

KARNESIA Flashcard Assisted by QR Code in Elementary SchoolNaflah Dikta Ramadhanti ¹ Puri Selfi Cholifah ² Khusnul Khotimah ^{3*}¹²³ Universitas Negeri Malang

*Khusnul Khotimah

✉ khusnul.khotimah.fip@um.ac.id

Abstract: The KARNESIA flashcard assisted by QR Code is a research development product in the form of a learning media in the form of a flashcard assisted by a QR Code with the product name KARNESIA. Based on the results of field trials, this product obtained validation results according to two media experts with an average of 96.4%. The validation of two material experts obtained an average score of 88.75%. The practicality and attractiveness of the product scored 94% and 98.8%, respectively. KARNESIA includes very valid, practical, and interesting criteria to be used in learning for fourth-grade elementary school.

Keywords: *Flashcard, QR Code, KARNESIA*

INTRODUCTION

Learning media is one of the tools that can be used in the learning process to make students active. Learning media is a tool used to help the learning process activities that serve to clarify the content of the material so that learning objectives can be achieved better [1]. Learning media also acts as an intermediary for delivering information from teachers to students. Media has an important role in learning outcomes because with the use of media the abstract material learned will be easier for students to understand [2]. Learning media plays an important role in learning so the selection and use need to be considered carefully and appropriately.

Many types of learning media can be used to attract students' interest. In today's modern era, technology has developed into the realm of education, including learning media. Technology can facilitate access to learning media so that it is considered more practical and fun for students. The use of learning technology can increase the enthusiasm of teachers and students to learn and can also facilitate and clarify students in exploring the material being studied.

One example is the incorporation of traditional media in the form of flashcards with QR Code technology. Flashcard is a relatively simple tool, but very effective in helping someone achieve active memory, its use is practical and does not require special skills [3]. Students can learn and play at the same time using flashcards, so it can attract students' interest

To cite this article: Ramadhanti, N.D, Cholifah, P, Khotimah, K. (2023). KARNESIA Flashcard Assisted by QR Code in Elementary School. *International Research-based Education Journal*. 5 (2), 293-300.

in learning. QR Code (Quick Response) is a two-dimensional code that is considered capable of providing information quickly. QR Code is a matrix symbol that has been developed to process information at high speed and contains 100 times more information than linear codes (barcodes) [4]. The combination of these two things can produce flashcard media with a QR Code. Flashcards will act as a medium that helps students remember the material and the QR Code will act as an intermediary between students and further information about the material.

Based on the distribution of the needs analysis questionnaire for class IV-B SDN Bunulrejo 2 on April 2, 2021, which was filled out by 28 students, it is known that 46.4% of students still do not understand at least 10 of Indonesia's cultural diversity; 75% of students answered that there were no social studies learning media available in the classroom; 89.3% of students feel they need social studies content learning media; and 100% of students are happy if there are learning media for social studies content. Based on this description, it can be concluded that students still do not understand the material about cultural diversity in Indonesia, the available learning media regarding Indonesian cultural diversity are still limited and cannot interact directly with students, and students feel they need media for study.

Based on the explanation above, the developer wants to develop an innovation from learning media, namely a QR Code -assisted flashcard with the product name "KARNESIA (Indonesian Diversity Card)". The media was developed based on an analysis of the curriculum and materials, namely about social, economic, cultural, ethnic, and religious diversity in the local province as the identity of the Indonesian nation and its relationship to spatial characteristics.

2. METHOD

This study uses research and development (R&D) with the ASSURE development model. This model was developed by Heinich, Molenda, Russell and Smaldino in 1996 [5]. Research and development using the ASSURE model have six stages, as shown in Figure 1 below.



Figure 1 ASSURE Model

The first stage of research and development is carried out by analyzing learners and the needs of SDN Bunulrejo 2 Malang. The analysis was carried out through observation, interviews with the homeroom teacher of class IV B and filling out student needs analysis questionnaires. There are 28 students in class IV B with an age range of 9-10 years with students who are quite active and cheerful, so they like learning which is done using the game method. Students are also able to operate gadgets/smartphones and are very interested in them. Parents of students have also facilitated students by providing internet access and the use of smartphones to support learning needs, especially during online learning as it is today.

