Implementation of Gender-Based Interactive E-Module Learning Media

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Abstract
This research aims to determine the validity and practicality of gender-based interactive e-modules, which are innovative media developed to increase students' interest in learning, as well as introducing learning media that is not gender biased so that it can be well received by male and female students, without distinguish between the two in the learning process, specifically in the availability of teaching materials or learning media in schools. This research method uses a development model that was developed using the Research and Development (R&D) method, namely research that creates, produces or develops a product in the form of planning through to evaluating the validity of the product that has been produced. This research uses the ADDIE model, where the ADDIE model consists of 5 stages which include analysis, design, development, implementation and evaluation, but this research only reaches the development stage. The data collection techniques used were observation, interviews and distributing questionnaires. The data analysis technique used is analysis of the validity and practicality of interactive e-modules with a Likert scale measurement scale. The results of the development of this interactive e-module were validated by experts including media experts with results (98.75%), material experts (98.88%), language experts (95%), and gender experts (98.46%) with The average validation result (97.77%) is "very valid" and suitable for use. The results of the interactive e-module practicality trial obtained scores from educators (94.44%), one to one (88.71%) and small group (92.71%) with average results (91.95%) which were categorized as very practical to apply during the learning process.

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Abstrak
Penelitian ini bertujuan untuk mengetahui validitas dan praktikalitas e-modul interaktif berbasis gender merupakan media inovatif yang dikembangkan guna meningkatkan minat peserta didik dalam belajar, serta mengenalkan media pembelajaran yang tidak bias gender agar bisa diterima dengan baik oleh peserta didik laki-laki maupun perempuan, tanpa membedakan antara keduanya dalam proses pembelajaran khusus nya dalam ketersediaan bahan ajar atau media pembelajaran yang ada di sekolah. Metode penelitian ini menggunakan model pengembangan yang dikembangkan menggunakan metode *Research and Development* (*R&D)* yakni penelitian yang membuat, menghasilkan atau mengembangkan sebuah produk dalam bentuk perencanaan sampai ke evaluasi validitas terhadap produk yang sudah dihasilkan. Penelitian ini menggunakan model *ADDIE*, dimana pada model *ADDIE* yang terdiri dari 5 tahapan yang meliputi analisis, desain, pengembangan, implementasi dan evaluasi, namun penelitian ini hanya sampai pada tahap pengembangan. Teknik pengumpulan data yang dilakukan yaitu observasi, wawancara dan penyebaran angket. Teknik analisis data yang digunakan yaitu analisis kevalidan dan praktikalitas e-modul interaktif dengan skala pengukuran skala *likert.* Hasil dari pengembangan e-modul interaktif ini divalidasi oleh para ahli diantaranya ahli media dengan hasil (98,75 %), ahli materi (98,88%), ahli bahasa (95 %), dan ahli gender (98,46 %) dengan hasil rata-rata validasi (97,77%) “sangat valid” dan layak digunakan. Hasil uji coba praktikalitas e-modul interaktif memperoleh nilai pendidik (94,44%), *one to one* (88,71%) dan *small group* (92,71%) dengan hasil rata-rata (91,95%) yang dikategorikan sangat praktis untuk diterapkan saat proses pembelajaran.

I. INTRODUCTION

Technology has influenced various aspects of the world, including the world of education (Jannah, 2020). Where 21st century learning is required to always be able to adapt to current developments. In this case, learning in schools should undergo changes in the implementation of teaching materials that serve as guidelines in the learning process that help educators and students in obtaining information. The changes

that should be implemented are developing and utilizing teaching materials into good solutions or alternatives. It can be seen that every year the learning media used in the world of education continues to develop.

Currently, the function and content of textbooks has shifted from what it should be. Textbooks should function as learning resources that are packaged through a good preparation process, namely they have been prepared, designed, studied and even tested. The element of appropriateness of material that contains an implicit agenda (hidden curriculum), in this case gender, which should be a concern, appears to be ignored. Awareness and knowledge about the importance of gender equality is a must for educators. Therefore, by knowing the ideology contained in textbooks, it is hoped that you will be able to actively participate in providing knowledge about gender equality when using them, both explicitly and implicitly (Yonata, 2022).

In order to create a perception about gender that prioritizes the principle of gender mainstreaming, researchers developed gender-based teaching materials, namely e-modules. The interactive e-module itself is a development of conventional module teaching materials which will later be developed into electronic learning media that is designed systematically and interactively. Where aspects of making this module will be seen in 3 gender settings, namely color, language and appearance.

Based on interviews conducted with science teachers and students at one of the State High Schools in Central Maluku, it is known that teachers have used modules in the learning process, but electronic ones have never been developed. The science teacher added that the material in the module was still less interesting, in terms of appearance and explanation, it was still less attractive to students. One of the students also said that the learning modules available at school were not well understood because the material listed was very dense in writing, which made them boring to read, which was why their score was still below the KKM, namely 75, determined by the school.

