E-LEARNING AS EDUTAINMENT: THE CHALLENGES AND SOLUTIONS FOR STUDENTS OF HIGHER EDUCATIONAL INSTITUTION IN KUALA LUMPUR, MALAYSIA

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Abstract

Edutainment method refers to the teaching and learning process that is relaxed and entertaining. In line with the advancement of ICT and efforts to improve the quality of education in Malaysia, the method of edutainment in e-learning is increasingly gaining attention and widespread use among educators as an effective teaching and learning strategy. However, it cannot be denied that there are difficulties associated in implementing e-learning as edutainment. Hence, this study intends to investigate the challenges and solutions to the implementation of e-learning as an edutainment approach among students of higher educational level. The study also analyzes the association between the students' demographic data with their perceived challenges towards the implementation of e-learning as edutainment approach. A quantitative study was conducted by distributed a set of questionnaires to 350 Bachelor of Arts (BA) students from 5 colleges in Kuala Lumpur, Malaysia through a random sampling technique. Study found that the perceived challenges (M=4.34), and the perceived solutions to overcome the challenges towards the implementation of e-learning as edutainment approach (M=4.23) are all at high level. Through Chi Square test and Binary Regression analysis, it was discovered that the students' gender, age, and familiarity with edutainment are not significant predictors of the perceived challenges in implementing e-learning as an edutainment approach. In conclusion, e-learning as an edutainment approach can be implemented by the students of various background as it allows for bridging the gap between theory and practice by providing opportunities to gather experiences, share knowledge and provide authentic contexts and activities for learning by doing.
Keywords: Edutainment, e-learning, and perceived challenges and solutions.

1.0   Introduction

The edutainment method refers to the teaching and learning process that is relaxed and entertaining. Mohd Zahar Kusnun and Affero Ismail (2017) adds that edutainment has the purpose to engage with the learners' emotions through a computer monitor and interesting animations. Besides that, edutainment approach is used mainly to increase the learners' expectations that learning can be fun and enjoyable. According to Duraku and Hoxha (2020), among the popular approaches of edutainment used as learning strategies are interactive storytelling, simulations, games, as well as animated stories. This entertaining learning method made the learning

process become more enjoyable for students as the concept focuses on relaxed learning that does not burden students. Edutainment approach includes the element of fun entertainment such as humor, acting, poetry, and musical games that create a positive learning atmosphere.

Through edutainment method, teaching strategies in the field of education have evolved. This method allows students to learn using various combinations of multimedia elements such as text, picture, video, sound, and animation elements by simply using a computer mouse to point and click on a specific word, picture, or button (Adnyani et al., 2020). Edutainment is a fresh method and not tied to the conventional teaching and learning method (Mohd Rosmadi Mohd Salleh and Hafizhah Zulkifli, 2020). Thus, this method provides an opportunity for the students' to develop creative minds, without imposing a burden on learning. Students see this method as a fun process, and it helps them to understand an academic subject better.

A study from Coman et al. (2020) has conducted an analysis on the value and potential that can be generated by the learning system through edutainment method. Studies show that the learning process through edutainment approach allows information and training to be accessed from various platforms either formally or informally. As it is more relaxing and entertaing, the students are given the opportunity to be more focused and creative to develop their potential.

Zirawaga (2017) in her study on edutainment emphasizes that it is an important element in the learning process. This study examines how the learning process that uses media and games can help improve the quality of the learning process. The results of the analysis of the study show that edutainment strengthens the basic aspects of learning that influence the development of generic skills and enables education based on social constructivist theory. Students show interest in alternative educational approaches. The use of multimedia in education allows for bridging the gap between theory and practice by providing opportunities to gather experiences, share knowledge and provide authentic contexts and activities for learning by doing.

In line with the advancement of Information and Communication Technology (ICT) and efforts to improve the quality of education in Malaysia, e-learning as edutainment approach is increasingly gaining attention and widespread use among educators as an effective teaching and learning strategy. In fact, the Malaysian government also gives full support to the use of edutainment methods in the teaching and learning process. This can be seen from the efforts of the Malaysian government that introduced the Smart Schools Program in 1990, where the program ensured that all schools involved were equipped with computers and educational software (Wan Malini Wan Isa et al., 2015). In fact, many studies emphasize the importance of edutainment method in efforts to improve student academic achievement (Darling-Hammond et al., 2019; Serdyukov, 2017; and Eze et al., 2020).

With e-learning, educational content can be delivered to students via an internet-connected computer, laptop, tablet, or smartphone. This trend in educational technology has not only increased chances for interactive learning but also saved time. Students may now choose what they need to study fast and effortlessly from wherever they are, as opposed to being confined to a traditional classroom (Coman et al., 2020). Students may also learn by engaging directly with the material on the screen; for instance, they can independently drag learning slides, or record the teaching and learning process. Additionally, decision-making situations in e-learning have led students to make their own learning decisions. In e-learning, students merely need to read or watch the learning material to acquire information. It has altered the delivery of education. In addition, there are numerous e-learning

courses that incorporate edutainment such as animation, digital media files (podcasts), and videos to create practical and multimodal learning experiences, such as picture e-books, textbook e-books, graphic novels, films, e-posters, websites, and oral storytelling, which require the use of different modes to convey meaning.

E-learning as edutainment approach demands the use of technologically advanced electronic equipment in online education. The operational competency, on the other hand, focuses on the ability to operate technology tools or hardware to allow online teaching and learning. Internet connectivity is required for online learning to access course materials. Internet users may engage in a range of learning experiences due to the accessibility of knowledge at their fingertips. Users may engage with information, educator, and learning partners to obtain assistance throughout the learning process, construct meaningful experiences, and achieve lifelong learning outcomes. E-learning creates a true learning environment by providing access to websites on the internet that serve as hubs for a variety of learning materials, such as internet access sites and hypermedia-based learning programs (Zahiah and Abdul Razaq, 2010).

