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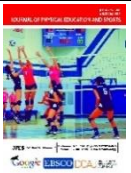

The Interactive E-Module Physical Fitness in Physical Education Learning for Student XI Grade of Senior High School

Ana Shofiyyatur Rosyida[1]✉, Tandiyo Rahayu[2], Setya Rahayu[3]

[1,2,3]Universitas Negeri Semarang, Indonesia

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Abstract

The research background was the less optimum of existing teaching material used although the infrastructures were adequate, such as the Internet connection and smart electronic gadgets. The purpose of this research was produces and analyzes an interactive e-module development in learning health, sport, and physical education for XI graders in the material of physical fitness. The researcher used research & development design with nine stages; 1) identification of potentials and problems, 2) data collection, 3) product design, 4) design validation, 5) design revision, 6) product trial run, 7) product revision I, 8) product trial use, and 9) product revision II. The obtained data were quantitative and qualitative. The researchers took the data with expert validation, pretest, posttest, and convenience test of the learners from 5 Public Senior High Schools and 5 Private Senior High Schools. The results of expert validation were obtained with an average percentage of 90%, there was a difference in the average score of pretest and posttest in Public Senior High Schools 41 to 65 and in the Private Senior High Schools from 38 to 61, and the results were significant 0.00 < 0.05. Conclusion about the product development showed that: 1) the product, an interactive e-module of physical fitness material for XI graders, was accessible from the link https://bit.ly/PJOKKebugaran_XI via WhatsApp; 2) the product was declared feasible, and 3) the product was effective to use. Researchers suggest that the interactive e-module development in learning health, sport, and physical education for XI graders in the material of physical fitness could widely used.

✉ Correspondence address:
Kampus Pascasarjana UNNES Jl. Kelud Utara 3, Gajahmungkur Semarang
E-mail: anasrosyida@gmail.com

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INTRODUCTION

Physical education and sports lesson at schools still apply conventional learning. This learning is identical to teachers' lecturers in front of the classroom. The teachers even demonstrate physical actions that should be done by the learners since the teachers think this strategy is effective. According to the preliminary research at 3 Public Senior High Schools in Kudus, the teaching materials for physical education and sport were not optimum. These problems must receive immediate action so that the learners will be autonomous as mandated by the character education program achievement of the 2013 curriculum (Restiana et al., 2021; Sya'roni et al., 2021; Triyanto et al., 2021).

The 2013 curriculum designs physical education and sport to promote physical movements and stay healthy based on the learners' characteristics (Abduh et al., 2020; Fahrizqi et al., 2020). The lesson design encourages learners to actively move happily and to keep their fitness and health by exercising and moving. In this case, the learners must also consider other influential factors of their health (Cleven et al., 2020; Fairclough & Stratton, 2005; Fletcher et al., 2018; Ozemek et al., 2019; Zhao et al., 2013).

Sulaiman (2016:15) defines Physical Education and Sport as the educational process involving physical activities. This process improves physical fitness, motoric skill, healthy lifestyle and knowledge, activeness, sportiveness, and emotional quotient (Azizi, 2020; Pramana et al., 2020; Puspitaloka & Arifin, 2021; Rustandi & Rismayanti, 2021; Syafitri et al., 2019).

Prof. Tandyo, in a Webinar on July 29, 2020, uploaded via YouTube in a Virtual Technical Meeting of Blended Learning, explains that physical education and sport require physical literacy. This literacy is useful to motivate; improve the confidence, physical competence, and knowledge and understanding of values; and make the learners actively participate and be responsible for their life physical activeness.

Liu & Chen (2020), Martins et al. (2021), Quennerstedt et al. (2021), and Young et al. (2021) also agree with the argument. The researchers argue that physical literacy should be the focus of physical education and sport because physical literacy aims to foster a healthy personality. The design of current physical education and sport fosters learners to be aware of physical fitness, exercise, and health (Gunadi, 2019; Someryoto et al. 2018).

The Ministerial Regulation of Education and Culture, Number 24 of the Year 2016, explains that XI graders must be capable of processing, reasoning, and presenting their concrete and abstract aspects based on their self-development at schools autonomously. They must also take action effectively and creatively and apply relevant methods based on the disciplines. Therefore, the development and adjustment of the ministerial regulation with the XI graders' characteristics are important.

