

The Benefits of Implementing Authentic-Based Multimedia Learning in Higher Education Institutions

Olusola-Fadumiye Titilope Olufunke, Jamalludin B. Harun,
Megat Aman Zahiri Megat Zakaria

School of Education, Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia

Email: taiwo.mary89@yahoo.com

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Abstract

Multimedia has become one of the most complex and diverse digital learning media for creating knowledge and enabling a sensory learning environment that helps students to learn better and integrate information. By emphasizing on real-world experiences, learning is intended to be applied to students' thought process. However, learning while having fun cannot be isolated from the media, which makes it easy for students to access it. This implies that the media must be able to fulfil the demands of students' progress. According to existing learning theories, authentic-based learning environments aid students in developing appropriate and effective understanding. Personal relevance for the students' perspective, authentic-based learning environments are positioned within suitable educational settings and the notion of an authentic-based learning environment is based mostly on situated learning theory and may be described in terms of the task setting of student roles. Students are always engaged in learning when the education is creative, interactive, and challenging. Thus, multimedia learning can create an authentic learning environment. Instructions that are not created using multimedia theories may result in an unproductive learning environment. This study examined some of the advantages that students may by from employing authentic-based multimedia learning in higher education. Internet databases with relevant information, such as SCOPUS, ERIC, Springer, IEEE, Emerald, Science Direct, Web of Science, and Google were searched. Research on the literature acquired from web sources has demonstrated that authentic-based multimedia learning environments provide several benefits to students in higher education institutions. Students' attention is sustained as skills are reinforced because they are more engaging, fascinating, and fun to use as well as the creation and deployment of technology to improve student learning outcomes and the review

of student attrition and classroom engagement. This also enabled students to transmit multimedia content. To improve students' academic performance, higher education institutions should implement authentic-based multimedia learning in teaching and learning settings.

Keywords

Authentic-Based Learning, Multimedia Environment, Higher Education, Learning, Performance

1. Introduction

Authentic learning occurs when students apply what they have taught in the classroom to actual facts and issues, which are the complexities and ambiguities of real-life circumstances that should be reflected in their learning engagement (DeVito, 2016). Every assignment, lesson, and unit in any learning experience should strive to inculcate authenticity so that students can acquire challenges of skills and confidence in their learning capacities. Hence, students participating in real-world applications are sometimes referred to as authentic learning. Learning experiences may be provided with relevance and authenticity by allowing teachers to become facilitators of learning and designing learning experiences with real significance and appropriateness (Keiler, 2018).

Moreover, authentic learning experiences when intelligently crafted may aid instructors in their evaluation of learning. Teachers and students will benefit from regular evaluations, both teacher-led and peer and self-assessment (Halawa et al., 2017). The learning journey becomes more relevant when it is authentic and fosters engagement which should lead to more meaningful learning. Likewise, students may now participate in a real learning environment where they can ask questions and engage in discussions with experts (Martin & Bolliger, 2018) in which genuine learning has the ability to alter the dynamics of the learning environment, breaking down the complexities of the classroom and the power imbalances that exist inside it. Consequently, students in a global classroom participate in interactive and linked learning through the creation and facilitation of authentic learning environments. (Tchamyu, 2017)

According to Aynas and Aslan (2021), authentic learning strives to provide students with certain critical life techniques to demonstrate the link between learning and real-life scenarios and to provide students with the challenges they will need in the future. This then benefits from the information we already have, pulling on our experiences and talent to guide our decisions and help us select our next actions within the context of the circumstances we find ourselves in (Tremblay, 2013). Get to know your students before constructing authentic-based learning. What is their passion? What piques their interest? Determine educational requirements. For instance, are they a group that excels in academic tasks, but needs to improve their students' thinking abilities? Students' needs

and interests are always a good idea to provide students with the capacity to apply their learning, learn through doing, understand their skills (Nold, 2017), to adapt and change, and create the habits necessary to do so successfully in their lives beyond school by providing them with true, real-life, and relevant learning experiences.

Authentic learning experiences foster cooperation and reflection that should be integrated across disciplines (Le et al., 2018) which means that an authentic activity that drives the desire to use, alter, apply, and reinterpret information must be given to students. They will also gain an understanding of the interactive nature of learning in multimedia environments. When students have the opportunity to systematically explore and act on local and global issues, they are more likely to become involved and motivated (Saeed & Zyngier, 2012). More and more multimedia activities are being created to evaluate students' understanding as well as to engage them with the course material.

