ASSURE Research and Development: The Documentary Video of Reog Dance to Enhance Learning Outcomes in History Learning

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Abstract. Technological advances in the industrial revolution (4.0) and the current conditions of the Covid-19 pandemic have changed the viewpoint in educational innovation. This form of learning is carried out in each house with an online system by utilizing technology. The problem experienced by students in class X social science senior high school 5 Jember is the low learning outcomes of history with a percentage of 93.9% under the minimum completeness criteria. The media used by educators during online learning are powerpoint and video TikTok. Educators also never develop local historical material. The results of the analysis of the learning media needs needed by students were 6.06% student worksheets, 3.03% modules, 6.06% textbooks, and 84.8% wanted a documentary video on history learning. The results of the analysis of the learning styles of the students were 42.4% visual, 45.4 audio, and 12.1% kinesthetic. Based on the description above, the researchers developed learning media in accordance with the needs of students and have been validated by experts. The product is also tested on users to measure the effectiveness of the media in improving historical learning outcomes. The development model used is ASSURE. Data collection techniques are interviews, questionnaires, documentation, tests. Data will be analyzed using percentage and relative effectiveness. The results showed that the validation of documentary video media by the three experts showed that the media could be applied by making small revisions. While the results of the effectiveness of the media show the results of 0.94 which are categorized as large effects. It can be concluded that the documentary video media is effective in improving the learning outcomes of the local history material of reog art.

1. Introduction

The Industrial Revolution 4.0 has changed the view in educational innovation [1]. Forms of educational innovation in the form of technology-based teaching and learning that can provide independent learning opportunities according to the speed of students [2]; These technological advances have enabled distance learning to emerge and encourage greater innovation in teaching methods both inside and outside the classroom [3] [18] [19] [20].

In line with the current conditions, where the Covid-19 pandemic causes learning to be carried out online (in a network) at each home by utilizing technology in accordance with the Ministry's Circular on Guidelines for Organizing Learning from Home in an Emergency Spread of Corona Virus Disease (Covid) -19. Online learning is learning that uses internet network technology with accessibility, connectivity, flexibility, and the ability to generate various types of learning interactions [4]. Imania said that online learning is a form of conventional learning that is translated into a digital format via an internet connection [5]. Online learning is online learning that is carried out outside the classroom using an internet connection.

In line with this, history subjects in the 2013 curriculum were developed based on several refinement of mindset including learning that can be done anywhere and the use of information and communication technology to increase the efficiency and effectiveness of learning [6] [21] [22] [23]. The information technology used is in the form of information from the internet, documentary films, historical photographs, historical videos, digital libraries, digital museums, and so on. The use of
information technology will be contextual by presenting historical material to be alive, as if present at this time and not trapped in verbalise material processing such as the lecture method [7].

Local history material needs to be developed, because it has been integrated into basic competencies and relevant learning content [8]. Penny and Kathleen in Wijayanti, concluded that there were changes in students towards a positive direction by trying out the patterns of student involvement in the context of curriculum integration [9]. One of the basic competencies of history subjects in grade X social science class which has the development of material regarding the environmental needs of students is the basic competency 3.10 which reads "analyzing the linkages of early life Indonesian human culture and its influence in contemporary life", with the material taken, local history of reog art. The cognitive dimension of analyzing must be mastered by students so that learning objectives can be achieved. The choice of material for local history of reog art cannot be separated from the locality of the reog art itself. Setiawan said that during the Dutch colonial period the people of Ponorogo migrated to the eastern region of Java, one of them to the Jember region, so that the art of reog can be displayed in Jember cultural events by its performers and has been widely known by the Jember community itself but not specifically. Thus, it is very unfortunate if the reog art which is often displayed is not interpreted properly by the audience, especially for students. [10].

Based on the studies of several researchers related to obstacles, solutions and learning projections, including research by Pangondian, which states that among the factors that are key to the success of online learning is the availability of facilities and infrastructure [11]. Another study by Dindin. J states that the obstacles in online learning are limited quotas, piling up tasks, limited mastery of technology, and unstable networks [12]. Therefore, a solution must be found in the online learning process, so that learning projections with the online system can be mapped by schools. One solution related to learning resources that can be used easily and can be accessed with low quotas in online learning is video media with time limits.