According to some previous studies, the researchers found some primary problems. The problems were 1) unoptimized teaching material implementations, 2) learners' difficulties to learn physical education and sport due to lack of textbooks; 3) different learning source preferences; 4) unoptimized internet infrastructure use, and 5) the need of developing interactive e-module for physical fitness material.

Teaching materials facilitate the achievement process of certain competencies. Fernandez-Antolin et al. (2021) and Guerrettaz et al. (2021) Explain that teaching material lowers traditional and inflexible teachers' controls. Teaching materials provide broader learning so learners can develop their competencies. Teaching materials also foster learners' autonomy to learn without teachers' presence (Abarca, 2020; Hakim et al., 2022; Safaringga & Herpandika, 2018; Sulistiono, 2014; Syauqy, 2017). Therefore, teachers must apply attractive and facilitative media for

learners' masteries (Ansari et al., 2020; Copriady et al., 2020).

One of the teaching materials is a module. A module facilitates and makes learners autonomously learn without the presence of teachers (Gaung, 2021; Gumantan Aditya et al., 2020). Misbah et al. (2021), Noer et al. (2021), and Pratita & Djahir (2021) argue that the module should be attractive, understandable, and complete. The completeness includes visual and auditory aids to facilitate learners.

In this advanced era, the module takes various packaging forms, including digital or electronic modules. Studies proved the success of e-module implementations. (Husniah 2018) found that pre and post results of learning activities with e-module during Islamic religion lessons showed positive results. Another study applied e-module for chemistry class. The study found that the applied module provided less boredom and a concrete explanation of the material. The module also made learners study autonomously with or without the teachers' presence. Thus, they could understand the concepts of colloid(UZ 2019).

From the previous studies, this Research & Development produces and analyzes an interactive electronic module for physical education and sport. The developed module is for XI graders with the material of physical fitness.

METHOD

The applied procedure of this research consisted of 9 stages. They were They were 1) identification of potentials and problems, 2) data collection, 3) product design, 4) design validation, 5) design revision, 6) product trial run, 7) product revision I, 8) product trial use, and 9) product revision II (Sugiyono, 2013).

The obtained data were quantitative and qualitative. The researchers obtained the qualitative data from online questionnaires. The researchers spread the questionnaires to the experts, including the media, learning, and language experts; and the learners. On the other hand, the researchers obtained the qualitative data from discussions, criticisms, and suggestions of the experts. Then, the researchers described the results in sentences.

The researchers collected the data from the learners via online questionnaires, pretest, and posttest. The researchers required the experts' criticisms to improve the product and ensure its reliability of the product.

After finding the potential problems, it collected the initial data via an online questionnaire. The researchers confirmed the existence of the problems. In this stage, the researchers invited the physical education and sports teachers of each XI grade. The researchers did this collaboration since the researchers had limited access to face-to-face learning. The initial data became the basis to develop the electronic module with physical fitness material for XI graders.

In this research, the questionnaire used the Liker scale from 1 - 5, from 'extremely poor' to 'very excellent.' The respondents could select an option by clicking. The researchers shared two types of tests for the learners, before and after the implementation of the module. The given test was a cognitive test about physical fitness as presented in the module. On the other hand, the questionnaire was useful to find out the convenience of using the module.

The questionnaire for the learners was validated and examined in terms of reliability with SPSS. This step was useful to determine the validity level and the reality, to determine the consistency of the data, and determine whether the product was ready to use or not. In this research, the researchers used a significant level of 0.05. If the r-count is lower than the r-table, the data is valid and vice versa.

The researchers analyzed the experts' suggestions with qualitative analysis techniques or descriptions. In this research, the online questionnaire used a closed-question type. The researchers analyzed the numerical results by calculating the percentages of each

question item. In this process, the researchers used this percentage formula:

$$\text{Nilai} = \frac{\sum skor}{\sum skor\ total}\ x\ 100\%$$

The researchers used numbers and percentages to classify the categories. Thus, the researchers could obtain the interpretations of whether the product was very reliable, reliable, fairly reliable, or unreliable.

