



Research Article

Effectiveness Of The Ethnopedagogical Approach In Interactive Video Assisted Scientific Learning In Elementary School Students

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Received : April 15, 2024

Revised : May 15, 2024

Accepted : June 20, 2024

Available online : July 22, 2025

How to Cite: Safitri, E. R., & Suningsih, T. (2025). Effectiveness Of The Ethnopedagogical Approach In Interactive Video- Assisted Scientific Learning In Elementary School Students . *Elementaria: Journal of Educational Research*, 3(1), 23–33. <https://doi.org/10.61166/elm.v3i1.83>

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Abstract. The ethnopedagogical approach to learning aims to integrate local cultural values into the educational process and make learning materials more holistic, relevant and contextual. More than that, technology makes learning media help visualize scientific concepts in an interesting and easy to understand way. Therefore, this research was conducted to determine the effectiveness of using interactive videos with an ethnopedagogical approach in scientific-based learning. Media was developed using a research and development approach. The level of effectiveness is measured by increasing student learning outcomes before and after using the media. The research was conducted

at SD Negeri 02 Palembang. The subjects of this research were 19 fifth grade elementary school students in the mathematics subject sub-theme of cube nets. Data collection was carried out using test instruments. The research results show that the use of interactive videos with an ethnopedagogic approach in scientific-based learning as a learning medium provides new experiences for students. The results of the field test showed an N-Gain value of 0.75 in the high category (effective). Evaluation results shows that the use of interactive videos with an ethnopedagogic approach in scientific-based learning is effective in improving mathematics learning outcomes for elementary school students.

Keywords: Effectiveness, ethnopedagogical, interactive, video, scientific.

Abstrak. Pendekatan etnopedagogis untuk pembelajaran bertujuan untuk mengintegrasikan nilai-nilai budaya lokal ke dalam proses pendidikan dan membuat materi pembelajaran lebih holistik, relevan dan kontekstual. Lebih dari itu, teknologi membuat media pembelajaran membantu memvisualisasikan konsep ilmiah dengan cara yang menarik dan mudah dipahami. Oleh karena itu, penelitian ini dilakukan untuk mengetahui efektivitas penggunaan video interaktif dengan pendekatan etnopedagogis dalam pembelajaran berbasis ilmiah. Media dikembangkan dengan menggunakan pendekatan penelitian dan pengembangan. Tingkat efektivitas diukur dengan meningkatkan hasil belajar siswa sebelum dan sesudah menggunakan media. Penelitian dilakukan di SD Negeri 02 Palembang. Subjek penelitian ini adalah 19 siswa kelas IV SD dalam sub tema mata pelajaran matematika materi jaring-jaring kubus. Pengumpulan data dilakukan dengan menggunakan instrumen uji. Hasil penelitian menunjukkan bahwa penggunaan video interaktif dengan pendekatan etnopedagogik dalam pembelajaran berbasis ilmiah sebagai media pembelajaran memberikan pengalaman baru bagi siswa. Hasil uji lapangan menunjukkan nilai N-Gain 0,75 pada kategori tinggi (efektif). Hasil evaluasi menunjukkan bahwa penggunaan video interaktif dengan pendekatan etnopedagogik dalam pembelajaran berbasis keilmuan efektif dalam meningkatkan hasil belajar matematika bagi siswa sekolah dasar.

Kata Kunci: Efektivitas, etnopedagogi, interaktif, video, ilmiah.

INTRODUCTION

Learning in the independent curriculum is encouraged to strengthen character education which is carried out through the application of project-based learning to strengthen the profile of Pancasila students. This is in accordance with national education goals. Apart from that, the independent curriculum also emphasizes diverse intracurricular learning with more optimal content so that students have sufficient time to explore concepts and strengthen competencies.

One learning approach that is relevant to the independent curriculum is scientific learning. The scientific approach is an approach that follows the concept of scientific research. The learning process is carried out through a series of student activities to be able to construct their knowledge. This approach is relevant to the educational paradigm in the Society 5.0 Era which directs the education and learning process so that students have the 4C competencies (creativity, critical thinking, collaboration, communication). The scientific approach is operationalized in the form of learning activities which include learning experiences in the form of

observing, asking questions, gathering information (trying), reasoning (associating), and communicating.

In an independent curriculum, teachers also have the freedom to choose and develop various teaching tools so that learning can be tailored to students' learning needs and interests. Learning media is used to help convey information in the form of material to students. Digital learning resources are understood as a combination of hardware and software that have the potential to overcome learning problems and facilitate learning activities (Dopo & Ismaniaty, 2016). Digital learning resources can be a solution to overcome gaps in time and locations that are impossible to reach due to limited funds, transportation, or accessibility (Mustakerov, Mustakerov, & Borissova, 2017).

