Development of Audio-Visual Media Based on Interactive Learning in Elementary School Students

Herlina Usman[1], Angela Novena1[2], Moonhidayati Otoluwa
[1]Education Faculty Universitas Negeri jakarta
[2]Education Faculty Universitas Negeri jakarta
[3]Language Education Faculty Universitas Negeri Gorontalo
herlina@unj.ac.id,moonhidayati@ung.ac.id,angelanovenaelisabeth@mhs.ac.id

Abstract
This research aims to develop an interactive learning media based on audio visual in the learning of Social Science in elementary school students. This research uses Research and Development method with the Analyze, Design, Develop, Implementation and Evaluation models. (ADDIE). This research was carried out at elementary scools and the subject of this research was a fourth grader in elementary school as many as thirty people in Jakarta. The object of this research is learning media the in learning videos in soisal science subjects. The steps in this study are 1) Conducting needs analysis through questionnaires and interviews 2) Making product designs, 3) Conducting product development, 4) Conducting trials : one to one, small group of learners and 5) Evaluate the product. Data analysis techniques use questionnaires and interviews. Conducted one to one trial of four students and a small group trial of 6 students, the results of the development trial were evaluated by media experts to get expert score of 90.2% with excellent category, by material expert gets 88.4% with excellent category, and by linguist gets score 96.6% . The results of the one to one product trial received a score of 84.6% and also the small group trial result received a score of 84.3%. This research resulted in an interactive audio-visual learning media that was used as a medium for social science learning in the fourth grade of elementary school.

Introduction

Using information and communication technology (ICT), teachers can apply various interesting learning methods or models in the classroom and can use them as a means of learning (Bryer et al., 2012). In pratiwi research stated that learning media is needed not for additional functions, but for the purpose of facilitating the achievement of more effective and efficient learning (Pratiwi, 2018). The use of media in the learning process makes learning more attractive to learners. Media learning is a factor that can motivate students in carrying out learning and is able to encourage students to achieve laboratory learning outcomes. Learning outcomes is used as a benchmark to find out how far someone has mastered the material that has been taught because, learning results are one of the goals of education that wants to be achieved in the learning process. Thus it can be said that learning is successful if the learner's learning outcomes are also successful (Ravena et al., 2021) Stated that the fact is that not all learners can achieve maximum learning results. This can be caused by various factors, one of which is the use of learning media that has not been maximized (Lina et al., 2019). From some of the above statements, it can be concluded that learning media is one of the factors in achieving maximum learning outcomes.

Learning media has a fairly important position in the components of the learning system. Without media, communication does not occur data and learning programs as a communication process will not run optimally (Usman et al., 2021) Learning media is a learning tool that is one of the components in the learning process that must be planned by teacher in learning activities (Evi Rizqi, 2017). In line with Nurrita's statement, learning provision is one of the communication tools used by teachers to convey materials to students (Nurrita, 2018) The selection of media used must be considered carefully in order to facilitate delivery. Information to students (Widyasusanti et al., 2021) Oleh therefore the creation and use of media in the learning process must be adjusted to student karateritik and current technological developments.

Audio visual media is a learning tool that displays the impression of sound (audio) and images (visuals) at once in one play through various digital applications, but it is also not entirely dependent on the understanding of words (Riyanto et al). , 2018). Audio visual learning media is an audible tool that means it can be heard and a visible tool so that it can make communication effective (Sakmal et al., 2011) In line with Rosyidah's research Which states the excess use of audio visual media is that the message conveyed is easy to understand, understand, and maintain in memory so that it will have a real effect on learning outcomes both cognitive, affective and psychomotor (Rosyidah and Winarni, 2016). In addition, Munandi argues that the advantages of audio visual media can also overcome the limitations of distance and time and can be repeated to increase understanding (Munandi, 2012). From some of the above opinions can be shown that audio visual media can increase students' learning spirit

and student understanding because not only audio elements but also visuals. so that students not only understand the material by listening but also seeing images or videos that clarify the subject matter.