E-learning also can be implemented through edutainment approach. In the context of a digital environment, the term "edutainment" refers to a hybrid kind of content that may take the shape of games, narratives, or visual elements. Edutainment in a computer environment is designed to do two things. First is to get the attention of students, and second is to keep that attention by connecting students' emotions to what they see on their computer displays via the use of brilliantly colored animation. One of them involves interactive education. There is a word known as technical entertaining that is used to explain edutainment in a computer environment. This term indicates that technology has close relations with entertaining, but it lacks certain qualities in terms of strictness and worth. The term "technological entertainment" refers to the act of utilizing technology just for the sake of using it, rather for teaching students reading, writing, or questioning skills. In technological entertainment, teaching methods go towards learner-centered approach which emphasize learner role more actively than teacher-centered approach. Edutainment approach such as computer games, animations, or music can be used as effective tool in teaching complex subjects, as well as can increase the motivation of learners (Aksakal, 2015).

1.1   Problem Statement

Following the total closure of schools and educational institutions in Malaysia, where the learning process is entirely conducted online, many studies have found that students face enormous challenges especially in terms of very limited internet access. Especially for students living in rural areas, it is very difficult for them to get stable internet coverage for the success of the teaching and learning process (Wan Faiziah Wan Abdul Rahman et al., 2020 and Quah, 2020). In fact, Quah (2020) also found that most students are seen not to have a suitable device with sufficient internet access to meet the needs of the online learning process.

Besides that, educators are used with the teachers-centered teaching strategy when conducting class in conventional environment. Although Mohamad Rozi, Abdul Aziz, and Wan Muna Ruzanna (2021) showed that teacher-centered learning is extremely successful for online learning, the outcomes of the study from Intan Nur Syuhada Hamzah and Zamri Mahamod (2021) reveal that the contrary is true, in which they mentioned that teacher-centered strategy as the primary approach in teaching are regarded useless in online learning. When

implementing an approach that is centered on the educator, online teaching and learning are less successful. This happens since it is difficult for the student to actively engaged in the online classroom when they need to focus on the educators only.

Instead, activity-centered teaching methods, such as online reading exercises, have emerged as a viable choice for instructors who want to conduct their lessons online. Not only the instructors able to verify that all their students are actively participating in the teaching and learning sessions, but they can also encourage their students to be active in the classroom by having them participate in reading activities. In a similar vein, students will be encouraged to participate actively in online teaching and learning sessions if they are rewarded in the form of encouragement. Students who are not participating in class should get a fine and have the educator bring their names up during teaching and learning sessions. Should this occur, it is likely that the students may experience the feelings of embarrassment. In the end, they will actively engage in the learning process.

In addition, recent advances in technology have made it possible to use computers in educational settings to create visual and auditory elements such as animation, simulation, and interpretation. However, it has been noticed that edutainment in computer environments is gradually moving towards a more constrained frame, which is consistent with a more conservative approach. In this light, education, and training in edutainment inside a computer environment are seen as the antagonists, and they are condemned for promoting a learning structure that is detrimental for the next generation. Students need to be prepared to deal with frustrating and bothersome circumstances that they may encounter throughout the learning process. Despite this, it has been said that a scenario like this one does not crop up very often in educational entertainment. This situation leads to a negative mindset developed toward educational entertainment in the context of the computer environment (Aksakal, 2015).

Hence, this study aims to investigate the perceived challenges and solutions of e-learning as edutainment approach among the students at higher education level.

1.2 Research Objectives

1. To investigate the challenges towards the implementation of e-learning as edutainment approach faced by the students in selected universities in Kuala Lumpur, Malaysia.
2. To examine the perceived solutions to deal with the challenges of implementing e-learning as edutainment approach among the students in selected universities in Kuala Lumpur, Malaysia.
3. To analyze the associations between the students' gender and the perceived challenges in implementing e-learning as edutainment approach.
4. To analyze the associations between the students' age and the perceived challenges in implementing e-learning as edutainment approach.
5. To analyze the associations between the students' familiarity with e-learning as edutainment and the perceived challenges in implementing e-learning as edutainment approach.

1.3 Research Hypotheses

H1: There is an association between the students' gender and the perceived challenges of e-learning as edutainment approach in class.

H2: There is an association between the students' age and the perceived challenges of e-learning as edutainment approach in class.

H3: There is an association between the students' familiarity with e-learning as edutainment and the perceived challenges in implementing e-learning as edutainment approach.

2.0 Literature Review

2.1 The Concept of Edutainment and E-learning as Edutainment

Edutainment is derived from two words namely education and entertainment. The term education generally refers to teaching a lesson. Meanwhile, the term entertainment refers to appealing or exhilarating learning. The emphasis of the edutainment method includes an engaging and pleasurable presenting strategy such as singing, storytelling, acting, and poetry. According to Melvina (2018), edutainment approach is a learning platform where students are allowed to have fun and be entertained with the lesson learned. She also stated that the edutainment approach is the outcome of mixing education with the entertaining element, as well as other sorts of media such as music, animation, video, text, and pictures. Edutainment approach has been used in schools, making the process of teaching and learning are more participatory and responsive to students' demands. Through the edutainment approach, the teacher's presentation of knowledge will be readily received and comprehended by students. Edutainment approach is a pleasant, happy, and regulated strategy that requires certain key components to be implemented. Singing, acting, poetry, and storytelling are the four basic components of edutainment. The study adds that edutainment approach can make sure the learning process of each subject taught with a systematic and motivated learning plan. Hence, this approach will also directly influence the improvement of the students' overall performance.

