



Development of Ethnosmartcard Media to Increase Understanding of Cultural Arts Concepts in Elementary Schools

Radela Rasendriya Ratna^{*1}, Tirta Dimas Wahyu Nagara²

¹⁻²UIN Kiai Ageng Muhammad Besari, Indonesia

**Corresponding author : radelarasendriyarm@gmail.com*

Abstract

Cultural Arts learning in elementary schools is often dominated by conventional methods, which leads to low active participation and students' difficulty in understanding material concepts in depth. This research aims to develop Ethnosmartcard learning media based on local wisdom to improve the understanding of Cultural Arts concept in fifth grade students. The research method used was Research and Development (R&D) using the ADDIE development model, which included the stages of analysis, design, development, implementation, and evaluation. The research subjects consisted of 26 fifth-grade students at SDIT Qurrota Ayyun Ponorogo. Data collection instruments included expert validation questionnaires, user response questionnaires, and pretest-posttest assessments. The results showed that the Ethnosmartcard media was declared very valid based on expert testing, with the Aiken index ranging from 0.75 to 1.00. The level of practicality of the media reached 92.77%, categorized as very practical. In addition, the media was proved to be effective in improving students' conceptual understanding, achieving an N-gain score of 0.68, which falls into the medium to high category. This study concludes that Ethnosmartcard media is feasible and effective as a contextual learning innovation to strengthen the understanding of art concepts in madrasah ibtidaiyah.

Keywords: *Ethnosmartcard, Cultural Arts, Concept Understanding, Learning Media, ADDIE.*

INTRODUCTION

Education is one of the important aspects in efforts to improve the quality of human resources who are able to adapt to the times and global challenges (Vianty, 2025). At the basic education level, the learning process is not only oriented to the mastery of knowledge, but also to the development of skills, attitudes, creativity, and character of students. One of the subjects that has an important role in supporting this goal is Cultural Arts. Cultural Arts learning can be a means for students to develop creativity, expressive skills, and appreciation for the culture of Indonesia (Wurtiningsih, 2023). In addition, art education also contributes to the formation of cultural identity as well as the development of 21st-century competencies such as critical thinking, communication, collaboration, and creativity skills (Musa, 2024; Richmond, 2025).

Despite having an important role, the implementation of Cultural Arts learning in elementary schools still faces various obstacles. Learning is still often dominated by lecture methods and the use of package books as the main learning resource so that student involvement in the learning process is not optimal (Herlianti, 2025). Dependence on printed teaching materials without the support of interesting learning media causes students tend to be passive and have difficulty understanding the concepts learned (Negara & Ningtanti, 2025). This condition shows that Cultural Arts learning requires media innovation that is able to help students understand the material in a more concrete and fun way. In addition, the development of learning media is also in line with the importance of teachers' ability to create learning facilities that are adaptive and in accordance with the characteristics of students (Negara & Fauziah, 2022; Nurhidayati et al., 2023).

The results of observations and interviews conducted in class V of SDIT Qurrota Ayyun Ponorogo show that the learning of Cultural Arts has not taken place optimally. The learning media used is still limited so that it has not been able to support the achievement of learning objectives maximally. During the learning process, students were seen to be less active in discussion activities and material exploration. In addition, some students also found difficulties in understanding materials related to regional cultural arts. This condition shows the need for more innovative learning media and in accordance with the characteristics of cognitive development of elementary school students.

One of the alternatives that can be used to overcome these problems is learning media that utilizes elements of local wisdom. Local wisdom is part of culture in a certain community that can be used as a source of learning that is close to students lives. Integrating local culture in learning can help students understand the material more contextually because it is directly related to the experiences they encounter in their daily lives (Fatmahanik, 2019; Ririn, 2025). In addition, the use of learning media also serves to help teachers convey complex material to be easier for students to understand (Lailan, 2023). Therefore, the development of learning media based on local culture is one of the relevant efforts to increase the understanding of the concept of Cultural Arts while fostering students' appreciation of regional culture.

