhanced digital experience (Hamid et al., 2018).

As Kintu, Zhu, and Kagambe (2017), discusses that VLE could be commonly applied in combination of mixed subjects in learning and could be accessed remotely, distribution of learning materials could be easily and VLE downsize the costs of various factors which involved in education by downsizing the backhand processes of preparing the learning materials and distributing the learning materials.

The past research studies determine that the impact of the technology in education could be facilitated and change the learning and teaching experience

with the use of digital platforms and the use of the internet.And the implications of VLE to support the higher education provision also taken place.

Impact of the Virtual Learning Environment in Higher Education

The implication of the VLE in higher education could be unavoidable with many positive advantages. According to the viewpoint of Arkorful and Abaidoo (2014), the utilization of the VLE in higher education could create a new approach to connect and review the academic activities for students and teachers. According to the research findings by Al-hariri and Al-hattami (2017), the advancement of digital and information technology with the utilization of the internet has developed as a new teaching tool that could make revolutionary changes in the traditional teaching method.

The digital education with the development of information technology has generated more choices to the students with the flexibility (Alves, Luisa Miranda, and Morais, 2017).As stated by Cassidy (2016), the VLE has developed as one of the key features in most of the higher educational universities which enable the capability to simplify the learning processes with enhanced technology in teaching and learning experience. According to the viewpoint of Serdyukov (2017), most of the universities and institutions of higher education compete to increase online class capacity in a rapidly growing digital market in education. The enlargement scale of virtual learning has created numerous alterations in higher education institutions, especially regarding educational distribution methods and academic assistance processes (Aljaber, 2018). But on the other side, the universities could face some challenges by moving towards the VLE.

Challenges and Issues in the Adoption of VLE in Higher Education

The adoption of VLE in higher education could be a crucial need. But the past research studies clearly illustrate that there are several challenges in adopting virtual learning in government universities (Ali, Wood-harper and Mohamad, 2018). The challenges such as institutional culture, the core value of the institution and lack of illiteracy, but the lack of illiteracy is mainly making an impact on the adoption of virtual learning in government universities (Karthigesu et al., 2014).

According to the research findings by Kisanga and Ireson (2015), the major issues and challenges in adopting the VLE in the higher education sectors such as infrastructure, poor support in the managerial and technical aspects, and lack of technical knowledge. According to the research viewpoint by Islam, Beer, and Slack (2015), the most important five challenges have been discussed such as cultural diversity, the method of learning, academic challenges in virtual learning, technical and technological.

According to the statement by Dean and Lima (2017), there are other challenging factors involved in the adoption of VLE such as engagement with the online learning platforms and lack of knowledge and support in creating the learning materials in online platforms. The lectures consider that VLE could be time-consuming in the implementation phase of execution as a large

input of learning resources needed since the system conducted based on inputted resources by the lecturers (Jongsermtrakoon and Nasongkhla, 2015). As mentioned above one of the major challenges in adopting the VLE is lack of support and guidance. Since there is no face to face interaction, providing the support for each student instantaneously is a high challenge for the lecturer and it's time consuming when the number of students assigned to the single lecturer (Cheok et al., 2017).

According to the viewpoint Shadiev and Yang (2020), a significant challenge for VLE is technology issues that could be challenging for every individual, but the issue will be inescapable as applications cannot be developed without any bugs. According to the statement by Nawaz and Khan (2012), lack of knowledge in VLE to make utilizing the functionality, so the teachers and students required technical support to handle the VLE effectively and creatively. In the implementation of VLE in higher educational institution underlined with challenges relevant to the quality and efficiency connected to virtual educational patterns. The issues could be the major issue that could make an impact on the virtual resources (Markova, Glazkova, and Zaborova, 2017).

The advantages of the adoption of the VLE in government universities could be the easy distribution of the learning materials and track the student assignment and student academic signs of progress (Mishra et al., 2019). But comparably there is a gap in the effect of the adoption of VLE in growing countries in government institutions, the issues involved in adopting a VLE in the government universities (Zuhairi, 2019). The gap is existing in the adoption of virtual learning between developed and developing countries especially in government universities, the study focuses on factors involves in adopting a virtual learning environment in the government universities (Zuhairi, 2019).But the adoption of the virtual learning environment in higher education is crucial. According to the statement by Khalid (2017), that, by 2025 there will be 200 million students per year who could demand higher education in the global context.

The academic system of the public institution has a unique method of the process of providing instruction and materials (Murshitha, 2016). The research study is going to focus on one of the growing countries. According to the investigation findings by Samsudeen and Mohamed (2019), the adoption of the VLE is extremely low in a government institution. It's because there are numerous challenges and issues in adopting the VLE in the public institution (Karthigesu et al., 2014).

According to the findings by Arkorful and Abaidoo (2014), few challenges have been discovered which has a key impact on the adoption such as institutional culture, the core cost of the institution, and lack of knowledge. The cultural challenges in the adoption of VLE could include the different languages from the different social background which could be in three different languages has been used when it comes to academic (Prasangani, 2014).

RESEARCH METHODOLOGY

The research study tailored with the systematic method to demonstrate the evaluation to identify the challenges in adopting the virtual learning environment in higher education at government universities and analyze the findings of the studies to prospect the conclusion of the primary objective and the purpose of the study.