The edutainment approach can be implemented through various techniques and in turn it makes the learning atmosphere become more conducive, meaningful, interesting, and fun. According to Zirawaga et al. (2017), education refers to the process of educating, whereas entertainment refers to having fun, being exciting, and being intriguing in the process of teaching and learning. Based on this concept, the element of entertainment can also be regarded as acts or words that amuse, elicit laughter, are hilarious, actions or words that make others laugh, and actions or words that decrease tension. It emphasized on the excitement that entice students to continue learning. Among the characteristics of the entertainment element are fun learning environment, peaceful, independent out of stress, full involvement from students, enthusiasm, attention and focus, interesting, fun, and relaxing learning.

According to Nurfartin Shamimi Che Ibrahim et al. (2021), positive behaviors will be exhibited by students when their teachers make use of teaching aids that are available in a digital format, such as multimedia software. This contrasts with traditional teaching aids, which include picture cards and textbooks. However, the climate of contemporary learning and teaching reveals the position of a few educators who still choose to employ the traditional approach, in which the teacher acts as the tutor to the students. Students are overburdened with the concept of fact remembering because of the conventional learning media-oriented strategy, which is one of the method's many drawbacks. It is believed that the students' cognitive growth would generate a less beneficial

influence on their mastery of science if the approach that was being used at the time that the students were being introduced to devices and information technology is allowed to continue to be used.

2.2 The Challenges of e-Learning as Edutainment among Students

According to Hasnah (2020), seventy percent of students who come from poor socioeconomic backgrounds report the need to participate in online learning makes them feel stressed. The implementation of the new standards has pushed the educational system toward making the most of available technological resources. It was discovered that students who coming from low-income family group who were required to subscribe to internet data in order to participate in courses, take tests, and hand in assignments were more burdened than students in other family groups. According to Wan (2020), a few countries have taken further actions and efforts, such as providing gadgets to students so that they can access to online classrooms. Meanwhile, the students in China, the United States, and Finland are given the opportunity to borrow digital tools from their respective institutions to participate in digital learning platforms. There are also donations from the business sector that make it easier for students from disadvantaged backgrounds to engage in online courses utilizing the necessary technology.

Students also faced challenges in term of lack of information and communication technology (ICT) skills, which prevents them from utilizing DELima, Zoom, Google Meet, and other Online Educational Resources (OER). Because of this, the instructor will need to devote a great amount of time to instruct students in the proper use of ICT. Without adequate knowledge on handling the tools, the students will have less motivation in e-learning. The weakness of internet connection in certain regions also become a barrier since it causes some students to "disappear off the radar", meaning that they are unable to follow along with their online education properly.

Throughout the process of media learning and edutainment, the difficulties associated with the usage of digital media were investigated in the research that was conducted by Matos, Festas, and Seixas (2016). Because the use of digital media has made it possible to obtain a vast amount of information, a particular focus has been placed on the need to cultivate behaviors that are effective, critical, and responsible at the individual level. However, learning via the use of this approach that involves digital media still has its own unique problems, which have been highlighted in this research. Students who have access to a wide variety of information run the risk of being exposed to a great number of inappropriate things. In fact, having such access can lead to a wider gap between the culture of the school and the students' daily experiences, which have been largely filled by digital media. According to the findings of the survey, kids today are given the impression that adults do not comprehend or value the educational experiences of today's students since digital learning techniques are used in education today.

2.3 The Solutions of e-Learning as Edutainment for Students

As a result of the proliferation of the internet, the teaching and learning process is no longer predicated only on the use of textbooks. Instead, the use of technology in teaching techniques by educators contributes to the provision of a more dynamic learning environment. Nur Hazirah and Masayu (2020) stated that throughout the

COVID-19 pandemic, online teaching methods have been implemented so that students can still participate teaching and learning activities while at home. During quarantine, the usage of the WhatsApp application as the primary delivery channel for teaching and learning has shown to be quite beneficial. Zawiah (2020) also supports the idea that the usage of the WhatsApp application during teaching and learning sessions as the preference of university students to use as their primary channel for teaching and learning. WhatsApp can be accessed easily, and it is more convenience for the students who do not have consistent access to the Internet. In summary, the integration of ICT into educational practices has the potential to produce comparable results to those obtained through more traditional approaches, provided that the challenges associated with online education can be surmounted through collaborative effort on the part of several different stakeholders.

The problems involved in implementing a game-guided curriculum have been the primary focus of the research that Marklund and Taylor (2016) have carried out. Studies on learning through digital games have placed a heavy emphasis on the integration of game design, predetermined learning principles, students' engagement, and learning outcomes. The study was done to gain an understanding of how games function in educational contexts and how they affect the work of teachers. Learning via games requires a significant time and energy investment on the part of educators, particularly in further cultivating the inventiveness of gaming activities that may be included into educational curricula. This is a very pressing issue. This study was carried out with consideration given to two case studies in which a researcher and a teacher worked together over the course of five months to implement MinecraftEdu as a classroom activity using the case studies as a guide. The study identified the various roles that a teacher needs to play if they want to make games a part of the school curriculum. This was accomplished by documenting both the work processes involved in implementing games into the classroom environment as well as the implementation of classroom activities based on actual games. In doing so, the study was able to identify the various roles. A better understanding of the context in which games will be used, as well as the role teachers play during game-based learning scenarios, is a necessary foundation for enhancing game viability as an educational tool, according to the findings of the study, which also highlights the significance of comprehending the constraints that are placed on the work of teachers.

