

E-Module Development of Physical Education Subjects for Sports and Health on Physical Fitness Materials for Class VII Junior High School Students

Boki Ariantesa¹, Asep Sujana Wahyuri², Bafirman HB³, Damrah⁴

¹ Master of Sports Education Student, Faculty of Sports Science, Padang State University, boki.ariantesa1998@gmail.com

² Lecturer of Sports Education, Faculty of Sports Science, Padang State University

³ Lecturer of Sports Education, Faculty of Sports Science, Padang State University

⁴ Lecturer of Sports Education, Faculty of Sports Science, Padang State University

ARTICLEINFO

Article history:

Received 20 Juni 2022

Received in revised form 30 Juni 2022

Accepted 19 Juli 2022

Available online 1 August 2022

Keywords:

E-Module, Physical Fitness Materials, PJOK Subjects

ABSTRACT

This study aims to develop an e-module for physical education subjects, sports and health on physical fitness material for seventh grade junior high school students. The type of research is research and development with the ADDIE development model (Analysis, Define, Development, Implementation and Evaluation). The research was conducted at SMP Negeri 23 Kerinci, SMP Negeri 10 Kerinci and SMP Negeri 19 Kerinci. is a validation sheet. Data collection techniques in the form of instruments that have been validated by experts. Data analysis techniques use validation sheets. Data analysis techniques use rating scales and percentage ranges. physical fitness for class VII junior high school students is very feasible to be used as teaching material with a validation value of 92.8%, 2) e-module product for physical education subjects, sports and health on physical fitness material for class VII junior high school students which was developed effectively for junior high school students class VII with the results of the effectiveness test of $76.8 > 76$.

Correspondent authors: : Boki Ariantesa¹, Asep Sujana Wahyuri², Bafirman HB³, Damrah⁴

^{1,2,3,4} Padang State University

E-Mail: boki.ariantesa1998@gmail.com

INTRODUCTION

In the era of the industrial revolution 5.0, the world society experienced significant developments in all fields of education (Oktarina et al., 2021; Santosa & Yulianti, 202). This is marked by the use of technology in education (Hamidi et al., 2011; Means, 2010). Education has a very important role for the progress of a nation (Santosa & Sepriyani., 2020). The use of technology in education serves as a means of developing student skills in the learning process (Suarsana & Mahayukti, 2013; Serin & Bozdağ, 2020; Lestari & Parmiti, 2020). Therefore, we need a technology that is able to improve the quality of student learning even during the Covid-19 pandemic(Chankuna et al., 2022).

Furthermore, learning during the Covid-19 pandemic is carried out online or online (Wulandari et al., 2021; Santosa et al., 2021; Khuram, 2021). Online learning is a teaching and learning activity carried out using the help of the internet network (Matsun & Saputri, 2020; Paramitha et al., 2022; Putria et al., 2020). This online learning is carried out with a learning platform consisting of zoom meeting, google meet, whatshap, zomodo, Microsoft team which can be accessed via the internet. Online learning activities aim to reduce the spread of Covid-19 in the world of education(Wolhuter & Jacobs, 2021;Marisa et al., 2020; Santosa et al., 2021). This has been confirmed in the Circular Letter of the Ministry of Education and Culture Number 4 of 2020 regarding the implementation of educational activities during the Covid-19 pandemic(Baety & Munandar, 2021).

Online learning can hinder the activities of the learning process between teachers and students which is usually done through face-to-face to online (Arkiang, 2021). This is due to difficulties in internet connection, learning facilities and infrastructure that are still limited in learning physical education, sports and health. Based on observations and interviews conducted with teachers and students in the subject of Sports and Health Education (PJOK) at SMP Negeri 23 Kerinci, teachers have not been able to apply online learning to students. This is because school facilities and infrastructure do not support online learning, there are no online-based teaching materials and student learning scores are still below the KKM, which is 70 in physical fitness subject matter. Therefore, it is necessary to have online-based teaching materials or better known as E-Modules to help teachers deliver subject matter.

E-module or electronic module is a module that can be accessed through information and communication technology, especially electronic devices (Aryawan et al., 2018). E-modules have characteristics, namely self-instructional, self-contained, stand-alone, adaptive, user-friendly, more consistent use of fonts, spacing and layout that

can be accessed via computers, laptops, smartphones and others. (Asmiyunda et al., 2018). According to Johan et al., (2022) the use of e-modules as learning media makes students more active and creative in learning (Fradila et al., 2021). In addition, according to (Serevina et al, (2018) e-module can improve students' critical and creative thinking skills in carrying out teaching and learning activities. The use of e-modules makes students learn more independently to master subject matter anytime and anywhere without a time limit (Aminatun et al., 2022; Fradila et al., 2021). Not only that, the use of e-modules in physical fitness materials helps students to be more effective and efficient.

