https://doi.org/10.26740/vt.v6n1.p1-12

Development of Interactive Video Media Solfeggio Learning in Performing Arts Education Study Program, FKIP UNTAN

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Article info:
Received: 13 November 2022
Reviewed: 24 January 2023
Accepted: 31 May 2023

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Abstract: This research is development of interactive video-based solfeggio learning media in the Performing Arts Education Study Program, FKIP, UNTAN. The purpose of the study is to produce products in the form of interactive video solfeggio learning media, test the feasibility of interactive video-based solfeggio learning media, and describe the response of educators and students to interactive video-based solfeggio learning media. The research method used 4D Thiagarajan research and development with stages of define, design, development, and dissemination. The subjects and research time of students in semesters 3-5 and will be held from July to September 2022. Data collection techniques use questionnaires and interviews. Research instruments are addressed to media and material validators and users by providing instrument questionnaires as well as criticism, input, and suggestions. Data analysis uses a Likerts scale. The results of research that interactive videos are very worthy of being used as a learning medium for solfeggio. Based on the results of media validation by students that solfeggio material can improve the ability to read block notation.

Keywords: development, solfeggio, video interactive, learning media

1. INTRODUCTION

Education is a means and has an important role in preparing young people who have the ability, personality, and skills in accordance with the demands of the times so that, quality improvement in terms of learning is needed. Education is a place to open up identities and disseminate broad access so as to make various subjects interested in continuing to learn (Meierdirk, 2016). Meeting the opinion of Ki Hajar Dewantara (Sugiarta, 2019) which states that education must ensure the process of knowledge transformation towards the process of value transformation. This means that education is a forum for the preparation of the capability process that will later be owned by humans.

The era of society 5.0 makes various innovations, especially in the field of education, to bring up various media to support learning. The progress of thinking in using technology as a support for learning and creativity is formed due to the development of technology-based learning media, methods, and models which are an ability to face education in the era of society 5.0 (Hudaidah, Cici, 2021). One aspect that affects the era of society in learning is media. This is in accordance with Sardiman's opinion in (Cahyono, Taufiq, 2021) media in learning is something that can be used to trigger student interest, feelings and thoughts so as to produce a learning process. It is further explained by (Batubara, Hamdan, 2021) that the scope of learning media includes materials, tools, and channels used to support learning and teaching activities. The

https://doi.org/10.26740/vt.v6n1.p1-12

learning media developed is a product in the form of an interactive video. Conceptually, interactive video begins with the meaning of video which is a combination of audio and visual together which is educational and informative with several types of hardware equipment, each of which continues to carry out its main function (Arsyad & Rahman, 2015). More comprehensively explained by (Firmansyah et al., 2020) that interactive video is a learning media that combines elements of sound, motion, images, text, or graphics that are interactive to connect the media with its users.

Education as a place to create developing humans, one of which is found at the tertiary level which is the subject of this research. Universitas Tanjungpura is a university in West Kalimantan, one of which has a Performing Arts Education study program at the Faculty of Teacher Training and Education. The Performing Arts Education study program has a variety of courses offered, one of which is solfeggio. The solfeggio course is a lesson in music that aims to foster students' ability to read rhythmically, write melodies, and improve students' sight reading and sight singing skills so as to improve the musicality of students. In relation to the objectives of the solfeggio course, it is in line with (Lumbantoruan, 2018) that learning activities refer to the syllabus and course plan made by the lecturer and focus on reading notes or notes. Based on the meaning of solfeggio that it is used for voice training and practicing intonation using notation name which is then aimed at reading notation correctly and developing hearing for music (Kiraly, 2003).

Regarding the importance of solfeggio courses for students of the FKIP UNTAN Performing Arts Education study program, learning media services for students have not been maximized by educators. This makes the gap in this study that the learning process is less optimized and needs an innovation especially to effectively support technological developments in the era of society 5.0. Therefore, this research makes a product, namely the development of interactive video-based media for solfeggio courses in the Performing Arts Education study program. With this research, it is intended to develop interactive video-based learning media using 4D research and development. The specific objectives in this study are: 1) to produce products in the form of interactive video-based solfeggio learning media; 2) to test the feasibility of interactive video-based solfeggio learning media; and 3) to describe user responses in this case students to interactive video-based solfeggio learning media.

