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Development of Digital Fashion Illustration Media Using Ibis Paint X Software to Improve The Competence of UNNES Fashion Students

Roudlotus Sholikhah[1], Widowati[2], Sita Nurmasitah[3]

[123]Universitas Negeri Semarang, Indonesia

Keywords

Development, Learning Media, Digital Fashion Illustration, Ibis Pant X

Abstract

This study aims to develop digital media in the form of learning videos on the eyes of Digital Fashion Illustration with Ibis Paint X software so that it can be used in learning and can improve student competence. This research is development research which refers to the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation) which includes: (1) the analysis phase, (2) the design phase, (3) the development phase, (4) implementation stage (trial), (5) evaluation stage. Digital media in the form of learning videos on the eyes of Digital Fashion Illustration with Ibis Paint X software that has been developed has been tested for eligibility by validators of media experts and material experts, as well as eligibility trials based on student responses of 40 students. The results of this study are in the form of digital media learning videos on the eyes of Digital Fashion Illustration with Ibis Paint X software. Based on the stages of media development that have been carried out, the final results of the eligibility assessment by media expert validators are 91.6% (very eligible), and the final eligibility assessment by the material expert validator is with a percentage of 97.5% (very eligible). At the implementation stage, the average result of the assessment based on the test student responses was 9.2 from the ideal score of 10 with a percentage of 92% (very positive). Thus, it can be said that digital video learning media for Digital Fashion Illustration with Ibis Paint X software is an eligible and practical medium to be used in learning Digital Fashion Illustration courses.

*Correspondence Address:
E-mail: roudlotus_sholikhah@mail.unnes.ac.id

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INTRODUCTION

The 4.0 Industrial Revolution has changed the paradigm of education in Indonesia, including learning. Learning activities that have been taking place in the form of face-to-face directly have turned to virtual learning. In addition, the emergence of the COVID-19 pandemic has added to the complexity of the learning process that has been taking place in face-to-face and hybrid learning. This condition required a change in the mindset and behavior of teachers and lecturers in implementing the learning process.

Learning in the COVID-19 pandemic era was dominated by the use of technology, namely the use of the internet programmatically and organized, known as online learning or e-learning. Meanwhile, online learning after the pandemic era uses a hybrid learning or blended learning system that combines face-to-face learning and virtual learning. Advances in information and communication technology that have an impact on the education world require teachers to be creative in planning learning activities and supporting the material delivery. This is supported by Li & Shieh (2016) which has stated that "The development of global education in past years presents plural, innovative, and open new atmosphere, mainly because of changeable technologies and rapid boom of knowledge", which means that rapid changes in both knowledge and technology globally have an impact in changing the atmosphere that is innovative and plural.

The use of technology in the education world, for example through digital media. Digital media is a form of electronic media that stores the data in digital form, not analog. The definition of digital media can refer to technical aspects (such as hard disk as a digital storage medium) and transmission aspects (such as computer networks for the dissemination of digital information), but can also refer to the final products such as digital video, digital audio, digital signatures and digital art (Meilani, 2014). Digital media has a huge impact on the world of education, especially at the university level, including the simplicity of accessing material content. Palinussa &; Mananggel (2021) said that lecturers can upload teaching materials, assignments, projects, and learning videos to 'online classes' to be accessible and studied by students anytime and anywhere without being limited by space and time.

One innovative aspect of the use of digital-based learning media in learning activities both face-to-face and independent activities is audio-visual in the form of learning videos. Learning video is a medium for transferring knowledge and can be used as part of the learning process. Learning videos such as video tutorials are more interactive and more specific than a book or module; Video tutorials for teaching by example, demonstrate and provide information to accomplish a specific task. Sadiman (2008) stated that video is an audio-visual media that displays images and sound. The message presented can be fact (events, important events, news) or fictitious (such as stories), biased informative, educative, or instructional. Daryanto (2010) revealed that video media is everything that allows audio signals to be combined with sequentially moving images. With the availability of learning videos, students have enough time to learn the presented material. Video-based learning facilitates processing information faster, maintaining knowledge, and remembering it accurately.