Nugent in Smaldino, states that many teachers use video to introduce a topic, present content, provide improvements, and increase enrichment in the form of short, short segments that educators can put together to support various benefits [13]. Agustiningisih explained some of the advantages in video media, including a combination of images and sound, able to influence human behavior beyond print media, can be used immediately, can be used repeatedly, can present physical material that cannot be brought into class, can present objects in detail., does not require a dark room, and can be used for classical or individual use. [14]. The video media that will be developed in this research is a documentary video using the Wondershare Filmora video editing application.

Furthermore, to design documentary video media to suit the needs of students, an analysis of teacher performance was carried out, interviewing the general characteristics of students, initial abilities, attractiveness, and learning styles of students. Based on the analysis of the performance of history subject teachers, specialization in class X shows that the media used online are power points, video tiktok, WhatsApp, and google classroom. Educators also consider the media used online to be less effective when viewed from the learning outcomes of students. In addition, the learning methods used in learning the history of specialization online are assignment, independent learning, and discussion methods. During online learning, schools provide facilities to students in the form of data packages. Educators also never develop local historical material. Educators have used instructional media in the form of videos but the duration is only 1 minute and is considered less effective. The obstacles experienced by educators in learning history with a special interest in local history material are time constraints and too dense material in the curriculum so that it is difficult to develop material. Educators also think that students only know a glimpse of the art of reog. Evaluation of learning carried out by educators is by doing daily tests, midterm tests and end-of-semester tests online using google form.

Based on the results of interviews with educators related to the characteristics of students, it was found that the average age of students in class X high school Jember was 15 and 16 years. His educational background comes from public and private junior high schools. The economic level of parents of students on average comes from the middle to lower class. Educators consider students to be
less interested and less motivated in participating in online learning, this is indicated by the lack of response from students regarding material information and assignments given by educators. In addition, educators also do not know the tendency of learning styles that students have because from the beginning the learning is online.

The same thing can also be seen from the results of the needs analysis questionnaire distributed to students which showed that 6.06% of students needed student worksheets, 3.03% of students wanted modules, 6.06% of students wanted textbooks and 84.8% of participants students want a documentary video in learning history of specialization. Based on the questionnaire of students' learning styles in this class, the results showed that students had a visual learning style of 42.4%, an audio learning style of 45.4%, and a kinesthetic learning style of 12.1%. So it can be concluded based on these data, students have a tendency to learn audio and visually. In addition, based on the initial knowledge possessed by students about the art of reog and its effects, the results obtained that 70.6% of students knew at a glance about the art of Reog and 27.2% of students did not know the art of Reog. Based on the analysis of the attractiveness of the students, it shows that 57.5% of students feel that learning history of specialization is very interesting, 69.6% of students feel sorry if they do not take specialization in history learning, 45.4% of students think that learning history of specialization is very interesting, online is fun, 15.1% of students feel that learning history of specialization conveyed by educators is easy to understand, 69.6% of students are motivated to learn local history material and 76.5% of students think that learning history of specialization in local history material of art reog encourages learning independently.

The problem faced by students based on data regarding student learning outcomes is that the majority of students with a total percentage of 93.9% in the subject history of specialization have a value below the minimum completeness criteria that have been determined by the school, namely 75. Thus based on the analysis of the needs of educators and participants For students above, learning media is needed that can help students improve their historical learning outcomes. The choice of development model cannot be separated from the characteristics of the development model itself. In accordance with the media to be developed, namely documentary video media with local historical material, the developer chose the ASSURE development model developed by Smaldino, et al. The ASSURE model was developed to create effective learning. This model is oriented towards the use of media and technology in creating the desired learning process (Smaldino, 2005).

