# DETERMINANT FACTORS THAT AFFECT E- LEARNING APPROACH IN TEACHING AND LEARNING AT HIGHER EDUCATION: A LITERATURE REVIEW

**Roslizawati Che Aziz [1]**
**Nik Alif Amri Nik Hashim[1]**
**Anis Nazihah Ahmad Nordin [1]**
**Halimatus Sakdiyah Hosayni [1]**
**Nur Fatin Syawani Suhaimi [1]**
**Abdullah Muhamed Yusoff [1]**

[1]Faculty of Hospitality, Tourism and Wellness, Universiti Malaysia Kelantan Malaysia,
(E-mail: roslizawati@umk.edu.my

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*Abstract: Recently, the eLearning market has growth up successfully as a result from the emerging of eLearning as the new paradigm of modern education. eLearning act as a medium consisting of various types of computer and electronic media which is communication tool as well as the Internet which provides training and certain subjects. By using eLearning, students can attend online classes anywhere, regardless of time and place. Generally, eLearning is more geared towards self-training and is ideal for individuals who work full-time but desire to further their studies. Thus, this study was developed and integrated the factors that lead to the effectiveness of eLearning approach in Teaching and Learning (T&L) system. The outcomes of this research will be helpful in developing new learning approach hence it is expected that the result of this study will reveal the effectiveness of eLearning based on few elements such as ICT skills, time management, resources and learning technique.*

*Keywords: E-Learning; Effectiveness of Teaching; Teaching and Learning Approach, New Education*

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## Introduction

E-Learning is well known among educators and students as it is a medium that consisting of various types of computer and electronic media which is communication tool as well as the internet which provides training and certain subjects. By using eLearning, students can attend online classes anywhere, regardless of time and place. Generally, eLearning is more geared towards self-training and is ideal for individuals who work full-time but desire to further their studies (Clark & Mayer, 2016; Aziz et al, 2019). E-Learning now is changing much more than the content and approaches to eLearning. Prior to the use of eLearning, there were other Web-

based technology (WBT), Open Distance Learning (ODL), Technology Based Learning (TBL) and Open Learning (Arkorful & Abaidoo, 2015). In the era of information technology, eLearning has become a popular term and have many interpretations. E-Learning also deliver information via the Internet to somewhere other than the class where the professor is teaching. With this alternative, students can communicate with their lectures or other students in the classroom or outside of the class (Clark &Mayer, 2016).

Masoumi and Lindström (2012) stated that eLearning is a platform of teaching and learning where students can receive teaching materials using the Internet and other network media. E-Learning allows a sophisticated learning process to take place regardless of the distance and number of members browsing it. E-Learning becomes more effective with the continuation of traditional class with online class. This makes eLearning a potential to facilitate "24/7" student learning 'anytime and anywhere', a university education which available worldwide and delivered from anywhere in the world (Parry, 2015). There are some benefits that can be obtained by anyone who uses eLearning as learning medium (Arkorful & Abaidoo, 2015). Among them is a student who use eLearning in the lesson will quickly get information instead of following traditional method. In addition, eLearning is far more effective without having bound by a packed schedule and eLearning is also an unlimited method which many ways how different course materials can be presented to students with various electronic learning techniques. E-Learning provides positive impact when used and best utilized by teachers and lectures and also helped in the application of 21st century skills in the education system (Masoumi & Lindström, 2012; Khasawneh et al., 2016).

There is a problem that should be considered in this study which is the identification of the effectiveness of eLearning tools in Teaching and Learning (T&L) systems among students at higher education institution. Problem that arise is a clear and concise statement that describes the symptoms of the specific issues that a researcher wishes to investigate. According to Al-Adwin and Smedley (2012), the change of learning styles provides a bit of challenge in cultural expectations and the on-going development of technology. Arkorful and Abaidoo (2015) stated that in eLearning requires skills of electronic knowledge. This is because students will have difficulty to accessing any software. Lack of resources, institutional structures and financial support will also affect the use of eLearning involving technological integration (Mann, 2014). When there is a financial support problem, the institution is difficult to provide users with high accessibility. Indirectly, students will face challenges in access to reliable computer and internet connection (Jethro, Grace & Thomas, 2012; Bakar et al., 2020). Along with the rapid development of technology, there are students and teachers who do not know about the existence of eLearning as a modern method for teaching and learning method (Lumandi, 2013). This shows that there are still a handful of people who are not aware of eLearning in education.

