Investigating Young Learners' Perceptions of Using E-Modules as a Learning Medium: A Mixed Methods Study

Saeful Bachrudin, Nur Arifah Drajati, Eka Budhi Santosa

Universitas Sebelas Maret
saefulbachrudin@stundent.uns.ac.id

Abstract

The use of electronic modules (e-modules) in the teaching and learning pro-cess allows teachers to solve learning problems and strengthen learners' crea-tivity. E-modules often utilize digital multimodal modes of delivery to create meaningful learning. Through a mixed-methods research design, this study aimed to explore the perceptions of using e-modules as learning media among 24 learners. Questionnaires and interviews were used to collect data. A Likert scale was used to analyze the data from the questionnaire, while the interview data was qualitatively analyzed. The results of the questionnaire showed that 81.25 percent of young learners strongly agreed and 18.75 per-cent agreed to use e-modules as learning media. This research shows that the use of e-modules as learning media is perceived to support young learners' learning processes positively. Then, the interview results show that multimo-dality-based e-modules can increase young learners' learning motivation and are suitable as learning media. This research further implies that the use of e-modules can be used as a tool to improve learners' competence. In the con-text of teaching, e-modules offer flexibility of use in various teaching and learning settings, not limited to online settings.

Keywords: *: E-modules, learning media, learners' perceptions, mixed methods*

INTRODUCTION

The era of digital technology has brought changes in human lifestyles that are closely related to the use of technological devices. Technology has become a tool to fulfil human needs and desires, and the sophistication of technological appli-cations creates creativity, innovation and new opportunities. However, on the other hand, the fulfillve impact of technological advancement in a digital society is also a concern. Changes in youth serinnovation, occur immediately, with a focus on the digital realm. Because of technological advancements, the world appears to have no bounds (Sopacua et al., 2020). In education, technology also has an important role. Educational technology, such as E-learning, learning media applications, and self-learning platforms, plays an important role in the education 4.0 era, which is in accordance with the demands of current educational devel-opments (Surani, 2019). Because school has essentially become a place where students can realize their potential. So, in order for technology to be regarded as an exciting learning medium by students, it requires innovation and optimal use of technology (Purnami et al., 2020). Media in the context of learning is defined as graphic, photographic, or electronic tools used to collect, process, and recon-struct visual or verbal information. Combined media is said to have a positive impact on learner achievement (Ge, 2021). In this context, the e-module is a col-lection of learning materials that includes materials, techniques, constraints, and evaluations that are appealingly and methodically constructed to attain the de-sired competences based on their level of complexity (Ricu Sidiq & Najuah, 2020).

The use of modules as learning media here is a response to the challenges of the era of disruption. Therefore, the modules developed and that will be used in the learning process must be modules that have adopted advances in communica-tion and information technology that are developing in society, including the use of the internet and the sophistication of Android technology. Module teaching materials are developed with the aim that students can learn independently (Rusmanto & Rukun, 2020). Modules have five main characteristics that become their advantages: self-instructional (facilitating independent learning), independ-ent (containing all material), stand-alone (not dependent on other people's teach-ing materials), adaptive, and user-friendly (Kimianti & Prasetyo, 2019). In the development of information technology, electronic modules, or e-modules, have emerged, which change the presentation of teaching materials from printed mod-ules to digital formats (Wirayasa et al., 2021). E-modules are also web-based teaching media that have advantages over printed modules because they are in-teractive, allow viewing of images, audio, video, and animation, and are equipped with formative tests and quizzes that provide immediate automatic feedback (Hunsu et al., 2018). The electronic module is a medium for gaining information about material that can be methodically constructed based on a unique curricu-lum and packaged in time units, as demonstrated by the usage of digital gadgets such as computers or Androids (Sirwan et al., 2021). E-modules are modules in digital form consisting of text, images, or both. They contain digital electronics material and are equipped with simulations that can be used in learning. The use of e-modules allows for controlling the ability and intensity of student learning as well as helping students understand practical material even though the availa-ble practical equipment is limited by presenting complete images and tutorials. E-modules can be studied anywhere, so students can learn independently both at home and outside of school hours. The use of e-modules is not limited by time, although the packaging may include an estimate of the time needed to learn cer-tain materials. However, students have flexibility in managing that time. In the learning process, to achieve optimal learning outcomes, an appropriate learning guide is needed.