The media developed in this study is Ethnosmartcard, a learning card media containing Cultural Arts materials based on local wisdom. This media is designed in the form of cards that contain visual and textual information about the local culture, so that it can help students understand concepts more concretely. In addition to being easy to



use, card media can also encourage student interaction, discussion, and active involvement during the learning process.

Several previous studies have shown that local culture-based media and learning card media have a positive influence on student learning outcomes. Research (Nugroho and Sari, 2019) showed that learning media based on local wisdom can improve students' understanding on learning materials. Research (Rahmawati 2020) also found that the use of smartcards can help students understand learning concepts more easily and increase their involvement in the learning process. In addition, (Wahyuningtyas and Silalahi 2024) concluded that cultural integration in learning is effective in improving students' understanding of concepts. Research (Kharisma and Dwidarti 2025) also showed that the use of smartcards in cultural diversity materials can improve the learning outcomes of elementary school students.

Although various studies have developed local culture-based media and smartcard media, research that integrates the two in the form of Ethnosmartcard media in the learning of Cultural Arts in elementary schools is still limited. Most previous research has only focused on the development of local culture-based media or smartcard media separately. Therefore, this research has a novelty in the development of Ethnosmartcard media which combines elements of local wisdom with interactive card media as a means of learning Arts and Culture. This media is expected to be able to help students understand the concepts in a more contextual way while increasing their appreciation of local culture. Based on this description, the purpose of this research is to develop Ethnosmartcard media based on local wisdom and to determine the level of validity, practicality, and effectiveness of the media in improving the understanding of Cultural Arts concept among grade V students at SDIT Qurrota Ayyun Ponorogo.

METHODS

This research applied a Research and Development (R&D) approach. The development model applied was the ADDIE model, which consists of five systematic stages: analysis, design, development, implementation, and evaluation (Saputro, 2011). This procedure was chosen because of its structured flow and its ability to connect theoretical studies with educational practice effectively (Sugiyono, 2013). The following is an explanation of each ADDIE Stage, Analysis stage. At this stage, student characteristics analysis, material analysis, and cultural context analysis were carried out. The analysis of students' characteristics was carried out to find out the initial abilities, learning interests, and needs of grade V students of SDIT Qurrota Ayyun Ponorogo. Based on the observations results, students were more interested in learning media that



contains elements of pictures, colors, games, and group activities than learning that only uses the lecture method. Furthermore, material analysis was carried out by examining learning outcomes, learning objectives, indicators, and subject matter that would be published in the Ethnosmartcard media. The material chosen in this study was Saman Dance in the Cultural Arts class V subject. The cultural element chosen was Acehnese culture related to Saman Dance as one of Indonesia's cultural heritages that has been widely known.

The Design stage was carried out by designing Ethnosmartcard media based on the results of the analysis. The activities carried out included the preparation of learning objectives, the selection of materials including the history of the Saman Dance, the meaning of movements, costumes, floor patterns, musical accompaniment, and cultural values, as well as the design of media forms consisting of information cards, picture cards, question cards, and evaluation cards. At this stage, research instruments were also prepared in the form of expert validation sheets, teacher and student response questionnaires, and concept comprehension tests.

The Development stage was carried out by developing media designs into real products in the form of Ethnosmartcard. The products developed were validated by subject matter experts and media experts to assess the feasibility of content, display, readability, and ease of use. Furthermore, the product was revised based on the validator's suggestions until a suitable medium is obtained for use in learning.

The Implementation stage was carried out by applying Ethnosmartcard media to learning Cultural Arts in class V of SDIT Qurrota Ayyun Ponorogo. Students used media in groups with the guidance of teachers to learn Saman Dance material. At this stage, data collection was also carried out through concept comprehension tests and questionnaires of teachers and students to find out the practicality of the media.

The Evaluation stage was carried out both formative and summative. Formative evaluation was carried out through expert validation and product revision during the development process, while summative evaluation was carried out after implementation to determine the effectiveness of Ethnosmartcard media in improving students' understanding of concepts based on test results, student response questionnaires, and teacher response questionnaires. This research was conducted at SDIT Qurrota Ayyun Ponorogo, East Java, in the even semester of the 2025/2026 academic year. The subjects in this study were fifth-grade students of SDIT Qurrota Ayyun, with a total of 26 respondents.

