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Development of Interactive E-Modules on Drawing Female Body Anatomy Comparison of 11xHead Height in Class X

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ABSTRACT
Students of SMK Negeri 3 Kota Solok have difficulty learning the basics of fashion learning material on drawing body anatomy as a basis for designing clothes. Therefore, the development of interactive e-modules aims to be an alternative means to help in learning the basics of fashion. This study uses a 4D (four D) development model, consisting of Define, Design, Development, and Disseminate, and this study was only carried out up to the development stage. The data collected from this study are data analysis of media validity tests and practicality tests. Based on the results of the study, it can be concluded that the e-module of anatomical drawings for fashion students that was developed is valid and practical, thus the interactive e-module of the material on drawing the anatomy of a woman's body with a ratio of 11xhead height is suitable for use as a learning medium at SMK Negeri 3 Kota Solok.

KEYWORDS

Instructional Media, Interactive E-Module, Draw, Anatomy, Software, E-Learning

INTRODUCTION

SMK Negeri 3 Kota Solok is one of the vocational high schools that has implemented independent curriculum. The Independent Learning Curriculum launched in 2022 is an improvement on the 2013 Curriculum (Curriculum and Textbook Center, 2020). SMK Negeri 3 Kota Solok has currently implemented the Independent Curriculum in grades X and XI, while grade XII still uses the 2013 curriculum. One of the majors or expertise programs at SMK Negeri 3 Kota Solok is Fashion Design. The implementation of the Independent Curriculum in grade X Fashion Design can be seen in the productive subjects of vocational competencies called Fashion Basics. The change from the 2013 curriculum to the independent curriculum has brought about changes in learning terms. One of the changes in terms is that the Fashion Design subject in the independent curriculum is referred to as the Fashion Drawing element.

Based on Learning Outcomes (CP) in the Fashion Drawing element, there is material that is expected to be mastered by students, namely anatomical drawings, students are expected to be able to apply and create anatomical drawings of the body as the main basis for drawing fashion. Students because this is a basic competency and a prerequisite for following the next learning. Applying concepts and creating anatomical drawings is a first-level design subject in studying fashion design, so that grade X students still find it difficult to follow the learning. This is because drawing anatomy is new material for grade X students, as well as an interest in learning to draw, especially drawing anatomy.

Based on an interview with the teacher in charge of the subject of fashion basics, fashion drawing

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elements, namely Anita Rahma, S.Pd on August 4, 2023, it was stated that in the Fashion Drawing element there are learning materials and competencies that are difficult for students to achieve. Judging from the students' assignment scores. 16 students out of 26 grade X students got low scores in the competency of drawing female body anatomy manually.

Based on the results of the female anatomy drawing assignment, there are still many students who do not properly understand the size and location of body parts and do not understand the steps for making anatomical drawings so that students find it difficult to complete independent assignments on making anatomical drawings. From the explanation of the teacher in charge of fashion drawing elements, the learning media used so far in learning to draw fashion is the board media.*(board)*in the form of a whiteboard and still visual media, namely in the form of images/photos from the internet and displays*power point.*

However, the existing media has not helped students much in the learning process. so it needs to be assisted by using learning media that can be viewed by each student repeatedly and can be accessed during class learning or outside of learning, for example to make it easier for students to practice at home. Meanwhile, the learning method that has been carried out is in the form of explicit body anatomy drawing exercises, namely students take turns to the front to practice and correct body anatomy drawings and are guided by demonstrations by the teacher, but due to time constraints not all students get a turn to the front.

The problems encountered indicate that the learning objectives in the material of drawing fashion have not been achieved optimally. Learning objectives can be achieved with many solutions, one of which is by using the right learning media. The Department of Education and Culture (1992:79) explains that the use of media in the learning process can arouse students' interest and motivation to learn, avoid verbalism, arouse orderly, systematic reasoning, and to foster understanding and develop values in students. However, currently in learning to draw body anatomy there is no use of varied learning media that can attract students' attention.