Several studies related to the use of E-modules as learning media show posi-tive results. According to a 2018 study, students responded positively to material delivered

via e-learning modules rather than a textbook since the e-learning modules provide fresh experiences in studying (McIntyre et al., 2018). The elec-tronic module is a non-printed digital-based module that can employ multimedia concepts to help the learning process and improve student understanding. Be-cause they include self-study guidelines, electronic modules are often known as self-learning media (Pradana et al., 2020). This indicates that e-modules are suit-able for distance learning. E-module is good for use in the learning process (Aminoto & Dani, 2018). It was established in 2019 that developing an e-module is highly viable for usage not only at the higher or secondary levels of education but also at the level of young learners (Jambi, 2019). Moreover, a 2020 study demonstrates the viability of the use of e-modules as teaching and learning me-dia, which has yielded outstanding results since it provides the learning activity and learning process for both students and teachers (Hamid et al., 2020). The e-modules developed were feasible and effective to use as teaching materials in learning, including online learning (Munandar et al., 2021). Android-based e-modules on chemical equilibrium material can be used as a medium for learning chemistry (Al Rasyid & Partana, 2021).

This research aims to investigate young learners' perceptions towards the use of e-modules in learning, which is an indicator of enthusiasm for learning. The pur-pose of this study is to investigate young learners' perceptions towards the im-plementation of e-modules as learning media. As the study analyzes the learner's views on the usability and convenience of e-modules as learning media. This is based on the Technology Acceptance Model introduced, where there are two important antecedents that predict behavioral interest in using information tech-nology, namely perceived usefulness and perceived ease of use (Bertagnolli, 2011). The data obtained from this research is expected to provide appropriate and interesting input regarding e-modules to support youth learning activities in accordance with the learning objectives to be achieved. In addition, the results of this study are also expected to provide knowledge and input regarding the views of teachers, students, lecturers, and students on the use of e-modules in online learning. Based on the findings, this article recommends creating and designing teaching materials that are more cooperative, fun, and involve student participa-tion in online classes.

METHODS

This research uses a mixed-methods research design that combines quantitative and qualitative approaches and involves exploration. This research was conducted using a survey method that used a questionnaire as a research instrument (Dr. Umar Sidiq, M.Ag Dr. Moh. Miftachul Choiri, 2019). Exploratory studies have strengths in their high flexibility and informal structure, allowing for in-depth exploration of issues. The questionnaire used in this study has been adapted and modified by the researcher. The participants in this study consisted of 24 village young learners who were still pursuing high school and college education. The survey consists of two parts, namely the usefulness of E-Modules and their ease of use as learning media. Data from the questionnaire will be analyzed using a Likert scale with a range of values from 1 (strongly disagree) to 5 (strongly agree), as shown in the following table:

Table 1. Likert Scale

Positive Statement Score	Category	Negative Statement Score
5	Strongly Agree	1
4	Agree	2
3	Netral	3
2	Disagree	4
1	Strongly Disagree	5

In addition, researchers also conducted interviews with participants through virtual online meetings and also used google forms as a form of support to obtain additional data and strengthen the results of the questionnaire to investigate youth perceptions regarding the use of e-modules as learning media. The results of the interviews will also be described qualitatively to facilitate the process of drawing conclusions from the data.

RESULTS AND DISCUSSIONS

This research has the aim of this research is to explore the perceptions of using e-modules as learning media among 24 learners. Questionnaires and interviews were used to collect data. A Likert scale was used to analyze the data from the questionnaire, while the interview data was qualitatively analyzed.

1.1 Questionnaire Results

Based on a survey through google form that was conducted in early June 2023, some data were obtained regarding youth perceptions of the use of e-modules as learning media. The survey population was all young people who underwent the learning process and had used e-modules as learning media, totalling 24 people consisting of 75% women, and 25% men. The respondents aged 16-20 years were 45.8% and aged 21-25 years were 54.2%. The last education of the respondents was 12.5% junior high school graduates, 75% high school graduates, and 12.5% undergraduate graduates. Based on questionnaire data, information was obtained that 100% of youth have used e-modules as learning media.