Ilomäki and Lakkala (2018) confirmed that students can create conclusions based on their own observations and experiences when utilizing technology as a tool or method to construct their own understanding. As part of the knowledge creation process, technology is essential to support students not only in obtaining information but also in collaborating, sharing, presenting, and displaying their ideas (Abubakar et al., 2019).

Therefore, the use of technology to facilitate authentic learning is not a matter of what is most accessible or suitable for students to engage with, but it necessitates deliberate selection that best promotes the strength of the teaching process in the learning environment. According to Lock and Duggleby (2017), it has become essential for learning activities to be authentic and interactive in order to achieve learning outcomes to improve students' academic performance. In order to ensure that the application seems to be thorough and well-rounded and that it may be used easily without a teacher (Darling-Hammond et al., 2020) which is a desirable feature with limited financing, quizzes and evaluations are incorporated.

Also, a greater awareness of numerous global concerns associated to learning development, such as severe poverty, human rights, globalisation, equality issues, professional ethics, and environmental difficulties, facilitates the integration of sustainability education into academic activities (Tchamyu, 2017). Moreover, changing educational practices within the subject matter of teaching and learning can be seen as a tool to enhance learning about sustainability. Additionally, it is important to address issues such as unequal distribution of infrastructure and resources among higher institutions, instructors' lack of trust in integrating technology, and the absence of and inadequate access to technical resources (Olufunke et al., 2022).

As a result, this study aims to gain a better understanding of the benefits of employing authentic-based multimedia learning in higher education. The entire review is guided by a research question that serves as the pivot for the study's methodology.

Research Question

What are the benefits of learning in an authentic-based multimedia environment for education institutions?

2. Research Strategies

A search for linked literature was conducted to achieve the review's goal. We were only able to find papers on authentic multimedia learning in higher education institutions. Authentic-based multimedia learning at higher education institutions with an emphasis on the prediction and identification of course objectives, students' interest is maintained as skills are reinforced because it is engaging, interesting, and enjoyable to use, develop and implement of technology to enhance student learning outcomes, enable students to transmit multimedia content and review students' dropout and engagement in classroom teaching are the inclusion requirements. Articles that had no relationship to the benefits of authentic-based multimedia learning in higher education institutions were excluded from the review. Articles published between 2010 and 2022 were also reviewed. Online databases were searched using SCOPUS, Springer, Science Direct, Web of Science, Emerald, IEEE, ERIC and Google. The articles we examined were written in English. Authentic learning, multimedia environments, higher education institutions, technology development and implementation, student learning outcomes, and student disengagement and engagement were among the terms searched for.

3. Findings and Discussion

Table 1 summaries the analysis of all articles collected from all databases, as well as the number of articles chosen for review from the complete database of the articles. The entire literature search yielded 78 research articles, and after applying the inclusion and exclusion criteria, the review included 26 research articles

Table 1. Analysis of articles obtained from the online databases.

Online Database	Total number of articles obtained from Database	Total number of articles selected for review
Scopus	8	2
Springer	10	3
Science direct	15	5
Web of science	7	3
Emerald	10	4
IEEE	6	1
Eric	6	3
Goggle	16	5
Total	78	26

that were found to have a direct relationship with the benefits of authentic-based multimedia learning in higher education institutions and also supported the research question.

Table 1 shows the summary of the articles on benefits of Implementing Authentic-based Multimedia Learning in Higher Education Institutions.

Figure 1 below shows the number of publications on the benefits of implementing authentic-based multimedia learning in higher education institutions. This shows the increasing attention researchers are focusing on the concept of authentic-based multimedia learning in higher education institutions. From two in 2010 to five in 2020, except for a drop in 2021, which may be due to the global crisis caused by the 19 viruses. However, it is believed that educational researchers will publish more articles.

The number of articles retrieved from the database (**Figure 2**).

The number of articles that were selected for review (**Figure 3**).