Based on the results of a needs questionnaire that was distributed to class Of all the science lessons that have been studied, the thing that is felt to be difficult is the material on additives and addictive substances, especially on the material on addictive substances, students find it difficult to recognize and group types of drugs into groups, clearly in line with the rampant cases of drug abuse in the school environment which are still being widely discussed. , the biggest reason is the lack of understanding and campaigning for the prevention of these substances.

The sad thing is that the majority of users are men, environmental and social factors are the cause, where men's environment is wider than women's, especially because of the habits of men who prefer hanging out and hanging out with their peers compared to women. From this case, the author is interested in adopting this material into the e-module that will be developed. Based on the needs analysis, there is a need for teaching materials in the form of learning modules that can help students understand the material more effectively and efficiently. One way that can be used is using interactive e-modules.

Kurniawan et al. (2018) said that e-modules can increase learning motivation, creativity and realize the principle of sustainable, unlimited progress in students' learning systems. This statement is strengthened by Gevi and Andromeda (2019) who state that e-modules can provide solutions for students to be able to use information and communication technology wisely.

Based on the description that has been outlined, the researcher aims to create a perception about gender that prioritizes the principles of gender mainstreaming, by developing gender-based teaching materials, namely interactive e-modules.

II. METHOD

This research was carried out in September – October 2023 at SMK Negeri 1 Central Maluku. This type of research is R&D (Research And Development). R&D is a research method used to produce certain products by testing the validity and practicality of the product. The development model used is ADDIE. The data collection techniques in this research are observation, interviews and documentation.

III. RESULT AND DISCUISION

A. Result

The research and development that has been carried out has resulted in a product in the form of a "Gender-based Interactive E-Module". The material in the e-module is addictive and addictive substances found in class IX which can be used by teachers in the classroom or independently by students at any time and at any time with the help of this learning e-module. The development stages using the ADDIE model are: a) Analysis stage

b) Design stage c). Design (development) stage. So, based on the research carried out by the authors, the results obtained are as follows:

1. Validity of interactive e-modules

Validation of the development of gender-based interactive e-modules was tested by 4 experts consisting of 1 material expert lecturer, 1 language expert lecturer, 1 media expert lecturer, 1 gender expert lecturer. The criteria for determining experts are: (a) experienced in their field, (b) have at least a master's degree or are currently pursuing a master's degree. Validation was also carried out by 3 practitioners including science teachers with the following criteria: (a) Experience in their field, (b) have a minimum SI education, (c) Are science teachers. The assessment instrument uses a Likert scale. The results of the 4th expert validation are as follows:

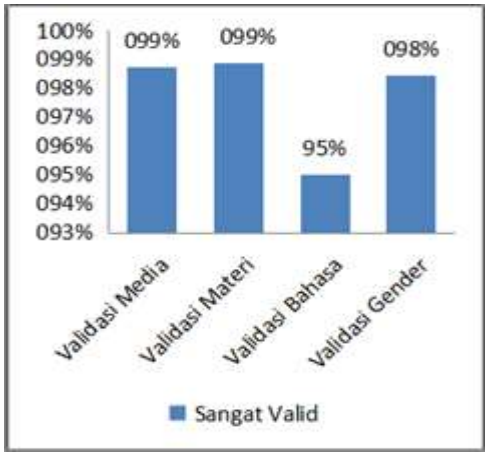

Figure 1. Expert validation results

From the results of the validation diagram above, the assessment results from the validator are obtained: a) media expert with a score of 98.75% in the very valid category, b) material expert with a score of 98.88% in the very valid category, c) language expert with a score of 95% very valid, d) gender expert 98.46% with very valid category. From the four validator values, an average validation value of 97.77% was obtained with the validation category "very valid".

2. Practicality of interactive e-modules

In carrying out practical trials, the first step taken by researchers was to distribute gender-based interactive e-modules in PDF form to students, then the researchers explained the purpose of each activity in the product. The next step is to provide a questionnaire assessing students' responses to the product that will be developed and which students will fill out through a questionnaire sheet that the researcher has prepared.