Video-based learning often proved to be more effective than traditional classroom learning. This is because the material that follows can be seen, and heard, and can be repeated several times. According to Miftahun (in Balkis et al., 2015) people are only able to remember 20% of what is seen and 30% of what is heard but 50% of what is seen and heard at once. In line with that, Yudianto (2017) stated that the influence of video media will enter humans faster than other media because the display is in the form of focal point light so it can affect human thoughts and emotions. In teaching and learning activities, this is very necessary because students will more easily understand the lesson. The importance of using learning videos during a pandemic era is to overcome student learning difficulties. This will help when virtual activities cannot be carried out due to disruption of the communication system. This condition is experienced by students who are in areas that are difficult to access information due to the lack of infrastructure in their area. The results of previous research found that learning videos are effective in improving student learning outcomes and motivation (Krisna &; Marga, 2017; Purwanti, 2015). The use of learning videos also makes it easier for teachers to learn and manage classes (Darma Wisada et al., 2019). This also encourages the development of learning videos for the Digital Fashion Illustration course.

Digital Fashion Illustration is one of the new courses in the UNNES Fashion Education Study Program. The description of the Digital Fashion Illustration course is to equip students with digital fashion design skills using various software including Ibis Paint X and Adobe Illustrator. This course is a development of the fashion design course, where along with technological developments, students are required to master making fashion designs digitally. The problem experienced in the Digital Fashion Illustration course is that there is no media developed because it is a new course that can help students understand the practical material for making digital fashion designs, especially during Covid 19 pandemic. Ibis Paint X is a software that is in the Android application and is used to draw fashion designs digitally. Ibis Paint X is a digital-based drawing application that can be done via smartphones, tablets, and other devices.

Therefore, this study aims to develop digital media in the form of learning videos in the Digital Fashion Illustration course with Ibis Paint X software so that it can be used in learning and can improve student competence in making digital fashion designs.

The development of digital media must also pay attention to the resources or facilities owned by students. Based on observations in learning activities, 90% of students have Android smartphones and the rest have both Android and laptops. This shows that the use of Android-based digital media will make it easier for students to access information through learning videos. Therefore, it is very possible that the development of digital-based learning media in the Digital Fashion Illustration course can provide students with a learning experience that is more meaningful and easier to understand.

METHOD

This research is a development research (Research and Development) which refers to the ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation). Based on the ADDIE development model, the development stages in this research consist of 5 stages, namely:

1. Analysis Stage

At this stage, the main activity is to analyze the need for new learning media, and the requirements for learning media development. Besides that, learning needs and the purposes of media development also become the focus of analysis

2. Design Stage

This stage is known as making a design (blueprint), in this development the design stages can be detailed as follows: Main idea design, creating content, Creating media flowcharts, story content design in the form of storyboards (storyboards), Making a basic sketch or rough drafts.

3. Development Stage

At this stage the initial design development process will be done by using the Ibis Paint X application, this stage consists of: Improving video design, making video design corrections, Making product validation questionnaire instruments for media design experts and material experts, Validation of learning media design by media design experts and material experts, design revision process.

4. Implementation Stage

The implementation stage is in the form of trials for students in the Digital Fashion Illustration course.

5. Evaluation Stage

The evaluation stage is a process to analyze the media based on the data that has been obtained, at this stage the data from the Student response questionnaire that has been obtained will be analyzed to determine the student's response as a form of enthusiasm for the video media being tested.

The data collection techniques used in this study are:

1. Assesment questionnaire

The questionnaire is a data collection technique by gives a set of questions or written statements to respondents to answer. The questionnaire is an efficient data collection technique to discover the variables that will be measured or expected from respondents. The questionnaire used in this study is an assessment

questionnaire to find out student responses to the implementation or trial of comic strip-based learning media products.

2. Documentation

Documentation (documentary) is a data collection technique by collecting and analyzing documents, both written, image, and electronic documents. These documents are selected according to the focus of the problem. The documents to be reported in this study are evidence of the implementation of the design process, development, validation, and trial in the form of photos.

The instruments used in this study were questionnaires and tests. The questionnaire is used to find out the results of validation by media experts and material experts as well as student responses towards the validity and practice of learning media. The test is used to measure the effectiveness of learning media. This is done in order to complete the eligibility criteria of a learning media, which is valid, practical, and effective (Plomp &; Nieveen, 2014). Data from validation and questionnaires were analyzed by using quantitative data analysis techniques, namely descriptive statistics.