In addition, Malaysia has created a wide range of online programs, such as Kahoot, Quizlet, Quizziz, Wordwall, and Gamilab, which may be accessed by instructors and students to facilitate the teaching and learning process. The process of instructing and learning among students and instructors may be made easier with the use of mobile apps that have been created and made available online. As a result, an application that can be accessed online and that may pique the attention of students has to be developed. According to Muhd Al-Aarifin and Jamilah (2017), Kahoot application contains musical elements and color displays, both of which attract the interest of students and make them look forward to beginning the game. Additionally, the application features a variety of questions that can be answered by students. Students that participate in learning using Kahoot report that it is a lot of fun, can be easily managed, is engaging, and assists them in better understanding the subjects that are being studied.

2.4   Underpinning Theories: Dual-Coding Theory

According to Allan Paivio's dual coding theory (Paivio, 1991; 2007), an individual processes the information they received through either verbal or visual channels (nonverbal images), depending on the type of channel it is. Verbal channels include things like text and sound, while visual channels include things like diagrams, images, and animations. These two channels can operate on their own, in parallel with one another, or even simultaneously when combined (Sadoski, Paivio, Goetz, 1991). The two separate information channels each have their own unique qualities. When processing information, verbal channels do so in a sequential fashion, but nonverbal channels may do it either simultaneously (synchronously) or in parallel.

When the sensory memory system receives inputs from the environment, including verbal and nonverbal stimuli, thinking activity occurs. These stimuli may include words or images. To discover the channels that correlate to the inputs that are being received, representational connections are made. When using the verbal channel, the representation is constructed in a logical and sequential manner. Meanwhile, the representation is being constructed in a comprehensive manner via the nonverbal channel. For instance, the eyes, nose, and mouth may be distinguished from one another, yet they can also be regarded as constituent parts of the face. Logogen is the term used to refer to the representation of information that is processed via verbal channels, while imagen is the term used to refer to the representation of information that is processed through nonverbal channels.

According to the findings of studies that were carried out by Paivio and Bagget (1989) and Kozma (1991), the learning activities of an individual may be improved upon by selecting the appropriate combination of different types of media (Ouyang & Stanley, 2014). For instance, the information that is communicated via the use of pertinent words (verbal) and images tends to be simpler to acquire and comprehend in comparison to the information that utilizes sound alone, text only, a mix of text and sound only, or illustration simply.

The Dual Coding theory also suggests that a person would learn more effectively when the learning medium used is an appropriate mix of verbal and nonverbal channels. This is an important implication of the theory (Ouyang & Stanley, 2014). In line with this statement, researchers argue that when the learning media used is a combination of several different media, then both information processing channels (verbal and nonverbal) are possible to work in parallel or together, which impacts the ease with which information is conveyed by learners. This is because both channels could work in parallel or together.

As a result, the researcher hypothesizes in this study that the use of e-learning by means of the edutainment approach may help the students by improving the level to which they think they are willing to embrace it. However, not all students able to readily comprehend the knowledge that is presented to them via learning media such as edutainment. According to Carlson, Chandler, and Sweller (2003), which discovered that there are significant differences in achievement depending on the interactivity level of the learning materials, the current study believes that there are challenges faced by students regarding the implementation of e-learning as edutainment.

3.0   Research Methodology

This study utilized a survey study through quantitative research methods and descriptive analysis. Quantitative data is analyzed descriptively to determine the perceived challenges and solutions of implementing

of e-learning as edutainment among the students at higher education level. A questionnaire was used as a research instrument to collect data. A closed-ended questionnaire used to collect quantitative data from the sample. The questionnaire set contained 36 items, in which it has been distributed to 350 Bachelor of Arts (BA) students from five universities in Kuala Lumpur, Malaysia. This sample size range is raised as much as possible to ensure adequate questionnaire returns for analytical purposes. Data collected then was analyzed using SPSS through descriptive analysis of mean score, and inferential analysis of chi square test and binary logistic regression to meet the objectives of the study, as well as prove the hypotheses.

4.0   Research Findings

Table 1: Reliability Analysis

Variables	Number of Items	Value of Cronbach's Alpha	Reliability
Challenges in e-learning as edutainment approach	15 items	0.903	Excellent
Solution on the Problems regarding E-learning as Edutainment Approach	8 items	0.850	Very good

Table 1 shows the value of Cronbach's Alpha for reliability analysis. The first variable recorded a 0.903 as the value of Cronbach's Alpha, indicating that the variable has an excellent reliability. In the meantime, the second variable recorded a 0.850 as the value of Cronbach's Alpha, indicating that the variable has a very good reliability. Since both variables recorded high reliabilities, all the measurement items are good to be used to collect data in the actual study.

Analysis of Respondents' Demographic Profile

Table 2: Analysis of Respondents' Demographic Profile

Students' Demographic Profile		Frequency	Percentage
Gender	Male	145	41.40 %
	Female	205	58.60 %
Age	20 years old and below	97	27.70 %
	21 - 25 years old	135	38.60 %
	26 - 30 years old	52	14.90 %
	31 - 35 years old	36	10.30 %
	36 - 40 years old	20	5.70 %
	41 - 45 years old	7	2.00 %
	46 years old and above	3	0.90 %