2. Methods

This type of research is research and development. The development design uses the ASSURE development model by Smaldino which includes: (1) analyze learner characteristic; (2) state performance objectives; (3) select methods, media, and materials; (4) utilize materials; (5) requires learner participation; and (6) evaluate and revise [15]. Expert validation uses 3 experts including material / subject matter experts, media experts, and linguists. The sample used for the small group trial was 6 students, and the large group test was 33 students. Data collection techniques in this development research are documentation techniques, questionnaires or questionnaires, interviews and tests. The data analysis technique used is qualitative data analysis and quantitative data analysis. The validation result data is used to calculate the questionnaire using the average calculation [16] as follows:

\[
R = \frac{\Sigma n}{T}
\]

Information:

R : Average validation value

\(\Sigma n\) : The number of validation values

T : Number of validation questions
The data used to determine the effectiveness of using documentary video instructional media were obtained through the pre-test and post-test given to students before and after using documentary video media in learning history. The results of the mean value of the pre-test and post-test students from the use of documentary video media were used to measure the effectiveness of learning outcomes using the relative effectiveness formula. The t test is used to determine the differences obtained by students in the initial and final conditions. The difference between the initial conditions and the final conditions using the draft video documentary media is assumed to be the effect of treatment or experimentation. The formula used to calculate the effectiveness of the treatment is by using SPSS.

The formula used to calculate the t-test using the paired sample t-test formula is used to compare the mean of one paired sample. The following is the paired sample t-test formula as below.

\[ \bar{d} = \frac{\sum d_i}{n} \]

The formula used to measure the level of effectiveness of learning outcomes is to use the relative effectiveness formula as below [17]:

\[ Eta\ Squared = \frac{t^2}{t^2 + N - 1} \]

Information:
\[ t \]: T value
\[ N \]: Number of sample

The following is the percentage criteria for the interpretation of the relative effectiveness test in table 2 below.

| Score  | Qualification         |
|--------|-----------------------|
| 0.01   | Small Effect          |
| 0.06   | Moderate Effect       |
| 0.14   | Large Effect          |

Source: Cohen, (Pallant)
3. Results and Discussion

3.1 Expert Validation

3.1.1 Validation Results of Material Experts / Field Content of Study

| Table 3. Material Expert Validation / Field of Study Content |
|-------------------------------------------------------------|
| **No.** | **Description** | **Score** |
|---------|----------------|-----------|
| 1. | The truth of the material content | \( \checkmark \) |
| 2. | Free from concept errors | \( \checkmark \) |
| 3. | Up to date material | \( \checkmark \) |
| 4. | Coverage and depth of material | \( \checkmark \) |
| 5. | Reference accuracy used | \( \checkmark \) |

Score total = 22

Based on the assessment given by the content expert in the field of study, the following results were obtained.

\[ R = \frac{\sum n}{T} \]

\[ R = \frac{22}{5} = 4.4 \]

Based on the results of research by material / field experts on the documentary video media developed, the rating was 4.4. If it is adjusted to the product feasibility table above, the documentary video media developed is included in the above average category, where the product developed can be applied by making minor revisions.

3.1.2 Media Expert Validation

| Table 4. Media Expert Validation |
|----------------------------------|
| **No.** | **Description** | **Score** |
|---------|----------------|-----------|
| 1. | The suitability of the media delivery strategy with the characteristics of students | \( \checkmark \) |
| 2. | The accuracy of the media delivery strategy | \( \checkmark \) |
| 3. | Media skills in developing students' critical thinking | \( \checkmark \) |
| 4. | The application of media in real life is in accordance with the characteristics of students | \( \checkmark \) |
| 5. | The accuracy of selecting media compared to other media | \( \checkmark \) |
| 6. | Video clarity with audience characteristics | \( \checkmark \) |
| 7. | Clarity of language style with audience characteristics | \( \checkmark \) |
| 8. | The accuracy of using the narration / caption | \( \checkmark \) |
| 9. | The accuracy of selecting the sound effect on the video | \( \checkmark \) |
| 10. | Video media packaging attractiveness | \( \checkmark \) |
| 11. | The accuracy and attractiveness of the overall video media | \( \checkmark \) |

Score total = 50
Based on the assessment given by the media / learning design expert, the following results were obtained.

\[ R = \frac{\Sigma n}{T} \]

\[ R = \frac{50}{11} = 4.5 \]

Based on the results of the instructional media design expert's assessment of the documentary video media above, the rating was 4.5. If it is adjusted to the qualification eligibility table, the documentary video media developed is in the above average category, where the product developed can be applied by making minor revisions.

