



Smart App Creator–Based Learning Media as an Innovation to Improve Student Learning Outcomes for Achieving Quality Education

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Abstract: Dance is an essential component of Arts, Culture, and Crafts (SBdP) learning in primary schools, including traditional regional dances such as the Denok Semarang dance from Semarang, Central Java. This study aimed to develop and evaluate *Smart App Creado* based learning media for teaching Denok Semarang dance to improve students' learning outcomes. The research employed a research and development (R&D) approach using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). The subjects were 31 fifth-grade students of SDN Wonosari 03, Semarang City. Expert validation showed that the media was highly feasible, with average scores of 92.00% from material experts and 88.50% from media experts. Effectiveness testing indicated significant improvements in learning outcomes. In the cognitive domain, paired t-test results showed a significant difference between pretest and posttest scores ($p < 0.05$), with N-Gain values of 0.65 (medium category) in the small group and 0.74 (high category) in the large group. In the psychomotor domain, students' performance increased from 81.50% to 85.20%. In the affective domain, student attitude questionnaire results showed a positive response with an average score of 86.40%. These findings conclude that SAC-based Denok Semarang dance learning media is effective in improving cognitive, psychomotor, and affective learning outcomes.

Keywords: Denok Semarang Dance; Learning Outcomes; Smart App Creator

Introduction

Dance is an important element in the teaching of Arts, Culture and Crafts in primary schools. Through dance activities, students not only learn about body movements, but also express ideas, feelings and aesthetic values that develop within society. Dance education at the primary school level plays an important role in developing children's potential holistically, including cognitive, affective, and psychomotor aspects (Maharani & Nurharini, 2024). This is in line with the national education objectives that emphasise character development, creativity, and critical thinking skills from an early age (Nurharini & Ratnaningrum, 2020). Dance serves as a vehicle for shaping children's personalities so

that they are able to appreciate art, build self-confidence, and develop social skills through collaborative activities in dancing (Setiyadi et al., 2024).

In addition, dance education in primary schools is also an effective means of instilling national cultural values (Retnoningsih, 2017). Amidst the growing tide of globalisation, students need to be introduced to the richness of local culture so that they develop an identity and pride in their own national heritage (Sarumaha et al., 2024). Through dance, children learn about the noble values embodied in every movement, rhythm and traditional costume (Mahmudah et al., 2021). Learning dance also fosters discipline, responsibility and cooperation, as dancing is usually done in groups and requires unity in every movement (Ardiyani, 2025). Thus, dance education not only trains motor skills, but

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also shapes the character and social sensitivity of students (Fitri et al., 2025).

On the other hand, dance education is part of the school's efforts to create a meaningful, enjoyable and contextual learning environment. Dancing makes students more active, enthusiastic and directly involved in the learning process (Pasaribu, 2024). Through these activities, teachers can instil aesthetic values and an appreciation for art in a more engaging way than text-based learning alone (Hardianti et al., 2025). Good dance education is also in line with the Merdeka Belajar (Freedom of Learning) approach, which emphasises the freedom of students to express themselves and develop their potential according to their interests and talents (Lestari & Tanjung, 2025). Therefore, strengthening dance education in primary schools is important to support the formation of Pancasila students who are creative, faithful, and have a strong personality within Indonesian culture.

The Denok Semarang dance is a traditional dance that originated and developed in the city of Semarang, Central Java. This dance depicts the character of Semarang women, who are known for being elegant, cheerful, dynamic and full of spirit (Wulandari & Nurharini, 2025). Her movements combine the gentleness typical of Javanese women with the energy and cheerfulness that reflect the life of the coastal community of Semarang (Nurharini, 2026). Every movement in the Denok Semarang dance embodies local cultural values such as elegance, modesty and beauty, reflecting the identity of the local community (Wijaya et al., 2025). Therefore, Denok Semarang dance not only serves as a form of entertainment, but also as a means of cultural expression and a symbol of regional identity that should be preserved by the younger generation (Cenabre-Galindon, 2023).