2. METHODS

The research method uses 4D research and development with the stages of define, design, development, and dissemination. R&D research with the 4D model was developed by S. Thiagarajan, Dorothy S. Semmel, and Melvin I. Semmel (1974) with the concepts of defining, designing, developing, and disseminating (Amir & Parumbuan, Mesach, 2018). The define stage consists of: 1) initial analysis; 2) student analysis; 3) task analysis; 4) concept analysis; 5) analysis of learning objectives; and 6) software specifications. The

https://doi.org/10.26740/vt.v6n1.p1-12

design stage consists of: 1) test preparation; 2) media selection; 3) format selection; and 4) initial plan. The development stage consists of: 1) expert learning media validation; and learning media testing. The dissemination stage consists of: 1) validation test of learning media; 2) packaging of learning media; and dissemination and adoption of learning media.

The research time was conducted from July to October 2022. Data collection techniques are used with questionnaire and interview techniques which are also carried out in the define stage of 4D research and development research. Then, the research instrument which is a tool used to collect data systematically, namely by means such as tests, questionnaires, or interviews (Fraenkel in (Sugiyono, 2018) The research instrument in this study used a questionnaire where the subjects in this research instrument were media experts, material experts, and users. In addition, there are several aspects in the research instrument lattice which are illustrated in the following table:

Table 1. Research Instrument Grids

No	Subjects of Research Instruments	Aspects	Indicator	Number of Questions Indicator	Questions Number
1	Media Expert	Goals	Ease of use as learning media	5	1 – 5
		Visual	Images, text, colors, fonts, layouts, and animations	7	6 – 12
		Audio	Music, qualities, and duration	6	13 – 18
		Benefits	Functions of learning media	5	19 – 23
		Desain	Layout, editing, audio and visual fidelity	7	34 – 30
2	Material Expert	Goals	Compliance with learning objectives	3	1 – 3
		Presentation	Material structural, language usage	12	4 – 15
		Qualities	Material can be conveyed	5	16 – 20
3	User	Goals	Compliance with learning objectives	3	1 – 3
		Presentation	Material structural, language usage	12	4 – 15
		Qualities	Material can be conveyed	5	16 – 20

The data analysis method uses a Likert scale with a description of the assessment: 1) strongly agree with a score of 5; 2) agree with a score of 4; 3) moderately agree with a score of 3; 4) disagree with a score of 2; and strongly disagree with a score of 1. Furthermore, the percentage formula was used to ensure that the assessed product received a feasible description. Likert scale is a psychometric scale commonly used in questionnaires (Taluka et al.,

https://doi.org/10.26740/vt.v6n1.p1-12

2019). The calculation of the percentage score is as follows (Jasmalinda, 2021):

$$P = \frac{f}{N} x\ 100\%$$

The information in the formula that P explains the percentage, *f* explains the score obtained, and N explains the maximum score. Categorization of the results of data processing has 5 scales including: 1) scale 5 for the very feasible category with a percentage (>80%-100%); 2) scale 4 for the feasible category with a percentage (>60%-80%); 3) scale 3 for the less feasible category with a percentage (>20%-40%); scale 2 for the inappropriate category with a percentage (>20%-40%); and scale 1 for the very inappropriate category with a percentage score (0%-20%) (Jasmalinda, 2021).

3. RESULTS AND DISCUSSION

3.1 Results

The result of the research is the development of interactive video-based solfeggio learning media in the Performing Arts Education study program, FKIP Untan. The results of this study are also inseparable from the stages contained in the research and development of the 4D model, namely the stages of define, design, development, and dissemination. The following explanation starts from the first to the last stage.

3.1.1 Define

Defining interactive video-based solfeggio learning media. Starting from the initial analysis where observations were made based on observations made by students who were and had followed the solfeggio course material. The obstacles faced based on oral interviews are that the absorption of knowledge obtained by students and the material presented is sufficient to demand student creativity without further explanation. The next step was student analysis which was conducted on 20 students. Based on the student analysis questionnaire, the results showed that 10 students answered strongly agree, 5 students answered agree, and 1 student answered moderately agree for interactive video-based solfeggio learning media products. Analysis of tasks given by students is to measure initial understanding of solfeggio (rhythmic) material with 10 questions. The results of the questions that have been done that 4 students are at a score of 61-80 (passed) and 16 students are at a score of 0-60 (did not pass). The minimum score criteria in the question is 70. The next analysis is concept analysis which is determined in the teaching materials and learning resources used during learning. In addition, in the Semester Learning Plan that the media used uses direct exposure and uses classroom facilities so that, it is less easy for students to understand solfeggio material. The analysis of learning objectives obtained is that the objectives to be achieved are integrated with the product in the

https://doi.org/10.26740/vt.v6n1.p1-12

form of interactive video displays in solfeggio courses. The software specifications used to create interactive videos are music presentation-based software such as: 1) Midi 4; and 2) Sibelius Ultimate. Meanwhile, OBS Studio was used to capture the video and Microsoft Power Point was used to create the images and writing materials in the video. The last supporting software used to put the video together (editing) used Wondershare Filmora.