This table shows the guideline to classify the obtained percentages (Sugiyono, 2013).

Table 1. The interpretation results

Percentage	Category	Qualification
86-100	4	Very reliable
76-85	3	Reliable
56-75	2	Fairly reliable
≤55	1	Unreliable

Then, the researchers determined the differences between pre and post-e-module implementations with pretest and post-test. The researchers analyzed the results with a T-test, assisted with SPSS. In this process, the researchers used a significant level of 0.05. If the result was lower than 0.05, the difference between pretest and posttest would be significant and vice versa.

RESULTS AND DISCUSSION

The researchers produced the module for XI graders with these steps: 1) studying the core competence and basic competence of physical education and sports lesson for XI graders based on the Ministerial Regulation of Education and Culture Ministry Number 24 the Year 2016; 2) reading relevant physical education and sports references and books suggested by the revised version of 2013 curriculum; 3) learning and determining the appropriate application to develop the e-module and to present the module on gadgets; 4) commencing the development; 5) promoting trial-error test, 6) editing the product to obtain the targeted results; and 7) discussing and validating the products with the experts.

The first stage was creating the materials in *Microsoft Word.* In this process, the researchers automatized some elements with heading tools, starting from the topic, sub-topic, and sub of the sub-topic. This automation was useful to facilitate users jumping to the selected parts by clicking the options on the table of content. The other automatized elements were the figures and video links inside of *Ms. Word.* In this process, the researchers arranged the placements of the elements. Thus, when users opened the file with an HTML application, the arranged elements would not be messy.

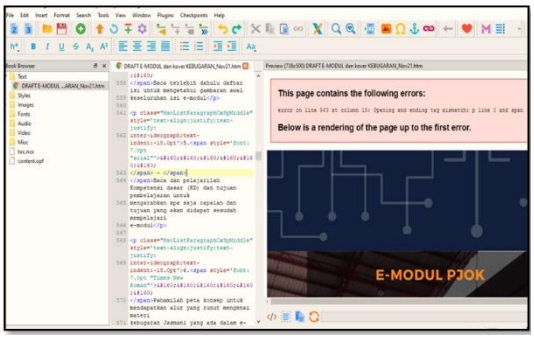

Figure 1. The developed materials with *Ms. Word* 2010

Figure 1 shows the process of creating the materia. After creating the materials, the researchers saved the materials in the form of HTML by clicking *web, filtered,* and *save* or *save as* options.

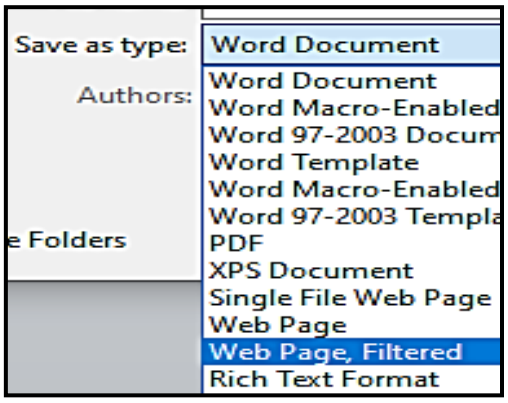

Figure 2. Saving the materials with *Web Page, Filtered* formats

After saving the HTML file format, the researchers ran the Sigil application. Then, the researchers clicked on *the open file* option. The researchers searched the HTML files. Here are the figures from the files:

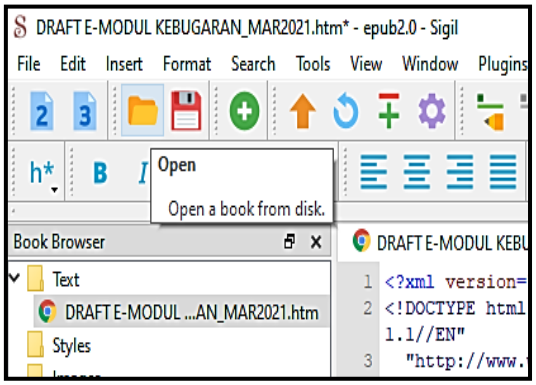

Figure 3. The Sigil window display

The display of the Sigil application is already in a *coding* format. However, this application also offers the *preview* option to check the final display of the product. With this option, the researchers could avoid errors and mistakes. After finishing the contents of the e-module, the researchers created the book covers by clicking on *the tool* and *adding cover* options. The researchers chose the predetermined figures and ended it by clicking *OK.* Then, the researchers put some identity elements, such as the names of the authors, languages, etc by clicking the *tool* option. Then, the researchers clicked on the *Metadata Editor* and clicked *OK* on the option.