Based on the explanation above, the researcher offers one alternative interactive learning media in the form of an Interactive e-module, namely a learning media that combines text media, image media and video media in one interactive e-module application for the material of drawing the anatomy of the female body, a comparison of 11 X head height. The purpose of this study is to produce a valid and practical interactive e-module learning media used in learning fashion drawing elements

METHOD

The type of research used is research and development.*(Research and Development)*. This research develops interactive e-module media on the subjects of fashion basics, fashion drawing elements, body anatomy drawing materials, comparison of 11 x head height. The research and development procedure of this interactive e-module media will be developed with a 4-D model.*(four-D models)*.and this research was only conducted up to the stage *develop*only. The implementation of the trial of the interactive e-module learning media product was carried out after the initial product design was validated by experts. The trial was conducted to determine the responses of teachers and students to the media and the role of interactive e-module media in the learning process. The data collection process in this study used a questionnaire that was measured using a scale*Likert.*The data analysis technique was carried out using descriptive analysis to describe the validity of the media and practicality tests through student responses and teacher responses to the interactive e-module media that will be developed.

1. Learning Media

Learning media is an important part of the learning process so that the learning process becomes more focused, organized, has guidelines and has planning that is in accordance with educational goals, and as a tool or means that helps the learning process to be easier and more efficient (Indriyani, 2019:19). According to (Cahyadi, 2019:3) explains that learning media is a tool, means, infrastructure, and connector for to spread, carry or convey a message*(message)*and ideas, so that they can stimulate students' thoughts, feelings, actions, interests and attention in such a way that the teaching and learning process occurs in each student.

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According to Oneika & Masniladevi (2019), learning media functions to convey the message clearly, so that learning objectives are achieved better and more perfectly. With the presence of learning media, the atmosphere of the learning process becomes more interesting and students are enthusiastic in participating in learning so that the learning material delivered by the teacher can be more easily accepted. Therefore, learning media is interpreted as a tool to help teachers convey learning materials to students.

Based on the opinion above, it can be concluded that media has a function and benefits as a means or tool used to convey messages from the sender to the recipient with the aim of increasing the recipient's understanding of the message to overcome limitations of space and time.

2. Interactive E-Module

Along with the development of technology, printed teaching materials have also developed into electronic teaching materials, for example e-books, e-LKPD, and e-modules (Elvarita, et.al, 2020). In general, the characteristics of e-modules are the same as the characteristics of modules, namely*self instructional, self contained, stand alone, adaptive, and user friendly.*According to Kuswandi (2021:23), other characteristics are found in e-modules, namely the arrangement of fonts, spacing, and layout of the manuscript remains/consistent, the presentation of e-modules is in accordance with the presentation requirements on electronic media, there is the use of multimedia in its presentation, the use of features using applications*(software),*special design according to learning principles.

From the explanation above, it can be concluded that interactive e-modules are the presentation of teaching materials in electronic form that can be accessed via mobile phones according to the specifications of the e-module product that is compiled. While interactive is e-modules presented in a more attractive form by combining several media, both visual and audio, so that there is a combination of several programs in an application that makes students active, independent and utilizes their technological knowledge.

3. Anatomical Images

According to Badiran and Sukaryono (1981:81) human anatomy is knowledge that includes human bones and muscles and then breaks them down into several parts to find out the relationship between one part and another. In line with this opinion, body anatomy is the parts of the body consisting of the head, body, two hands, two legs and parts of the face, namely the nose, eyes, ears, mouth and hairstyle (Yusmerita, 2007:22). According to Mustika (2020) Body anatomy is very important, especially for a designer to express his ideas and ideas to others. Fashion design on body anatomy has a very big influence on the clothing models presented. Designs that are poured into body anatomy will look clearer and more attractive than designs without body anatomy. According to Ernawati (2008:216) there are several things that need to be considered to draw body anatomy with ideal dimensions: a) Comparison of height and width of the body b) Position of body parts c) Attitude, style and body movement d) Fall of clothes on the body.

The anatomical image of the body has certain proportions. As Agusti Efi, (2012:1) stated that "The size and proportion factors also cannot be ignored, the proportion in fashion design is more related to the shape of the wearer's body and the clothes worn. No matter how good the clothes are, if the body shape of the person wearing them does not support them, then the good clothes do not look good". Based on one of the research results developed by Prof. Agusti Efi.MA. He is a lecturer who teaches fashion design including the science of human anatomical images. The body proportion of 11 X height is a body proportion that has body part sizes that are easy to follow and*simple*. The proportion of the body is 11 times the height of the head in the illustration. Included in the proportion with the extension using a ratio of 9–12 times the height of the head.