Previous research by Gumara & Wahyuri (2022) e-module development in sports and health education subjects is effective for grade VII SMP students. Research by Shaukani & Zarwan (2022) the development of e-modules in PJOK learning is very feasible to be applied to junior high school students. Research by Saraswati & Linda (2019) e-module development in learning is very effective in helping students understand the subject matter. Research by Based on these problems, this study aims to develop an e-module for physical education subjects, sports and health on physical fitness materials for seventh grade students of junior high school.

RESEARCH METHODS

This research is a type of development research or R&D with the ADDIE model (Analysis, Define, Development, Implementation and Evaluation). Development research is a research method used to produce a particular product or improve an existing product, and test the effectiveness of the product. Population The research was conducted at SMP Negeri 23 Kerinci, SMP Negeri 10 Kerinci and SMP Negeri 19 Kerinci. The instrument used in this study is a validation sheet. Data collection techniques are instruments that have been validated by experts. Data analysis techniques use validation sheets. Data analysis techniques use rating scales and percentage ranges which can be seen in table.1-2.

Table.1 Rating Scale

Score	Category
4	Worth using without revision
3	Worth using with minor revision
2	Worth using with major revision
1	Not worth using

(Sumber:Arikunto, 2011)

Table. 2 Criteria Percentage of Validation Sheet

Percentage Range (%)	Criteria
86-100	Very worth it
71-85	Worthy
56-70	Enough
41-55	Not enough
< 40	Fail

(Sumber: Arikunto dalam Ade (2018)

RESULTS AND DISCUSSION

Result

The development of the E-Module for physical education subjects on sports and health on physical fitness material for class VII SMP students is very valid to be used in physical fitness learning materials, it can be seen in the table. 3-4

Table.3 E-Module Validation Score by Material Experts

Indicator	Score	%	Category
a. Suitability and accuracy	18	90	Very worth it
b. The suitability of the material with the student's situation	4	100	Very worth it
c. Attractiveness	4	100	Very worth it
d. interest	4	100	Very worth it
e. Clarity of understanding the material	4	100	Very worth it
f. Learning opportunities	4	100	Very worth it
g. Provide study assistance	8	100	Very worth it
h. Motivating quality	4	100	Very worth it
i. Impact on students	12	100	Very worth it
j. Impact on teachers and their learning	8	100	Very worth it
Mean	7		Very worth it

Table. 4 Material Assessment Results

Expert	Max	N	%	Category
Theory	72	69	95,83333333	Very worth it

Based on Table 3, it explains the score of material validation by experts with an average of 7 in the very feasible category. So, Judging from the validation of the e-module material for sports and health physical education subjects, physical fitness material is very suitable for use in the teaching and learning process in the classroom. In addition, the feasibility of the material and the quality of learning used in physical education subjects, sports and health on physical fitness material are very feasible. This can be seen in Table 4 where the results of the material assessment by material experts are 34 or 96 categories very feasible. Thus, the development of e-modules with material for physical fitness activities is declared very feasible and can proceed to the next stage, namely the trial stage.

Furthermore, the development of e-module media for sports and health physical education subjects on physical fitness material is very suitable for use in the teaching and learning process in class VII junior high school. This can be seen from the results of media validation in the table. 5 and Histogram 1.

Table. 5 Media Validation Score

Indikator	Score	%	Categori
A. Legibility	6	75	Worth
B. Suitability	7	87,5	Very worth it
C. Composition	7	87,5	Very worth it
A. Convenience	4	100	Very worth it
B. Completeness	6	75	Worth
C. Convenience	16	100	Very worth it
A. Efficiency	4	100	Very worth it
B. Independence	4	100	Very worth it
C. Attractiveness	3	75	Worth
Mean		89	Very worth it

Expert	Max	N	%	Category
Media	64	57	89,0625	Very worth it

Based on Table. 5 explains that the development of e-module media in sports and health education subjects on physical fitness material is very feasible. This can be seen from the media validation score of 89% in the very feasible category. Furthermore, in terms of the language used in the very valid e-module, it can be seen in Table.6 -7