The final step was - saving the results. The Sigil application saved the file in EPUB format, *electronic publication* formal. Then, the file was accessible by electronic book readers. For gadgets with *the Android* operating system, the gadgets must download *the e-book* reader application. However, for gadgets with the iOS operating system, they could directly access the book since the operating system already has the reading application, *Books.*

The gadget users could download various e-book reader applications on *Playstore.* The EPUB file type will adjust the display based on the gadgets' reading applications. Here is the example of the opened electronic module's display accessed with *ReadEra.*

Figure 4. The product display is based on reading software.

The researchers used the reading application due to some reasons. The reasons were 1) many users, more than 10 million users, had already downloaded the application on *Playstore;* 2) the application had an excellent star-review rate, 4.8 - 5 star rate, with more than 500 thousand positive comments; and 3) the application had a simple and easy-to-operate display.

The developed product had three parts. They were 1) the front part, consisting of a) front cover, b) preface, c) instruction to use the e-module, d) table of content, e) core competence and learning objectives, f) the developed character, g) the conceptual map, and h) motivation; 2) the content, consisting of a) apperception, b) learning material, and c) exercise tip; 3) the closing part, consisting of a) reflection, b) summary, c) cognitive test and psychomotor tasks, d) bibliography and e) profile of the author.

The researchers applied the Indonesian language. However, the researchers also applied some casual language variety based on the learners' communication characteristics. The adjustment of the language included the use of *'kamu'* instead of *'anda.'* The researchers also used the word *'ayo'* instead of *'mari.'* Thus, the researchers could foster interactive communication as if it was a face-to-face meeting. The researchers expected these

adjustments could convey the information in the module to the learners based on their characteristics and age.

The Design Validation

After producing the products, the researchers validated the product. The researchers discussed the products with media, material, and language experts. The media expert was Untari Widistuti, S. Pd. She was a graduate of ICT UNNES. She had many experiences in guiding the learners to join the multimedia competition. The second expert was Dwi Tutik Sugiyarti, S Pd. She is a teacher at Pubic Senior High School 6, Yogyakarta, teaching physical education and sport. Then, the language expert was Saeful Hadi, M. Pd. The researchers invited Afrilia Puspita Sari, S.Pd to review the question items. The reviewer had specific expertise in media, especially learning media. Then, the researchers handed the questionnaire items to the experts of media: 1) Untari Widiastuti, S.Pd and 2) Berwinda Windiastuti, S.Pd.

In the first phase, the researchers obtained a percentage of 72% from an expert I and 68% from expert II with the category of fairly reliable. From the results, the researchers revised the product and handed the product to the two experts. In this phase, the researchers obtained a percentage of 89% from an expert I and 87% from expert II, with the category of "very reliable."

Then, the researchers explained the data with a diagram to determine the different validation results of the experts, I and II.

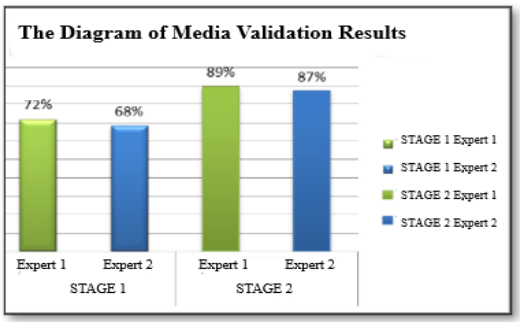

Figure 5. The validated result percentages from the experts in media

In this research, the researchers also involved the expert in physical education and sports lesson. In this phase, the expert, Widyastuti, S.Pd, reviewed the questionnaire item. The expert had much experience in teaching physical sports education at schools. Then, the reviewed questionnaire was handed over to two lesson experts. They were 1) Dwi Tutik Sugiyarti, S. Pd, 2) Hery Supriadi, M. Pd. In the first phase, the obtained percentages were 80% from an expert I with a category of "reliable" and 70% from expert II with a category of "fairly reliable." The researchers revised the product based on the experts' suggestions. After that, the researchers promoted the second-phase validation. The result of this phase showed better percentages. They were 98% from an expert I and 93% from expert II, categorized as "very reliable."