Data collection was carried out through observation techniques, interviews,



questionnaires, and testing (Sugiyono, 2018). Observations and interviews were conducted at the initial analysis stage to identify media needs in the field. The questionnaire was used to collect validation data from media, materials, and language experts, as well as to measure practical responses from teachers and students. Meanwhile, to measure the level of students' understanding of concepts before and after using Ethnosmartcard media, a pretest and posttest were carried out.

The understanding of concepts in this study was measured through several indicators, namely the ability of students to explain concepts, identify elements contained in the material, provide examples that are in accordance with the concepts studied, and distinguish characteristics between concepts. In the Dance material, these indicators are manifested in the ability of students to explain the meaning of Dance, identify the elements contained in Dance, explain the meaning of movements and cultural values contained in it, and distinguish the characteristics of regional Dance. These indicators were used as a basis for the preparation of pretest and posttest questions.

Data analysis combined both qualitative and quantitative techniques. Data in the form of suggestions and input from validators were analyzed descriptively (qualitatively) for product improvement. Quantitative data from the results of expert validation were analyzed using percentage correction calculations and Aiken's V index to determine the level of product validity (Arikunto, 2012). Furthermore, the effectiveness of media in improving concept understanding was tested using Paired Sample T-Test analysis through the SPSS application (Sahir, 2021). The magnitude of the increase in student comprehension was analyzed using the N-Gain test to measure the level of media effectiveness of significant (Volunteer et al., 2024).

RESULTS AND DISCUSSION

Results

The development of Ethnosmartcard media followed the ADDIE model procedure, producing an interactive educational card product measuring 5.6 cm x 10 cm with dance art materials based on local culture. At the analysis stage, it was found that the lack of innovative media led to a low understanding of students' concepts. The developed product then has been through a series of validation tests by media, material, and language experts to ensure feasibility before field implementation.

The validation results were analyzed using the V Aiken index to determine the level of validity of each aspect. A summary of the results of expert validation is



presented in Table 1.

Table 1. Summary of Expert Validation Results

Yes	Aspects	Aiken Index	Categories
1	Media Design	0,75 – 1,00	Applicable
2	Cultural Arts Materials	0,75 – 1,00	Applicable
3	Language Qualifications	0,87	Applicable
4	Teaching Modules	0,75 – 1,00	Applicable
5	Instrument Test	1,00	Applicable

Based on the data in Table 1, all aspects of Ethnosmartcard media are declared valid and feasible for learning use. In addition to validity, the research instrument was tested for reliability with an Alpha Cronbach value of 0.975, indicating a very high level of internal consistency. After being declared feasible, the media was implemented in class V of SDIT Qurrota Ayyun to measure its practicality and effectiveness. The media practicality data was collected through teacher and student response to questionnaires. The results are summarized in Table 2.

Table 2. Media Practicality Test Results

Respondent	Number of Respondents	Score (%)	Categories
Teacher (2 Respondents)	2 people	92%	Very Practical
Fifth grade students (26 respondents)	26 people	92,77%	Very Practical

The comparison of pretest and posttest scores was used to measure the effectiveness of media in improving students' understanding of Cultural Arts concept. Analysis through SPSS showed that the data has been distributed normally and homogeneously. Hypothesis testing using the Paired Sample T-Test yielded a significance value (2-tails) of 0.000, showing a significant difference in ability before and after media use. The improvement of students' understanding of concepts was analyzed based on four indicators, namely the ability to explain the concept of Dance, identify elements of Dance, provide examples of cultural values contained in Dance, and distinguish the characteristics of Dance from other regions. The results of the N-Gain analysis of each indicator are presented in Table 3.