Table. 6 Language Validation Score

Indikator	Score	%	Category
a. Legibility	4	100	Very worth it
b. Effectiveness	7	87,5	Very worth it
c. language usage	10	83,33333	Worth
d. accuracy	7	87,5	Very worth it
e. Consistency	3	75	Worth
f. Suitability	6	75	Worth
Mean		84	Very worth it

Table. 7 Language Assessment Results

Expert	N Max	N	%	Category
Language	44	37	84,09091	Worth

Based on Table 6-7, the results of the validation of the language used in the e-module in the subjects of sports and health education in physical fitness material are very feasible. It can be seen from the results of the assessment by linguists that 84% of the category is very feasible. Therefore, in terms of media, the media and language used in the e-module are all valid categories and are very suitable to be used as teaching materials in physical fitness material in Class VII SMP. In addition, the development of e-modules in physical fitness material is effectively used as teaching material. This can be seen from the product effectiveness test in Table 8

Table. 8 Product Effectiveness Test

N- Gain skor	:	0,77	Hight
N -Gain skor (%)	:	76,8	Effective

Based on the results of the effectiveness test in Table 8, the results of the pretest and posttest were analyzed by means of the average difference test (t-test). Which (T-test) is according to Microsoft excel software. In the results of the study, it is known that the N Gain score is 0.77 and when viewed in the Gain score distribution category according to Meltzer in Syahfitri (2008) is in the high category with $0.77 > 0.7$. its effectiveness is 76.8 and when viewed from the interpretation of the effectiveness of N-Gain according to Hake R. R. in Kahar (2017), it is in the effective category with $76.8 > 76$. So it can be concluded that there is a significant difference between the pretest and posttest learning outcomes using E -Modules. And the development of E-Modules that have been developed is effective to improve students' understanding.

Discussion

This research is one of the development studies that aims to produce one of the e-module learning media and find out the feasibility and effectiveness of the module and see how the comments and suggestions from experts, namely media experts, linguists, and material experts on e-learning media -module created. The product of the development of this teaching material is in the form of an E-Module of Physical Education, Sports and Health on physical fitness material for class VII Junior High School students which is made using the Kinemaster and Canva applications with several considerations, namely this program is very effective and easy to use for learning conditions. In a network like today, this program is easier to use, can display multimedia programs, and is an interactive learning media that is easier if it is developed and modified into other materials, besides that, this website is also free and can be accessed easily. The development of e-Modules in modules in sports and health education subjects on physical fitness material is very effective for use in learning in class VII SMP. This can be seen from the results of the N-Gain test of 76.8. This is in line with research (Welker et al., 2021) The development of e-modules in learning is very effective and more efficient.

The development of e-modules in sports and health physical education learning has a very important role in physical fitness material. According to Wulandari & Wibowo, (2022) e-module development in sports learning is very valid to be used in teaching and learning activities. In addition, according to Sri et al., (2022) e-module development in learning is able to encourage students' critical thinking skills. E-modules used in physical fitness learning materials can improve problem solving skills in students. This is in line with research by Wahyuni, (2020) the application of e-modules in teaching and learning activities can improve students' critical thinking skills.

Furthermore, the application of e-modules in learning physical sports and health education has several advantages. The application of the E-Modul on physical fitness material in class VII SMP has advantages, namely the advantages of the E-Modul PJOK on physical fitness material for class VII SMP students, namely: This E-Module is interactive teaching material for students, the E-Module is made can be accessed anywhere with an internet network via a shared link, the E-Modul can be accessed via mobile phones as well as laptops/computers, this E-Modul contains a series of planned and systematic learning activities. The E-Module is designed to be attractive and there is a video explanation of the material so that it is easy to learn and can answer students' learning needs, Makes it easier for teachers to explain theoretical learning about physical fitness activity material, Allows students to learn independently with this E-Module, E-Modules are flexible because the module material can be studied by students in different ways and speeds, this E-Module can provide feedback so that students know their shortcomings and immediately make improvements.

E-modules based on the use of communication and information technology are solutions for teachers in delivering subject matter at school. E-Modules can be accessed via the internet and are not limited to time (Roldán-zafra et al., 2022). The development of E-modules in learning physical sports and health education is very suitable for use in class VII SMP. In addition, the existence of e-modules does not cover the shortcomings of conventional modules (Astuti & Riefani, 2022). Menurut Rismayanti & Sukirwan(2022) e-modules have more interesting animations, thus fostering student creativity.