Assessment questionnaire for media design experts that contains assessments on aspects of content, presentation, and language with assessment scores between 1 to 4 (very suitable, suitable, less suitable, and not suitable). The assessment indicators in the instrument are as follows:

Table 2. Media Experts Assessment

ASPECTS	INDICATORS
Graphic/image display	Shape and image size
	Imaginative variety of images.
	Selection of relevant and interesting video backgrounds and characters
	Compatibility of images with writing
	Coloring technique (color selection)
Writing/word display	Theme and title selection
	Font shapes and sizes in text and conversations
	Word bubble selection
	Clarity of writing
	Use of relevant language.
Media functions	Video media is easy to operate/use
	The language of video media delivery can be understood easily
	Presentation of learning materials in videos
	Video media storyline
	Video media as a learning resource

Assessment questionnaire for material experts that contains assessments on aspects of content, presentation, and language with assessment scores between 1 to 4 (very suitable, suitable, less suitable, and not suitable). The assessment indicators in the instrument are as follows:

Table 3. Media Expert Assessment

NO	ASPECTS	INDICATORS
1	Content	Compatibility of video media content with KI, KD, and Indicators
		Simplicity of understanding examples of behavior depicted in video media
		The video is relevant to the material that students must learn
		The video is equipped with evaluation test questions
2	Presentation	Simplicity of using media
		Simplicity of understanding video media storylines
		Video media has motivational value in behaving

3	Language	Use of language in accordance with the characteristics of participants
		Use of dialogue or text that leads to concepts understanding
		Clarity in providing information.

Student response assessment questionnaire: used to determine student responses after the implementation or trial of Ibis Paint X video media products for Digital Fashion Illustration learning. The assessment indicators in the Student response questionnaire instrument are as follows:

Table 4. Student Response Assessment

Indikator
Ibis Paint X video media is easy to use independently
Ibis Paint X video media can be used anywhere and anytime
The Ibis Paint X video media contains interesting images and characters
The Ibis Paint X video media contains interesting stories and conversations
I can understand the storyline on the Ibis Paint X video media very well
The examples of behavior shown in the Ibis Paint X video media stories are vivid
I can understand the subject matter presented in the Ibis Paint X video media
I enthusiastically answer the questions provided on the Ibis Paint X video media
Using the Ibis Paint X video media for digital fashion illustration learning is fun
I am more motivated to learn Digital Fashion Illustration by using the Ibis Paint X video media

The analytical technique used in this research is quantitative analysis in the development evaluation process, this analysis is used to analyze data collected from questionnaires. Quantitative data is obtained at the development stage in the form of design and content validation, and at the implementation stage in the form of student response data questionnaires to the use of learning video media.

The expert validation questionnaire answers in this development use the Likert Scale measurement technique which is a scale used to measure the attitudes, opinions, and perceptions of a person or group, as follows:

Table 5. Likert Scale

Score	Explanation
4	Very Suitable/Excellent
3	Suitable/Good
2	Less Suitable/Less
1	Not Suitable/Poor

The validation questionnaire test of media and material design experts was done by comparing the number of respondents' scores (Σ) with the number of ideal scores (N), as for the formula as follows:

$$P = \frac{\sum R}{N} \times 100\%$$

Notes:

P: Percentage score (rounded)

Σ R: The sum of all answer scores given by respondents

N : Ideal number of scores

The validation measurement criteria used can be presented in the following table:

Table 6. Validation Measurement

Achievement Level	Scale	Explanation

90 – 100 %	Excellent	Very eligible/ very valid/ does not need revision
80 – 89 %	Good	Eligible/valid/does not need revision
70 – 79 %	Less	Not eligible enough/ not valid enough/ needs revision
< 69 %	Poor	Not eligible/invalid/needs revision

After all, validators declared it was eligible to use based on media validation data analysis, then a trial was carried out at the media product implementation stage by collecting data using student response questionnaires to the use of comic strip-based media. Student response questionnaire answers using the Guttman Scale measurement technique. This scale is used to get an unequivocal answer to a problem, as follows:

Table 7. Guttman Scale

SCORE	Explanation
1	Yes
0	Not

The average percentage of each component is calculated using the following formula:

$$P = \frac{\sum R}{N} \times 100\%$$

Explanation:

P: Percentage score (rounded)

Σ R: The sum of all answer scores given by respondents

N: Ideal number of scores

Decision-making or conclusions about media eligibility are practically analyzed using criteria (modifications in Nizamuddin 2020) as follows:

Table 8. Media Eligibility Criteria

Achievement Rate (%)	Scale	Explanation
90 – 100 %	Excellent	Very positive/ very practical/ does not need revision
80 – 89 %	Good	Positive/practical/does not need revision
70 – 79 %	Less	Less positive / less practical / needs to be revised
60 – 69 %	Poor	Negative/ impractical/needs revision

RESULT AND DISCUSSION

Development of Digital Fashion Illustration Media with Ibis Paint X Software to Improve the Competence of UNNES Fashion Design Students

This media development is implemented through development procedures on the ADDIE model (Analysis, design, development, implementation, evaluation).