(Husein, 2015), media Interactive learning can make the learning process varied, interesting, and not boring. (Pramoto et al., 2015), interactive learning provision can be interpreted as an application program (software) consisting of various media elements such as text, graphics, photos, animation, video, and sound that are presented interactively for learning purposes. Meanwhile, according to (Hakim et al., 2014), interactive learning media means tools in the learning process to meet targeted learning goals by using ways based on visual, audio, print media, or audio visual. Based on some opinions, it can be concluded that interactive learning media is a medium or tool in learning that has various visual, audio, or audio visual elements such as text, images, sounds presented interactively that can maximize learning.

Interactive video is a video that can provoke students during the learning process so that students will respond to what they see and hear, thus students will be able to absorb messages from the material contained in the video (Izzudin et al. , 2013). In line with Utami's opinion, this audio-visual-based interactive system presents moving images with accompanying sounds. Moving images or visual and sound (audio) animations included in visual animation are part of the sense of sight and sense of hearing (Utami & Julianto, 2013). From some of the above opinions , it can be concluded that interactive audio-visual media can convey learning materials by not making students bored and can also improve student memory. because there is an audio or sound explanation that is supported by visuals or images that can interest students in understanding the material provided.

Every learning activity must be carried out systematically, the social science learning system integrates various learning components to achieve national education goals in general and social science learning goals in particular. The components of learning must support each other to create a fun and interactive learning atmosphere (Basori, 2016). Therefore, an update is needed in the learning process so that students can easily understand social science subject matter. One way is to develop interactive learning media, namely learning videos that can make students better understand the material and increase students' learning interest. (Evi Rizqi, 2017) developed an interactive audio visual media on the material of indonesian independence figures. The results of this study proved that the average post-test score is higher than the average pre-test value. In other words, it can be said that learning using audio visual-based learning media in independence figures provides maximum improvement results. The research conducted aims to develop audio visual-based learning media but not interactive media. This research has similarities, found in subjects where researchers create audio-visual-based learning media for social science subjects in elementary school. (Lina et al., 2019) which aims to find out the influence of the use of Audio-Visual Video Learning Media on the learning outcomes of elementary students.

(Lukman et al., 2019) . From the results of the data, it can be concluded that learning media is effective for students to use as one of the learning media independently. This research produces media that apply the same elements of text, images, sound and animation as the research that will be done, namely producing audio-based interactive learning media visual. This research uses Adobe Flash to create interactive learning media, while the research will be conducted using Edpuzzle to create learning videos. (Joni et al., 2014) which aims to determine the influence of the use of audio visual media on natural science subjects. The implementation of the use of audio-visual media in learning has a positive impact on students. It can be known from the study that siswa get a new learning atmosphere, the classroom atmosphere becomes more interactive, learning becomes interesting, students become more enthusiastic and more motivated to follow learning

Method

In this research methodology procedure using Research & Development with the ADDIE model. There are five steps in the ADDIE development model, namely: 1) analysis, 2) design, 3) development, 4) implementation, and 5) evaluation. The steps in this study are 1) Conducting needs analysis through questionnaires and interviews 2) Making product designs, 3) Conducting product development, 4) Conducting trials: one to one, small group of learners and 5) Evaluate the product. Data analysis techniques use questionnaires and interviews.

1. Analysis

The development of new learning media is initiated by problems in the use of learning media that have been applied. Problems can occur because the existing learning media is less diverse and less applicable to technology development. After conducting a needs analysis and obtaining data using questionnaires, researchers will design the development of interactive learning media in social science elementary school lessons for historical relics of elementary school students

2. Design

This stage known as making product designs. The product design is still conceptual and will underlie the next development process. Drawing up a learning media creation plan that begins with compiling a framework for creating interactive learning media on the edpuzzle platform .