Race	Malay	91	26.00 %
	Indian	81	23.10 %
	Chinese	140	40.00 %
	Others	38	38.00 %
Year of Study	First Year	54	15.40 %
	Second Year	149	42.60 %
	Third Year	133	38.00 %
	Fourth Year	10	2.90 %
	Repeat Student	4	1.10 %
CGPA	First Class (3.50 - 4.00)	106	30.30 %
	Second Class (Upper Division) (3.00 - 3.49)	138	39.40 %
	Second Class (Lower Division) (2.20 - 2.99)	**75**	21.40 %
	Third Class (2.00 - 2.19)	31	8.90 %
Familiarity with Edutainment Term	Yes	145	41.40 %
	No	205	58.60 %
Prefer e-learning with edutainment approach?	Yes	171	48.90 %
	No	179	51.10 %
Application / software used for edutainment in e-learning	Zoom	96	27.40 %
	Google Meet	88	25.10 %
	Crickle	0	0
	Skype	0	0
	BlueJeans	0	0
	BigBlueButton	0	0
	AnyMeeting	28	8.00 %
	Webex	56	16.00 %
	GoTo Meeting	46	13.10 %
	Microsoft Teams	14	4.00 %
	YouTube Streaming	16	4.60 %
	Whereby	0	0
	Yotribe	0	0
	Discord	0	0
	Miro	0	0
	Twitch	0	0
	Vimeo	0	0
	Facebook Live	6	1.70 %
	Loom	0	0
	hopin.to	0	0

Table 2 contains the data obtained in this study. From the total of 350 students who participated in the study, majority of them are female, who accounted for 58.60%. The other 41.40% of respondents are male

students. Then, the data shows the respondents who most participated in this study are those who aged between 21 to 25 years old, with 38.60%, followed by 27.70% of students who aged 20 years old and below. There are only 14.90% of students aged between 26 to 30 years old have participated in the study. In the meantime, the least number of participants among the students are those who are between 31 to 35 years old, with a percentage of 10.30%, followed by students aged between 36 to 40 years old, with a percentage of 5.70%. There are also students who aged between 41 and 45 years old and indicated by 2.00%. Furthermore, minority students accounted for only 0.90% of those who took part in this study and are 46 years old and above.

Next according to the collected data, majority of the students who participated in the study are Chinese, in which they accounted for 40.00% from the total respondents. Meanwhile, other races make up for 38.00% from the total respondents, followed by 26.00% of Malay students. Indians made up the smallest proportion of respondents, who accounted for 23.10%.

Also, Table 2 shows majority of the respondents, with 42.60% of them, are students in the second year. Then, 38.00% of the respondents are third-year students, followed by 15.40% and 2.90% of first year and fourth-year students, respectively. The lowest data shows that there are only 2.90% of students who were involved in this study being repeat students.

All the respondents also are classified according to their CGPA achievement, where most of the students who participate in this study, who accounted for 39.40%, obtain the second class (upper division) with CGPA of 3.00–3.49. Then, there are 30.30% of students who are classified as first class with a CGPA of 3.50–4.00. Moreover, the second class (lower division) is represented by 21.40% of the students with CGPA between 2.20 and 2.99. Meanwhile, there were only a few students fall in the category of third class with a CGPA of between 2.00 and 2.19, accounted for 8.90% of all respondents. Then, it was found that most of the students, who accounted for 58.60% of them, are not familiar with the edutainment terms. On the contrary, another 41.40% of them are already familiar with the edutainment terms. Most of the students who participated in the study who are represented by 51.10% mentioned that they do not prefer edutainment approach in e-learning. Meanwhile, the other 48.90% said that they would prefer edutainment approach to be used in e-learning sessions.

From the table, it is agreed that most of the respondents, accounted for 27.40%, use Zoom as the software to practice e-learning as edutainment approach, followed by 25.10% who mainly use Google Meet. Webex and GoTo Meeting are also widely used during e-learning as edutainment approach, in which there are 16.00% and 13.10% of students mentioned on the use of both applications respectively. In addition to this, 8.00% of the students mainly use AnyMeeting, 4.00% mainly use YouTube Streaming, and 4.00% of the students mainly use Microsoft Teams as the application during e-learning classes as edutainment approach. The second least popular application used by respondents was Facebook Live, with only 1.70% use it. Then there are none of the respondents who use Crickle, Skype, BlueJeans, BigBlueButton, Whereby, Yotribe, Discord, Miro, Twitch, Vimeo, Loom, and hopin.to for e-learning as edutainment approach.

Objective 1: To investigate the challenges towards the implementation of e-learning as edutainment face by the students in selected universities in Kuala Lumpur, Malaysia.

Table 3: Mean Score Analysis for the challenges towards the implementation of e-learning as edutainment face by the students in selected universities in Kuala Lumpur, Malaysia.

Measurement Items	Mean Score	Std. Dev.	Interpretation
1. Difficulties to accept edutainment methods in e-learning class.	4.53	0.704	High Level
2. Difficulties for the student to link the entertainment with the knowledge.	4.39	0.726	High Level
3. Difficulties to answer online exams or assignments in formal format when learning through edutainment methods.	4.52	0.658	High Level
4. Lack of interaction between students and educators made the edutainment methods are difficult to understand.	4.47	0.700	High Level
5. Not receiving clear instructions or expectations during e-learning class with edutainment methods.	4.46	0.696	High Level
6. Not receiving timely feedback during e-learning class with edutainment methods.	4.40	0.765	High Level
7. Lack of suitable devices to support the edutainment method in e-learning.	4.16	0.636	High Level
8. Lack of experience in handling edutainment method in e-learning.	4.13	0.857	High Level
9. Lack of knowledge on handling technological devices.	4.26	0.713	High Level
10. Need more guidance from the educators with edutainment methods in e-learning.	4.46	0.724	High Level
11. Lack of motivation to focus on lesson class despite using edutainment methods.	4.30	0.778	High Level
12. Lack of technology/software required for home access of edutainment method	4.14	0.753	High Level
13. Lack of training courses provided by the institution to use edutainment methods in completing tasks or assignments.	4.37	0.786	High Level
14. The software of e-learning with edutainment methods is too complicated to use.	4.24	0.725	High Level
15. Inaccessibility of audio/video material, PDF, or PowerPoint.	4.25	0.710	High Level
Overall Mean Score	**4.34**	**0.729**	**High Level**

In summary, the perceived challenges in the implementation of e-learning as an edutainment approach among students of higher education is at a high level of mean score (M = 4.34, Std Dev. = 0.729).