CONCLUSION

From this study, it can be concluded that 1) the e-module product for Physical Education, Sports and Health subjects on physical fitness material for class VII SMP students is very suitable to be used as teaching material with a validation value of 92.8%, 2) e-module product for subjects Physical education lessons on sports and health on physical fitness material for seventh grade junior high school students were developed effectively for seventh grade junior high school students with effectiveness test results of $76.8 > 76$.

REFERENCE

- Aminatun, T., Subali, B., Yuningsih, Y., Dwiyani, A., Prihartina, I., & Meliana, D. (2022). Developing Android-Based Mobile through Local Ecosystem Materials to Improve Thinking Skills of High School Students. *Anatolian Journal of Education*, 7(1), 73–82. <https://doi.org/10.29333/aje.2022.716a>
- Arikunto, S. (2011). *Dasar-Dasar Evaluasi Pendidikan*. Bandung: Bumi Aksara.
- Arkiang, F. (2021). Analisis Pembelajaran Daring Selama Pandemi Covid-19 Di Daerah 3T (Nusa Tenggara Timur). *Jurnal Pendidikan*, 12(1), 57–64. <https://jp.ejournal.unri.ac.id/index.php/JP/article/downloadSuppFile/7917/209>
- Asmiyunda, A., Guspatni, G., & Azra, F. (2018). Pengembangan E-Modul Kesetimbangan Kimia Berbasis Pendekatan Saintifik untuk Kelas XI SMA/ MA. *Jurnal Eksakta Pendidikan (Jep)*, 2(2), 155. <https://doi.org/10.24036/jep/vol2-iss2/202>
- Astuti, N., & Riefani, M. K. (2022). *Validitas Modul Elektronik “Pembelahan Sel” Berbasis Keterampilan Berpikir Kritis (Validitas Modul Elektronik “Pembelahan Sel” Berbasis Keterampilan)*. 6.
- Baety, D. N., & Munandar, D. R. (2021). Analisis Efektifitas Pembelajaran Daring Dalam Menghadapi Wabah Pandemi Covid-19. *Edukatif: Jurnal Ilmu Pendidikan*, 3(3), 880–989. <https://edukatif.org/index.php/edukatif/article/view/476>
- Chankuna, D., Thanaiudompat, T., & Sujintawong, P. (2022). The Analysis of Problems and Needs of Educational Information Technology of Thailand National Sports University. *Education Quarterly Reviews*, 5(2). <https://doi.org/10.31014/aior.1993.05.02.474>
- Fradila, E., Razak, A., Santosa, T. A., Arsih, F., & Chatri, M. (2021). Development Of E-Module-Based Problem Based Learning (PBL) Applications Using Sigil The Course Ecology And Environmental Education Students Master Of Biology. *International Journal of Progressive Sciences and Technologies (IJPSAT)*, 27(2), 673–682. <http://ijpsat.ijsh-journals.org>
- Gumara, O. H., & Wahyuri, A. S. (2022). Pengembangan E-Modul Mata Pembelajaran Pendidikan Jasmani Olahraga dan Kesehatan pada Materi Pokok Pola Hidup Sehat untuk Siswa Sekolah Menengah Pertama. *Edukatif: Jurnal Ilmu Pendidikan*, 4(4), 6185–6192. <https://doi.org/10.31004/edukatif.v4i4.3066>
- Hamidi, F., Meshkat, M., Rezaee, M., & Jafari, M. (2011). Information technology in education. *Procedia Computer Science*, 3, 369–373. <https://doi.org/10.1016/j.procs.2010.12.062>
- Johan, R. C., Rullyana, G., & Ardiansah, A. (2022). Hyper content e-module in information behavior course with the assistant of screencast. *Journal of Education and Learning (EduLearn)*, 16(2), 210–218. <https://doi.org/10.11591/edulearn.v16i2.20339>
- Marisa, U., Yulianti, & Hakim, A. R. (2020). Pengembangan E-Modul Berbasis Karakter Peduli Lingkungan di Masa Pandemi Covid-19. *Seminar Nasional PGSD UNIKAMA*, 4(September), 323–330.
- Matsun, M., & Saputri, D. F. (2020). Pengembangan E-Modul Fisika Berbantuan Whatsapp Sebagai Alternatif Pembelajaran Dimasa Pandemi Covid 19. *ORBITA: Jurnal Kajian, Inovasi Dan Aplikasi Pendidikan Fisika*, 6(2), 213. <https://doi.org/10.31764/orbita.v6i2.3130>
- Oktarina, K., Suhaimi, S., Santosa, T. A., & ... (2021). Meta-Analysis: The Effectiveness of Using Blended Learning on Multiple Intelligences and Student Character Education During the Covid-19 Period. ... *Journal of Education* ..., 4(3), 184–192. <http://journal.ummat.ac.id/index.php/IJECA/article/view/5505%0Ahttps://journal.ummat.ac.id/index.php/IJECA/article/download/5505/pdf>
- Rismayanti, T. A., & Sukirwan, N. A. (2022). *Pengembangan E-Modul Berbantu Kodular pada Smartphone untuk Meningkatkan Kemampuan Berpikir Kritis Matematis Siswa SMP*. 06(01), 859–870.
- Rizki Aryawan¹, I Gde Wawan Sudatha², A. I. W. I. Y. S. (2018). Pengembangan e-modul interaktif mata pelajaran ips di smp negeri 1 singlaraja. *Jurnal EDUTECH Universitas Pendidikan Ganesha*, 6(2), 180–191.
- Roldán-zafra, J., Perea, C., Polo-blanco, I., & Campillo, P. (2022). *Design of an Interactive Module Based on the van Hiele Model: Case Study of the Pythagorean Theorem*. 17(1), 1–10.
- Santosa, T. A., Razak, A., Anhar, A., & Sumarmin, R. (2021). The Effectiveness of the Blended Learning Model on Student Learning Outcomes in Zoology Subjects in the Covid-19 Era. *Pendidikan Biologi*, 7(1), 77–83.
- Santosa, T. A., & S., E. M. (2020). Analisis Masalah Pendidikan Biologi Pada Sekolah Menengah Pertama Di Era Pandemi Covid -19. *Jurnal Review Pendidikan Dan Pengajaran*, 3(2), 273–278. <https://doi.org/10.31004/jrpp.v3i2.1278>
- Saraswati, S., & Linda, R. (2019). *Development of Interactive E-Module Chemistry Magazine Based on Kvisoft Flipbook Maker for Thermochemistry Materials at Second Grade Senior High School*. 3(October), 1–6. <https://doi.org/10.17509/jsl.v3i1.18166>
- Sri, D., Adi, B., & Maridi, M. (2022). *JPBI (Jurnal Pendidikan Biologi Indonesia) Developing the guided inquiry-*