3. Development

The process of developing interactive learning media products based on Audio Visual social science lessons begins by looking for supporting materials in books and articles and then recorded, after which researchers look for images on the internet and supporting videos on youtube. Once all is prepared, the researcher designs as well as moves the material, video image to the edpuzzle.

4. Implementation

During implementation, the design of learning media that has been developed was applied to the actual class conditions. The material was delivered using new learning media developed. After the application of learning media, an initial evaluation carried out to provide feedback on the learning media. The initial design has been completed and will then lead to a validation process by media experts, material experts and linguists to find out the level of feasibility of using assessment instruments.

5. Evaluation

The last stage is evaluation, at this stage implemented learning media that has been developed in real situations. During implementation, the design of the learning media that has been developed is applied to the conditions in the actual classroom. Materials are provided through learning media that have been developed. The data used in the development of interactive learning media based on audio visual is a questionnaire. The questionnaire uses a likert scale that serves to analyze the needs and validations of media experts, material experts, and linguists. Data analysis techniques in this study use quantitative descriptive analysis. Qualitative data in the form of statements are very poor, not good, medium, good and very good converted into quantitative data with a value scale of 1 to 5. Here is the rating scale that is used as a guideline in interpreting eligibility:

Table.1 Rating Scale

No	Percentage	Eligibility Categories
1	80%-100%	Very good
2	61%-80%	Good
3	41%-60%	Enough
4	21%-40%	Less
5	0%-2-%	Very lacking

The results are averaged and used to assess the quality of interactive learning media based on audio visuals that have been developed. The criteria for interactive learning media based on audio visual will be converted to values on a scale of five using the Likert Scale which is analyzed descriptively with the following formula (Purwanto, 2009: 112)

X =R/N x 100%

X =Expected value (searched)

R: The number of scores of items or questions answered correctly

N: Maximum score of the test

Results

The results obtained are interactive learning media products based on audio visual that are valid, practical and also effective in the subjects of social science in elementary School studenta. This Validity Test was carried out by providing a product draft accompanied by an assessment instrument in the form of a research questionnaire. (Sugiyono,2009) the questionnaire method a data collection technique carried out by giving a set of questions or written statements to respondents to answer.

The results of the validation test by expert review :

1] Media Members

Table 2. Media Expert Validation Assessment

No	Aspects	Score
1	Video View	93%
2	Consistency	100%
3	Use of letters and spaces	85,7%
4	Physical criteria	90%
	Avarege	90,2%
	Rating	Very good

Based on the table above, the validation of Interactive Learning Media based on Audio Visual social science elementary school conducted by media experts gets an average product feasibility of 90% and is categorized very good.

2). Materials

The validation by material experts to assess the quality of products in terms of materials.

Table.3 Material Expert Validation Result

No	Aspects	Score
1	Content Quality	90%
2	Serving	85,7%
	Avarege	88,4%
	Rating	Very good

The validation of Interactive Learning Media based on Audio Visual social science lessons by material experts gets an average product feasibility of 88.4% and is categorized as very good.

3] Language

The quality the product in terms of language. The language validation results are as follows:

Table. 4 Linguist Validation Assessment Result

No	Aspects	Score
1	Sentence structue	100%
2	Sentence effectiveness	100%
3	Term used	100%
4	Communicative language	100%
5	Dialogical and interactive	89%
6	Comformity to the level of student development	90%
7	The blurriness and cohesiveness of thoufht flow Spelling accuracy	90%
	Avarege	96,6%%
	Rating	Very good

The validation of Interactive Learning Media based on Audio Visual social science lessons material conducted by linguists gets an average product feasibility of 96.6% and is categorized as excellent.