Students' time is also limited resources because time management can be handled effectively or not. This is because students have differences preferences among individuals in managing their time when they attained their college time. E-Learning flexible because can cut time and easy to access (Arkorful & Abaidoo, 2015). Most of the respondents were between the age of 18 to 32 years old and research about eLearning has been developed based on the Jordanian Higher Education system (Al-Adwan & Smedley, 2012; Osman, 2018). While this research focus on tourism students ages between 19 to 25 years old and research about eLearning has not yet been explored. As a result, from current environment related to eLearning, the aims of this study is to examine the effect of ICT skills, time management, resources and learning

technique towards the effectiveness of eLearning tools in teaching and learning system especially among students at higher education institutions.

## Literature Review

E-Learning is one of the way people to communicate and learn using technology (Ecclesfield & Garnett, 2015). It is also one of the tools emerged from information technology has been integrated in many universities and other higher education institute, shifting from traditional way of education to modern method which using a modern technology. According to Sclater (2012), education is also the process of facilitating learning, or the acquisition of knowledge, skills, values, beliefs, and habits. There are many methods in education to get the knowledge include storytelling, discussion, teaching, training, and direct research. There are four factors that give impact towards the effectiveness of eLearning tools in teaching and learning systems among students at higher education. All the factors that have been discussed by previous studies such as Information and Communication Technologies (ICT) skills, time management, resources and learning technique.

### Information and Communication Technology (ICT) skills

Information and Communication Technology (ICT) skills has been use expanded widely all over the world. Teaching and learning session are more interesting as the ICT provides the interactivity. In general, the accessibility of ICT in Malaysia is no longer an issue as Malaysia has many of providers of network so that students can access to the Internet. Besides that, students also do not have difficulties to access the ICT because most of them nowadays have their own laptops and personal computers. Even though students do not have their own laptop, they still can access to the cybercafés as cybercafés are mushrooming in every residents and country (Umar & Jalil, 2012). According to the previous researcher, provide students with ICT skills is an important goal in every schools and institution across the country because by equipping them with the skills may increase and enhance their ICT development in eLearning. Wit, Heerwegh and Verhoeven (2012) stated that if eLearning can improve the ICT skills among the students, it is important to universities to distinguish the ways in which they want to use their skills with their learning styles. ICT skills are necessary for students because they need to get benefit from eLearning so that they can improve themselves in their studies and learning styles. If students can adapt with eLearning easily, it shows that eLearning have been implemented successfully in the university.

Chief Executive Officer (CEO) of the Canadian Education Association (Mann, 2014) stated that, *"if education aimed at provide the children to their world, the tools of technology must be norm in the classrooms and schools"*. That is means educators need to create opportunities for students to acquire ICT skills in order to show them new learning tools. According to the previous researcher, provide students with ICT skills is an important goal in every schools and institution across the country because by equipping them with the skills may increase and enhance their ICT development in e-learning. Khan, Hasan and Clement (2012) stated that the tools of ICT skills offers a strong learning environment and might change the teaching and learning process so that students can deal with their capabilities to develop the knowledge because ICT skills can increase power and capabilities in the e-learning environment for education. According to previous researcher, ICT skills used to develop student collaboration, communication and how to overcome problem in education although ICT skills are common in developed countries, but they still cannot reap revenue due to some obstacles. In e-learning, tools and technologies have been used such as web-based education, TV broadcast and virtual

classroom. To access with the tools, students must have a knowledge how to use and adapt with ICT skills because e-learning is a modern strategy for teaching and learning (Lumadi, 2013). Hence, he also stated that ICT skills has opened whole new horizon to access to the information and change on how people interact, conducting teaching or businesses in international systems. The previous researcher also stated that ICT skills can change how people think and act in society and education.