3.1.3 Linguist Validation

| No. | Description                                                                 | Score |
|-----|-----------------------------------------------------------------------------|-------|
| 1.  | The language used is communicative                                         | ✓     |
| 2.  | Compliance with Indonesian language rules                                  | ✓     |
| 3.  | Suitability of sentences with the level of development of students           | ✓     |
| 4.  | Simplicity of sentence structure                                            | ✓     |
| 5.  | The language used is not in the local language                             | ✓     |

Score total = 23

Based on the assessment given by the linguist, the following results were obtained.

\[ R = \frac{\Sigma n}{T} \]

\[ R = \frac{23}{5} = 4.6 \]

Based on the results of the linguist's assessment of the documentary video media above, the rating was 4.6. If it is adjusted to the qualification eligibility table, the documentary video media developed is included in the outstanding category.

**Figure 1.** Reog dancer  
**Figure 2.** Documenter video
Based on the picture above shows a documentary video footage of learning local history, reog art material that has been validated by experts.

3.2 Small group test
The small group test is a trial that is carried out by involving 6 students as subjects. The basis for selecting students is on the recommendation of educators based on the achievement qualifications of students in the class, each consisting of 2 students with high abilities, 2 students with moderate ability, and 2 students with ordinary abilities. The effectiveness test with multiple choice questions and essays was carried out twice, namely before (pre-test) and after (post-test) the use of documentary video media.

Table 6. Small group test

|        | $\bar{x}$ | N | $\sigma$ | $\sigma_t$ | r | t | df | $\alpha$ | p. |
|--------|-----------|---|----------|------------|---|---|-----|---------|----|
| Pretest| 60.33     | 6 | 15.082   | 6.167      | 0.817 | 7.248 | 5 | 0.005   | 0.001 |
| Postest| 90.33     | 6 | 7.118    | 2.906      |        |       |     |         |      |

Based on the table above, it shows that the pre-test mean value is 60.33 (Std. Deviation = 15.08) and the post-test is 90.33 (Std. Deviation = 7.11). The mean post-test score was greater than the pre-test score in the small group of subjects. Thus, it can be concluded that there is an increase in student learning outcomes (small groups) after using documentary video media. The table above shows a significance value of 0.047 (smaller than the threshold value = 0.05). Thus, there is a significant correlation between the pre-test and post-test scores of the small group at the 5% confidence level (0.047 < 0.05) with a level of 0.817.

Based on the table above, it is found that the $\text{value}_\text{count} = 7.248 (> t_\text{0.05; 05}) = 2.570$ or the significance value is smaller than the threshold value of the 5% confidence level (0.001 <= 0.050). Thus, it can be concluded that there is a significant difference between the pre-test and post-test scores in the small group, which means an increase in student learning outcomes after using documentary video media. The results of the pre-test and post-test mean scores of students using documentary video media that have been developed will be used to measure the effectiveness of local history learning using the relative effectiveness formula. The following is the relative effectiveness formula used.

$$\text{Eta Squared} = \frac{t^2}{t^2 + N-1}$$

$$\text{Eta Squared} = \frac{7.248^2}{(7.248)^2 + (6-1)}$$

$$\text{Eta Squared} = 0.91$$

Based on the results of the effectiveness of history learning outcomes in the use of documentary video media by 0.91%. If included in the table of relative effectiveness test criteria, the documentary video developed will qualify for the Large Effect effectiveness level. This means that the level of effectiveness of documentary video media has a very big influence in increasing the results of studying history.

3.3 Large group test
The large group test is a product testing activity after a small group trial but with more subjects. At this stage the developer implements online local history learning using documentary video media with
the material "reog art as a form of Indonesian culture and its influence today". The field trial activities were using the subject of 33 students.

### Table 7. The Large Group test

|          | $\bar{x}$ | N  | $\sigma$ | $\sigma_x$ | r   | t    | df  | $\alpha$ | p    |
|----------|------------|----|----------|------------|-----|------|------|----------|------|
| Pretest  | 42.82      | 33 | 14.563   | 2.535      | 0.789| 24.032| 32   | 0.005    | 0.000|
| Postest  | 88.21      | 33 | 5.355    | 0.932      |      |       |      |          |      |

Based on the table above, it is known that the pre-test average value is 42.82 (Std. Deviation = 14.563) and the post-test is 88.21 (Std. Deviation = 5.355). The average post-test score is greater than the pre-test value in the field trial. Thus, it can be concluded that there has been an increase in student learning outcomes in field trials after using documentary video media. The significance value is 0.000 <0.05. Thus, there is a significant correlation between the pre-test and post-test scores of the large group at the 5% confidence level (0.000 <0.05) with a level of 0.789.