Based on the explanation above, it can be concluded that the anatomical image of the body has a very large purpose and influence on the clothing models presented. The design that is poured into the anatomy of the body will look clearer and more attractive than without the anatomy of the body. So in the study, the researcher will create learning media as a guide that makes it easier for students to create components of the anatomical image of the body and the proportions of the female body, a comparison of 11 X head height

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4. Validation Test Analysis

Based on the validation questionnaire, several steps were taken, namely:

1) Scoring the answers with the following criteria:
   SS = Strongly Agree (Score 4)
   S = Agree (Score 3)
   TS = Disagree (Score 2)
   STS = Strongly Disagree (Score 1)

2) Determine the high score
   High score = Many validators x Many indicators x Maximum score

3) Determine the number of scores obtained from each validator.
   Validity Level = $\frac{\text{Number of chords obtained}}{\text{Highest score total}} x\ 100\%$

4) Giving validation values:

Table 1. Interpretation of Product Validity Data

No	Interval	Criteria
1	90% – 100%	Very Valid
2	70% – 89%	Valid
3	50% – 69%	Quite Valid
4	30% – 49%	Invalid
5	20% – 29%	Totally Invalid

Source: Adapted from Sugyono (2013:99)

5. Analysis of Practical Results

The analysis of the results of the practicality test was compiled based on a Likert scale according to Arikunto (2012:180) with four alternative answers carried out using the following steps:

1) Score the answers using the following criteria:
   SS = Strongly Agree (Score 4)
   S = Agree (Score 3)
   TS = Disagree (Score 2)
   STS = Strongly Disagree (Score 1)

2) Determine the high score
   High score = Many validators x Many indicators x Maximum score

3) Determine the number of scores obtained from each validator.
   Practicality Level = $\frac{\text{Total scores obtained}}{\text{Highest score total}} x\ 100\%$

Table 2. Interpretation of Product Practicality Data

No	Interval	Criteria
1	90% - 100%	Very Practical
2	70% - 89%	Practical
3	50%-69%	Quite Practical
4	30% - 49%	Not Practical
5	20% - 29%	Very Impractical

Source: Adapted from Sugyono (2013:99)

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RESULT AND DISCUSSION

1. Defenition Stage

At this stage, there are five steps taken, namely front-end analysis, student analysis, task analysis, concept analysis, and learning objective analysis. Based on the results of interviews conducted with teachers of the basic fashion subjects of fashion drawing elements, there is information regarding problems regarding the learning process in explaining the steps of drawing the anatomy of the body along with the proportions of a woman's body using media. Boarding the form of a whiteboard that is less flexible in its use, the use of images so that body proportions are not available, there is no media that explains the steps for drawing female body anatomy based on interactive multimedia in learning so that students are less than optimal in drawing human body proportions. Therefore, media development is needed—modular interactive in the form of applications that can support the learning process. Furthermore, based on student analysis, in the use of interactive e-module media, students become more enthusiastic and motivated in learning because students can see and witness directly the displays of the material to be studied. Then, for the analysis of the tasks that are used as a benchmark for student abilities, are in the form of multiple choice exercises, essays, and self-reflections contained in the interactive e-module media. Furthermore, for the analysis of the concept itself, it is arranged systematically and through discussions with the teacher in charge of the elements of drawing the material mode of drawing anatomy so that the material presented in this interactive e-module media is the basic concept of human anatomy and drawing the proportions of the human body.

2. Planning Stage (Design)

This stage is carried out by starting from media selection, format selection, and initial design of interactive e-module media. The media selected is an interactive e-module with a display format starting from the intro menu, and the main menu, the main menu consists of several sub-menus, namely the e-module description menu, the e-module usage instructions menu, the learning menu, the video tutorial menu, the evaluation menu and the e-module compiler profile menu on the side layout. The following are the results of the interactive e-module media display design:

Figure 1.Appearance*Cover*

Figure 2.Interactive E-Module Application Main Menu Display

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3. Development Stage

Based on the research conducted, the results of validation and student responses to interactive e-module media on anatomical drawing material were obtained as follows:

1) Validation of Interactive E-Module

The validation of the Interactive E-Module media was taken in two aspects, namely the design aspect of the interactive e-module media and the material aspect contained in the interactive e-module media. Validation data was taken from validators consisting of 1 media aspect validator and 2 material aspect validators. The results of the media validation test data can be seen in table 3 below:

Table 3. Interactive e-module Media Validation Results

Assessment Aspects	Validity Value %	Category
Display EligibilityScreen design	96.42%	Very Valid
Feasibility Ease of use	100%	Very Valid
Consistency Eligibility	100%	Very Valid
Eligibility for Benefit	100%	Very Valid
Graphic Eligibility	92.85%	Very Valid
Total	385.27%	Very Valid
Average	**97.85%**	**Very Valid**

The average result of the overall media validation test value is 97.85% with a very valid category. This means that from the media aspect, the interactive e-module produced is good. Then the results of the material validation test on the interactive e-module media are summarized in the following table 4:

Table 4. Interactive e-module Material Validation Results

Assessment Aspects	Validity Value %	Category
Content Eligibility	93.33	Very Valid
Language Eligibility	97.91	Very Valid
Presentation Eligibility	95.83	Very Valid
Total	287.07	Very Valid
Average	**95.69**	**Very Valid**

The average overall result of the validation test value on the material expert is 95.69% with a very valid category. From the results obtained, it can be interpreted that the material presented in this interactive media is in accordance with the learning indicators. After the results of the media validation and the results of the material validation are combined, the final result of the interactive e-module media validation on the Anatomy drawing material is 96.77% with a very valid category and is suitable for use as a learning medium.

2) Student respons

The interactive e-module media that has been declared valid by the validator was then tested on class X Fashion Design students in the 2023/2024 academic year at SMK Negeri 3 Kota Solok. This trial was conducted on two groups, namely a small group of 10 people and a large group of 25 people. Student response data on the use of interactive e-module media in the small group was 85.35% with a practical category. While in the large group, the student response data obtained a score of 84.82% with a practical category. Based on the percentage data of student responses, it can be concluded that this interactive e-module media can be used positively with an average of 85.08% with a practical category.

3) Teacher Respons

Teacher response data on the use of interactive e-module media is 97.65% with a very practical category. Based on the percentage data of large group student responses and teacher responses, it can

be concluded that this interactive e-module media can be used positively, with an average of 91.23% obtained with a very practical category.

Based on the results of the respondent's research in the field test, the assessment of the media aspect is grouped into five categories, namely the feasibility of the screen design display, the feasibility of ease of use, the feasibility of consistency, the feasibility of usefulness, and the feasibility of graphics. From the results of the data analysis of the five aspects, very valid results were obtained with an average of 97.85%. While based on the results of the field test, the material aspect was grouped into three specs, namely the feasibility of content, the feasibility of language, and the feasibility of presentation. From the results of the analysis of the three aspects, very valid results were obtained with a category of 95.69%.

Based on these results, it can be concluded that this interactive e-module media is attractive in terms of appearance, uses text, images, and videos that support the material, the language, and sentences used are clear and communicative, and interactive. This interactive e-module media can be used as a flexible learning media in its use. According to Delianti (2013:5), Interactive media can be used at any time, and the selection of materials can be adjusted according to your wishes.

In terms of material, interactive e-module media can be stated as being in accordance with basic competencies. The material presented is arranged systematically referring to learning outcomes (CP). According to Sumarni (2005:5), material validation is said to be valid if the material presented is systematic and easy to understand and in accordance with the competencies to be achieved. Based on student responses, the interactive e-module media developed can be interpreted and is easy to use. The interactive e-module media material on drawing female body anatomy with a ratio of 11 x head height can make it easier for students to learn, increase learning activities, and motivate students in drawing human body proportions. So it can be concluded that the interactive e-module media developed is practical and feasible to use in learning anatomical drawings.

CONCLUSIONS

Based on the results of the research that has been done, an interactive e-module media is produced on the subjects of fashion basics, fashion drawing elements, anatomical drawing materials packaged in a modular application which contains interactive multimedia with basic concepts of human anatomy and drawing the proportions of a woman's body, a comparison of 11 x head height. The development of this interactive e-module media uses a 4D model with the stages of definition, planning, and development. The interactive e-module media developed is suitable for use in learning fashion drawing, material for drawing the anatomy of a woman's body, a comparison of 11 x head height with an assessment of the results of the validation test from media experts and material experts obtained an average of 96.77% with a very valid category, and field trials on small and large group students obtained an average of 85.08% with a practical category.

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