The results of the youth questionnaire on the usefulness of e-modules as learning media are shown below:

Table 2. Questionnaire results on the percentage of young learners' statements regarding the usefulness of e-Modules

Indicators of Usability (Perceived Usefulness)	Young Learners' Perceptions				
	Strongly Agree (%)	Agree (%)	Netral (%)	Disagree (%)	Strongly Disagree (%)
By using e-modules, the work is done faster.	79,2	20,8	0,0	0,0	0,0
Using e-modules can improve job performance.	83,3	16,7	0,0	0,0	0,0
E-modules can boost productivity (boost productivity).	83,3	16,7	0,0	0,0	0,0
With e-modules, you can increase work effectiveness.	79,2	20,8	0,0	0,0	0,0
With e-modules, it makes the job easier.	83,3	16,7	0,0	0,0	0,0
The e-	79,2	20,8	0,0	0,0	0,0

module is useful for me.					
Total	**487,5**	**112,5**	**0,0**	**0,0**	**0,0**
Average	**81,25**	**18,75**	**0,0**	**0,0**	**0,0**

From Table 2, it can be seen that 83% of youth conveyed that the use of e-modules is very helpful for learning work effectively or quickly. With e-modules, 79.9% of youth can improve their performance in learning. It shows that this e-module is a digital learning medium that can affect motivation to master English. In addition, 79.2% of youth strongly agree that e-modules can make them more productive in learning, and 83% strongly agree that e-modules can improve their performance effectively. Most of the youth who have studied e-modules independently said that e-modules greatly improve performance, and 79.2% said that e-modules can make work easier. The usefulness of e-modules is reinforced by data as much as by the conclusion that 83.3% of youth confirm that e-modules are very useful for self-empowerment.

Table 3. Questionnaire results on the percentage of young learners' statements Regarding the Ease of Use of e-Modules

Indicators of Usability (Perceived Usefulness)	Young Learners' Perceptions				
	Strongly Agree (%)	Agree (%)	Netral (%)	Disagree (%)	Strongly Disagree (%)
As Learning media, E-modules are easy to learn.	79,2	20,8	0,0	0,0	0,0
As a Learning Media E-module, it has a system that is easy to control.	83,3	16,7	0,0	0,0	0,0
As learning media, e-modules have interactions with the system that are clear and understandable.	83,3	16,7	0,0	0,0	0,0
As a Learning medium, E-modules have flexibility in interaction.	79,2	20,8	0,0	0,0	0,0
As a Learning media, E-Modules make it easy to become skilled in using the system.	83,3	16,7	0,0	0,0	0,0
E-Modules for Learning Media are simple to use (simple to use).	79,2	20,8	0,0	0,0	0,0
Total	**487,5**	**112,5**	**0,0**	**0,0**	**0,0**
Average	**81,25**	**18,75**	**0,0**	**0,0**	**0,0**

Table 3 shows that 79.2% of youth reported that e-modules as learning media are easy to learn. In addition, 83.3% stated that e-modules have an easy system to control, in the sense that youth in learning can control the rhythm of learning independently. This is supported by the fact that 83.3% of respondents said that e-modules can be used flexibly, which allows youth to master teaching materials with self-regulated learning time. This shows that e-modules have a pattern of learner or user interaction with a system that is clear and easy to understand. Most of the youth (79.2%) consider that e-modules have flexibility in interaction. Learning English with e-modules can be organized independently and is very flexible. A total of 83.3% of the youth understood that the e-modules had contributed to making their skills in using the system easier. From several reasons for the ease of e-modules, they showed a positive response, namely that 79.2% of e-modules as learning media are very easy to use.