Teachers and students in the context of communication are senders and recipients of messages. To convey messages from the sender to the recipient, learning media needs to be used (Massie & Nababan, 2021). The emergence of new stimuli and interests, generating motivation and stimulation in learning activities, and even increasing psychological effects on students are functions of the use of educational media in the learning process (Farida, Destiniar, & Fuadiah, 2022).

From a student's perspective, one of the reasons why mathematics subjects are difficult to understand is the selection of teaching materials that are less attractive both in terms of appearance and content adequacy. This is one of the causes of low mathematics scores. As a result, students feel bored more easily and are less interested in studying the material presented (Anggreni, 2019). Therefore, it is important for teachers to determine the right media so that it can be used effectively in learning. Teaching materials play an important role in learning activities for both teachers and students. Educators will experience difficulties in increasing the adequacy of their learning if they are not provided with complete educational materials. Moreover, for students, without showing the material students will experience difficulties in learning. Thus, it is important to analyze the characteristics of each school, including at the elementary school level, before using media in learning. However, media use must be adjusted to the contextuality of each school. (Farida et al., 2022) (Zahwa et al., 2022) For this reason, media development needs to be developed using appropriate procedures according to student characteristics.

On the other hand, ethnopedagogy is an educational approach that offers concepts based on culture or local wisdom. Local wisdom itself is interpreted as a potential that must be given a new interpretation so that it is flexible in facing the challenges of the times. Thus, this approach will make the learning process capable of building a world of quality education so that it can produce quality resources, have expertise, be skilled, be creative, be productive, have positive behavior, and always love the nation's culture. homeland and country.

Ethnopedagogy prioritizes harmonious relationships between educators and students so that learning activities become intrapersonal relationships that are

heart-touching and full of empathy. In its implementation, ethnopedagogical learning aims to instill the values of local wisdom of an ethnic group (Hastuti et al., 2020). Ethnopedagogy is also expected to develop the correct attitude towards national cultural values in students (Rahmawati, Ridwan, Cahyana, & Wuryaningsih, 2020). Another thing that is no less important is student learning outcomes and the instillation of social values which are also the advantages of ethnopedagogy-based learning (Lestari & Bahri, 2021a). The integration of ethnopedagogy in science learning can provide meaningful learning for students to develop student involvement and cultural awareness (Rahmawati et al., 2020). Apart from that, a scientific-based ethnopedagogical approach can make learning integrated with innovative media and follow developments in science and technology and pay attention to local wisdom values to strengthen critical thinking skills.

However, the advantages of a scientifically based ethnopedagogical approach packaged in interactive media have not been used optimally in learning. This phenomenon is certainly a challenge for educators, whether teachers or lecturers, to design meaningful learning by integrating ethnopedagogical, scientific and technological approaches.

This research was conducted to see how the synergy of a scientifically based ethnopedagogical approach packaged in interactive media can increase the effectiveness of mathematics learning in elementary schools. All the variables in question are represented in video-assisted interactive learning developed using digital-based applications.

METHOD

This research was conducted using the Research & Development (R&D) method. This method was chosen because it makes it possible to design teaching materials that are effective and practical and prioritize the active involvement of experts. This method will produce a design or concept for teaching materials that is new so that it can be implemented in learning. In accordance with the development model used, the research procedures are analysis, design, development, implementation and evaluation. To assess the practicality and effectiveness of the media developed, the prototypes produced in the previous stage were tested through small groups and field tests.

The approach used in analyzing data is descriptive quantitative. The subjects of this research were 19 fifth grade elementary school students in the mathematics subject sub-theme of cube nets. Data collection was carried out using test instruments. Data collection is carried out by giving tests to students. The collected data was analyzed quantitatively descriptively. Analysis is carried out by providing an interpretation of the data obtained so that it becomes clearer and more meaningful. The research flow diagram regarding the stages carried out in this research can be seen in the following image.