The five years of research articles were selected from the recent year to collect the evidence. The study has taken place with the five years of the gap to identify the evidence in the recent circumstances. So, the evidence has collected from the research articles within the five-year gap up to the current research findings. The appropriate research articles were chosen with the related variables which have identified based on the primary and secondary objectives of the review. the identified variables which could process through the innovation and create a smart educational environment in higher education. The following systematic literature review approach outline shows the research methodology.
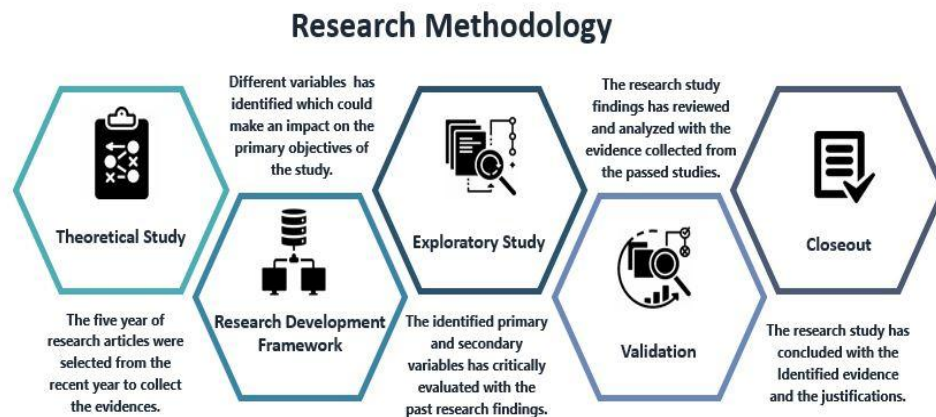
Research Methodology

Theoretical Study — The five year of research articles were selected from the recent year to collect the evidences.

Research Development Framework — Different variables has identified which could make an impact on the primary objectives of the study.

Exploratory Study — The identified primary and secondary variables has critically evaluated with the past research findings.

Validation — The research study findings has reviewed and analyzed with the evidence collected from the passed studies.

Closeout — The research study has concluded with the Identified evidence and the justifications.

Figure 2. Systematic Literature Review Approach

DISCUSSION

The understanding of different viewpoints from the past studies of cloud computing is could be defined in VLE, cloud computing has several benefits with few risks. And as stated by Raja and Nagasubramani (2018), the impact and utilization of cloud computing unified with every individual, the industry so, cloud computing into the education sector is unavoidable. According to the findings by Jathanna and Jagli (2018), the major security challenge in cloud computing is data security, the chances of third-party access to the sensitive data of the organization could be high such as external hackers and data violations. So, the cloud-based learning environment could be defined as the Virtual Learning Environment. To overcome this issue, there are virtual training labs for professional education to give knowledge about cloud technology.

IT training is mainly supportive of these virtual training labs. Handling the virtual training labs could be flexible with the university culture (Aljuhani et al., 2018). The introduction of cloud-based education has been supportive of many people to attend for higher education that takes place globally (Zawacki-

richter et al., 2019).Even though the challenges and disadvantages are there in the utilization of VLE in education, the satisfaction of students and teachers is enhancing and initiating new potentials. The investigation of the perceptions of the students in the VLE shows the positive impact and reputed benefits in the learning activities in online (Cassidy, 2016).

According to the research findings by Al-hariri and Al-hattami (2017), on the student's satisfaction and relying on the technology utilization for the academic activities has the high percentage satisfaction results. But considering the adoption of VLE in the government universities, the adoption has advantages and disadvantages and challenges as well.As stated by Franklin and Nahari (2018), identifying the challenges and issues in VLE adoption in the public educational institution could be important to explore. Thefinding factors that could solution and encourage the government institution for adopting virtual learning and realization of the vital to enhancement to the virtual learning experience of students in higher education which could satisfy the student's and lecturer's intention and collaboration moving towards the VLE in government institution (Samsudeen and Mohamed, 2019). As stated by Alves, Luisa Miranda, and Morais (2017), the major disadvantages of virtual learning are depending on information technology sources and academic activities could be dependent on internet connectivity.

According to the research finding by Shazali and Hashim (2019), the acceptance of the digital platform and the technology available in educational sectors. However, according to the viewpoint of Alokluk (2018), the understanding of advantages and disadvantages in VLE which could make the easy choice the teachers and students.

According to the findings by Unal and Cakir (2017), of the student's and lecturer's attitude in moving towards online learning with different aspects such as effective collaboration with the members and lecture, availability of the learning materials and accessibility of the resources, the research result shows that there is a significant positive relationship in the future enhancement of education. But when considering the adoption of the VLE, there are several challenges and issues faced by the educational.

But according to the analysis from the past study, the research studies have taken place related to identifying the challenges in adopting VLE up torecent years. Even though the studies have done up to this year, there is no specific research has been done specifically focused on investigating the challenges in adopting the VLE in government institutions in higher education.

CONCLUSION

The past research study has taken place in explaining the growth of the technology and the impact of the technology in the education sector, specifically the cloud technology has been discussed. The use and advantages of cloud computing and the implementation and utilization of cloud computing in the educations sector have been discussed. The comparative studies have taken place to identify the importance of the virtual learning environment.

The advantages and disadvantages of the virtual learning environment and the different research findings analyzed to explain the enhancement of a virtual learning environment and the impact of the adoption of the virtual learning environment in higher education. The past research studies have illustrated the key investigation element for the research which could be defined as challenges and issues faced in the adoption of virtual learning in higher education institutions.

More importantly, the factors required to be considered during the adoption and the implementation of the virtual learning environment. The importance of the satisfaction and attitudes of the students and lecturers in moving toward the virtual learning environment in the higher educational institution.

The investigational study about the challenges and issues which could impact on the adoption of VLE and identifying the challenges and issues specifically concerning the government institution. The reason could be in the developing countries and the past research studies illustrate that there are many challenges and issues in adopting the VLE in higher education but, considering the government institution there is not much investigation has done in particular to identify the challenges and issues in the recent years.

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