



The Assessment of 2D Animation E-Module Suitability Usage in Malaysia Community College

¹Suhaizal Hashim, ²Mohd Erfy Ismail, ³Alias Masek, ⁴Rashidah Lip, ⁵Nadzrah Sa'adan & ⁶Pipit Utami

^{1,2,3}Universiti Tun Hussein Onn Malaysia, Malaysia, ⁴Muar Community College, Malaysia, ⁵Universiti Teknologi MARA, Malaysia, ⁶Universitas Negeri Yogyakarta, Indonesia

Email: ¹suhaizal@uthm.edu.my, ²erfy@uthm.edu.my, ³aliasmasek@uthm.edu.my, ⁴rashidah.lip@gmail.com, ⁵nadzrahsaadan@gmail.com, ⁶pipitutami@uny.ac.id

Apart from the extensive facilities, the expertise and competence of lecturers is seen as one of the important things to complement the implementation of the policy especially in the teaching and learning process. However, teaching in the form of explanation may force them to not be bored and not interested in learning topics conducted by lecturers. Therefore, this study aimed to evaluate the suitability of the Basic 2D Animation E-Module in terms of content, interface design and user acceptance levels. This e-module software through the Microsoft PowerPoint application based on the Basic 2D Animation curriculum subject, Malaysia Community College Certificate Program. This quantitative study was conducted using a survey method using a questionnaire instrument distributed to 50 students from 3rd semester of 2D Animation Programs. The three Community Colleges involved in this study were in Segamat, Kuala Langat and Kepala Batas. The data obtained was analyzed based on frequency, mean and standard deviation. The study found that the content level of suitability content was high with a mean score of 3.63. Evaluation on the suitability level of the interface design is also at a high level with a mean score of 3.63, while acceptance level of the user shows the mean score of 3.62 which also on a high level. All respondents agree that the application of the Basic 2D Animation E-Module used is suitable and meets the requirements for the implementation of teaching and learning. This e-module can be expanded to enable its implementation to be more attractive and effective.

Key words: *Acceptance level, Content aspect, Interface design aspect, 2D Animation E-Module.*



Introduction

Community College in Malaysia is an institution that offers training and skills needs to various levels of society and provides educational opportunities to meet the needs of the industrial market or as preparation for further higher education. In order to ensure that Community College students meet the market and industry requirements, various programs have been planned to ensure that Community College products can compete to position themselves in the job market (Ahmad, Jalani, & Hasmori, 2015). Various programs are also being implemented as an enhancement to the curriculum and skills training programs offered to keep abreast of current developments in the industry.

In line with that, the Community College Department continuously energizes programs that can produce competent students as a product for industrial markets (Hanapi, Kamis, Kiong, & Hanapi, 2017). Hence, the Community College staff cohesively collaborates in order to ensure that the program operation as well as teaching and learning process tally to the industry's current needs and to ensure that graduates will contribute to the industry (Hashim, Hamid, & Muhyiddin (2017).

In Malaysia, there are three Community Colleges that offer 2D Animation Program which situated in Segamat, Kuala Langat and Kepala Batas. In 2010, this Community College has implemented the National Mode Skills Curriculum (SKK-M) 2D Animated Certificate Program which includes technical, knowledge and social competence. The SKK-M is based on three key features of a modular curriculum, work-based skills training and through practice approach (Hashim & Lip, 2018). Among the challenges faced by faculty members in Community College is to produce quality graduates as well as proficient in the field of 2D Animation.

The 2D Animation Certificate Program is a program that gives students the opportunity to acquire knowledge, run-through theoretical and practical skills in the 2D Animation field (Santi, & Purnama, 2017). Through this method, the delivery of knowledge and skills has helped students to prepare them for the real working environment or to pursue higher education. In order to ensure the goal of producing quality and competitive Community College products, some effective approaches are applied to students during the teaching and learning process.

Community College students are among the students who have a modest achievement and they need a diverse teaching process that is equivalent with their ability to understand. Teaching in the form of an explanation may result them being swiftly bored and not interested in the topics steered by lecturers (Sakka, 2015). Therefore, the process of teaching and learning should be done not only as an explanation but also through demonstration and

exhibition. Besides, these sessions should be equipped with multimedia facilities and the use of teaching materials in the form of an interactive multimedia such as e-module to stimulate and attract students' interest in learning (Salsidu, Azman & Abdullah, 2017).