1. Analysis Stage

At this stage, the main activity is to analyze the need for new learning media, and the requirements for learning media development. Besides that, learning needs and media development purposes are also the focus of analysis. The analysis done by researchers is by analyzing the curriculum and RPS (Semester Learning Plan) of the Digital Fashion Illustration course, analyzing the characteristics and learning outcomes of students in the Digital Fashion Illustration course.

2. Design Stage

This stage is known as making a design (blueprint), in this development the design stages can be detailed as follows: main idea design, creating content, Creating media flowcharts, story content design in the form of storyboards, Making a basic sketch or rough drafts

3. Development Stage

At this stage will be done the initial design development process will use the Ibis Paint X application, This stage consists of Improving video design, making video design corrections, Making product validation questionnaire instruments for media design experts and material experts, Validation of learning media design by media design experts and material experts, design revision process.

In this study, researchers conducted a media validation test for media expert lecturers. Here are the results of the assessment of media expert validators:

Table 9. Validation I media expert

NO	ASPECTS	INDICATORS	Score
1	Graphic/image display	Image shape and size	4
		Imaginative variety of images.	4
		Selection of relevant and interesting video backgrounds and characters	3
		Compatibility of images with writing	2
		Coloring technique (color selection)	3
2	Writing/word display	Theme and title selection	4
		Font shapes and sizes in text and conversations	2
		Word bubble selection	3
		Clarity of writing	3
		Use of relevant language.	3
3	Media functions	Video media is easy to operate/use	2
		The language of video media delivery can be understood easily	3
		Presentation of learning materials in videos	4
		Video media storyline	4
		Video media as a learning resource	3
		Total Score	47
		Ideal Score	60
		Percentage	78,3 %

Based on the analysis of the media expert validation results by assessing based on aspects of graphic / image display, writing/word display, and media function, a total score of 15 assessment indicators was obtained, namely 47 out of an ideal score of 60, with a percentage of 78.3% this score is in the less category with a percentage between (70 – 79)%, so it can be said that the comic strip media is still not eligible in terms of mediation to be tested, So it is necessary to revise/improve based on suggestions and input that have been given by media experts as follows: a) Color contrast between writing and images has to be adjusted again b) The font shape of the letters has to be adjusted again to the ability of students to read and understand the various font types. c) The selection of word bubbles is even more varied by adjusting the size of the comic panel d) The arrangement of comic panels in sheets has to be adjusted again to make it more clearer and easier to read according to the order of the panels.

After revision/improvement of comic strip media based on advice from media experts, researchers prepare the instruments for phase II validation tests for media experts. Revised/corrected learning video media are given to the same media expert for validation. Validators were again given the same assessment questionnaire along with the revised comic strip media. The following is a table of validation results from phase II media experts:

Table 10. Validation II media expert

NO	ASPECTS	INDICATORS	Score
1	Graphic/image display	Image shape and size	4
		Imaginative variety of images.	4

		Selection of relevant and interesting video backgrounds and characters	4
		Compatibility of images with writing	3
		Coloring technique (color selection)	3
2	Writing/word display	Theme and title selection	4
		Font shapes and sizes in text and conversations	3
		Word bubble selection	4
		Clarity of writing	3
		Use of relevant language	4
3	Media functions	Video media is easy to operate/use	3
		The language of video media delivery can be understood easily	4
		Presentation of learning materials in videos	4
		Video media storyline	4
		Video media as a learning resource	4
		Total Score	55
		Ideal Score	60
		Percentage	91,6 %

Based on the analysis of the validation results from stage II of media experts, the total score obtained from 15 assessment indicators was 55 out of the ideal score of 60, with a percentage of 91.6%. This score is in the Very Good category with a percentage between (90 - 100) %, so it can be said that the Ibis Paint X learning videos are very eligible in terms of mediation to be tested at the implementation stage.