There are several problems experienced by teachers in learning, especially during social studies learning the teacher finds one of the problems, namely the lack of learning media. Social studies learning media available are only in the form of maps or globes so they are limited to certain materials, while for other materials they are not, for example the material on Indonesian cultural diversity. During learning the teacher only uses 29 media in the form of an LCD projector to display pictures related to the material classically. Other learning media used by teachers in learning are miniatures brought by students themselves for those who have them, while online learning teachers only use videos or images sent to students. Several problems were also experienced by students in social studies learning, especially material about cultural diversity in Indonesia. Some students are still not able to understand or identify the material. Students also feel the need for learning media and are happy when there are social studies learning using the game method.

The next stage is to determine the basic competencies and learning objectives. Learning objectives are described based on basic competencies 3.2 and formulated into four learning

objectives. Based on the results of the analysis at the student analysis stage of curriculum analysis, the results obtained are the unavailability of learning media that interact directly with students. Students also like learning done with games, besides that students also have an interest in using smartphones. So researchers want to develop a learning media that combines technology and games. The media that will be developed is a QR Code-based flashcard media with the product name "KARNESIA".

The next stage is utilizing technology, media and materials. At this stage the researcher will begin to determine the design of the media is developed. The initial design of the product is made using a blueprint (storyboard) which contains a flashcard design plan that will be made. The next stage is the stage of producing media. Figures 2 and 3 below are examples of displaying KARNESIA products.



Figure 2 Front and Back View of KARNESIA



Figure 3 Examples of KARNESIA Media Contents

The resulting product is then validated by media experts and material experts. The product will be corrected based on input from the experts, if the product validated by the experts is declared invalid, the revision stage is carried out. The product revision stage is carried out until the media and material experts state that it is valid. Learning media that have been validated by experts can be said to be feasible to be tested.

The next stage is require learners' participation. After the product is declared valid by media experts and material experts, the next step is product testing. At this stage, the product will be tested with a small group. The trial was conducted on 14 students of class IV-B SDN Bunulrejo 2 Malang, with various student abilities (high, medium and low ability students). During the trial, students will be divided into three groups, with each group containing two students and one smartphone for each group. Students and groups will conduct discussions using KARNESIA media. At this trial stage, students are given the freedom to seek information from the KARNESIA media through the QR Code so that students can actively participate in learning. In addition, at the end of the lesson, students will be given a media interest questionnaire to find out responses to the KARNESIA media.

The types of data used in this research are qualitative and quantitative data. Evaluation of expert and user validators was measured using a Likert scale. Answers will be grouped into 4 groups which are broken down on a Likert scale. Quantitative data in the form of numbers is processed using percentages with the following analytical formula.

$$V = \frac{TSe}{TSH} \times 100\%$$

3. RESULTS AND DISCUSSION

The results of the validation carried out by media expert 1 get an average percentage of 98.8%. Criticisms and suggestions from media experts 1 should be equipped with video format material so that motion/audio-visual content can be presented. Information from audio-visual media can be in the form of verbal or nonverbal messages so that it can be attached to students better. Based on this input, the researcher added a card containing a QR Code containing a video about Indonesia's cultural diversity with the link <https://www.youtube.com/watch?v=BDy2ChJusqU&t=16s>.

The results of the validation carried out by media experts 2 get an average percentage of 94%. Criticisms and suggestions from media 2 experts are that the material for making cards should be made thick so that they are not easily damaged. One of the media selection criteria that must be considered is practical, flexible and can last a long time [7]. Based on this input, the researchers changed the thickness of the paper material from Art Paper 260gr to Art Paper 310gr. The next input is so that the colors are made more varied so that they are not monotonous. Correspondingly, RA (TK) and MI (SD) students tend to like colorful visual

messages [8]. Based on this input, the researcher added several colors to the card and grouped the color of the card based on the major islands in Indonesia.

The results of the validation carried out by material expert 1 get an average percentage of 90%. Criticisms and suggestions from material 1 experts can include (1) in the instructions added ways to install the application, (2) the color of the provincial map in question must contrast with other provincial maps, (3) adding openings for the 5 major islands in Indonesia, (4) the identity of the developer is given a name and photo, (5) the addition of the UM logo on the cover, and (6) the addition of learning objectives according to the input. Based on these inputs, the researchers made revisions to make KARNESIA media better.