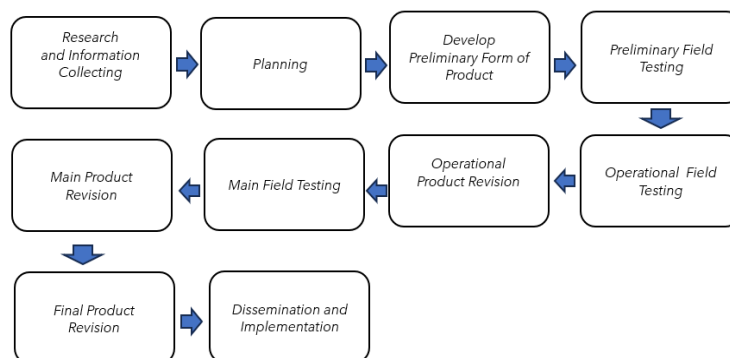


Figure 1. Research Flow

RESULTS AND DISCUSSION

FINDINGS

Analysis Of The Need For Interactive Media Development Using A Scientifically Based Ethnopedagogical Approach

At the needs analysis stage, it was found that students' difficulties in learning mathematics were caused by the teacher's delivery method being less understandable to students, the large number of formulas that had to be memorized, a lot of material that needed to be studied, the examples given were less relevant and the use of learning media was less than optimal. The methods that teachers often use during learning are assignment lectures, drills and exercises, and games. In terms of the use of ICT-based media in learning, it is still not optimal due to the limited ability of teachers in developing media so that teachers mostly use learning resources downloaded from the internet (by use). Teachers stated the need for a scientific approach in developing interactive media as well as the need to introduce local cultural values to students through learning media. For the support aspect of the school environment, it was found that the school was quite conducive and supported learning activities in the classroom using multimedia. This is shown by the availability of equipment and the readiness of the school community to implement it. Thus, it is necessary to develop innovative learning media with a scientifically based ethnopedagogical approach and paying attention to local wisdom values to strengthen character education.

Validity Of Interactive Media With A Scientifically Based Ethnopedagogical Approach

At the validity testing stage of interactive media with a scientific-based ethnopedagogical approach, the results showed that interactive videos with a scientific-based ethnopedagogical approach were declared very feasible or very

valid based on every aspect of the assessment in terms of construct and content, so that they could be used as a learning resource for students. The results of the validity test using the Gregory test obtained a validity coefficient of 0.90, which means that each aspect is overall valid and in the very high category.

The following are several images of interactive media footage with a scientifically based ethnopedagogical approach.



Figure 2. Integration of Local Cultural Values in the Media

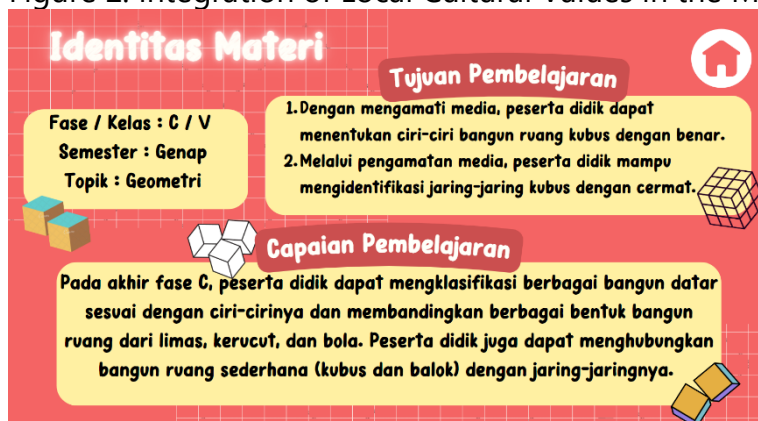


Figure 3. Initial Media Display

Effectiveness Of Interactive Media With A Scientifically Based Ethnopedagogical Approach

To determine the effectiveness of using interactive videos, this is done by collecting learning outcome data obtained through tests. The tests carried out consist of pre-test and post-test to measure student learning outcomes before and after learning. Trials were carried out through small groups and field trials.



Figure 4. Interactive Video Assisted Learning Atmosphere



Figure 5. Students access videos using mobile phones

Small Groups

At the small group stage, the results of revisions at the expert review and one to one stage became prototype 1. Prototype 1 was tested on six students who were selected based on different levels of thinking ability (high, medium, low). Students were asked to provide criticism and suggestions which were used as input for revising prototype 1. Based on the scores given by the six students in the small group test, an average score of 0.86 was obtained in the high practicality category. Prototype 1, the result of improvements at the small group stage, became prototype 2. Prototype 2 was then implemented through field testing to assess the effectiveness of the product as follows.

Field Tests

Prototype 2, the result of improvements at the small group stage, was field tested on class V students at SD Negeri 02 Palembang. The purpose of conducting field trials is to determine the effectiveness of the video being developed. Field trials using videos in classroom learning. To find out the effectiveness of the video being developed, it is done by giving a pre-test before learning begins and giving a post-

test after the learning process is complete. The following is a table of Pre Test and Post Test scores.