Khan, Hasan and Clement (2012) added that ICT skills enhance teaching and learning by provides benefit and opportunities to the teachers and students to practice and analyse, offering easy access to articles and materials needed by themselves. This is because ICT skills help students to engage with the decision making and how to solve the problem and related on how to think globally. Those who want to practice the advanced technology during teaching and learning process should have ICT skills as it is an important as part of attracting students and enriching students with new learning experiences (Al-adwan & Smedley, 2012). In conclusion, teachers and students must be confidence in their ICT skills competences (Wastiau, Blamire, Kearney, Quittre, Gaer & Monseur, 2013). This is because the outcomes and achievement of the implementation comes from both teachers and students. ICT skills really impacted the learning styles, achievement and motivation of the institutions. The participation of both teachers and students can significantly affect their ICT use.

### Time management

Next factors that lead to the effectiveness of eLearning are time management. According to Adebisi (2013), time management refers to planning the day to use time effectively and it is most likely related to the industrial revolution. Time management among students refers on how they do things effectively. Good time management among students will help students to be able to be more productive, creative, save money and avoid doing work in vain and to increase the chances to enhance academic performance. According to previous researcher, good time management is crucial to tackle the stress of modern life without feel too much pressure in traditional way of life. Arkorful and Abaidoo (2015) stated that by using eLearning, both teachers and students have a flexible time and places to do their work. All the educators and students have availability to choose the place and time that suits themselves to deliver their work. Besides, online education also allows self-pacing. This is because students have their own time to suits them with their study so that they can adapt to go in slow or quick speed based on their understanding. E-Learning also makes students has the availability to have more interactive with their teachers as they have their own time to contact with their educators. This will help to eliminates barriers of student to hindering the participation in online education. E-learning allows the flexible learning and reduced the students to go to classes (Arkorful & Abaidoo, 2015). The scholars stated that students can do activities conducted by their educators via interactive video so that they can watch and listen it repeatedly. By this way, students can participate in the online education from any places and flexible time, offering travel people to access easily any resources to experience a better learning style. This way also helps disabled students to further study from any location. This shows they can manage their time effectively with their own comfortable ways. According to Elkaseh, Wong and Fung (2016), educators create learning experiences through online education and students can use a social networking in ways that can guide them to get learning experience. Teachers and students utilize the online education and its impact particularly between both teachers and students in higher institutions. Online education influenced the effectiveness of their studies and the ways of their educators teaching method. E-learning shows that this approach is ease of use for teachers and students.

When all students know how to use online education, more students will have more intention to use e-learning technology for their learning styles. E-learning helped students on how to use the technology and indirectly enhance their performance and effectiveness in their learning (Al-adwan, Al-adwan & Smedley, 2013).

Institutions must make sure that their e-learning approach is friendly so that students will regularly use the approach and getting more engagement from all the students. The positive outcomes are e-learning will encourage students to get benefits when use e-learning. At the end of the day, student participation to use e-learning will increase as this approach is easy to use. This is supported by Chang, Yan and Tseng (2012), if one can perform a task at anytime and anywhere, they will feel easier toward time. That means perceived ease of use is when student believe that e-learning is helpful to their task completion. As for conclusion, e-learning can help students in their time management. As the past review from variety of scholars, e-learning can cut their times because they can perform their work at any time and places within the campus area. As e-learning is a simple technology in the university, perceived ease of use is one the factors that affected students to use online education.

### Resources

E-Learning is an online tool used for virtual learning environment to help and easier the delivery of the educational content for educational institutions (Venkataraman and Sivakumar, 2015). Indeed, Osuafor and Emeji (2015) also support that online tools consist of a various term of educational technology that electronically or technologically software of teaching and learning systems. WiFi is still preferred as a way for Internet connection due to its higher bandwith, slow delay and slow energy consumption (Chen, Jin, Suh, Wang & Wei, 2012; Hashim et al., 2019). The ability of ICT to support learning and teaching based on multimedia resources is also related to the increased of interest in eLearning. Inadequate in technology infrastructure can lead to more harm than good to teachers, students and experience learning itself (Bora & Ahmed, 2013). E-Learning is a tool used to transfer of transmission, teaching or programming through electronic devices such as computers, mobile phones, i-pads, tablets and others. In other words, institutions that implement eLearning will enlarge and enhance the combination of technology and facilities they offer in campus (Venkataraman & Sivakumar, 2015).