The practicality trial of the gender-based interactive e-module was carried out after the product design was validated through expert assessment. From the trial, weaknesses could be identified and then revised according to input from the validator. Practicality trials were carried out first using 3 students (one to one) after that creating small groups of 15 people (small groups) and practicality trials were carried out in class IX Science, with 1 science subject teacher. The following practical responses from educators and students can be seen in the following figure:

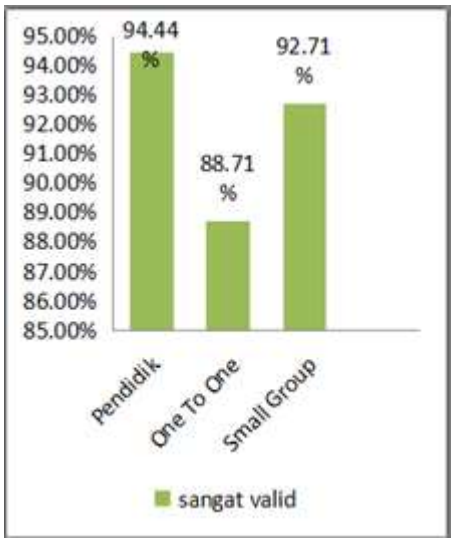

Figure 2. Results of practicality responses

From the results of the practicality diagram above, the assessment results obtained from respondents are: a) educators with a score of 94.44% in the very valid category, b) one to one test with a score of 88.71% in the very valid category, c) small group test with a score of 92 .71% is very valid. From the three respondents' scores, an average practicality score of 91.95% was obtained with the validation category "very valid".

B. Discussion

This research is research into the development of interactive e-modules, where according to Seruni et al., (2019) the existence of interactive e-modules is expected to

increase enthusiasm for learning not only at school but also independently anywhere and at any time. Based on the explanation above, the authors developed teaching materials in the form of gender-based interactive e-modules. The reason for taking this gender basis is to provide knowledge about the importance of gender equality when using it, both explicitly and implicitly in learning media.

Creating this gender-based interactive e-module is not easy to do. Bearing in mind that there are several obstacles that occur in this development stage, including adjusting the material to core competency standards and basic competencies and conformity with the phoneme that is the background of this research, placement of image and video layouts that are adapted to the material and research time which is hampered due to the difficulty of filing. research permission letter. The authors have gone through expert validation and the science teacher response stage as well as testing with students using small group tests and one to one tests with very decent scores, so they have successfully developed a product in the form of a gender-based interactive e-module.

The process of developing this interactive e-module consists of several stages, first conducting pre-research by conducting interviews, observations and filling out questionnaires with students and teachers with the aim of finding out how science learning is carried out in the school, then the data obtained is used as initial data analysis. need. Both stages of e-module design use the Canva application. Third, the product development stage is validated by experts and practicality by respondents. Where according to Yaumi (2018), the validation stage aims to ensure the validity of the product is developed so that data can be obtained about product deficiencies or weaknesses. These deficiencies will then be corrected by researchers and then the development will be suitable for testing on students.

In line with this, according to S. Nasution (2018), the stages of creating e-modules have a complete series that stands alone and consists of a series of learning activities that are arranged to help students achieve a number of formulated goals, so that by using e-modules Students can learn independently and can achieve learning goals according to existing competency aspects.

The characteristic of the gender-based e-module that differentiates this e-module from other modules is that by using 3D objects and using gender-based media, students can learn by using the two hemispheres of their brain synergistically. Synergistic thinking activates all the functions of 2 parts of the brain at once, that is the purpose of interactive because it contains interesting elements of color, video and images. The aim of developing this e-module is to be a solution to the existence of gender bias in learning media, as well as providing educational advice for the phenomenon behind this research, namely preventing additive abuse through education for students to learn.

According to (Pujiyanti, 2021), it is argued that the use of teaching media in the teaching and learning process can be used to stimulate thoughts, feelings, attention and abilities or learning skills so that it can encourage a more effective learning process.

From the results of this research, it is also known the advantages and disadvantages of the interactive e-module that has been developed, that learning with interactive e-modules can make learning easier because this material is complete according to existing KD and KI. Apart from that, this gender-based interactive e-module is presented with interactive pictures and videos in it, the material is presented briefly and clearly. Students' memory in the learning process increases as a result of the teaching and learning process using gender-based interactive e-modules. Apart from that, the advantages obtained by using gender-based interactive e-modules also have weaknesses. This weakness is that the development of this interactive e-module uses the Canva application which is only accessed online to enter the application, some of the features can only be accessed when using an account. premium. In the future, if you want to use the same media, you can use additional applications such as Book Creator, YouTube, Google Drive, Plipbook Maker Pro, and others.

IV. CONCLUSION AND SUGGESTION

A. Conclusion

Based on the results of the research and discussions that have been carried out, the conclusion is that the gender-based interactive e-module was declared valid by obtaining an average assessment result from material, media, language and gender

validators of 97.77% with the validation category "very valid". The gender-based interactive e-module was declared practical by obtaining an average result from the student and teacher response questionnaire of 91.95% with the validation category "very valid".

B. Suggestion

The suggestions given to future researchers are expected to be able to maximize the gender-based e-module, then be able to develop this research.

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