Students' understanding on the teaching and learning process becomes difficult when the explanation is only verbal, rather than using the combination of multimedia elements such as graphics, texts, video, audio, animation and interaction that been applied in the presentation (Ali, 2015). In line with more effective implementation of teaching and learning process, attractive teaching aids should be produced and used in the classroom. Thus, a study was conducted to determine the degree of suitability of the e-modules that been develop to obtain feedback from users, especially Community College students. These are the objectives of the study:

- i. To identify the suitability level of the 2D Animation E-Module in terms of content.
- ii. To identify the suitability level of the 2D Animation E-Module from interface design aspect.
- iii. To identify the acceptance level of the 2D Animated E-Module by the user.

The Basic 2D Animation E-Module is an electronic module that combines multimedia elements and interactive conceptual learning (Liew, 2013; Khrennikov,et.al 2015). The 2D Animation E-Module intended as a learning resource and contains information that can entice users to continue using it in their learning process. These E-modules can be used as value adders and support materials to their reference books.

In this study, this Basic 2D Animation E-Module is an application developed using Microsoft PowerPoint. The Basic 2D Animation E-Module is used to facilitate and attract the teaching and learning process through a new perspective by combining multimedia elements (text, graphics, audio, video, animation and interactivity). Electronic media-based learning such as e-learning, m-learning and others gives students the ability to learn freely and openly (Hussin, 2017). This two-dimensional animation base refers to a simple moving object across the screen of a display is the basic knowledge that students must master in their learning process (Sutaji, 2015).

Methods

In this study, the researcher chose to use descriptive method by involving quantitative data using the questionnaires that will be distributed to the respondents. By choosing this method, it is time saving, easier to respondents, cost saving, faster data collection and respondent in a group can be used (Bertram, D. (2007). Questionnaires are cost saving and researcher can facilitate the respondents to answer the questions raised.

Population and sampling

In this survey, researchers use random sampling methods as they are perceived to be suitable to the context of quantitative research. The study was conducted in three Community Colleges that offered the 2D Animation Program which are Segamat Community College, Kuala Langat Community College and Kepala Batas Community College. Sample size was resolved by referring to the Krejcie & Morgan (Krejcie, & Morgan (1970) table which includes 50 third semester students who took the Foundation of 2D Animation subject.

Instrument

Questionnaires were divided into five parts, namely A, B, C, D and E. Part A comprises of respondent information, part B comprises of 2D Animation E-Module in terms of content, part C about 2D Animation E-Module from interface design aspect and lastly are part D on acceptance level of the 2D Animated E-Module by the user as in Table 1 below:

Table 1: Items Distribution

Section	Research questions	Items
A	Respondent Information	3
B	2D Animation E-Module in terms of content aspect	7
C	2D Animation E-Module from interface design aspect	7
D	Acceptance level of the 2D Animated E-Module by the user	7

All items were built based on the construct and been validated by field expert. The reliability index of 0.887 (> 0.07) were reported using Alpha Cronbach, which indicated that items were reliable and suitable for research study. Questionnaires were used to obtain information about the facts, feelings, beliefs, desires and others. Accuracy and response of the subject to the stimulus of the questions were also included.

Data Analysis

The descriptive statistical analysis method were used as a standard test to analyze the mean score difference as well as to determine the demographic distribution of respondents. These data were analyzed to obtain frequency and mean values. A four point Likert scale were used

in this research because there is no safe neutral option and it is suitable to use in order to get specific responses [12]. Collected data will be analyzed to generate the statistics of the frequency (percentage). Min value and standard deviation were used to explain the suitability level of the 2D Animation E-Module. The data was analyzed using Statistical Packages for Social Science (SPSS) version 22.0.

Results

This section discusses the background of respondents by considering three items which is gender, race and institution. This assessment was conducted on 50 third semester students who took Foundation of 2D Animation subject in Community College. Analysis of the data obtained is presented in the form of frequency (N) and percentage (%).