based module on the circulatory system to improve student ' s critical thinking skills. 8(1), 77–85.

- Suarsana, I. M., & Mahayukti, G. A. (2013). Pengembangan E-Modul Berorientasi Pemecahan Masalah Untuk Meningkatkan Keterampilan Berpikir Kritis Mahasiswa. *Jurnal Nasional Pendidikan Teknik Informatika (JANAPATI)*, 2(3), 193. <https://doi.org/10.23887/janapati.v2i3.9800>
- Vina Serevina, Sunaryo, Raihanati, I Made Astra, I. J. S. (2018). Development of E-Module Based on Problem Based Learning (PBL) on Heat and Temperature to Improve Student's Science Process Skill. *TOJET: The Turkish Online Journal of Educational Technology* –, 17(3), 26–36.
- Wahyuni, D. (2020). *Efektifitas e-Modul Berbasis Problem Solving Terhadap Keterampilan Berfikir Kritis Peserta Didik. 6(2), 180–189.*
- Welker, K., Cox, C., Bylina, H., Baer, H., Duessel, S., & Directors, C. D. (2021). *A CHRONIC CONDITION E-LEARNING MODULE FOR SCHOOL NURSES TO TRAIN AFTERSCHOOL TEACHERS AND STAFF. 12(3), 50–57.*
- Wulandari, A. M., & Wibowo, A. K. (2022). Android based petanque sports module electronic development. *MULTILATERAL: Jurnal Pendidikan Jasmani Dan Olahraga, 21(1), 57–70.*
- Wulandari, F., Yogica, R., & Darussyamsu, R. (2021). Analisis Manfaat Penggunaan E-Modul Interaktif Sebagai Media Pembelajaran Jarak Jauh Di Masa Pandemi Covid-19. *Khazanah Pendidikan, 15(2), 139.* <https://doi.org/10.30595/jkp.v15i2.10809>