Objective 2: To examine the perceive solutions to deal with the challenges of implementing e-learning as edutainment among the students in selected universities in Kuala Lumpur, Malaysia.

Table 4: Mean Score Analysis for the solutions to deal with the challenges of implementing e-learning as edutainment among the students in selected universities in Kuala Lumpur, Malaysia.

Measurement Items	Mean Score	Std. Dev.	Interpretation
1. Learning process should be engaging.	4.27	0.758	High Level
2. Students need to have motivation to learn.	4.36	0.747	High Level
3. Actively engaged in class.	4.30	0.760	High Level
4. Self-initiatives needed on mastering the applications/software for edutainment methods in e-learning.	4.26	0.788	High Level
5. Comprehensive training needed for students in the field of e-learning skills with edutainment methos.	4.24	0.769	High Level
6. The need to adopt a blended learning approach at the beginning of the implementation of full-scale edutainment methods in e-learning.	4.05	0.945	High Level
7. Introduce compulsory e-learning courses in the curricula for all students, particularly in the first and second year of study to equip them with e-learning skills as well as improve accessibility to e-learning.	3.95	0.976	High Level
8. Utilizing educational technology appropriately.	4.37	0.736	High Level
Overall Mean Score	**4.23**	**0.810**	**High Level**

In conclusion, the overall mean score analysis for the solutions to deal with the issues of integrating e-learning as edutainment among students of higher education is at a high level of mean score (M = 4.23, Std Dev. = 0.810).

Objective 3: To analyze the associations between the students' gender and the perceived challenges in implementing e-learning as edutainment.

H1: There is an association between the students' gender and the perceived challenges of e-learning as edutainment in class.

Table 5: Chi-Square Analysis of students' gender and the perceived challenges in implementing e-learning as edutainment.

		Value	Df	Asymp. Sig. (2-sided)
Students' Gender	Pearson Chi-Square	218.905	1	.000
	Likelihood Ratio	257.464	1	.000
	N of Valid Cases	350		

Table 5 shows the analysis of chi-square test for the association between the students' gender and the perceived challenges of e-learning as edutainment approach in their classes. The table shows that the significant p-value for the gender is 0.000, which is less than 0.05 ($p < 0.05$). Hence, it serves as the evidence to show that there is association between the students' gender and the perceived challenges of e-learning as edutainment in class. Hypothesis null is rejected. To determine whether the students' gender is a significant predictor to their perceived challenges in implementing e-learning as edutainment, binary logistic regression analysis was utilized.

Table 6: Binary Logistic Regression Analysis of students' gender and the perceived challenges in implementing e-learning as edutainment.

		Perceived challenges (difficulty) in implementing e-learning as edutainment	P value	Odd Ratio	95% Confidence Interval	
					Lower	Upper
Students' gender	Male	138, 95.17 %	0.998	0.000	0.000	1.489
	Female	32, 15.61 %				

It was found through the data analysis that 138 male students found that the implementation of e-learning as edutainment approach in their lesson classes is difficult. This is represented by a total of 95.17 % from a total male student who participate in the study, in which it is majority of the male students who found the implementation of e-learning as edutainment approach is difficult. On the other hand, only 32 female students found that the implementation of e-learning as edutainment approach in their lesson classes is difficult. This is represented by 15.61 % from a total of female student who participate in the study.

Table 6 shows the analysis of binary logistic regression to examine whether the gender of students can be the predictor to their perceived challenges in implementing e-learning as edutainment approach in their lesson classes. As the significant, p value is 0.998 which is higher than the standard coefficient of significant value 0.50 ($p < 0.50$), hence, it can be concluded that there is no significant influence of gender on perceived challenges in implementing e-learning as edutainment approach among the students. In summary, gender of the students cannot be used as the predictor on their perceived challenges in the implementation of e-learning as edutainment approach.

Therefore, hypothesis 1 is rejected. There is no association between the students' gender and the perceived challenges of e-learning as edutainment approach in class.

Objective 4: To analyze the associations between the students' age and the perceived challenges in implementing e-learning as edutainment.

H2: There is an association between the students' age and the perceived challenges of e-learning as edutainment in class.

Table 7: Chi-Square Analysis of students' age and the perceived challenges in implementing e-learning as edutainment.

		Value	Df	Asymp. Sig. (2-sided)
Students' Age	Pearson Chi-Square	134.837	1	.000
	Likelihood Ratio	155.740	1	.000
	N of Valid Cases	350		

Table 7 shows the analysis of chi-square test for the association between the students' age group and the perceived challenges of e-learning as edutainment approach in their classes. The table shows that the significant p-value for the gender is 0.000, which is less than 0.05 ($p < 0.05$). Hence, it serves as the evidence to show that there is association between the students' age group and the perceived challenges of e-learning as edutainment in class. Hypothesis null is rejected. To determine whether the students' age group is a significant predictor to their perceived challenges in implementing e-learning as edutainment, binary logistic regression analysis was utilized.

Table 8: Binary Logistic Regression Analysis of students' age as the predictor for perceived challenges in implementing e-learning as edutainment.