Based on the data, 30 respondents (60%) of the total respondents were males, while 20 (40%) were female respondents. The majority of the respondents were Malays which is 43 (86%). Indian respondents were 6 (12%) and the rest are Chinese (2%). There were three institutions involved in this study: 24 students from Kuala Langat Community College (48%), 15 students from Segamat Community College (30%) and the remaining 11 students were from Kepala Batas Community College (22%).

Next, as indicated in Table 2, 3 and 4 below; the result of the mean and standard deviation on the suitability level of the 2D Animation E-Module.

Table 2: Level of the 2D Animation E-Module in terms of content

Item	Mean	Standard deviation
Item A1Q1	3.70	0.46
Item A1Q2	3.56	0.50
Item A1Q3	3.56	0.50
Item A1Q4	3.56	0.54
Item A1Q5	3.56	0.50
Item A1Q6	3.66	0.48
Item A1Q7	3.78	0.42
TOTAL	3.63	0.49

Table 2 contains 7 items to be answered by students. The analysis of the item's overall findings showed that all respondents agreed to a high level on the suitability of the 2D Animation E-Module in terms of content (mean = 3.63 and standard deviation = 0.486). The A1Q7 item shows the highest mean score (mean = 3.78) while A1Q2, A1Q3, A1Q4 and



A1Q5 item shows the lowest mean score (mean = 3.56). Overall, the contents of the 2D Animation E-Module seems to be suitable at high levels and meet the students need.

The content in this E-module seems to fulfill teaching objectives, contains accurate description, well organized, easy to understand, suitable and interesting as it combines multimedia elements. Serevina (Serevina, 2018) state that a developed e-module is considered very feasible to be used as independent learning materials by considering its content quality, language aspect, content accuracy and display aspect.

The contents of an application developed as E-module must be based on the syllabus and set of learning objectives, as the teaching process will be more interesting, focused, structured and well-timed (Yusoff, 2017). In this study, all respondents agreed that the content meets the level of suitability usage of this E-module. This mode of integration enables the assessment of higher cognitive understanding of the concepts and students' ability to apply what they learn (Carnasciali *et al.*, 2018).

Based on Ng (2019) state that E-module allowed for personalized learning on an adaptive platform. By using E- Module in the classroom, teachers and students were generally positive about their experiences but more scaffolding would have benefited students and that successful teachers were those who invested time to explore and internalize the content of the e-module.

Table 3: Level of the 2D Animation E-Module from interface design aspect

Item	Mean	Standard deviation
Item B2Q8	3.62	0.49
Item B2Q9	3.58	0.50
Item B2Q10	3.68	0.47
Item B2Q11	3.68	0.47
Item B2Q12	3.56	0.50
Item B2Q13	3.60	0.50
Item B2Q14	3.66	0.49
TOTAL	3.63	0.49

In Table 3 above, the questionnaire contains 7 items to be answered by students. The analysis of the item's overall findings showed that all respondents agreed to a high level on the suitability of the 2D Animation E-Module from interface design aspect (mean = 3.63 and standard deviation = 0.488). The B2Q10 and B2Q11 item shows the highest mean score (mean = 3.68) while B1Q12 item show the lowest mean score (mean = 3.58). Overall,

respondents agreed that the 2D Animation E-Module from interface design aspect is suitable and the animated video used in this E-Module is attractive.

The results of the findings showed that all respondents agreed with the design of the E-module interface with the mean obtain at high level. This result is similar with a research that aims E-module oriented to the development of students' chemical literacy on the solution colligative properties material which ensuing that it is feasible to be used (Irwansyah, Lubab, Farida, & Ramdhani, (2017). The data also supported by a research that state E-module design that has been prepared is feasible to be used to develop Islamic values in chemistry learning and expected to support the process of character formation of learners' through the learning of chemistry (Darmalaksana, 2017).

Application design is part of a process to produce a prototype or multimedia product by integrating several multimedia elements, including text, graphics, audio, video and animation. In the process, it involves some of the important features of Human Computer Interaction (HCI) (Samsudin, Guan & Yusof, 2018). Interactive application interface design makes exploring more interesting and reduces boredom (Yusoff, 2017). This e-module interface design display is user friendly, graphics, video and easy-to-use icons allowing users to easily use them.