However, with the passage of time and the rapid pace of globalisation, the younger generation's interest in traditional dance, including the Denok Semarang dance, has declined. Children are more interested in popular culture, such as modern dance or digital entertainment content that is widely available on social media (Husnawati & Nurharini, 2024). This phenomenon has resulted in many primary school students lacking knowledge about their own regional dances, in terms of their history, meaning, and movements (Nurfitrotul H et al., 2025). If this situation is allowed to continue, there is concern that local cultural values will become increasingly marginalised and lose their relevance in the eyes of future generations (Nabilulnuha, 2025). In fact, the preservation of local culture is an important part of building national character rooted in traditional values and local wisdom (Azzahra & Nurharini, 2024).

The importance of introducing Denok Semarang dance to primary school students is a strategic step in instilling a love for local culture from an early age (Sinyor et al., 2024). Culture-based learning can strengthen students' identity and help them understand cultural diversity in Indonesia (Hamidah et al., 2025).

Although dance education plays an important role in instilling cultural values and developing students' creativity, its implementation in primary schools still faces various obstacles (Rui et al., 2025). Based on initial observations at SDN Wonosari 03 Semarang, dance education, particularly in the material on the Denok Semarang dance movements, has not been optimally implemented. The learning process is still dominated by conventional methods such as lectures and direct movement imitation without the aid of interesting and interactive learning media (Kustyarini et al., 2020). Teachers usually only show examples of movements manually in front of the class, while students try to imitate them without adequate visual guidance (Raheb et al., 2020). This makes it difficult for some students to understand the sequence of dance movements correctly and they quickly become bored due to the lack of variety in the delivery of the material.

One application that has great potential for development in dance education is Smart App Creator (SAC). This application is an Android-based interactive media creation platform that allows teachers to develop learning applications without having to have programming skills (Arafah et al., 2023). Through Smart App Creator, teachers can create attractive displays, insert tutorial videos of Denok Semarang dance movements, interactive images, explanations of the meaning of the movements, as well as quizzes or evaluative exercises. These features can help students better understand and remember dance movement sequences because they can observe, imitate, and practise independently using digital devices (Mushlihurrohman & Suratno, 2024). Thus, learning no longer depends on the direct presence of the teacher but can take place flexibly and repeatedly.

The use of learning media based on Smart App Creator is also in line with the needs of today's students, who are familiar with technology and digital visuals (Syadida & Erita, 2022). Interactive media can stimulate interest and motivation to learn because it provides a more enjoyable and immersive learning experience (Petersen et al., 2022). In addition, teachers are also assisted in explaining the material because the media can serve as a visual guide and demonstration tool. This innovation not only facilitates students' understanding of the various movements of Denok Semarang dance, but also serves as a strategic step in integrating local culture with modern technology. By developing digital

learning media based on Smart App Creator, it is hoped that dance education at SDN Wonosari 03 Semarang will become more interesting, effective, and relevant to the characteristics of students in the digital age.

Method

The type of research used is development research with the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The ADDIE model is a systematic framework for designing effective learning media, starting from needs analysis to final evaluation. The ADDIE model is widely used in the development of learning media because of its flexibility in adapting designs to classroom contexts and learner characteristics (Ramadani & Nurharini, 2024).

This research was conducted at SD Negeri Wonosari 03 in Semarang City during the information gathering and trial stages. The research period at SD Negeri Wonosari 03, Semarang City was from 16 December 2025 to 7 January 2026. The population is a group of objects or subjects with certain characteristics and qualities that have been determined by the researcher as the focus of the study to be analysed and concluded (Sugiyono, 2019). In this study, the population consisted of fifth-grade students at SD Negeri Wonosari 03, Semarang City. The number of students participating in the study was 31. Data collection techniques included questionnaires, documentation, pre-tests and post-tests, psychomotor assessment sheets, and affective assessment sheets.

Analysis

The analysis stage was conducted to identify dance learning needs in primary schools (Rustianti & Asih, 2025). At this stage, researchers analysed the conditions of SBdP learning, particularly the material on Denok Semarang dance movements, student characteristics, the curriculum used, and the availability of learning media. The results of the analysis showed that dance learning still lacked interactive media, so it was necessary to develop Smart App Creator-based media that was attractive, easily accessible, and suited to the needs of students.

Design

The design stage was carried out by compiling the design of the learning media to be developed (P.B. et al., 2021). Researchers design the material structure, determine learning competencies and objectives, compile storyboards, and design media displays that include text, images, animated videos, accompanying audio, and practice questions. Media design is tailored to the characteristics of primary school students and interactive learning principles (Nelwideri et al., 2025).