3.1.2 Design

Design and development of interactive video-based solfeggio learning media, beginning with the preparation of the test which is intended for 20 students. Based on the results of filling out the test given, 6 students were able to answer all questions correctly 7 and wrong 3, 8 students were able to answer all questions correctly 5 and wrong 5, the remaining 6 students were able to answer 3 correct and 7 wrong. The next step is media selection based on concept analysis, task analysis of student characteristics as users, and a deployment plan that uses a variety of diverse media, one of which is interactive video. The selection of interactive video-based solfeggio learning media is based on the results of interviews with students and observations of the learning process of solfeggio courses, especially in rhythmic material. The format selection in the next step is based on the formulation of learning media design, strategies, approaches, methods, and learning resources. The learning media design was taken by using an interactive video format with the subject of the speaker delivering rhythmic teaching materials which then used a question-and-answer strategy and approach in the video. In addition, demonstration and lecture methods are used in the interactive video. The learning resources used are from basic solfeggio and solfeggio 1 books. The initial design, which is the last stage in the design stage, used a storyboard to create an interactive video design. There are 9 display slides starting from the opening display by displaying the research identity, solfeggio material (rhythmic material) and closing material provided by the speaker.

Figure 1. Learning Media Preparation

https://doi.org/10.26740/vt.v6n1.p1-12

Meanwhile, an overview of the making of the product is given in the first slideshow in the storyboard that has been made. The description is as follows:

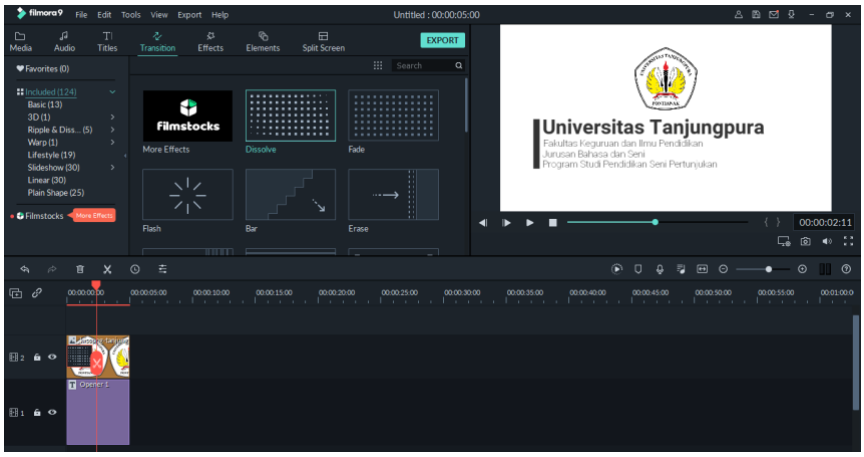

Figure 2. First Slideshow

3.1.3 Development

Development of interactive video-based solfeggio learning media. Beginning with the validation of learning media by experts where two expert validators are appointed based on the specifications of their fields, namely media and material. Furthermore, the validation test was carried out by media experts with a total answer score of 131 and had a percentage score of 87.3%. The following is presented in the table sheet of answers given by media experts:

Table 2. Results of Media Expert Validation Test

No	Ques.	SH	SM	%	Inf.
1	P1	5	5	100	Valid
2	P2	3	5	60	Valid
3	P3	4	5	80	Valid
4	P4	4	5	80	Valid
5	P5	4	5	80	Valid
6	P6	5	5	100	Valid
7	P7	4	5	80	Valid
8	P8	4	5	80	Valid
9	P9	5	5	100	Valid
10	P10	5	5	100	Valid
11	P11	5	5	100	Valid
12	P12	4	5	80	Valid
13	P13	4	5	80	Valid
14	P14	5	5	100	Valid
15	P15	5	5	100	Valid
16	P16	3	5	60	Valid
17	P17	5	5	100	Valid
18	P18	4	5	80	Valid
19	P19	5	5	100	Valid
20	P20	4	5	80	Valid
21	P21	4	5	80	Valid
22	P22	5	5	100	Valid
23	P23	4	5	80	Valid
24	P24	5	5	100	Valid

https://doi.org/10.26740/vt.v6n1.p1-12

25	P25	4	5	80	Valid
26	P26	4	5	80	Valid
27	P27	4	5	80	Valid
28	P28	5	5	100	Valid
29	P29	4	5	80	Valid
30	P30	5	5	100	Valid
Average		**4,36**	**5,00**	**87,3**	**Valid**