Table 4: The acceptance level of the 2D Animated E-Module by the user

Item	Mean	Standard deviation
Item C3Q15	3.60	0.54
Item C3Q16	3.70	0.46
Item C3Q17	3.54	0.50
Item C3Q18	3.58	0.50
Item C3Q19	3.66	0.48
Item C3Q20	3.62	0.49
Item C3Q21	3.66	0.48
TOTAL	3.62	0.49

Based on the findings from Table 4 above, the questionnaire contains 7 items to be answered by students. The analysis of the item's overall findings showed that respondents acceptance level of the 2D Animation E-Module were high (mean = 3.62 and standard deviation = 0.493). The C3Q16 item shows the highest mean score (mean = 3.70) while C3Q17 item show the lowest mean score (mean = 3.54). This shows that all respondents agreed that learning based on the 2D Animated E-Module can create more active learning.



Through the findings, the overall level of acceptance of the user is at a high level with a mean of 3.62. This is because the whole respondent agrees that this E-module is very interesting, creating active learning, enhancing the level of student understanding and becoming their source of reference. The result is similar with a research on E- module that includes interactive multimedia such as audio-visual presentation, graphical theme, animation, case-based learning, and pre-test and post-tests for each topic area have enhance student engagement and learning outcomes in a local context [Kowitlawakul *et al.*, (2017).

Multimedia and interactive based learning can enhance student and student self-learning rather than listeners or viewers (Yusoff, 2017). The findings of this study found that the 2D Animation E-Module result a high degree of conformity. The effectiveness of an application or software developed is subjective and depends on the user's response (Sidek, Fathil, Zain, & Muhammad, 2016). The development of this e-module helps the student's self-directed learning as well as helping teachers deliver more interesting and easier.

Conclusion

Generally, the 2D Animated Basic E-Module had a high level of suitability on three assessed aspects which are content, interface design and level of student acceptance. It can be concluded that this 2D Animated Basic Module that has been used can fulfil the needs and suitability of the students' teaching and learning.

The 2D Animation E-Module teaching tool can help make learning more interactive by incorporating multimedia elements. The study was conducted to identify the suitability level of the 2D Animated Basic Module to the student learning process. All respondents agree with this e-module application that is developed to meet the objectives set by achieving a high level of compatibility.

This 2D Animated Basic E-Module can also help the learning process become more interactive and engaging. Simple and easy explanations through these E-modules have help students understand easily. In addition, these e-modules can also be the primary reference of students in completing their assignments and projects. Besides, the optimum use of it by lecturers as teaching aids can help the implementation of teaching and learning process to be more effective, attractive and interesting.



REFERENCES

- Ahmad, M. J., Jalani, N. H., Hasmori, A. A., (2015). TVET di Malaysia: Cabaran dan Harapan. In *Seminar Majlis Dekan-Dekan Pendidikan Awam 2015* (p. 340).
- Ali, N. (2015). *Pembangunan Dan Penilaian Keberkesanan Perisian Multimedia Terhadap Pencapaian Murid Bermasalah Pendengaran Dalam Mata Pelajaran Pembantu Penyedia Makanan* (Doctoral dissertation, Universiti Pendidikan Sultan Idris).
- Bertram, D. (2007). Likert scales. Retrieved on 2nd November 2018.
- Carnasciali, M. I., Harichandran, R. S., Erdil, N. O., Nocito-Gobel, J., & Li, C. Q. (2018). Integrated e-Learning Modules for Developing an Entrepreneurial Mindset: Direct Assessment of Student Learning.
- Darmalaksana, W. (2017). Developing E-Module Based on Islamic Values.
- Hanapi, Z., Kamis, A., Kiong, T. T., & Hanapi, M. H. (2017). Jurang integrasi kemahiran employability di Malaysia: Satu kajian empirikal graduan kejuruteraan Kolej Komuniti (Integrated employability skills gaps in Malaysia: An empirical study of Community College graduates). *Geografia-Malaysian Journal of Society and Space*, 12(3)
- Hashim, S. A. B. M., Hamid, S. A., & Muhyiddin, M. Z. (2017). The Use of Microgenetic Method to Measures the Cognitive Change by Introducing New Education Tool. *Journal on Technical and Vocational Education*, 1(1), 53-61
- Hashim, S. & Lip, R. (2018). *Pembangunan dan penilaian tahap kesesuaian penggunaan E-Modul Asas Animasi 2D di Kolej Komuniti Malaysia* (Master dissertation, Universiti Tun Hussein Onn Malaysia).
- Hussin, N. (2017). *Penggunaan Laman Web Sebagai Transformasi Dalam Pengajaran Dan Pembelajaran Pendidikan Islam*. *O-JIE: Online Journal of Islamic Education*, 1(2).
- Irwansyah, F. S., Lubab, I., Farida, I., & Ramdhani, M. A. (2017, September). Designing Interactive Electronic Module in Chemistry Lessons. In *Journal of Physics: Conference Series*(Vol. 895, No. 1, p. 012009). IOP Publishing.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.



