

The Development of Melayu Nusantara Gymnastics as an Innovative Model for Cultural Preservation

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ABSTRACT: This study aims to develop the Senam Melayu Nusantara model as a form of cultural-based sports innovation that has a dual function, namely preserving Malay cultural values while improving physical fitness. The study used a Research and Development (R&D) approach with a modified Borg and Gall model, including the stages of needs analysis, product design, expert validation, limited trials, and field trials. Data were obtained through observation, questionnaires, and documentation, and analyzed descriptively quantitatively and qualitatively. The validation results showed that the product was feasible to be implemented with a total score from four assessors of 291 and a maximum score difference of only 3, the reliability value (R) obtained was 98.97%. The limited trial with 43 respondents resulted in an average percentage value for the "Agree" category reaching 46.57%. While the large trial with 120 respondents obtained an average percentage result of 42.81% in the "strongly agree" category. These findings confirm that Senam Melayu Nusantara not only has educational value, but also has potential as a medium for cultural preservation. The study recommends the implementation of these gymnastics in physical education learning activities and regional cultural events.

KEYWORDS: Malay Archipelago Gymnastics, model development, physical fitness, Malay culture, physical education.

I. INTRODUCTION

Sport exercise including in 3 rooms scope sport in Constitution sports (Sriwahyuniati, 2020) . Gymnastics including sport Education , sports achievements and sports recreation (Kuncoro & Rahayu, 2023). Sport exercise including sport Education Because material exercise Good exercise floor and exercise rhythm has become material studied in curriculum Education good at school base both at school medium (Widowati et al, 2024). Sport Exercise including sport performance Because exercise under parent organization PERSANI (Union Exercise All of Indonesia) below under the auspices of KONI has official in the match in various level regional , national until international (Budiarti, 2016) . Meanwhile sport exercise including sport recreation or sport public Because in some exercise certain exercise own elements of positive taste , making perpetrator exercise happy , capable reduce depression And anxiety as well as add enjoyment in exercising . Exercise including sport recreation among them exercise fitness physical , gymnastics elderly , gymnastics zumba , yoga, dancemix , poundfit , gymnastics creation area and others. Exercise Freshness Physical in Indonesia is activity Which normal done on circles public and agency education in a way routine moment Morning And afternoon . Exercise Freshness Physical moment This Already Lots developed public and agency government with adopt elements culture on every area . On every the period , Exercise Freshness Physical own innovation new that is results from effort development by agency government (Jannah et al., 2024) , Ministry Youth And Sport for example and development from parent organization sport recreation on public For create public Which Healthy physical And spiritual with implant values culture Indonesia.

Culture in Indonesia is very diverse (Fitri Lintang & Ulfatun Najicha, 2022) Diversity culture prove that Indonesian society has quality production extraordinary culture normal , if referring to on understanding culture that is results work human . Culture Already attached on public And Already down hereditary by grandma ancestors And ancestors on every area as well as will the more conceptualized in life public so that become A trust to things Which relate with A difficult beliefs For removed (Antara & Yogantari, 2018) . Beliefs that still exist develop in life something society , usually maintained through properties local it has .

Importance culture will bring one's behavior into line with cultural expectations area aim For realize public rich will culture area, culture area in Indonesia Alone diverse. Among them is Malay. Malay culture is a culture that has been attached to the nation since Formerly And is culture archipelago (Alfarizi et al., 2023; Maryamah et al., 2023). Maintaining Malay culture can strengthen national identity and a sense of unity among the people. One way to preserve Malay culture is by studying and developing Malay

The Development of Melayu Nusantara Gymnastics as an Innovative Model for Cultural Preservation

culture in Indonesia. Not influenced by foreign culture and teaching Malay culture to all corners of Indonesia, even to Malay-related countries outside Indonesia. Maintaining culture is not only through art and customs rituals And habit other (Alfarizi et al., 2023).

Nusantara culture has unique and complex characteristics (Samongilailai & Utomo, 2024), born from the interaction of hundreds of ethnic and cultural groups spread throughout the Indonesian archipelago. This diversity not only reflects the richness of our ancestral heritage but also symbolizes the strength of the Indonesian nation. One of the main characteristics of Nusantara culture is cultural pluralism, namely the ability of Indonesian people to live side by side with differences and build harmony in diversity (Hadijaya et al., 2024). This plurality is evident in everyday social life, which upholds the values of tolerance, mutual cooperation, and mutual respect between groups.

Nusantara culture also has distinctive characteristics in artistic expression and cultural symbols, such as dance, traditional music, traditional ceremonies, and regional clothing. (Abdullah et al., 2025; Habsary et al., 2024). This cultural expression is not only a means of entertainment, but also a medium for conveying moral messages, group identity, and educational tools across generations. Traditional arts and culture often contain educational values such as discipline, cooperation, social ethics, and a sense of love for the homeland. According to Manarfa et al (2023) , preserving local arts and culture is an important part of character education based on national identity. Therefore, understanding the characteristics of Nusantara culture is an important step in strengthening national identity and building a cultured young generation.