The appropriate infrastructure for ICT skills development such as internet, extranet, intranet and LAN network is considered one of the biggest challenges in implementing e-learning in institutions, especially in developing countries. E-learning environment must provide students and teachers with reliability and accessibility of network and facilities (Al- adwan & Smedley, 2012). Integrating several technologies teaching methods such as video conferences into an e-learning development program allows students to gain experience with technology provided by the institutions (Reilly, Vandenhouten & Lepak, 2012). According to Reilly, Vandenhouten and Lepak (2012), as an expert technology, the faculty needs to know how to use new software and facilities, the course management approach and varied of educational software. Mastering these skills can enhance faculty and teaching acceptance online. The use of new technologies is needed to develop online courses, activities and communicate in a different scale of distance. The reason of successful faculty is because they offer opportunity of resources such as classroom experiences and encourage professional communication of educators with the same concern (Reilly, Vandenhouten & Lepak, 2012).

According to Odeshi (2014), know student intention and understanding the effectiveness of e-learning can help academic administrators create mechanism based on software to attract students to adapt with e-learning. Increased attention has been given to information technology infrastructure services. These concerns considered as an important role in ICT skills infrastructure services in the outcome and growth of the e-learning. Additionally, the infrastructure services to include fast response and productivity improvement in e-learning (Alsabawy, Steel and Soar, 2013). Many applications tools in education content which the students can properly reform the traditional teaching and education to train a wide number of high-quality personnel. But e-learning has a limited body language and has social excuses to face to face learning session. So, in this case we must be creative to attract this student to be fully participated in the classroom which is by using their own devices like smartphone. But we also must be careful to designing e-learning interface interaction, not to adding interaction in interactive activities seeking. This interaction must be had intends, engaged, paying attention in the class, related the material that they are covering. It must be supporting the learning purpose and sustain the user attention (Ramadiani, Azainil, Haryaka, Agus & Kridalaksana, 2015).

### Learning technique

Finally, the factors that lead to the effectiveness of eLearning are learning technique. Learning is the best as a process, not in terms of yield. To increase learning in higher education, the main focus is the engagement of students so that they can enhances their learning styles – a process that includes a review or feedback on the effectiveness of their learning efforts (Gilakjani, 2012). Traditional learning styles had established type of education process in higher education, over a decade. Over the past 20 years, computer-based learning has revolutionized in the university sector and becoming an icon for higher education in 21st century (Lukman & Krajnc, 2012). The changing of learning styles provides several challenges including changes in cultural expectations and ongoing technological advancement skills of staff and students (Al-adwan & Smedley, 2012). Learning technique is applied in different spectrum, which is distributed learning, hybrid learning and online active learning. In an eLearning environment, a variety of tools are employed such as internet-mediated teaching, web-based learning, virtual classrooms and videoconferences (Al-adwan & Smedley, 2012). Students can adapt differently in learning techniques by their educators. It is important to evaluate students" learning styles to assess their eLearning performance to know whether eLearning is suitable in teaching" (Huang, Lin & Huang, 2012).

Learning through computers has challenged the view of traditional lectures which is necessarily been the best way to facilitate learning within the university environment. Students found that e-learning has its own advantages over student learning (Li, Qi, Wang & Wang, 2014). However, face-to-face interaction communication is still important which is play a lot of expressions, body language and eye contact and these do not exist in online learning technique (Tayebinik & Puteh, 2012; Aziz et al.,2019). Knowledge and skills for solve the innovative problem and complex in multicultural and multidiscipline environment can be receive through non-traditional learning method and it has been found significantly enhance students learning and participation (Lukman & Krajnc, 2012).

Educators who are skilled in learning principles are more likely to adopt student-centered instruction. These educators have broad views on teaching can help students to engage in new learning method and process. They are aware of the changing demographics of traditional

method and influence technology on student ways of learning (Gilakjani, 2012; Aziz et al., 2019). In e-learning, students are independent with their own learning process, due to lack of face-to-face contact with their tutors and other students (Al-adwan & Smedley, 2012). E-learning also offer an opportunity for interactivity between students and tutors during learning session while in hybrid learning, most traditional face-to-face classes are replaced by online components. However, some students are not interested in technology and feel more comfortable in traditional methods that involve in face interaction in physical classes. Implementing an e-learning process requires an organizational change within the institution including staff, student off-campus and the new teaching concepts (Al-adwan & Smedly, 2012; Osman, 2018). E-learning management has to create conditions where students are motivated, satisfied, effective and efficient for them. E-learning management is an important part of this implementation (Urh, Pintar &Jereb, 2015).