- Khrennikov, A. Y., Mazhurin, R. V., Radin, P. S., & Khrennikova, T. A. (2015). Metrological Estimation of Measurement Error with the Determination of the Technical State of Substation Electrical Equipment. *Energy Economics Letters*, 2(2), 24-34.
- Kowitlawakul, Y., Chan, M. F., Tan, S. S. L., Soong, A. S. K., & Chan, S. W. C. (2017). Development of an e-Learning research module using multimedia instruction approach. *CIN: Computers, Informatics, Nursing*, 35(3), 158-168
- Liew, J. H. (2013). *Visualeyes: an interactive learning tool to ameliorate 3D animation skills refining and promote self-learning for novice animators*.
- Ng, W. (2019). A Partnership-Designed Online Module on Climate Science: Impact on Year 10 Teachers and Students. *EURASIA Journal of Mathematics, Science and Technology Education*, 15, 2.
- Sakka, S. S. (2015). *Kesan aplikasi pembelajaran berteraskan multimedia terhadap pelajar teknikal dari aspek gaya pembelajaran visual di Politeknik Malaysia* (Doctoral dissertation, Universiti Tun Hussein Onn Malaysia).
- Salsidu, S. Z., Azman, M. N. A., & Abdullah, M. S. (2017). *Tren Pembelajaran Menggunakan Multimedia Interaktif dalam Bidang Pendidikan Teknikal: Satu Sorotan Literatur*. *Sains Humanika*, 9(1-5).
- Samsudin, M. R., Guan, T. T., & Yusof, A. M. (2018). Evaluation of Mobile Application Prototype in Context of Design Against Human and Computer Interaction. *International Journal of New Computer Architectures and Their Applications*, 8(2), 95-102.
- Santi, I. T., & Purnama, B. E. (2017). Pembuatan Film Ande-Ande Lumut Menggunakan Animasi 2 Dimensi Pada Taman Kanak-Kanak (TK) Az-Zalfa Sidoharjo Pacitan. *Speed-Sentra Penelitian Engineering dan Edukasi*, 6(3).
- Serevina, V. (2018). Development of E-Module Based on Problem Based Learning (PBL) on Heat and Temperature to Improve Student's Science Process Skill. *Turkish Online Journal of Educational Technology-TOJET*, 17(3), 26-36.
- Sidek, S. F., Fathil, N. S., Zain, N. Z. M., & Muhammad, K. (2016). *Pembangunan Perisian Kursus "Saya Suka Belajar" Untuk Pembelajaran Bahasa Melayu Bagi Kanak-Kanak Autisme*. *Jurnal Pendidikan Bahasa Melayu*, 4(1), 1-10..



Sutaji, S. S. (2015). *Kesan penggunaan koswer multimedia animasi visual terhadap pencapaian pelajar dalam mata pelajaran matematik* (Doctoral dissertation, Universiti Tun Hussein Onn Malaysia).

Yusoff, A. F. M. (2017). *Pembangunan Perisian Pengajaran dan Pembelajaran Multimedia Interaktif Pengurusan Jenazah Politeknik Malaysia*. *O-JIE: Online Journal of Islamic Education*, 2(2).