Based on the number of articles selected for this review, it can be inferred that higher education institutions can gain a series of benefits from using authentic-based

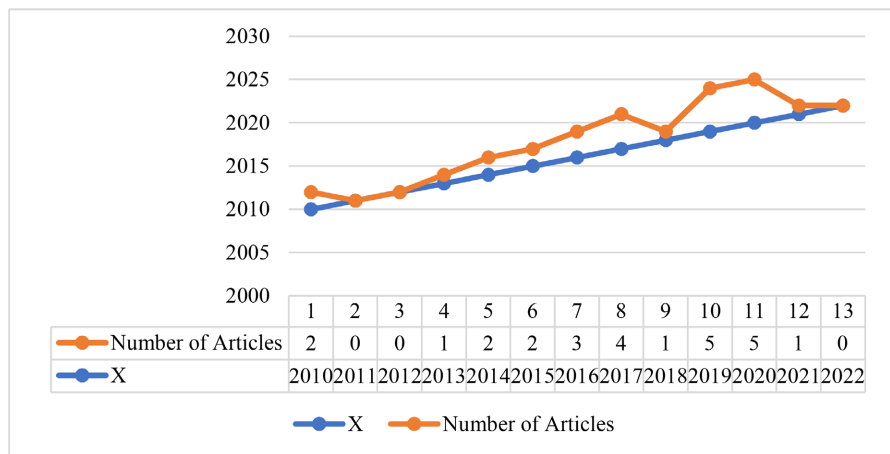


Figure 1. Number of publications from 2010-2022.

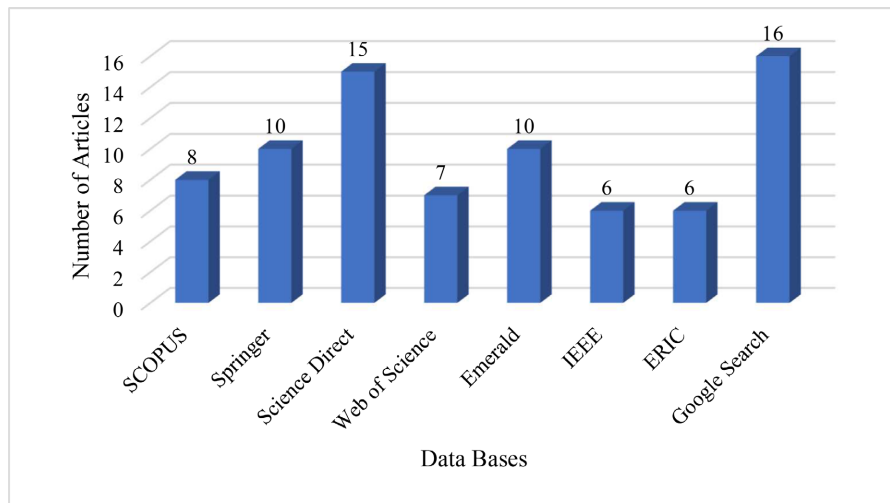


Figure 2. Showing the total number of articles obtained from database.

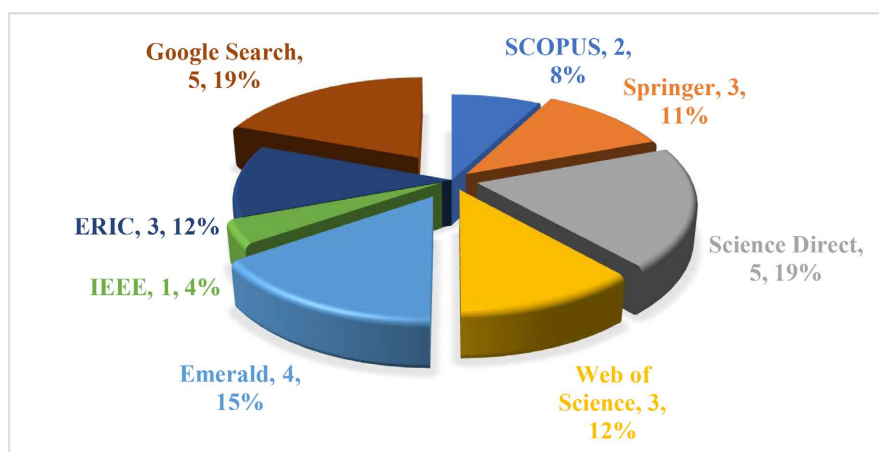


Figure 3. Showing the total number of articles selected for review.

Table 2. Summary of studies on benefits of authentic-based multimedia learning in higher education institutions.