### The significance of e-Learning approach at higher education

E-learning means an application and processes like digital collaboration, computer-based learning and virtual classroom. In additional, e-learning available for anywhere because it is self-management learning, on-demand training and delivery-efficiency (Cheng, Wang, Moormann, Olaniran & Chen, 2012). E-learning usually deliver information through electronic media like audio or video tape, Internet, interactive TV and satellite broadcast (Ramayah & Lee, 2012). Every year, there are thousands of students continue their study at universities where the study environment in university plays an important role using ICT skills. Within ICT skills, students can get benefit from digital learning environment and they have opportunity to train and improve themselves using the digital learning environment for studies (Verhoeven, Heerwegh & Wit, 2012). ICT skills provide powerful learning environment and transformation from the learning and teaching process. From that, students can act active and self-directed when deal with knowledge. This mean, ICT skills important to promote new method of instruction in teaching and learning approach. This can be used to improve students' skill in communication, cooperation and problem solving (Khan, Hasan & Clement, 2012: Osman, 2018).

Time management is about planning in order to make the suitable use of time. With good time management, students will be more creative, productive and avoid working ridiculous hours. Key to success in time management is protecting and planning the planned time which involves re-conditioning environment. That mean, good time is doing high quality work, not high quantity (Adebisi, 2013). Using e-learning, students and teachers have their own flexible time and places to do their work. E-learning makes students have their availability to interactive with their teacher. This automatically helps students to hindering the participation in online education (Arkorful & Abaidoo, 2015).

E-learning can use to transfer of transmission or programming through electronic devices like mobile phone, computers and tablets. That means institutions implement will enlarge the combination of technology and facilities in campus (Venkataraman & Sivakumar, 2015). The infrastructure of ICT skills like internet and extranet is the challenges in implementing e-learning in institutions. In addition, environment of e-learning should provide students and teachers with accessibility of network and facilities (Al-adwan & Smedley, 2012). These considered as an important role in ICT infrastructure services in growth of e-learning (Alsabawy, Stell & Soar, 2013). Learning technique applied in different spectrum which is hybrid learning, online learning and distributed learning. In e-learning environment, there have

a few of tools like web-based learning, virtual classrooms and internet-mediated teaching. The management of e-learning need provide environment, which is students are satisfied, effective and efficient for them (Urh, Pintar & Jereb, 2015). E-learning also provides an opportunity for communication between students and teacher during learning session that in hybrid learning. In other word, traditional classes are replaced by online learning although online technique give benefit to student, traditional classes still important because it include body language and eye contact which it is not exist in online learning technique (Tayebirik & Puteh, 2012).

**Conclusion**

E-learning can encompass a variety of online initiatives. A broad way to think about e-learning is the use of electronic devices to deliver or acquire information in teaching and learning approach. Technology nowadays has advanced much as the geographical gap is bridged with the tools of e-learning that make students feel as inside the classroom. This is because technology such as smartphones and tablets had embraced in the classroom and in daily life. Online communication has offered a learner to keep in touch and discussed a related matter. E-learning offers many benefits for students and teachers in learning and teaching approach. For instance, there is no predetermined time for students and teachers to involve in learning and teaching session. Everyone can be on their own pace, know what to do and how to do their job. E-learning can be in individual or by groups. It gives students option to participate in e-learning alone or together. Besides that, e-learning also can be accessible everywhere and anytime as they connected to the Internet.

With modern advancements, the benefits of interactive learning tools are not only available for premise classroom sessions but can also be delivered over the internet. Tools such as desktop sharing software can be used to achieve web conferencing sessions that are just as effective as one-on-one skits. eLearning has completely transformed the way in which learning is imparted to students. Unlike traditional chalk and board method of teaching, eLearning makes learning simpler, easier, and more effective. Thus, this research is expected to examine the effectiveness of eLearning usage in teaching and learning systems among students at higher education in Malaysia. The objective of the study is to identify how the students evaluate the effectiveness of eLearning in teaching and learning systems based on ICT skills, time management, resources and learning technique. There are four factors that have been identified that lead to the effectiveness of eLearning usage in T&L system among students. The key findings of the study include the acceptance of the proposed model. Based on the model, we will know whether the methods used can evaluate the effectiveness of eLearning usage among higher education students.

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