The researchers present the data validation of the experts with this bar. Here are the percentage differences of both experts from the first and second validation phases.

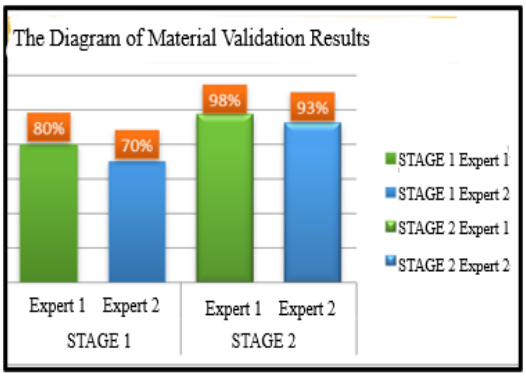

Figure 6. The validated result percentages from the lesson experts

In this research, the researchers also involved language experts. They were 1) Saeful Hadi, Pd., M. Pd, 2) Ulfah Mey Lida, M. Pd. In this validation, the researchers asked Agustin Dwi A, S Pd, to review the questionnaire. She is an expert that guides her learners to compete in many language competitions. From the validation, the results showed a percentage of 74% from language expert I. Then, from the language expert II,

the score was 62%. These results were categorized to be "fairly reliable." The researchers used the results to improve the product in terms of language. This decision was also supported by the supervisors. The revised version of the product obtained better validation results. From the first expert, the researchers obtained a percentage of 91%. The researchers obtained a percentage of 84% from the second expert. These scores were categorized to be "reliable."

Here is the diagram indicating the percentage differences between both experts.

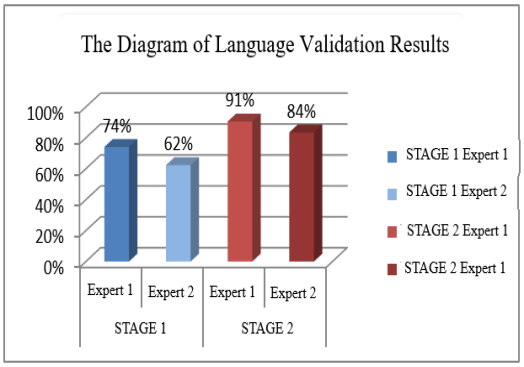

Figure 7. The validated result percentages from the language experts

The Revised Design and Product Trial Run

After undergoing the review and evaluation with the experts, the researchers revised the product based on the experts' suggestions. Then, the revised version of the product was ready to undergo. In this test, the participants were the XI graders of 10 Senior High Schools in Kudus. They were five Public Senior High Schools and 5 Private Senior High Schools.

From the test results, the researchers revised the product. In this process, the researchers also took the experts' consideration to revise the product. Here are the suggestions from the experts for the product.

Table 2. The product previews by the experts during first-phase validation

MASUKAN	KESIMPULAN
1. Use brief sentence for the displayed text 2. Use proportional sentences and figures to attract the learning intention	Reliable with revision
1. Tidy up the writing 2. Shorten the material, use excellent colors	Reliable with revision
Keep developing your potential for all health & sport education learners. Bravo PJOK!	Reliable with revision
1. Choose interesting and colorful figures 2. Tidy up the writing	Reliable with revision
1. Not compatible to run with Samsung A51. The letters were scambled 2. Incorrect writings of the Basic Competences. Corrections 3.5 and 4.5 3. Make the size only 3kb (for learning) or make the sub-chapter 4. Unzoomed out table 5. Make the order correct from the cover, guideline, use, table content, and abstract	**Unreliable. Must be revised**
1. Use standard terms, "Frekewensi" is not standard. 2. Use arial font type 3. Use proper font for the page	Reliable with revision

From the suggestions, the researchers revised the product to improve the readers' convenience so that the readers could understand the content excellently.