Based on the table above, the value of $t$ count = 24.032 (> $t_\alpha(0.05; 32)$ = 2.036 or the significance value is smaller than the threshold value of the 5% confidence level (0.000 < $\alpha = 0.05$). Thus, it can be concluded that there is a significant difference between the pre-test and post-test scores in field trials, which means that there is an increase in student learning outcomes after using documentary video media. The results of the pre-test and post-test mean scores of students using documentary video media that have been developed will be used to measure the effectiveness of local history learning using the relative effectiveness formula. The following is the relative effectiveness formula used.

\[
\text{Eta Squared} = \frac{t^2}{t^2 + N-1} = \frac{24,032^2}{(24,032)^2+(33-1)} = 0.94
\]

Based on the results of the effectiveness of history learning outcomes in the use of documentary video media by 0.94%. If included in the table of relative effectiveness test criteria, the documentary video developed will qualify for the Large Effect effectiveness level. This means that the product developed successfully increases the effectiveness of learning. This can be seen from the results of the study which show that there is a significant difference between the results of the pre-test and post-test conducted in field trials. The results showed that the post-test score was greater than the pre-test.

### 4 Conclusions

Based on the results of data analysis and discussion of the process and results of the development of local history learning documentary video media, reog class X art material using the ASSURE development model, it can be concluded that:

a) The documentary video media product has gone through the expert validation stage which includes material experts, media and learning design experts and linguists. The results of the material validation achieved a rating of 4.4 with the qualification of "above average", the validation of media experts and the learning design reached a rating of 4.5 with the qualification of "above average", and the validation of the language which reached a rating of 4.6 with the
qualification of "outstanding". Product development also goes through the user test stage. The results obtained in the educator user test reached a rating of 4.6 and the student user test achieved a rating of 4.6 with "outstanding" qualifications.

b) The small group trial involved 6 students, the pre-test mean score was 60.33 (Std. deviation = 15.082) and the post-test mean score was 90.33 (Std. deviation = 7.118). The mean post-test score was greater than the pre-test score in the small group of subjects. So, it can be concluded that there has been an increase in student learning outcomes (in small groups) after using documentary video media. In addition, the success of documentary video media in improving the learning outcomes of history in small groups shows an effectiveness level of 0.91% which is classified as a Large Effect qualification.

c) The field trial involved 33 students, the pre-test mean score was 42.82 (Std. deviation = 14.563) and the post-test mean score was 88.21 (Std. deviation = 5.355). The average post-test score is greater than the pre-test value in the field trial. So, it can be concluded that there has been an increase in student learning outcomes (in field trials) after using documentary video media. In addition, the success of the documentary video media in improving the learning outcomes of history in field trials shows an effectiveness level of 0.94% which is classified as a Large Effect qualification.

Based on the above recapitulation results, documentary video products to increase the effectiveness of historical learning outcomes using the ASSURE mode developed have been validated and obtained good results. Documentary video media can improve the results of studying history. It can be concluded that the development of documentary video media for learning local history of reog art using the ASSURE model can increase the effectiveness of the learning outcomes of classroom students.