1.2 Interview Results

Meanwhile, from the results of the interview, it can be explained that the use of e-modules as learning media, according to participants, shows the level of intensity of using e-modules during the learning period. It is used for each new material by the teacher, which can be done outside of learning hours. In addition, the use of e-modules as learning media is an important part of the learning series for each subject. E-module learning media can be used in project-based learning. From the existing data, e-modules are very effective in delivering learning materials in a more structured and flexible manner. The effectiveness of this e-module is also seen in the way the learning material is delivered, which is accompanied by a variety of visual and audiovisual profiles (images and videos) to help understand the concept. Thus, multimodal-based e-modules are considered effective because they have an element of attractiveness and a high interactive level for obtaining additional information outside the classroom. The aspect of convenience obtained from e-modules is that they can provide explanations accompanied by concrete and relevant examples. In addition, the structure of the concept material is arranged in an organized and schematic manner so as to facilitate complex understanding. Learning with e-modules can be said to be easy because learners can read repeatedly and independently. Multimodal digitalization aspects such as the integration of learning materials accompanied by the visualization of images, diagrams, and videos are very helpful in understanding concepts. E-modules are very useful in learning the complexity of the concepts of the material being taught. The completeness of animation and video illustrations to facilitate understanding can be visualized well because they are accompanied by relevant examples. Thus, it can be said that e-modules are convenient to use because they have flexibility that can be adjusted to user needs and can be accessed from the device owned by the user.

The perception of e-modules in terms of the level of quality of their interactive character in facilitating engagement in the learning process is that they are equipped with interactive quiz features. It makes learning more interesting and active. Users are more active and independent in their learning, so learning motivation increases. The quality of e-modules as a means to facilitate independent learning can be easily applied. E-modules can be used according to user needs. This is reinforced by the perception that with e-modules, learning can be organized according to the speed of learning and according to the ability that matches the rhythm and style of learning. E-modules can also be used as a companion learning resource in addition to direct instruction by teachers.

The use of E-Module Media as a medium in general can be said to support the learning process. Thus, through E-Modules, changes in collaborative attitudes and independence in learning among village youth are very visible. In addition, the results

of this study also illustrate that the use of E-modules in online learning is very appropriate. This certainly has an impact on aspects of developing and determining policies in the online teaching and learning process, along with the basis for creating and designing teaching materials that are more cooperative virtually

2   Discussion

This study shows that e-modules are very useful for youth as a learning medium that can support their learning in the context of the world of work, which is a personal responsibility. The characteristics of the module include: 1) self-instructional; 2) self-contained; 3) stand-alone; 4) adaptive; and 5) user-friendly (Wulansari et al., 2018). One of the learning mediums that might drive students to learn is the e-module. In terms of advantages, the electronic module itself can make the learning experience more entertaining, interactive, and available at any time and from any location, as well as improve the quality of learning (Darmaji et al., 2019). E-modules are arranged systematically into the smallest learning units and presented in electronic form. E-modules are also equipped with various elements, such as audio, video, animation, and navigation, which allow users to interact more actively (Fitri et al., 2015).

It can be concluded from several indicators that In EFL Semantic content classes, video lectures are helpful in enhancing student learning outcomes. There are various causes for this: Videos feature a comprehensive collection of learning explanations (text, images, and sound); videos are engaging learning mediums that are easily available and can help students make better use of their time (Sukiman, 2022). In addition, the development of this module is accompanied by hypertext, which is accessible online (Aslik et al., 2022).

E-modules provide variety and diversity in learning methods because e-module users can learn material with a diversity of learning methods that have an impact on increasing one's interest in learning. In their research examining the feasibility of using e-modules during the e-module trial on computers, they proved the enthusiasm of students for using the product and actively asked questions and gave answers to (Fonda & Sumargiyani, 2018). This shows that the e-module is suitable for use in the learning process, either accompanied by a teacher or used as independent teaching material. Meanwhile, the use of e-modules as learning media is very interesting because e-modules provide an attractive appearance that can increase the enthusiasm of students for learning (Prasetyo, 2020).

CONCLUSION

Based on the findings above, it can be concluded that youth have a positive per-ception of the use of e-modules as learning media. The majority of respondents believe that e-modules are effective and useful in the learning process. They recognize that e-modules can increase learning engagement and motivation, as well as facilitate the accessibility of learning materials. Some factors that influence youth perceptions of e-module use include the quality of e-module content, the intuitive user interface, the availability of social interaction, and the ease of use and accessibility of technology. Respondents tend to give a positive assessment if the e-module fulfills these criteria. Youth also consider e-modules equipped with multimodal-based displays to be effective as they have visual appeal and a high interactive level for obtaining additional information outside the classroom environment. In addition, e-modules can be customized to suit various learning approaches and preferences. Youth also suggested that they would like learning materials to be packaged in multimodal e-modules to support their self-development outside of formal learning.