Development

During the development stage, researchers realised the media design into actual products using the Smart App Creator application (Hidayah & Mulyani, 2024). The developed media contained material on the various movements of the Denok Semarang dance, videos of the movements, explanations of the steps, and learning evaluations. The developed products were then validated by subject matter experts and media experts to determine the level of validity and feasibility of the media before being tested. The media expert validator was Basuki Sulistio, S.Pd., M.Pd., a lecturer in educational technology, and the material expert validator was Ika Ratnaningrum, S.Pd., M.Pd., a lecturer in dance. The instrument used was a 1-4 Likert scale.

Implementation

The implementation stage was carried out by testing the learning media on students (Hasanah et al., 2024). Media was used in the dance learning process in the classroom in accordance with the learning scenario that had been designed (Arsih et al., 2025). At this stage, the researcher conducted pre-tests and post-tests to measure the improvement in learning outcomes, as well as collecting responses from students regarding the use of learning media based on Smart App Creator (Farhana & Arini, 2023).

Evaluation

The evaluation stage is conducted to assess the quality of the learning media developed (Adhana & Andriani, 2024). The evaluation covers aspects of validity based on expert assessment, practicality based on student responses, and media effectiveness based on student learning outcomes (Arlim & Fauzi, 2025). The evaluation results are used as a basis for improving and refining the media so that it is suitable for use in dance education in primary schools (Erita et al., 2024).

Research Subjects and Objects

The subjects of this study were 31 fifth-grade students at SDN Wonosari 03 Semarang, who participated in a trial of the use of the Smart App Creator application-based Denok Semarang dance movement learning media. In addition to the students, SBdP teachers were also involved to provide responses and input on the use of learning media. The object of this study was the Denok Semarang dance movement learning media based on Smart App Creator developed by the researcher, which was reviewed in terms of the validity, practicality, and effectiveness of the media in improving student learning outcomes in terms of dance knowledge and skills.

Research Instruments

The research instrument was used to measure student learning outcomes after using the Smart App Creator application-based Denok Semarang dance movement learning media. The instrument was designed to assess three areas of learning outcomes, namely cognitive, psychomotor, and affective.

The cognitive aspect was measured using a written test in the form of multiple-choice questions related to students' knowledge of Denok Semarang dance. The material measured included the definition of dance, the names and sequence of dance movements, the meaning of the movements, dance accompaniment, and supporting elements of dance. This instrument aimed to determine the level of students' understanding and mastery of concepts after participating in learning using the developed media.

$$N\ Gain = \frac{Skor\ Posttest - Skor\ Pretest}{Skor\ Ideal - Skor\ Pretest} \quad (1)$$

Psychomotor aspects are measured using a performance assessment sheet that is used when students practise the various movements of the Denok Semarang dance. The assessment focused on the accuracy of the movements, flexibility, suitability to the accompaniment, and cohesiveness in performing the dance movements. This instrument aimed to assess the students' skills in practising dance movements directly. the formula is the total score obtained divided by the total overall score multiplied by 100%

Affective aspects are measured using an affective observation sheet during the learning process. The assessment covers students' confidence, responsibility, cooperation, discipline, and enthusiasm in participating in dance learning activities. This instrument is used to determine students' attitudes and interests in traditional dance learning after using the Smart App Creator-based learning media. the formula is the total score obtained divided by the total overall score multiplied by 100%.

Result and Discussion

Result

Cognitive Domain Learning Outcomes

Normality test results, t-test, and n-gain on a small scale

Table 1. Small-scale normality test

| Test | Kolmogorov-Smirnov | | | Shapiro-Wilk | | |
|----------|--------------------|----|-------|--------------|----|-------|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Pretest | 0.251 | 10 | 0.073 | 0.665 | 10 | 0.087 |
| Posttest | 0.145 | 10 | 0.200 | 0.937 | 10 | 0.517 |

Based on Table 1 above, the results of the pretest and posttest normality tests using the Shapiro-Wilk formula showed Sig > 0.087 for the pretest and Sig > 0.517 for the posttest on a small scale.