Table. 5 One-to-one Test Result

No	Aspects	Score
1	Presentation of materials	84,4%
2	Visual	81,6%
3	Audio	86,6%
4	Interactive Video Diary	80%
5	Benefits of Interactive Video	100%
	Avarege	84,6%%
	Rating	Very good

Table.6 Small Group Test Result

No	Aspects	Score
1	Presentation of materials	86,6%
2	Visual	83,3%
3	Audio	86,6%
4	Interactive Video Diary	83,3%
5	Benefits of Interactive Video	80%
	Avarege	84,3%%
	Rating	Very good

The elaboration of the results of the study shows that interactive media based on Audio Visual is feasible to be applied in the teaching and learning process. Therefore, learning media is a tool used to convey learning messages in various forms to improve the student learning experience to concrete (Nurhasanah & Sarivah, 2020).

Technology has developed very well today. Changes in the use of technology in the world of education also certainly also change and must keep up with the times. In the changes in character of students every year are also felt. If in the past students were not familiar with gadgets, online games, and social media, now the situation is very much different Students are already proficient in operating (Widiasworo, 2019) smart phones, playing various types of games, and surfing in cyberspace. Therefore, teachers are required to be able to create media that is in accordance with the changing times and characteristics of students.

(Utami & Julianto.2013), This audio-visual-based interactive media has a new dimension to learning because it can present moving images with accompanying sounds. Moving images or visual and sound (audio) animations included in visual animation are part of the sense of sight and sense of hearing. Both senses are very useful to focus students' attention during learning activities so that students' absorption and memory in learning materials packaged in the form of audio-visual media can increase in general. Interactive learning media based on audio visual developed using the help of edpuzzle, while those contained in interactive videos are text, images, videos, mini quizzes that later students can write answers to questions and conclusions from learning that have been learned. An interactive audio-visual learning medium developed from validation results by one media expert, one material expert and one linguist.

Conclusions

The development of Interactive Learning Media with Audio Visual Character in social science learning in class four using the ADDIE research stage There are five steps in the development model, namely: analysis, design,development, implementation and evaluation. Interactive Learning Media based on Audio Visual in social science learning is worth using in learning based on the assessment of the three experts and also the assessment of learners. The number of scores obtained for Interactive Learning Media based on Audio Visual from media experts is 90,2%, from material experts is 88.4%, and scores from linguists is 96.6%. With these three scores, Interactive Learning Media with Audio Visual is categorized as very good even though there are revisions. In addition to expert tests, tests are also carried out by learners to assess the products developed. The assessment by students is carried out with two stages, namely the one-to-one test and the small group test. Assessment by learners can be seen from Table 5, and Table 6. The one-to-one test scored 84.6% and the small group test received a score of 84.3%. With this score the product is categorized very well. Based on the results of the calculation of the recapitulation of expert validation assessments and product trials to students, researchers can find out that audio-visual-based interactive learning media is feasible for use in social science learning of Historical Relics materials for the fourth grade of elementary school.