Table 3. The trial during the product revision process

NO.	THE REVISED COMPONENTS	RESULTS	NOTES
1	Make the texts briefer	Revised	Edited with Ms Word (the e-module draft)
2	Make the text and figure proportional and interesting	Revised	Edited with Ms Word (the e-module draft)
3.	Tidy up the texts	Changing the coding in *Sigil* led to *error*.	**Failed to revise** with the editing application (lack of coding mastery)
4.	Not compatible for all smartphone, example: Samsung A51. The text was scrambled while being run	Problem unsolved, errors in the epub file or in the reader application	**Failed to revise**
5.	Problem with the table-zooming out feature	The zooming out feature did not work when zomming out the tables.	**Failed to revise**
6.	The order problems. The contents were unordered.	The draft in Ms Word was correct but it could not be read in the application.	**Failed to revise**
7.	The italic words for specific terms and the applied fontz	Revised	Edited with Ms. Word

From the data, the researchers considered changing the predetermined concept with an alternative solution. Then, the researchers searched and studied what software that could facilitate the production of the interactive e-module.

Table 4. The process of developing the first and second e-module products

Before revising the product	After revising the product
The processes 1. The pre-made draft with Ms. Word, saved in *Web filtered (html)* format 2. Running *Sigil,* go to *edit,* select *save the file in epub.* 3. Distributing the files via WhatsApp for the readers 4. Ensuring the e-reader application for readers; downloading the application via *playstore* for those who did not have the *e-reader* 5. Running the e-module	The processes 1. Saving the *draft* with *pdf* format. 2. Running the *canva iapplication; editing* the display, attractive template, figure insertion, layout, and the frame; saving the file in *pdf.* 3. Running the *flip pdf professional* application; editing and linking the table of content with the targeted page, inserting YouTube links; gaining the link to access the module. 4. Running the *bit.ly* application to simplify the website (links) 5. *Link* dibagikan kepada calon pembaca melalui *whatsApp.* 6. Sharing the link via WhatsApp 7. Running the e-module for learning purposes

The differences between the pre-revised and revised modules were 1) product simplification without coding skills, 2) more attractive display supported with *Canva* software by clicking the given templates, 3) ease of access to save the *Canva* typed file format into *Pdf* for further editing process with *flip maker* - an application to create a book layout with an easy-editing option, and 4) ease of access to run the product with an Internet connection without book reader application. This software allowed the readers to click the shared link. Then, they could directly read the module online.

After revising the product, the researchers validated the product with the experts. In this process, the researchers would use the corrections and the suggestions of the experts.

Table 5. The responses of the experts toward the revised product

No.	Validator	Responses	Conclusions
1	Media Expert 1	1. Revising based on the suggestion 2. Excellent revision result	Reliable e-modul without revision
2	Media Expert 2	Better display	Reliable e-modul without revision
3	Material Expert 1	Keep developing your potential for all health & sport education learners. Bravo PJOK.	Reliable e-modul without revision
4	Expert Material 2	Revised based on the suggestions	Reliable e-modul without revision
5	Language Expert 1	Applicable	Reliable e-modul without revision
6	Exeprt Language 2	Revised based on the suggestions	Reliable e-modul without revision

The table shows some corrections from the language expert I. The expert suggests 1) putting a profile of the author after the bibliography, 2) writing the bibliography based on correct writing technique, and 3) providing a learning evaluation and method to assess the learning. The researchers revised the product based on those suggestions.

From the explanation, the researchers concluded the experts' judgment as shown in this table.

Table 6. The conclusions of the experts

Number	Experts	Percentages	Category
1	Media	88	Very reliable
2	Learning	96	Very reliable
3	Language	88	Very reliable

Product Trial Run

After being revised, the researchers tested the product. In this process, the researchers used a smartphone or online media. On the other hand, the learners received an explanation of this research objective. The e-module file format was EPUB. For learners that could not run the file, they received a book reader application. Then, all learners studied the module within the given time. The following step was - instructing the learners to fill out the online questionnaire form. This questionnaire was useful to determine the strength, weaknesses, and responses of the learners toward the developed module.