		Perceived challenges (difficulty) in implementing e-learning as edutainment	P value	Odd Ratio	95% Confidence Interval	
					Lower	Upper
Students' Age	20 years old and below	91, 93.81 %	0.505	1.105	0.822	1.489
	21 - 25 years old	26, 19.26 %	0.505	1.105		
	26 - 30 years old	29, 55.77 %	0.505	1.105		
	31 - 35 years old	14, 38.89 %	0.505	1.105		
	36 - 40 years old	6, 30.00 %	0.505	1.105		
	41 - 45 years old	2, 28.57 %	0.505	1.105		
	46 years old and above	1, 33.33 %	0.505	1.105		

It was found through the data analysis that there are 91 students who are 20 years old and below that agreed the implementation of e-learning as edutainment approach is challenging and difficult. This is represented by majority of the students in the age category, accounted for 93.81 % of them. Next, in the age group of 26 to 30 years old, majority of them also found the implementation of e-learning as edutainment approach is challenging, in which it accounted for 29 students and represented by 55.77 % of them. Meanwhile, there are only 14 (38.89 %) and 6 (30.00 %) students in the age group of 31 to 35 years old and 36 to 40 years old who agreed that the implementation of e-learning as edutainment approach is challenging respectively. Lastly, there are 2

(28.57%) students in the age group of 41 to 45 years old, as well as 1 (33.33%) student in the age group of 46 years old and above who agreed that implementing e-learning as edutainment approach in their lesson classes is challenging.

Table 8 shows the analysis of binary logistic regression to examine whether the age group of students can be the predictor to their perceived challenges in implementing e-learning as edutainment approach in their lesson classes. As the significant, p value is 0.505 which is higher than the standard coefficient of significant value 0.50 ($p < 0.50$), hence, it can be concluded that there is no significant influence of age group on perceived challenges in implementing e-learning as edutainment approach among the students. Thus, age group of students cannot be used as the predictor on their perceived challenges in the implementation of e-learning as edutainment approach.

Therefore, hypothesis 2 is rejected. There is no association between the students' age and the perceived challenges of e-learning as edutainment approach in class.

Objective 5: To analyze the associations between the students' familiarity with e-learning as edutainment and the perceived challenges in implementing e-learning as edutainment.

H3: There is an association between the students' familiarity with e-learning as edutainment and the perceived challenges in implementing e-learning as edutainment.

Table 9: Chi-Square Analysis of students' familiarity with e-learning as edutainment and the perceived challenges in implementing e-learning as edutainment.

		Value	Df	Asymp. Sig. (2-sided)
Students' Familiarity with e-learning as edutainment	Pearson Chi-Square	143.363	1	.000
	Likelihood Ratio	156.620	1	.000
	N of Valid Cases	350		

Table 9 shows that the significant p-value for the familiarity with e-learning as edutainment approach is 0.000, which is less than 0.05 ($p < 0.05$). Hence, it serves as the evidence to show that there is association between the students' familiarity with e-learning as edutainment approach and the perceived challenges of e-learning as edutainment in class. Hypothesis null is rejected. To determine whether the students' familiarity with e-learning as edutainment approach is a significant predictor to their perceived challenges in implementing e-learning as edutainment, binary logistic regression analysis was utilized.

Table 10: Binary Logistic Regression Analysis of students' familiarity with e-learning as edutainment and the perceived challenges in implementing e-learning as edutainment.

		Perceived challenges (difficulty) in implementing e-learning as edutainment	P value	Odd Ratio	95% Confidence Interval	
					Lower	Upper
Students' Familiarity with edutainment	Yes	124, 85.52 %	0.998	0.000	0.000	1.489
	No	45, 21.95 %				

As shown in the Table 10, majority of the students who are familiar with the edutainment term still find it challenging to implement e-learning as edutainment approach in their lesson classes. This is represented by a total 124 of the students and accounted for 85.52%. Meanwhile, there are only 45 students that are accounted for 21.95% that are not familiar with the edutainment term agreed that implementing e-learning as edutainment approach is challenging.

Table 10 shows the analysis of binary logistic regression to examine whether the students' familiarity with edutainment can be the predictor to their perceived challenges in implementing e-learning as edutainment approach in their lesson classes. As the significant, p value is 0.998 which is higher than the standard coefficient of significant value 0.50 ($p < 0.50$), hence, it can be concluded that there is no significant influence of familiarity with edutainment on perceived challenges in implementing e-learning as edutainment approach among the students. Thus, familiarity with edutainment cannot be the predictor for the perceived challenge of implementing e-learning as edutainment approach among the students.

Therefore, hypothesis 3 is rejected. There is no association between the students' familiarity with edutainment and the perceived challenges of e-learning as edutainment approach in class.

5.0   Discussion

Through the data analysis, it was found that all difficulties suggested by the research are highly challenging for students regarding the implementation of e-learning as edutainment approach. It is mostly difficult for the students to accept the implementation of e-learning as edutainment approach due to the methods of edutainment used in e-learning classes. Not only that, due to the edutainment approach utilized in the class, the students find it difficult to answer the questions in examinations or assignments since both type of assessments need them to answer in formal format and textbook languages.

In addition, lack of 2-ways communication between the educators and students made the edutainment methods become more difficult to understand and harder to incorporate with the approach. Students agreed that through edutainment approach in the e-learning, they not received clear instructions, timely feedback, as well as having a hard time to link the entertainment with the knowledge to meet the lesson objective. Also, lack of knowledge to handle educational technologies, lack of motivation to concentrate on the courses, lack of experience in managing the edutainment approach of e-learning, as well as inaccessibility of audio/video material,

PDF, or PowerPoint contributes to the difficulty of implementing edutainment approach in e-learning. Tamilmullai and Salini (2021) mentioned that the willingness of students to follow online classes are dependent on devices, data plans and student self-motivation. Other challenges faced when the lack of ICT skills in accessing DELima, Zoom, Google Meet and various online learning methods among students or parents. This causes the teacher need to focus more time on teaching students the use of ICT. If the student does not explain about the procedures for the use of ICT. Motivation of students will decrease to implement online learning. As supported by Nur Hanisah and Mohd Isa Hamzah (2021), e-learning make it harder to supervise the students to engage and participate actively in the lesson class. When there is lack of supervision on the students, there are easily distracted from focusing on achieving their goals and did not concentrate on the lesson classes. In overall, it can be said that the students face challenges more in terms of their lack of knowledge and experience of handling educational technologies, and hard to engage and understand the e-learning class that using edutainment approach. This is mostly because they have been very familiar with the conventional method of learning, and hence incorporating with the edutainment approach seems difficult for them, especially when they need to utilize the knowledge they gained in the class of e-learning through edutainment approach in answering the formal and textbook format of examinations or assignments.