REFERENCES

Al Rasyid, M., & Partana, C. P. (2021). Pengembangan E-Modul Berbasis Android

pada Materi Kesetimbangan Kimia untuk Peserta Didik SMA. Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan, 6(4), 670. https://doi.org/10.17977/jptpp.v6i4.14737

Aminoto, T., & Dani, R. (2018). Pengembangan Model Diskusi Berbasis Whatsapp Untuk Meningkatkan Pemahaman Konsep Pada Mata Kuliah Fisika Statistik. EduFisika, 3(01), 24–30. https://doi.org/10.22437/edufisika.v3i01.5804

Aslik, M., Karyono, H., & Gunawan, W. (2022). Pengembangan E-Modul IPA Berbasis Literasi untuk Mendukung Pembelajaran Daring Bermakna. JINOTEP (Jurnal Inovasi Dan Teknologi Pembelajaran): Kajian Dan Riset Dalam Teknologi Pembelajaran, 9(1), 56–67. https://doi.org/10.17977/um031v9i12022p056

Bertagnolli, C. (2011). Delle vicende dell'agricoltura in Italia; studio e note di C. Bertagnolli. Delle Vicende Dell'agricoltura in Italia; Studio e Note Di C. Bertagnolli., 13(3), 319–340. https://doi.org/10.5962/bhl.title.33621

Darmaji, D., Kurniawan, D. A., Astalini, A., Kurniawan, W., Anwar, K., & Lumbantoruan, A. (2019). Students' perceptions of electronic's module in physics practicum. Journal of Education and Learning (EduLearn), 13(2), 288–294. https://doi.org/10.11591/edulearn.v13i2.13005

Dr. Umar Sidiq, M.Ag Dr. Moh. Miftachul Choiri, M. (2019). Metode Penelitian Kualitatif di Bidang Pendidikan. In Journal of Chemical Information and Modeling (Vol. 53, Issue 9).

Fitri, N., Fauzi, B., & Esmar, B. (2015). Pengembangan Modul Elektronik Fisika dengan Strategi PDEODE pada Pokok Bahasan Teori Kinetik Gas untuk Siswa Kelas XI SMA. Prosiding Simposium Nasional Inovasi Dan Pembelajaran Sains 2015 (SNIPS 2015), 2015(Snips), 337–340.

Fonda, A., & Sumargiyani, S. (2018). the Developing Math Electronic Module With Scientific Approach Using Kvisoft Flipbook Maker Pro for Xi Grade of Senior High School Students. Infinity Journal, 7(2), 109. https://doi.org/10.22460/infinity.v7i2.p109-122

Ge, Z. G. (2021). Does mismatch between learning media preference and received learning media bring a negative impact on Academic performance? An experiment with e-learners. Interactive Learning Environments, 29(5), 790–806. https://doi.org/10.1080/10494820.2019.1612449

Hamid, M. A., Yuliawati, L., & Aribowo, D. (2020). Feasibility of electromechanical basic work e-module as a new learning media for vocational students. Journal of Education and Learning (EduLearn), 14(2), 199–211. https://doi.org/10.11591/edulearn.v14i2.15923

Hunsu, N., Adesope, O., Van Wie, B. J., & Pour, N. B. (2018). Fostering an enriching learning experience: A multisite investigation of the effects of desktop learning modules on students' learning experiences in engineering classrooms. ASEE Annual Conference and Exposition, Conference Proceedings, 2018-June. https://doi.org/10.18260/1-2--30533

Jambi, U. (2019). Development of E-Modules Based on Local Wisdom in Central Learning Model at Kindergartens in Jambi City. European Journal of Educational Research, 8(4), 1137–1143. https://doi.org/10.12973/eu-jer.8.4.1137