Table 3. N-Gain Score Analysis Results for Concept Understanding

Indicator	Average Prates	Post-Average	N-Gain (Category)	Categories
Explaining the concept of Dance	60,20	85,40	0,63	Medium
Identifying the elements of Dance	49,24	90,10	0,81	Height
Provide examples of cultural values contained in Dance	63,49	83,20	0,54	Medium
Distinguishing the characteristics of other regional dances	57,47	88,60	0,73	Height
Overall Average	57,65	86,83	0,68	Medium

Overall, the average concept comprehension score increased from 57.65 to 86.83, with an average N-gain value of 0.68, falling into the medium to high category. These findings showed that Ethnosmartcard media was effective in improving the mastery of cultural art concepts among elementary school students. The final product was realized in the physical form of an education card with proportional dimensions of 5.6 cm x 10 cm. The visual design used a harmonious combination of colors and attractive illustrations that represent the richness of local culture, such as traditional dancers and regional musical instruments. Structurally, the card integrated concise Cultural Arts materials, usage instructions, and interactive educational challenge elements. These concrete visual representations aimed to grab students' attention and help them build their understanding contextually.





Figure 1. Ethnosmartcard Media Design

Discussion

The findings of the study show that the Ethnosmartcard learning media meets strict theoretical and technical feasibility criteria before its widespread implementation. Validity indices ranging from 0.75 to 1.00 are not only statistical but represent the alignment of the design with the cognitive characteristics of fifth-graders, who require structured visual representations to understand abstract concepts. Validation of the material and teaching modules proves the scientific accuracy of the content and relevance to the learning outcomes. In addition, the high reliability of the instrument (0.975) guarantees stable and reliable data collection (Arikunto, 2012). This rigorous validation is very important, as systematically designed media is a prerequisite for effective instructional delivery (Arsyad, 2019; Kristanto, 2011).

In line with its validity, Ethnosmartcard media shows an extraordinary level of practicality of 92.77% from the user's perspective. High practicality scores from teachers (92%) and students (92.77%) indicate that the media successfully overcomes technical barriers common in the use of conventional media. A concise, interactive, and colorful design directly focuses students' attention and simplifies complex material



(Lailan, 2023). Psychologically, the mechanism of educational games creates a pleasant learning atmosphere, reduces boredom and increases intrinsic motivation to actively explore cultures. This shows that the product is functionally feasible for real learning dynamics in madrasah ibtidaiyah. These findings reinforce previous literature proving that smart card media effectively encourages participation, strengthens memory, and facilitates collaborative interactions (Muhimmah et al., 2025; Rahmawati, 2020).

Basically, the success of the Ethnosmartcard is evidenced by its ability to significantly accelerate conceptual understanding. The effectiveness test showed a substantial spike with an N-Gain score of 0.68 (medium to high category) (Volunteer et al., 2024). This increase indicates that the ethnopedagogical approach is in line with the principles of constructivism (Rahmawati, 2021). Unlike conventional methods, Ethnosmartcard places local culture as the main source, bridging abstract concepts into observable representations (Suryani, 2020). Through visual practices and symbols, students actively build knowledge based on familiar cultural experiences. It empowers them to move beyond rote to explain and interpret concepts with their own arguments.

This achievement confirms the novelty of research in the academic literature. Comparatively, Sari and Nugroho (2019) show the effectiveness of local wisdom media but limit to conventional visuals. Recent research on educational games such as DUGIBO and Mystery Cards stimulates reading and engagement effectively (Istiqomah & Rosita, 2024; Solikhah & Rosita, 2024), but it does not have a specific conceptual foundation in local cultural wisdom. Although cultural integration in the learning model is significant, it has not been packaged into a practical concrete card (Wahyuningtyas & Silalahi, 2024). Thus, this research fills the scientific gap by synergizing the appeal of smart cards with the preservation of structured local culture. The implementation of Ethnosmartcard is expected to be an innovative reference for educators to create an active and meaningful learning environment.

CONCLUSION

The development of Ethnosmartcard as a learning medium to improve the understanding of fifth grade students about Cultural Arts concept has been successfully carried out through the ADDIE model stage. This media is very feasible, based on expert validity tests with an Aiken index of 0.75 to 1.00. The practicality level reaches 92.77%, indicating that it is easy to use and attractive to students. In addition, Ethnosmartcard significantly improves learning outcomes with an average N-Gain of 0.68. The main conclusion is that Ethnosmartcard has succeeded in bridging the understanding of art concepts through a contextual approach based on local wisdom. The researchers suggest



continuous utilization by teachers to foster student motivation and cultural appreciation.

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