Table 2. Small-scale t-test (peired samples test)

| Pair 1 | Mean | Std. Deviation | df | Sig (2-tailed) |
|-------------------|--------|----------------|----|----------------|
| Pretest-Posttests | 69.900 | 14.949 | 10 | 0.000 |

Based on Table 2 above, it can be seen that the average difference between the pretest and posttest using SPSS 26 is sig (2-tailed) 0.000. In the paired sample t-test, it is said that there is a significant difference between the pretest and posttest data if the sig value (2-tailed) < 0.05, so it can be concluded that the difference between the pretest and posttest scores on the small scale and large scale shows a significant difference.

Table 3. Small-scale n-gain test

| Test | N | Min | Max | Mean | Std. Deviation |
|--------------------|----|------|------|--------|----------------|
| Ngain | 10 | 0.40 | 1.00 | 0.6469 | 0.22240 |
| Valid N (listwiss) | 10 | | | | |

Based on the analysis of learning outcome data, the average N-Gain score was 0.6469 on a small scale with a moderate category. Thus, from these results, the Smart App Creator learning media in teaching the Denok Semarang dance movements in the dance art subject, with the material 'Arranging Traditional Dance Movements', is effective for use in learning.

Normality test results, t-test, and n-gain on a large scale

Table 4. Large-scale normality test

| Test | Kolmogorov-Smirnov | | | Shapiro-Wilk | | |
|----------|--------------------|----|-------|--------------|----|-------|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Pretest | 0.168 | 21 | 0.127 | 0.923 | 21 | 0.098 |
| Posttest | 0.156 | 21 | 0.200 | 0.928 | 21 | 0.125 |

Based on the SPSS 26 output, Sig > 0.098 was obtained for the pretest and Sig > 0.125 for the posttest in the large-scale test. The data was considered normally distributed because Sig > 0.05. Once the data was known to be normally distributed, the T-test could be continued using parametric statistics.

Table 5. Large-scale t-test (peired samples test)

| Pair 1 | Mean | Std. Deviation | df | Sig (2-tailed) |
|-------------------|--------|----------------|----|----------------|
| Pretest-Posttests | 68.452 | 16.326 | 21 | 0.000 |

Based on the table above, the sig value (2-tailed) > 0.05, so there is no significant difference in learning

outcomes between the pretest and posttest data, which means there is a significant difference.

Table 6. Large-scale t-test (peired samples test)

| Test | N | Min | Max | Mean | Std. Deviation |
|--------------------|----|------|------|--------|----------------|
| Ngain | 21 | 0,50 | 1.00 | 0.7445 | 0.13170 |
| Valid N (listwiss) | 21 | | | | |

Based on the analysis of learning outcome data, the average N-Gain score was 0.7445 on a large scale with a high category. Thus, from these results, the Smart App Creator learning media in teaching the Denok Semarangan dance movements in the dance art subject, with the material 'Arranging Traditional Dance Movements', is effective for use in learning.

Psychomotor Learning Outcomes

Based on the results of psychomotor domain testing through the assessment of Denok Semarangan dance performance, it was found that the students' abilities showed excellent results. This can be seen in Table 7, which shows the psychomotor performance of the small group below.

Table 7. Small-scale psychomotor demonstration

| Indicators | Students ability (%) |
|----------------|----------------------|
| Imitation | 87.5% |
| Manipulation | 85% |
| Precision | 77.5% |
| Articulation | 77.5% |
| Naturalisation | 80% |
| Average | 81.5% |

In the large group, these results show that the Smart App Creator-based Denok Semarangan dance movement learning media is effective in supporting students' learning outcomes in the psychomotor domain. This can be seen in Table 8 below.

Table 8. Large-scale psychomotor demonstration

| Indicators | Students ability (%) |
|----------------|----------------------|
| Imitation | 84.5% |
| Manipulation | 86.9% |
| Precision | 85.7% |
| Articulation | 84.5% |
| Naturalisation | 84.5% |
| Average | 85.2% |

Affective Learning Outcomes

Based on Table 9, the assessment results for the affective domain in small group work show that the

students' attitudes were in the excellent category, with an average percentage of 82.5%.

Table 9. small-scale attitude assessment

| Indicators | Students ability (%) |
|-------------------|----------------------|
| Faith | 80% |
| Critical Thinking | 82.5% |
| Creativity | 80% |
| Collaboration | 87.5% |

Based on Table 10, the results of the affective domain assessment in large group work show that the students' attitudes were in the excellent category with an average percentage of 87.75%.