Learning video media that has been assessed and validated by media experts is then given to material experts to assess the content of Ibis Paint X and its suitability for the Digital Fashion Illustration course. At this stage the researchers provide video media to be read by the validators along with a questionnaire instrument that has been prepared to provide an assessment of the comic strip media by assessing it based on aspects of content, presentation, and language (questionnaire results from material expert validation in the attachment), the following is a table of validation analysis results by material expert:

Table11. Validation I Material Experts

NO	ASPECT	INDICATORS	Score
1	Content	Compatibility of video media content with KI, KD, and indicators	3
		Simplicity of understanding examples of behavior depicted in video media	4
		The video is relevant to the material that students must learn	3
		The video is equipped dilengkapi with evaluation test questions	2
2	Presentation	Simplicity of using media	3
		Simplicity of understanding video media storylines	4
		Video media has motivational value in behaving	3
3	Language	Use of language in accordance to the characteristics of participants	2
		Use of dialogue or text that leads into concepts understanding	2
		Clarity in providing informations	3
		Total Score	29
		Ideal Score	40
		Percentage	72,5%

Based on the validation results analysis of material experts by assessing based on aspects of content, presentation, and language, a total score was obtained from the 10 assessment indicators, namely 29 out of an ideal score of 40, with a percentage of 72.5%. This score is in the Poor category with a percentage between (70 - 79) %, so it can be said that video media is still not eligible in terms of content/material for testing, so

revisions/improvements need to be made based on suggestions and input given by material experts as follows: a) Pay attention more to the use of capital letters including people's names b) Slang is used enough because not all students can understand. c) The size of the text in the dialog needs to be enlarged to make it clearer. d) Completeness of the material.

After making revisions/improvements to the Ibis Paint X video media based on suggestions from material experts, the researcher then prepared the instruments for the second phase validation test for material experts. The following table shows the results of the material expert's validation phase II:

Table 12. Validation II Material Experts

NO	ASPECT	INDICATORS	Score
1	Content	Compatibility of video media content with KI, KD, and indicators	4
		Simplicity of understanding examples of behavior depicted in video media	4
		The video is relevant to the material that students must learn	3
		The video is equipped with evaluation test questions	4
2	Presentation	Simplicity of using media	4
		Simplicity of understanding video media storylines	4
		Video media has motivational value in behaving	4
3	Language	Use of language in accordance to the characteristics of participants	4
		Use of dialogue or text that leads into concepts understanding	4
		Clarity in providing informations	4
		Total Score	39
		Ideal Score	40
		Percentage	97,5%

Based on the second stage result analysis from the material expert's validation, a total score of 10 assessment indicators was obtained, namely 39 out of an ideal score of 40, with a percentage of 97.5%, this score was in the very good category with a percentage between (90 – 100) %, so it can be said that the Ibis Paint X video media is very eligible in terms of content/material to be tested at the implementation stage.

As the final stage of the development process, the researchers then accomplished the Ibis Paint X learning video which was ready to be tested as needed.

4. Implementation Stage

The implementation stage is in the form of a trial of students in the Digital Fashion Illustration course with a total of 40 students.

Some of the activities carried out by students based on researcher observations in the learning process using Ibis Paint are:

1) Students watched the Ibis Paint X learning videos with enthusiasm

2) Students interacted with the lecturers regarding the tutorials in the learning video,

3) Students designed the clothing by following the steps in the learning video

4) Students worked on the questions provided in the media, so that triggering thought processes.

After the lesson was finished, the researcher distributed questionnaires to students to collect the data in the form of responses to the Ibis Paint X learning video media that had been implemented.

5. Evaluation Stage

The evaluation stage is the process of analyzing the media based on the data that has been obtained.

The results of student responses, the average student assessment score is (9.2) from the ideal score of (10) with a percentage of 92%. This score was in the very good category, namely between (90 – 100)%, thus it can be said that the Ibis Paint X learning video media received a very positive response from students. Besides that, based on the observations while using the Ibis Paint X learning video media, students look very enthusiastic about design.

Based on the overall accumulation of assessments at the validation and eligibility testing stages, media experts and material experts after going through the improvement process have been given an eligible title for implementation, and received a very positive score for student responses. Thus the Ibis Paint X learning video that has been developed is a very practical and eligible media for use in learning Digital Fashion Illustration courses.

CONCLUSION

The result of this study is in the form of digital learning video media in the Digital Fashion Illustrations course with the Ibis Paint X software. Based on the media development stages that have been done, the final results of the eligibility assessment by the media expert validators are with a percentage of 91.6% (very eligible), and the final results of the eligibility assessment by the material expert validators are with a percentage of 97.5% (very eligible).

At the implementation stage, the average assessment result based on the response of the trial students was 9.2 out of an ideal score of 10 with a percentage of 92% (very positive). Thus it can be said that digital learning video media for the Digital Fashion Illustration course with Ibis Paint X software is eligible and practical to be used in learning Digital Fashion Illustration course.

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