S/N	Author(s)	Research Objectives	Population	Benefits Derived through authentic-based multimedia learning
1	Klaus Gotthardt et al. (2014)	To incorporate web-based learning technology and multimedia content in higher education for students learning outcomes.	Higher distance education	-Improved students learning outcomes. -Social interaction among students and the instructors.
2	Chen & Hwang (2020)	Creating genuine environments for EFL language learning and teaching has a big impact on the widespread usage of technology in classroom instruction.	Higher education institution	Allows the visualization of simulated objects, and interaction with the learning environment
3	Zydney & Grincewicz (2011)	Integrating of technology to enhance the authenticity of problems in the learning environment by providing students with realistic scientific tools.	Higher education institution	Make learning more engaging, interactive and collaborative
4	Yang & Kwok (2017)	To identify the determinants of students' intention to use ICT tools in an authentic environment.	Polytechnic Institution	-Increased student motivation and engagement. -Supporting of creativity. -Promotion of collaborative learning.
5	Jessica et al. (2020)	Incorporation of using multimedia tools as a good pedagogy, and good design for authentic experiences	Higher distance education	Allows students to develop a richer understanding of the target knowledge domain
6	David Anderson & Selva Staub (2015)	Integrating digital badges into existing higher education degrees for the transformation of learning environments to reflects mastery of authentic tasks.	Higher education institution	-It helps transform current degree programs to be more flexible and accessible. -Improved students learning outcomes
7	Nickchen & Mertsching (2016)	To create application of scientific principles to design structures, machines to real-world problem and also to encourage meaningful reflection on authentic tasks.	Higher education institution	-Filling of knowledge gaps -Deepens the students' knowledge and increases their motivation
8	Bajrami & Ismaili (2016)	To investigate the benefits that teachers and learners get in using audio-visual aids in teaching and learning language, as well as to show that by using the appropriate video Material in an authentic environment.	Higher education institution	-Students get interested and engaged in activities, -Be more active, motivated and confident in their communicative language competence.

Continued

9	Jaziar Radianti et al. (2020)	To identify design elements of existing research dedicated to the application of Virtual reality in higher education.	Higher education institution	-Improved students learning outcomes. -Assimilation of knowledge
10	Bülent Dös (2015)	To explore the effect of storytelling on knowledge retention and the views of students on the learning process with a variety of digital multimedia.	Higher education institution	It provides higher order thinking, technology usage, active for students.
11	Li & Wong (2021)	Integration of smart learning with advanced technologies to facilitate student learning and interaction	Higher education institution	-Improved students learning outcomes. -Increased interaction and collaboration
12	Po-Sheng Chiu et al. (2018)	To explore the acceptability of various benefits of e-book for educational contexts, as well as the possible benefits of incorporating e-books into real learning.	Higher education institution	Provide opportunities for students to construct their own knowledge through engaging in problem solving, higher-order thinking, and reflections in real-world contexts.
13	Jen-Jiun Lin & Huifen Lin (2019)	To investigate the effect of mobile-assisted L2 vocabulary learning with the use of technologies in the learning environment.	Higher education institution	-Improved students learning outcomes.
14	Raúl Rengel et al. (2019)	Development of new learning resources based on multimedia materials	Higher education institution	Acquisition of new knowledge
15	Mehdipour & Zerehkafi (2013)	To examine the impact of mobile devices on teaching and learning practices by the use of digital media.	Higher education institution	Increased student motivation and engagement
16	Doris Yin Kei Chong (2019)	To provide authentic experience through class designs and gamification as a multimedia pedagogy to foster learning motivation	Higher education institution	Increased student motivation and engagement.
17	Yosy Machluf et al. (2017)	To develop a deep sense of the nature of scientific visualization and modeling through authentic hands-on and mind-on activities.	Higher education institution	-Acquisition of new knowledge -Improved students learning outcomes.
18	Vlad Hosu et al. (2017)	To create subjectively annotated video database, showing authentic distortions for deep learning purposes.	Higher education institution	Reflections in real-world contexts.
19	Yang & Baldwin (2020).	Implementation of an integrated STEM learning with the use of a technology-enabled authentic learning environment	Higher education institution	-Increased interaction and collaboration -Provide opportunities for students to construct their own knowledge through engaging in problem solving -Increased student motivation and engagement
20	Mojtaba Tajeri et al. (2017)	To explore the appropriate classroom activities which assist language teaching and learning with innovative approaches in higher education.	Higher education institution	-Increasing learners' academic attainment -Attracts students' attention -Increased interaction
21	Tutty & Martin (2014)	To investigate the effects of assessment Aligned, Reflective on student performance within the learning context of mobile instruction	Higher education institution	Increased interaction and collaboration