The results of the validation carried out by media experts 2 get an average percentage of 87.5%. Criticisms and suggestions given by media experts 2 include, (1) time to explain the map of Indonesia should be displayed in its entirety and (2) providing opportunities for students to ask questions freely in learning. Based on this input, the researcher did both of these things when the researcher conducted a product trial.

Based on the results of user trials (teachers) obtained an average percentage of 94% with a very practical category that can be used without revision. These results are following the research conducted by Sufinda who developed a media that was marked by the hard work of recognizing Javanese characters in third-grade elementary school students who got a percentage of 86.9% with a very practical category by the teacher. [9]. KARNESIA media is also considered to be able to make it easier for students to understand because it can foster student interest and motivation to learn. Display images, colors and writing are considered very attractive for learning media that will be used by students. The card material used is good and thick, but it would be better if the card was laminated to make it more durable. One of the media selection criteria that must be considered is practical, flexible and can last a long time [10].

Based on the test results for students, the average percentage is 98.8% with a very interesting category and can be used without revision. In line with that, previous research by Susilowati and Deni who developed a Javanese script flashcard media to improve reading and writing skills got a percentage of 99.4% of student responses in the very decent category [12]. Based on the student response questionnaire, 100% of students stated that the KARNESIA learning media was easy to use, interesting and motivating to learn, a good visual presentation is coloring, for coloring pictures it will create a realistic impression [11].

4. CONCLUSION

Based on the results of research on the development of QR Code-based flashcard media on Indonesian cultural diversity material for fourth-grade elementary school students, it can be divided into two conclusions, namely general and specific conclusions. In general, it can be concluded that the developed KARNESIA media is valid, practical and is divided into three namely validity, practicality, and attractiveness. The media validation results obtained an average percentage of 96.4% with a very valid category and can be used without revision. The results of material validation obtained an average percentage of 88.75% with a very valid category and can be used without revision. The results of the media practicality assessment that has been carried out get 94% results in the very practical category and can be used without revision. The results of product trials conducted on 14 students of class IV-B obtained an average percentage of 98.8% with a very interesting category and can be used without revision.

ACKNOWLEDGEMENTS

This research was supported by the Department of Primary and Preschool Education, Faculty of Education, State University of Malang.

REFERENCE

- Arsyad, A. 2011. *Learning Media* (15th Edition). Jakarta: Rajagrafindo Persada.
- Bennis, T. 2019. *Accelerated Learning: 18 Powerful Ways to Learn Anything Really Fast! Increase Your Memory Efficiency. Think Bigger and Succeed Bigger! Great for Listening in the Car!*. Vaclav Vrbensky.
- Hamdayama, J. 2016. *Learning and Learning*. Bandung: Rineka Cipta.
- Kustandi & Ayah. 2020. *Development of Learning Media: Concepts & Applications of Development of Learning Media for Educators in Schools and Communities*. Prenada Media.
- Kustandi & Father. 2020. *Development of Learning Media: Concepts & Applications of Development of Learning Media for Educators in Schools and Communities*. Prenada Media.
- Purnama, S. 2010. Elements of Color in Multimedia Development of Islamic Religious Learning. *Al-Bidayah*, 2(1), 113-129.
- Sanaky, H., AH. 2013. *Interactive-Innovative Learning Media*. Yogyakarta: Kaukaba Dipantara.

Sezer, B., Karaođlan Yılmaz, FG, & Yılmaz, R. 2013. Integrating Technology Into the Classroom: Learner-Centered Instructional Design. *Ijonte: International Journal of New Trends in Education and Their Implications*, 4(12), 134-144.

Soon, T. 2008. QR Code. *Synthesis Journal*, 2008, 59-78

Sufinda, DA 2020. Development of Javanese Script Domino Learning Media (DAKWA) by Strengthening the Character of Hard Work to Introduce Javanese Script to Grade III Elementary School Students. Thesis. Malang: State University of Malang.

Susilowati, G. & Deni, S. 2019. Development of Javanese Script Flash Card Media to improve Reading and Writing skills. *Journal of Enjoyable Learning*, 8(3), 149-153.