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References
[1] Shahroom, A.A., & Hussin, N. 2018. Industrial Revolution 4.0 and Education. Journal of Academic Research in Business and Social Science.8(9): 159-178.
[2] Hariharasudan, A., & Kot, S. 2018. A Scoping Review on Digital English and Education for Industry 4.0. Social Sciences Article.7(227):1-13.
[3] Almeida, F., & Simoes, J. 2019. The Role of Serious Games, Gamification and Industry 4.0 tools in the Education 4.0 Paradigm. Contemporary Educational Technology.10(2) : 120-136.
[4] Moore, J.L., Dickson-Deane, C., & Galyen, K. (2011). E-Learning, online learning, and distance environments: Are they same? Internet and Higher Education.
[5] Imania, K.A. 2019. Rancangan Pengembangan Instrumen Penilaian Pembelajaran Berbasis Online. Jurnal PETIK. Vol 5, 31-47.
[6] Noviyanti, Magfiroh F, Wahyudi AN, Puji RPN 2020 Analysis of Changes in Student Activity and Learning Patterns During the Pandemic: Case Study of High School Students in Jember Regency. Pancaran Pendidikan. 93 10.25037/pancaran.v9i3.297
[7] Alamsyah M R B, Puji RPN and Soepeno B 2020 Information media on historical tourism: probing into public perspectives in Jember regency IOP Conf. Ser.: Earth Environ. Sci. 485 012138
[8] Puji RPN et al 2020 The Students’ Prior Knowledge at The Department of History Education within Tertiary Education IOP Conf Series: Earth And Environmental Science 485 012041doi:10.1088/1755-1315/485/1/012041
[9] Wijayanti, Y. 2017. “Peranan Penting Sejarah Lokal Dalam Kurikulum di Sekolah Menengah Atas”. Jurnal Artefak: History and Education. Ciamis: Universitas Galuh Ciamis.

[10] Setiawan, I. 2018. Reog Pandhalungan: Politik wacana media, kekuasaan, dan proyek identitas Jember. Artikel. Matatimoer Institute.

[11] Pangondian, R.A., dkk. 2019. Faktor-Faktor Yang Mempengaruhi Kesuksesan Pembelajaran Online Dalam Revolusi Industri 4.0. In Seminar Nasional Teknologi Komputer & Sains (SAINTEKS) (Vol.1, No.1).

[12] Dindin, J, et all. 2020. Pembelajaran Online Masa Pandemik Covid-19 Pada Calon Guru: Hambatan, Solusi Dan Proyeksi. Karya Tulis Ilmiah (KTI) Masa Work From Home (WFH). UIN Sunan Gunung Djati Bandung.

[13] Smaldino, dkk. 2005. Instructional Technology and Media for learning. New Jersey: Merrill Prentice Hall.

[14] Agustiningsih. 2015. “Video” Sebagai Alternatif Media Pembelajaran Dalam Rangka Mendukung Keberhasilan Penerapan Kurikulum 2013 Di Sekolah Dasar. Jurnal Pancahan, Vol.4. Hal 55-68. Februari, 2015.

[15] Smaldino, dkk. 2005. Instructional Technology & Media for Learning: Teknologi Pembelajaran dan Media untuk Belajar. Jakarta: Kencana Prendanamedia Group.

[16] Gronlund, N.E. 1977. Constructing Achievement Test. Second Edition. PRENTICE-HALL, INC., Englewood Cliffs, N.J. 07632.

[17] Pallant, J. 2003. SPSS Survival Manual. Version 10 and 11. Open University Press Maidenhead. Philadelphia.

[18] Hidayah B, Na‘im M, Puji RPN 2020 Technological content knowledge of history teachers in Jember IOP Conf Series: Earth And Environmental Science 485 012132 doi:10.1088/1755-1315/485/1/012132

[19] Puji RPN and Umamah N 2018 Edmodo Multimedia: Supporting Technology for Media Learning at Higher Education International. Journal of English. Literature and Social. Sciences 3 2456 https://dx.doi.org/10.22161/ijels.3.1.9

[20] Priskilla M et al 2018 Interactive Multimedia Based on Computer Assisted Instruction: Development Efforts on the Learning Interest and Effectiveness in the History Learning International Journal of Humanities and Social Science 5 43

[21] Rismayati F A et al 2017 Reyog Ponorogo National Festival as the Cultural Conservation Efforts and Character Education for the Younger Generation The International Journal of Social Sciences and Humanities Invention 4 3768 DOI: 10.18535/ijjshii/v4i8.12

[22] Puji RPN and Ahmad AR 2015 Gaya Belajar dan Kemahiran Pemikiran Sejarah Dalam Pembelajaran Sejarah di Peringkat Universitas Edusentris, Jurnal Ilmu Pendidikan dan Pengajaran, 2 253

[23] Puji RPN and Ahmad AR 2015 Learning Style of MBTI Personality Types in History Learning at Higher Education Scientific Journal of PPI-UKM 3 289