In addition, added suggestions from media experts as improvements and optimization of interactive videos, namely: 1) the video can be understood, however, in the lesson section, emphasis can be given so that students who see video shows can easily digest instructions in the video; and 2) the layout in the video is appropriate, it can only be maximized in the section of strengthening the speaker's audio volume to make it clearer and understood by students. After the validation test by media experts is the validation test by material experts. The results of the validation test by material experts obtained a total answer score of 92 with a percentage score of 92%. The following is presented in the table of answers given by material experts:

Table 3. Results of Material Expert Validation Test

No	Ques.	SH	SM	%	Inf.
1	P1	5	5	100	Valid
2	P2	4	5	80	Valid
3	P3	3	5	60	Valid
4	P4	4	5	80	Valid
5	P5	5	5	100	Valid
6	P6	5	5	100	Valid
7	P7	5	5	100	Valid
8	P8	5	5	100	Valid
9	P9	5	5	100	Valid
10	P10	5	5	100	Valid
11	P11	5	5	100	Valid
12	P12	5	5	100	Valid
13	P13	4	5	80	Valid
14	P14	5	5	100	Valid
15	P15	3	5	60	Valid
16	P16	5	5	100	Valid
17	P17	4	5	80	Valid
18	P18	5	5	100	Valid
19	P19	5	5	100	Valid
20	P20	5	5	100	Valid
Average		**4,6**	**5,00**	**92**	**Valid**

Material expert validation added suggestions related to improvements for learning media so that it can be used more appropriately for solfeggio courses. The advice given by the material expert validation is the need to be applied and adjusted to the accessibility of interactive videos. This means that students can easily access this learning media efficiently and effectively so that learning objectives can be achieved.

3.1.4 Dissemination

The dissemination of interactive video-based solfeggio learning media is carried out in several steps. The first step is the

https://doi.org/10.26740/vt.v6n1.p1-12

learning media validation test conducted by users (students). The results of the learning validation test aimed at 20 students that reached an average score of 4.225 from the maximum average score of 5 and had a percentage score of 84.5% so as to get a very feasible assessment to be used as learning media. The following is presented in the table of answers from students who have filled out 20 questionnaires from the solfeggio interactive video assessment statement:

Table 4. Results of Learning Media Validation Test

No	Ques.	SH	SM	%	Inf.
1	P1	87	100	87	Valid
2	P2	82	100	82	Valid
3	P3	85	100	85	Valid
4	P4	86	100	86	Valid
5	P5	81	100	81	Valid
6	P6	86	100	86	Valid
7	P7	83	100	83	Valid
8	P8	82	100	82	Valid
9	P9	82	100	82	Valid
10	P10	81	100	81	Valid
11	P11	87	100	87	Valid
12	P12	87	100	87	Valid
13	P13	83	100	83	Valid
14	P14	85	100	85	Valid
15	P15	83	100	83	Valid
16	P16	87	100	87	Valid
17	P17	87	100	87	Valid
18	P18	88	100	88	Valid
19	P19	87	100	87	Valid
20	P20	81	100	81	Valid
Average		**4,225**	**5,00**	**84,5**	**Valid**

Before the last stage, namely dissemination of products that have been given suggestions, input, and advices, improvements are made. The improvements made to the interactive video-based solfeggio learning media are as follows: 1) refine the transition effect movement on the video display so that it does not look broken; 2) increase the size of the images and fonts on the video display so that they look clear and easy to read; and 3) clarify the speaker's voice by reducing noise and increasing the gain on the volume of the video sound so that it sounds clear.