Table 10. Large-scale attitude assessment

| Indicators | Students ability (%) |
|-------------------|----------------------|
| Faith | 88% |
| Critical Thinking | 85.7% |
| Creativity | 86.9% |
| Collaboration | 90.4% |

Discussion

Results of Learning Media Development

The Denok Semarangan dance movement learning media based on Smart App Creator is presented in a practical and easy-to-use manner for students to use flexibly at home or at school. This solution is provided to give teachers and students an idea that students can learn easily and enjoyably anywhere and anytime with proper supervision. The researcher developed the Smart App Creator-based learning media for Denok Semarangan dance movements using the ADDIE model research and development procedure, which consists of five stages, namely analysis stage, design stage, development stage, implementation stage, and evaluation stage.

After analysing and identifying the needs of teachers and students for learning media for Denok Semarangan dance movements based on Smart App Creator, the researchers began designing the media by collecting material from teacher books, student books, and internet literature studies. After the design was created, it was then developed on the canva.com platform and subsequently imported into the Smart App Creator application to add navigation features and triggers that facilitate student use. The application can be downloaded onto Android devices or accessed via a link.



Figure 1. Media flow chart design

Figure 1 above shows a flowchart of the Denok Semarang dance movement learning media based on Smart App Creator, which is designed systematically and structurally. This learning media consists of several scenes, namely the cover page as the initial display, the login page containing user identity, the menu page as the navigation centre, the introduction page containing learning outcomes and objectives, the material page covering the history of Denok Semarang dance, dance performances, dance videos, makeup and costume design, and musical accompaniment, followed by a dance movement page containing lenggang seblak sampur, mentang sampur kaki maju, geyol sampur kanan, sembah geyol, and jongkok berdiri.



Figure 2. Illustrate media creation in the Smart App Creator

The image shows how to create learning media for Denok Semarang dance movements using Smart Apps Creator, as shown on the cover page.



Figure 3. Student login



Figure 4. Media main menu page



Figure 5. Menu of Denok Semarang dance movements



Figure 6. Explanation of the various movements of the Denok Semarang dance



Figure 7. Demonstration of various Denok Semarang dance movements

The image shows the login page, where researchers display information and a play button to proceed to the next slide. In this section, researchers added the song Gambang Semarang as background music. The main menu page contains learning outcomes and objectives, dance history, dance performances, dance movements, evaluation quizzes, and developer profiles. In the dance movements section, the menu displays the dance movements found in the Denok Semarang dance. Next, the meaning of each movement variety is explained, along with examples of movement variety performances (front view, side view, foot view, hand view). It is also equipped with main menu buttons, previous, next, and exit.

Results of Learning Media Feasibility

The Denok Semarang dance movement learning media based on Smart App Creator was validated by subject matter experts and media experts before being implemented in learning. The assessment scale consists of four categories, namely a score of 4 for the excellent category, a score of 3 for the good category, a score of 2 for the adequate category, and a score of 1 for the poor category.

Tabel 11. Recap expert validation results

| | Material Expert | Media Expert |
|---------------|-----------------|---------------|
| Score | 49 | 47 |
| Maximum Score | 52 | 48 |
| Percentage | 94,23% | 97,91% |
| Criteria | Very feasible | Very feasible |

After the assessment process by subject matter experts and media experts, revisions were made and improvements were made to the Denok Semarang dance movement learning media based on Smart App Creator. It can be said that this media is valid and suitable for use in dance learning activities for the subject matter 'Arranging Traditional Dance Movements'. This is evidenced by the validation results by subject matter experts, which obtained a score of 97.91% in the very feasible category, and the media validation results, which obtained a score of 94.23% in the very feasible category.

After the Smart App Creator-based Denok Semarang dance movement learning media product was deemed valid and suitable for use, the researcher conducted product testing and usage testing. In the product testing, the researcher distributed response questionnaires to teachers and students in grade V at SDN Wonosari 03 Kota Semarang.

Tabel 12. Recap of Large scale response results

| | Score (percent) | Criteria |
|----------|-----------------|---------------|
| Teacher | 88% | very feasible |
| Students | 93% | very feasible |

In this trial, the student response questionnaire scored 88%, and the teacher response questionnaire scored 93%. Based on the results of these questionnaires, it can be said that the Smart App Creator-based Denok Semarang dance movement learning media is very suitable for use in learning activities.