The researchers tested the module via online mode for XI graders of 10 Senior High Schools in Kudus. The researchers did this process by involving every physical education and sports teacher in the schools. In the beginning, the researchers shared the pretest.

Then, the researchers shared the interactive e-module for the learners to study. After that, the learners worked on the posttest with the same questions. In this stage, the researchers aimed to find out the differences between the pre and post-module implementation. The researchers did this by comparing the pretest and posttest results.

The First Product Revision

The researchers used the trial run test and questionnaire results to find out the shortcomings of the products. Then, the researchers revised the products based on the results and the experts' suggestions.

Product Trial Use

After analyzing comprehensively, promoting small-scale tests, and revising the product, the researchers promoted large-scale tests. The researchers involved 10 schools, 5 Public Senior High Schools, and 5 Private Senior High Schools. The researchers shared the pretest for the learners to determine their initial cognition about physical fitness. Then, the researchers shared the post-test with the learners. The posttest was useful to evaluate the improvements or changes from the previous condition. After that, the researchers distributed the online questionnaire about the developed module.

Final Product Revision

The researchers analyzed the obtained questionnaire results to determine the strength and shortcomings of the product. Then, the researchers revised the products to realize a reliable and effective module for XI graders.

In this research, the module had three components: the front part, the content, and the closing part. The front part, the homepage, consisted of a cover, preface, instructions to use, and table of contents. The content of the module consisted of three units. At the beginning of the content, readers could read the basic competence, learning objective, and conceptual map of the module. Then, the readers could also read the motivation and apperception as the trigger to elicit readers' curiosities in studying the module.

In Unit 1, the module contained some differences in physical activity, physical exercise, and exercise. The unit also provided how to optimally exercise and calculate the pulse while exercising. In Unit 2, the readers could study health and skill. In Unit 3, the module discussed the Physical Fitness Test of Indonesia, TJKI, for various exercise types. The unit also explained the method to promote the test, calculate the result, assess - especially for senior high school learners, and interpret the final results or conclusions.

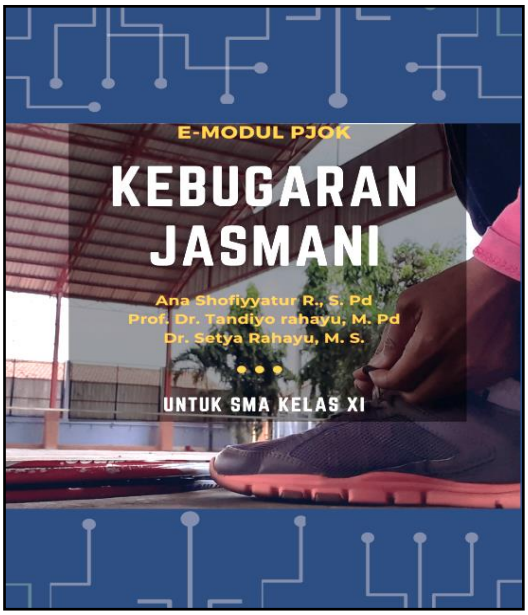

Figure 8. The cover of e-module

The closing part of the module consisted of reflection on the materials, physical and fitness tips, summary, and assessment (study case, exercise, and physical task). The last element of the closing part consisted of the bibliography and profile of the author.

Figure 9. The tips written in the module

The developed module did not only provide materials, but also study cases, exercises, and physical tasks. The study cases and the question exercises encouraged learners' cognition of the studied material. The

learners had to analyze the presented problems. The physical tasks had clear instruction to train learners' psychomotor. In the module, the guideline of writing a report facilitated learners to practice autonomously and honestly as part of the affective aspect value.

The production of the module had a user-convenience orientation. Cahyaningrum & Jaenudin (2021) and Permata et al. (2021) Explain that the module should be convenient for the users. Thus, a module could support the cognitive and psychomotor constructions of the users. In this research, the researchers linked the table of contents with the targeted pages. Thus, when the readers clicked the table of contents, the link would bring them to the targeted pages. This module also had some instructions to facilitate readers accessing the interactive e-module. The module also contained simple materials and colorful figures to clarify the content. The module also had direct video links to YouTube so that learners could study better.