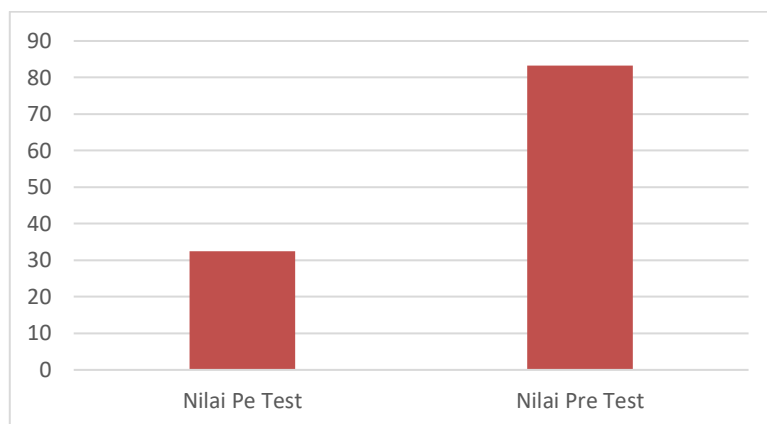


Figure 6. Pre Test and Post Test Results in Small Group

The pre-test is carried out before starting learning using videos, while the post-test is carried out after learning. From the data presented in Table Figure 4. Pre Test and Post Test Results in Small Group. At the end of the lesson, students were asked to answer post test questions and obtained an average score of 83.2. Then the students' pre-test and post-test score data were analyzed to determine their effectiveness by determining the N-Gain value.

The N-Gain value obtained in the field test was 0.75, which is included in the high category. In line with the opinion of Meltzer (2002), that if there is an increase in student learning outcomes, it means that the student has learned more than before. It can be concluded that the video applied to this limited test produces an effective video because effectiveness does not only refer to the process or student activity but also refers to the results, namely the achievement ranking achieved through the test. Thus, the research results show that the use of interactive videos with an ethnopedagogical approach in scientific-based learning is effective in improving elementary school students' mathematics learning outcomes.

DISCUSSION

The results of this research are in line with previous research which shows that video-assisted interactive learning also strengthens character education. This is indicated by the significant difference between before and after using video media for language politeness learning. The use of interactive learning video media can improve language politeness for young children in Javanese culture (Apriliani et. al., 2020). Student responses to learning using rme-based interactive videos have gone quite well, such as videos containing problems related to real life and presenting interesting videos, amounting to 78.8% of students' needs at the start of lectures to view the material. to learn (Sudarman, 2021). Thus, the use of learning videos can be an effective alternative in improving students' mathematical understanding. It is

recommended that teachers and educational policy makers consider using learning videos using the Problem Based Learning model as part of a more interactive and fun mathematics learning strategy (Rahmananda, et al, 2024). Reasoning, communication, problem solving, conceptual understanding, mathematical understanding, creative thinking, and critical thinking are examples of mathematical abilities (Yulaistin & Roesdiana, 2022).

Apart from that, the effectiveness of using interactive videos also shows that multimedia-based interactive video learning media is good and suitable for use as a mathematics learning media (Suseno, 2020). Therefore, to achieve higher learning effectiveness, innovative development of interactive learning media is an important step. That way, learning in the digital era can be more interesting, effective and inclusive for students.

Research examining the use of digital teaching materials in learning shows that digital teaching materials are suitable for use in learning (Musdzalifah&Rohayati, 2018). Apart from that, research conducted (Agung & Akhyar, 2018) concluded that the development of teaching materials in the form of digital modules is in line with developments and innovations in the education sector and is in accordance with the current digital era. The results of other research also show an increase in student learning activities after using digital teaching materials by implementing the 5E learning cycle model (Ratiyani, 2014). Furthermore (Wijayanti, 2018) stated that the development of digital teaching materials should be integrated into e-learning.

Based on research by Umami (2020), it shows that there is a difference in the influence between the application of the flipped class learning model with interactive video media and conventional learning models on vocational school students' understanding of mathematical concepts. This can also be explained as a form of student positive response to mathematics learning using multimedia which meets the effectiveness criteria with 84% of student responses reaching the positive or very positive category. (Damopolii, 2019). This positive response also causes the learning model through interactive video learning media to be able to motivate students so that learning achievement can increase (Wulandari, 2021).

CONCLUSION

Based on the research results, it was found that the effectiveness of using interactive videos with an ethnopedagogical approach in scientific-based learning is in the high category with an N-Gain value of 0.75.

ACKNOWLEDGMENT

The researcher would like to express his gratitude for the financial support provided by the Sriwijaya University Public Service Agency's DIPA budget for the

2023 fiscal year, based on Chancellor's Decree 0189/UN9.3.1/SK/2023 dated April 18 2023.

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