Finishing, distribution, and application of interactive video-based solfeggio learning media is done by entering on the Universitas Tanjungpura Learning Management System (LMS) website page. Universitas Tanjungpura Learning Management System is an access that can be used by students in conducting e-learning to support assignments and materials in courses. The technical packaging, distribution, and application of interactive video-based solfeggio learning media is carried out by lecturers by uploading first on the youtube page, then copying and pasting the youtube embed and moving it to the Universitas Tanjungpura LMS website.

https://doi.org/10.26740/vt.v6n1.p1-12

3.2 Discussion

The development of interactive video-based solfeggio learning media in the Performing Arts Education study program, FKIP UNTAN can be feasibly used for learning media in solfeggio courses. These results are obtained based on the validation test of media, material, and users (students) who have filled in the video product questionnaire that has been assessed. The summary of the assessment obtained is that the media validation test received a valid and valid statement to be used with a percentage score of 87.3%. The assessment by the material expert received a valid statement to use with a percentage score of 92%, and the user received a valid statement to use with a percentage score of 84.5%. The percentage score above 80%-100% makes this interactive video-based solfeggio learning media in the very feasible category. The results of interactive videos with very feasible categories are inseparable from suggestions, input, and advices from media experts, materials, and users which refer to improving and optimizing interactive video-based solfeggio learning media in the Performing Arts Education study program, FKIP UNTAN can be used as learning media for solfeggio courses. The following is explained in a graphical chart of the percentage of results from the media, material, and user validation tests.

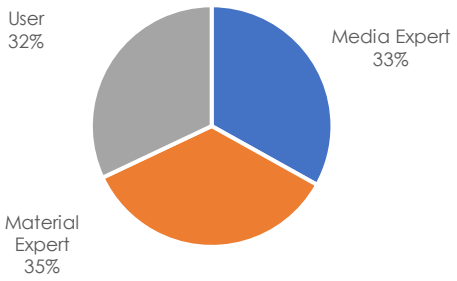

Chart 1. Percentage of Learning Media Validation Test Results

The research and product development steps using the 4D model are in line with research conducted by (Rafida et al., 2022) that there are several stages carried out to make video tutorial products including the defining stage (define), selection of learning media (design), development stage (development), and dissemination stage (dissemination). In addition, in research conducted by (S, Bustanil et al., 2019), it was found that aspects of assessment on material experts, media, and users as a validation test in video-based learning media.

Interactive videos make learning media development more innovative. In the era of society 5.0, creativity and innovation are increasingly demanded in terms of education, especially the role of educators, namely as facilitators and students who are the center of learning itself. The role of technology contrasts and brings changes in learning so that, forming a collaboration that builds meaning for the learning objectives can be achieved (Salsabila, Unik & Agustian, 2021). Various interactive videos developed by

https://doi.org/10.26740/vt.v6n1.p1-12

previous researchers such as, the development of interactive video learning media for room service subjects at SMK 1 Sewon (Muslimah, 2016); development of interactive learning videos based on material and questions as a supplement to improve mastery of science subject concepts (Sofiyullah, 2015); development of interactive videos on integrative thematic science learning on human blood circulation material (Wardani, Ratri & Syofyan, 2018); and development of interactive video learning media to improve elementary school students' science learning outcomes (Rahmawati et al., 2021).

This research can be used with the hope that the coverage of solfeggio material will be wider considering that there are still many various musical symbols used. In addition, the media used can be further developed regarding the evaluation of the results of student practice activities.

4. CONCLUSION

Interactive video-based learning media can be one way to conduct learning activities. The dynamic and flexible nature of this media allows students to learn solfeggio material through videos anytime and anywhere. Through interactive video, students are not only watching and listening to learning video material but also actively involved in the learning process.

The results shown after using this media are that students of the Performing Arts Education study program can increase motivation and solfeggio skills, especially reading beam notation. This is proven by the validation test by students as users who have a valid score of 84.5% and are suitable for use. Solfeggio skills that must be improved by each student make this interactive video can be used as learning media. Learning that utilizes technology is expected to complete the developmental tasks of students and their musicality.

AUTHOR CONTRIBUTION

Zakarias Aria Widyatama Putra: Creating and designing analyses, collecting data, contributing data or analysis tools, Writing paper, and Paper Transcription

Imam Ghozali: Creating and designing analyses, allowing research as the head of the study program, and referring to journal articles

Mastri Dihita Sagala: Creating and designing analyses, contributing data or analysis tools, and develop a learning video framework.

Egi Putri Grandena: Collecting data, contributing data or analysis tools, and Editing Video.

All authors have read and agreed to the published version of the manuscript.

ACKNOWLEDGMENTS

Thank you for the support given from Performing Arts Education Study Program, Faculty of Teacher Training and Education, Universitas Tanjungpura for the permission and research funding support that has been provided.

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