The respondents from 5 Public Senior High Schools and 5 Private Senior High Schools worked on the online questionnaire. The questionnaire consisted of 10 questions times about the interactive e-module convenience. After studying the module, the respondents worked on the questionnaires to evaluate the module.

The researchers used the Liker scale with five answers. They are: very agree (SS), agree (S), neutral (N), disagree (TS), and extremely disagree (STS). In this process, the researchers involved 581 learners from 5 Public Senior High Schools and 5 Private Senior High Schools.

In this research, the researchers also determined the pre and post conditions of the developed module implementation for the learners. The researchers shared the pretest and posttest for the participants. The tests consisted of identical 10 questions. Then, the researchers analyzed the data with SPSS. Here are the results.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE TEST	40.9524	819	16.71921	.58422
	POST TEST	64.9328	819	14.99272	.52389

Figure 10. The obtained mean of pretest and posttest at public senior high schools

The means of the tests are 41 for pretest and 65 for posttest at Public Senior High Schools. The mean scores indicated a difference between the pre and post-module implementations. The same finding was also observable at Private Senior High School. For the Private Senior High Schools, the researchers applied the same data processing technique. Here are the results.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE TEST	38.4914	232	15.37018	1.00910
	POST TEST	61.1207	232	13.27508	.87155

Figure 11. The obtained mean of pretest and posttest at private senior high schools

From the data processing stage, the researchers obtained the same significant scores between the pre and post-module implementations. In this research, when the significant score is less than 0.05, the result has a significant difference. On the other hand, if the significant score is higher than 0.05, the result has no significant difference.

The significant scores of Public and Private Senior High Schools are 0.00. Thus, based on the conditions to make a decision, 0.00 < 0.05, the interactive e-module with physical fitness material for XI graders was significant. The evidence was the difference between the pre and post-module implementation results at Public and Private Senior High Schools. Simonson et al. (2021) explain that significant value and the difference between pretest and post-test results became the indicators of excellent product development.

The researchers took the data online since at that time the spreading speed of the omicron typed COVID-19 virus was high. Thus, many schools in Kudus applied online

learning, moreover for schools under the supervision of the Province Government. In this research, the limitations were:

At public schools, the researchers could only share the instructions via WhatsApp. Then, these instructions were forwarded by physical education and sports teachers of each school to their XI graders.

At public schools, although they had offline learning, indoor-class learning was limited. The principals also suggested the researchers not interrupt the learning activities. On the other hand, some learners did not have smart gadgets so they could not participate in this research.

Since the instructions were shared on online media, the results were not optimal even when the researchers collaborated with the physical education and sports teachers of each school. For example, the researchers instructed the learners to follow the research flow, starting from 1) working on the pretest, 2) studying the interactive e-module, 3) working on the posttest, and 4) filling out the questionnaire about the product convenience.

From 1947 learners of 5 Public Senior High Schools, only 819 or 42% were eligible for further analysis. On the other hand, from 5 Private Senior High Schools, only 232 or 38% out of 614 were eligible for further analysis.

Table 7. The recapitulation of pretest & post-test completions

NO.	Schools	Not working the pretest	Not working the posttest	Working on the pretest and posttest	Not working the pretest and posttest	N
1	NEGERI	57	437	819	634	1947
2	SWASTA	3	130	232	249	614

The developed module for physical fitness material had these strong points:

The accessibility via the blue-colored link. The module's appearance as a *handout* to facilitate readers moving to the next pages. The linked table of contents with the targeted pages. Interactive and simple language with figures and video links to facilitate learners' understanding. The assignments in the forms of study cases, exercises, and physical tasks to do autonomously.

On the other hand, the shortcomings of the module were:

The Internet access requirement or adequate Internet balance. The requirement o use gadgets with compatible Internet access.

CONCLUSION

The results and the discussion about the product development showed that: 1) the product, an interactive e-module of physical fitness material for XI graders, was accessible from the link https://bit.ly/PJOKKebugaran_XI via WhatsApp, and 2) the experts deemed the product valid with an average percentage of 90%, and 3) the product was effective because the significant level was 0.00 < 0.05. The researchers suggest the implementation use of the developed product for broader users of XI graders at Senior High Schools.

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