Continued

22	Chien Yu et al. (2010)	To implement effective use of pedagogical design principles with appropriate multimedia instructions to improve students' higher retention rates.	Higher education	-Increasing social interactions and cooperation -Collaboration and higher-order thinking
23	Fatirul (2020)	Designing authentic learning and how to design innovative and creative learning model assisted by smartphone applications.	Higher education institution	-Attracts students' attention -Improved students learning outcomes -Provide opportunities for students to construct their own knowledge
24	Boateng et al. (2016)	Integration of technology with the use of videos as a medium for teaching in the learning environment.	Higher education institution	Improved students learning outcomes.
25	Kola & Kehinde (2019)	To explore the enhancement of technology in education through authentic learning	Technical higher education	-Acquisition of new knowledge -Reflections in real-world contexts.
26	Rosita Agustining Tyas (2019)	To identify the utilization of authentic materials in teaching ESP to enhance students learning achievement.	Higher education institution	-Students get interested and engaged in activities -Increased student motivation and engagement.

multimedia learning, which includes maintaining students' interest as skills are reinforced because it is engaging, interesting, and enjoyable to use, develop and implement of technology to enhance student learning outcomes and review students' retention and engagement in the classroom. This also enables students to transmit multimedia content. Hence, Joynes et al. (2019) opined that an authentic environment aids in the preparation of students for skilled roles, which may enhance and inspire students to reflect on how information will be applied in the actual world in an authentic learning environment. The authentic learning context is also effective for engaging students and demonstrating how they may apply what they have learned in the classroom to their everyday life, which can help develop the education of student's motivation (Boateng et al., 2016). Besides, an authentic setting provides students with an interactive learning experience using the available resources to solve great challenges. Therefore, to help students develop their skills, we developed an authentic-based multimedia learning environment that uses interactive tools to help foster moral development (Table 2).

The constructivist setting looks to have the most potential for adopting authentic-based multimedia in higher education as a valuable learning aid (Herrington et al., 2014). This environment can therefore profit from the qualities of authentic learning environments in higher education. According to the researchers, using data from authentic-based multimedia learning has helped students learn more effectively and given instructors a better knowledge of how students learn when using such media. Authentic-based multimedia can also be used for instructional creation and advancement to provide ideas on various higher education issues related to teaching methods, with the aim of enhancing learning and teaching procedures and assisting with the development of curriculum in the

learning environment (Coman et al., 2020).

There has been a significant rise in dropouts and low attendance in distance learning, according to other research. However, employing dropout prevention strategies would enable educational institutions to spot students who are in danger of failing their courses and indicate issues that may be resolved to assist them finish their study (Blount, 2012). In order to address the issue of dropouts in certain institutions' distance education courses, authentic-based multimedia strategy have been created. Thus, the most significant benefits of authentic-based multimedia learning are that it enables instructors to pinpoint student learning achievement and devise strategies for raising students' performance levels throughout the educational process.

4. Conclusion

This review reveals the importance of applying authentic-based multimedia learning in higher education institutions, notably in the subject area of the classroom instruction, which is gaining traction in all universities across the world. According to the literature reviewed, students' interest, development, and implementation of technology to enhance student learning outcomes, reviewing students' dropout and engagement in the classroom, and multimedia content transmission are the major areas where authentic-based multimedia learning can positively impact the learning environment in higher education institutions

5. Suggestion for future Studies

Additional developments are required, including the addition of learning scenarios that include phases in the learning process for the delivery of course content in the learning environment. If the delivery of the content is not accompanied by an appropriate learning approach, no medium employed as a learning tool or instructional material will perform efficiently. To accomplish each student's learning development, it is vital to indicate what approaches or tactics will be employed in the learning process with the existing medium because students are the main users of learning technologies. It is recommended that research be carried out to assess students' understanding of authentic-based multimedia learning approaches. This will reveal a great deal of students' attitudes towards learning in the classroom.

Furthermore, the deployment of authentic-based multimedia learning requires teachers' knowledge and competency to use authentic-based multimedia learning for appropriate feedback to students. Authentic-based multimedia learning may help higher education institutions access massive databases that can help them conduct learning activities that will improve teaching and learning in the school environment. Research on how higher education institutions make better use of information collected from students would be extremely beneficial. Future studies are needed to improve student performance and retention by designing and implementing an authentic-based multimedia approach that is integrated

into the learning environment.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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