Effectiveness of Learning Media Cognitive Domain Learning Outcomes

The effectiveness of the Denok Semarang dance movement learning media based on Smart App Creator was obtained from a paired t-test and N-Gain test. The paired t-test yielded a sig. (2-tailed) value of 0.000. The t-test results were analysed using the decision-making criteria that if Sig (2-tailed) < 0.05, then Ho is accepted, or there is a significant difference between the learning outcomes in the pretest and posttest using the Smart App Creator-based Denok Semarang dance movement learning media. After the researcher completed the paired t-test, the researcher then conducted an average gain test (N-Gain). The N-Gain test showed an increase in the average learning outcomes of students of 0.6469 on a small scale with a medium category and 0.7445 on a large scale with a high category.

Psychomotor Learning Outcomes

The effectiveness of the Smart App Creator-based Denok Semarang dance movement learning media on psychomotor learning outcomes can be seen from the results of trials in small and large groups. In the small group trial, the students' ability to imitate, manipulate, perform movements with precision, combine various movements, and perform movements flexibly was rated as good to very good, with a percentage of 81.5%. Furthermore, in the large group trial, the percentage of psychomotor learning outcomes increased to 85.2%, indicating that students were increasingly able to demonstrate the Denok Semarang dance movements more accurately, coherently, and confidently. This improvement indicates that the learning media is not only easy to use but also effective in helping students understand and practise dance movements optimally. Thus, the Smart App Creator-based learning media is considered effective in improving students' learning outcomes in the psychomotor domain, both in small and large group trials.

Affective Domain Learning Outcomes

The effectiveness of the Smart App Creator-based Denok Semarang dance movement learning media on affective learning outcomes can be seen from the results of trials in small and large groups. In the small group trial, students showed positive attitudes during learning, with an attitude score of 82.5%, such as

increased interest, motivation, cooperation, and self-confidence in participating in dance learning activities. Furthermore, in the large group trial, the attitude assessment score was 87.75%, and the positive attitudes of the students developed further, as seen from the increased involvement of students in learning, their ability to work together in groups, and their enthusiastic and responsible attitudes during the learning process. A comparison of these results shows that the use of Smart App Creator-based learning media can foster better affective attitudes in students. Thus, learning media is considered effective in improving student learning outcomes in the affective domain, both in small and large group trials.

Conclusion

Based on the results of research and development, the Denok Semarang dance movement learning media based on Smart App Creator (SAC) is declared to be very suitable for use in teaching dance to fifth grade elementary school students. This is proven by the results of subject matter expert validation with a percentage of 94.23% and media expert validation of 97.91%, both of which are in the very suitable category. In addition, the results of the teacher and student response questionnaires in small and large group trials showed very positive responses, with a student assessment percentage of 88% and a teacher assessment of 93% in both trial stages. These results indicate that the learning media developed has an attractive appearance, is easy to use, and is suitable for the characteristics of the students, making it suitable for application in the dance learning process. Smart App Creator-based learning media has also been proven effective in improving student learning outcomes in the cognitive, psychomotor, and affective domains. In the cognitive domain, paired t-test results showed a significance value of $0.000 < 0.05$, indicating a significant difference between pretest and posttest scores, with an increase in N-Gain of 0.6469 in the small group (medium category) and 0.7445 in the large group (high category). In the psychomotor domain, the performance observation results showed an increase in student ability from 81.5% in the small group to 85.2% in the large group, reflecting an increase in skills in imitating, combining, and performing various Denok Semarang dance movements more accurately and flexibly. Meanwhile, in the affective domain, the students' attitude scores increased from 82.5% in the small group to 87.75% in the large group, indicating the development of positive attitudes such as motivation, cooperation, confidence, and responsibility during the learning process. Thus, the Smart App Creator-based learning media for the movements of the Denok Semarang dance is not only suitable for use but also

effective in improving the overall quality of dance education.

This study has limitations because it was only conducted in one school. Therefore, it is recommended that SAC be integrated into various other regional dances so that its effectiveness can be tested in a broader context and make a greater contribution to the preservation and development of traditional dance.

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The first author, S.R contributed to the research, product development, data analysis, article writing. The second author, A.N as a supervisor in research activities to writing the article.

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Conflicts of Interest

The authors knowingly confirm that no research conflicts have been reported.

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