Kimianti, F., & Prasetyo, Z. K. (2019). Pengembangan E-Modul Ipa Berbasis Problem Based Learning Untuk Meningkatkan Literasi Sains Siswa. Kwangsan: Jurnal Teknologi Pendidikan, 7(2), 91. https://doi.org/10.31800/jtp.kw.v7n2.p91--103

McIntyre, T., Wegener, M., & McGrath, D. (2018). Dynamic e-learning modules for student lecture preparation. Teaching and Learning Inquiry, 6(1), 126–145. https://doi.org/10.20343/teachlearninqu.6.1.11

Munandar, R. R., Cahyani, R., & Fadilah, E. (2021). Pengembangan E-Modul Sigil Software Untuk Meningkatkan Hasil Belajar Siswa Di Masa Pandemi Covid-19. Biodik, 7(4), 191–202. https://doi.org/10.22437/bio.v7i4.15204

Pradana, R., Sulton, S., & Husna, A. (2020). Pengembangan E-Modul Berbasis Mobile Learning Seni Budaya Materi Konsep Budaya, Seni, dan Keindahan Untuk Siswa Kelas X SMKN 1 Turen Malang. JINOTEP (Jurnal Inovasi Dan Teknologi Pembelajaran): Kajian Dan Riset Dalam Teknologi Pembelajaran, 6(2), 89–96. https://doi.org/10.17977/um031v6i22020p089

Prasetyo, M. T. (2020). Modul Elektronik Sebagai Media Pembelajaran Daring di Masa Pandemi. Konferensi Internasional Pertama Tentang Manajemen Pendidikan Dan Ekonomi Syariah, September, 134–138.

Purnami, A. S., Mulyoto, M., & Winoto, B. (2020). Android-based shopping skill for mentally-disable student. Journal of Education and Learning (EduLearn), 14(3), 411–415. https://doi.org/10.11591/edulearn.v14i3.16110

Ricu Sidiq, & Najuah. (2020). Pengembangan E-Modul Interaktif Berbasis Android pada Mata Kuliah Strategi Belajar Mengajar. Jurnal Pendidikan Sejarah, 9(1), 1–14. https://doi.org/10.21009/jps.091.01

Rusmanto, R., & Rukun, K. (2020). The Development of E-Learning Module Based on Project-Based Learning (PjBL) for Electric Motor Installation Course. Journal of Education Research and Evaluation, 4(2), 181. https://doi.org/10.23887/jere.v4i2.24608

Sirwan, Kamal, & Nurkhamid. (2021). Developing E-module based on mobile learning as a preparation media. Journal of Physics: Conference Series, 1833(1). https://doi.org/10.1088/1742-6596/1833/1/012049

Sopacua, J., Fadli, M. R., & Rochmat, S. (2020). The history learning module integrated character values. Journal of Education and Learning (EduLearn), 14(3), 463–472. https://doi.org/10.11591/edulearn.v14i3.16139

Sukiman. (2022). European Journal of Educational Research. European Journal of Educational Research, 11(3), 1245–1257.

Surani, D. (2019). Studi Literatur : Peran Teknolog Pendidikan Dalam Pendidikan 4.0. Prosiding Seminar Nasional Pendidikan FKIP, 2(1), 456–469.

Wirayasa, I. D. G. P., Darmayasa, I. P., & Satyawan, I. M. (2021). Pengembangan Instrumen Penilaian Hasil Belajar Ranah Kognitif Model 4D Pada Materi Sepak Bola Berdasarkan Kurikulum 2013. Jurnal Pendidikan Jasmani, Olahraga Dan Kesehatan Undiksha, 8(3), 81–88. https://doi.org/10.23887/jjp.v8i3.33760

Wulansari, E. W., Kantun, S., & Suharso, P. (2018). Pengembangan E-Modul Pembelajaran Ekonomi Materi Pasar Modal Untuk Siswa Kelas Xi Ips Man 1 Jember Tahun Ajaran 2016/2017. JURNAL PENDIDIKAN EKONOMI: Jurnal Ilmiah Ilmu Pendidikan, Ilmu Ekonomi Dan Ilmu Sosial, 12(1), 1. https://doi.org/10.19184/jpe.v12i1.6463