References

1. Andrianti, Y., & Susanti, L. R. R. (n.d.). *Pengembangan Media Powtoon Berbasis Audiovisual pada Pembelajaran Sejarah*.
2. Anjarsari, E., Farisdianto, D. D., & Asadullah, A. W. (2020). *Pengembangan Media Audiovisual Powtoon Pada Pembelajaran Matematika Untuk Siswa Sekolah Dasar (Development Of Audiovisual Based Powtoon Media In Mathematics Learning For Elementary School Students)* (Vol. 5, Issue 2).
3. Dasar, J. P., Pembelajaran, D., Salamah, E. R., Guru, P., Dasar, S., Bina, S., & Mandiri, I. (2017). Premiere Educandum *Pengembangan Media Pembelajaran Berbasis Audio Visual Tokoh-Tokoh Kemerdekaan Indonesia*. Premiere Educandum, 7(1), 9–18. http://ejournal.unipma.ac.id/index.php/PE
4. Lina, N., Elly, S., Mahesa. Y. P. 2019. *Penggunaan Media Pembelajaran Video terhadap*
5. *Hasil Belajar Siswa SD. 2017*. Indonesian JOURNAL OF Primary Education, 3 (2) 64-72.
6. Mawan Akhir Riwanto, & Nuning Budiarti, W. (2021). *Pengembangan Media Pembelajaran Interaktif IPA SD Terintegrasi Pendidikan Karakter Peduli Lingkungan*. JURNAL PENDIDIKAN DASAR NUSANTARA, 6(2), 71–82.https://doi.org/10.29407/jpdn.v6i2.14974
7. Mufidah, I., Nulhakim, L., & Alamsyah, T. P. (2020). *Development of Learning Media for Video Audio-Visual Stop Motion Based on Contextual Teaching and Learning in Science Learning Water Cycle Material*. Jurnal Ilmiah Sekolah Dasar, 4(3), 3. www.covid19.go.id
8. Novelti, Syahrul, R., & Agustina. (2018). *Developing an Instructional Model Assisted Audio Visual Media*.
9. Nurhasanah, N., & Sarivah, I. (2020). *Model Pengembangan Media Permainan Engklek Berbasis Pendidikan Karakter Untuk Siswa Kelas IV Sekolah Dasar*. JPD: Jurnal Pendidikan Dasar, 1–11. http://journal.unj.ac.id/unj/index.php/psdpd/article/view/18230

10. Pendidikan, J. T., & Pendidikan, I. (n.d.). *Pengembangan Multimedia Interaktif Mata Pelajaran IPA Pokok Bahasan Sistem Peredaran Darah Manusia Untuk Kelas VIII SMP* Wahid Hasyim Malang Lukman Arief Novianto, I Nyoman Sudana Degeng, Agus wedi.
11. Rachmadtullah, R., Nadiroh, N., Syarif Sumantri, M., & S, Z. M. (2018). *Development of Interactive Learning Media on Civic Education Subjects in Elementary School*.
12. Rozali, F., & Salam, U. (n.d.). *Developing Audiovisual Instructional Media Using Powerpoint For Teaching English In Primary School*.
13. Sakmal, J., & Riani, D. N. (2014). *Penggunaan Media Pembelajaran Audiovisual Untuk Meningkatkan Kemampuan Berbicara Dan Menulis Siswa* Pendidikan Guru Sekolah Dasar FIP Universitas Negeri Jakarta. In *Perspektif Ilmu Pendidikan* (Vol. 28, Issue 1).
14. Stevi, & Haryanto. (n.d.). Need Analysis of Audio-Visual Media Development to Teach Digestive System for Elementary School.
15. Usman, Herlina. , A. Miftahulkhairah. , Z. Linda. , L. A. J. (2021). *Pelatihan Multimedia Interaktif Berbasis TPACK bagi Guru-Guru Sekolah Dasar di Kecamatan Klapa Nunggal Kabupaten Bogor Jawa Barat*. *PERDULI*, *02*(01), 1–11.
16. Utami, K., & Julianto. (2013). *Penggunaan Media Audio Visual untuk Meningkatkan Pemahaman Konsep Siswa di Sekolah Dasar*. Jurnal Penelitian Pendidikan Guru Sekolah Dasar, 1(2).
17. Widiasworo, E. (2019). *Guru Ideal di Era Digital (Damaya*). Noktah.
18. Widyasusanti,M., Sarifah,I., &Usman, H. (2022). *Pengembangan Media Pembelajaran E-Learning berbasis Moodle Pada Materi Pecahan Senilai Kelas IV Sekolah Dasar*.Prima Magistra: Jurnal Ilmiah Kependidikan,3(1), 1-15. https://doi.org/10.37478/jpm.v3i1.1289
19. Yuliarsih. (n.d.). P a g e | 29 53 *Developing Learning Media Using Audio Visual For Students Grade Vii At Mts*. *Miftahul Ihsan.on Students ' Science Competencies*. *Journal of Educatioan Review and Research*, *1*(1), 38–50.