In the meantime, there are 8 measurement items used to measure the perceived solutions regarding the implementation of e-learning as edutainment approach, in which all of them are highly agreed by the students. The students agreed that they need to practice using the educational technologies, and have more motivation to learn, as well as. By that means, full engagement in the classroom is one of the most important aspects in overcoming challenges posed by students in the process of integrating edutainment in online learning. Most importantly, most of the students agreed that there is a need for the introduction of compulsory e-learning courses in the curricular for all students, particularly in the first and second year of study to equip them with e-learning skills as well as improve accessibility to e-learning. According to Wan (2020), several countries have taken additional steps and initiatives by donating devices to students so that access for online classes can be improved. China, the United States and Finland provide space for students for digital learning platforms by borrowing digital tools from schools. Therefore, contributions from the private sector also alleviate the burden of underprivileged students to participate in online classes using appropriate devices.

The study has examined the association between the students' gender, age, and familiarity with edutainment with their perceived challenges in the implementation of e-learning as edutainment approach, It was found through the data analysis that even though the students' gender, age, and familiarity with edutainment are significantly associated with their perceived challenges in the implementation of e-learning as edutainment approach through chi square test, yet the additional analysis of binary regression found that these demographic data are not the significant predictors towards the perceived challenges in the implementation of e-learning as edutainment approach, Thus, the study has concluded that there is no significant relationship between the students' gender, age, and familiarity with edutainment with their perceived challenges in the implementation of e-learning as edutainment approach.

Since the e-learning through edutainment approach is implemented by the educators, the students only need to prepare for themselves for the classes, participate, as well as engaged actively in the classes. There is no

need for the students to feel the burden of implementing e-learning as edutainment approach, in which they just need to absorb all the knowledges delivered by their educators. Therefore, it is relevant for the students' gender, age, and familiarity with edutainment are no predictors for their perceived challenges in the implementation of e-learning as edutainment approach. However, since every student's learning style may be different, in which they can be better learning through auditory, visual, kinesthetics, or reading and writing, the e-learning through edutainment approach utilized by their educators may be difficult for them to accept.

Thus, the students can no longer use the old set of thoughts, which is to wait for the educators to speak or to start a new lecture. Determining what to study, finding material that the educators have placed on virtual learning platforms such as Google Classroom and university e-learning, then organizing their own time to research the material and then complete it. The timing and prioritization of which materials need to be studied and completed first, which then need to be thought through. When learning is done online, students can no longer rely on educators alone as a source of knowledge. Students also need to open their minds to research other Online Educational Resources (OER), not just depending on the notes from their educators. Finding authentic and accurate learning materials is also one of the lifelong learning skills that need to be built. These include notes or electronic books from leading universities, videos, and free open learning platforms such as Massive Open Online Courses (MOOCs).

6.0   Research Significance and Contribution

Current study has some contributions towards the students of higher educational level. Through the study, the students have given awareness on the many alternatives of learning, not only using the conventional way of traditional method. E-learning can be utilized through many educational technologies, and it can also combine as edutainment approach. Edutainment approach in e-learning make the lesson classes become more interactive, and students will not be bored from sitting in a long hour of classes. In addition to that, the students will be able to recognize their pattern of learning and studying, in terms of which approach and methods are more effective for them to gain knowledge. This is because there are different learning styles among the students. Their learning styles may differ from visual learning, auditory learning, kinesthetics learning, as well as reading or writing learning styles. Hence, the edutainment approach in e-learning may made the students identify their ways of effective learning styles, then utilized it to excel in academic. Edutainment approach can be utilized in every learning style. The students who learn through visual learning style can learn through simulation. The students who learn through auditory earning style can learn by listening to storytelling. The students who learn through kinesthetics can learn through gamification, and the students who learn through writing or reading can learn through poetry. This study has the ability to create an awareness on the effective learning styles of each student through the past studies that has been discussed in the previous chapter. Hence, when they face challenges in the implementation of e-learning as edutainment, the students should not be discouraged at all, instead they should identify their learning style and utilizes it to the fullest for a better academic achievement.

7.0   Conclusion and Recommendation

In conclusion, it was found that there is no association between the students' gender, age, and familiarity with e-learning as edutainment with their perceived challenges in the implementation of e-learning as edutainment approach. The study suggests that any student who wants to continue adult learning through distance learning basis that mostly utilizes e-learning should set their goals first before choosing a field of specialization. This is because it can very challenging, where students need to always focus on achieving their goals. Even though edutainment approach can be fun and effective at the same time for the students to excel in their academic performance, yet it is not suitable for everyone. Some students are better to learn in conventional way of traditional method as it helps them to understand better. Being a student in higher educational level means that they need to start being independent and not fully depends on the knowledge gained from the lesson classes. In this way, if the approach used by the educators during e-learning classes is not suitable or effective for the students, they will not be affected much as they can independently find their ways out to study on their own and still excel in their academic. This study suggests qualitative study to be conducted for similar studies in future so that researcher can gather diverse data and has the possibility to make new findings.

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