From a Malay cultural perspective, body movement is not merely a physical activity, but also a means of expressing life values (Bailey, 2024; Syahroni & Irawan, 1385), such as politeness, gentleness, harmony, and respect for others. Positive Malay characteristics such as friendliness, courtesy, collectivity, and a spirit of mutual cooperation are very much in line with the basic values of sports, especially educational and recreational sports that emphasize sportsmanship, togetherness, and balance between body and soul.

Thus, the relationship between Malay culture and gymnastics is complementary. Malay culture provides a foundation of values and aesthetics (Hussain et al., 2020; Warni & Karim, 2023), while gymnastics serves as a medium for transforming these values into a fun, educational, and culturally inclusive activity. Melayu Nusantara Gymnastics serves as an example of how local cultural heritage can be actualized in a modern sporting context without losing its traditional roots, enriching educational and recreational sports forms that reflect the nation's identity.

Besides matter said , sport Also including culture ancestors of the nation Which Keep going developed and implemented update such appearance (Asri et al., 2021; Harvianto & Abeng, 2021). In everyday life, sport Also have connection Which close with culture, Because sport is part of a developed culture man (Yoda, 2020). Indonesian society believes that through cultural sports, it can improve healthy humans, healthy humans are a resource needed in development, healthy humans can be achieved through sports. Sport including culture , or cultivate sport . Sport is something a person's activities that involve Physical and motor skills as the main focus of activities (Sutapa et al., 2021). Sports are currently very popular among many groups, both young and old (Orunbayev, 2023), starting from children, teenagers, adults to sports are very popular among the elderly (Parlebas, 2020).

Sport own role important not only in maintaining physical fitness, but also as a vehicle preservation culture nation (Sumantri et al., 2024; Syafruddin et al., 2022) . In the Indonesian context, there is a wealth of traditions and culture that can be integrated with sports activities, one of which is through the development of culture-based gymnastics. However, until now there are not many gymnastics models that represent cultural identity. Malay that was formed from all over archipelago as Wrong One clump big Indonesian nation .

Problems that arise is the low variation of local gymnastics that is able to accommodate students' needs in physical education learning, while strengthening cultural identity. This research attempts to present Nusantara Malay Gymnastics as an answer to this challenge. This exercise is designed with movements inspired by Malay dance art, combined with systematic physical training principles.

II. RESEARCH METHODS

This research uses a **Research and Development (R&D) approach** with a modified Borg and Gall model. (Maydiantoro, 2021) , including needs analysis through observation and interviews, initial product design in the form of a sequence of Malay culture-based gymnastics movements, validation by media experts, movement experts, and cultural experts, product revisions, and limited trials on 30 students and field trials on 100 elementary school students. Data were obtained through questionnaires, observations, and documentation, then analyzed descriptively quantitatively to assess the percentage of feasibility and improvement in physical fitness, and qualitatively to gather input and suggestions from experts and accompanying teachers.

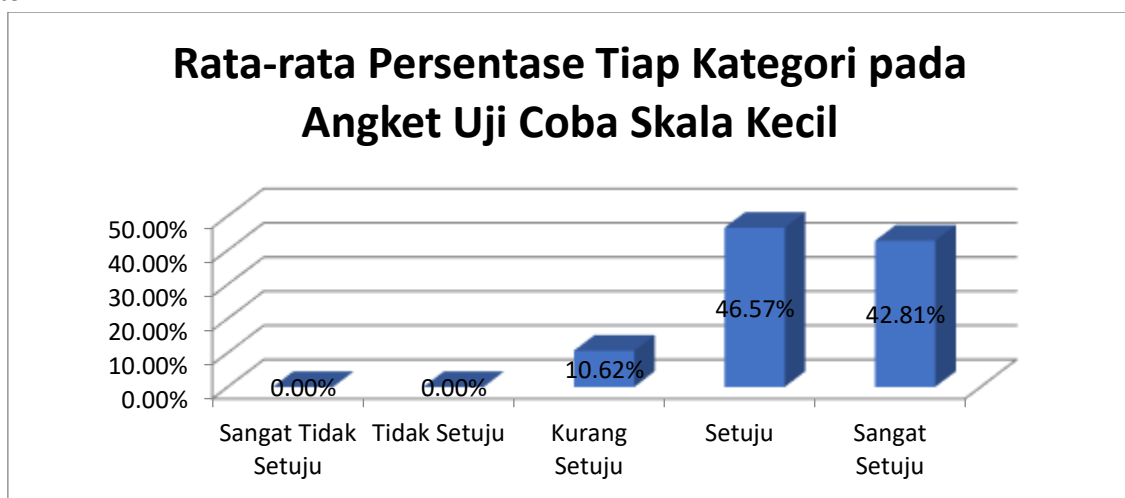
The Development of Melayu Nusantara Gymnastics as an Innovative Model for Cultural Preservation

III. RESULTS

The results of the reliability analysis using the Borich formula indicate that the research instrument has a very high level of reliability. With a total score of 291 from four assessors and a maximum score difference of only 3, the resulting reliability value (R) was 98.97%. This result far exceeds the minimum limit of 75% required by Borich to declare an instrument reliable. (Narine & Harder, 2021; Salimin et al., 2015). With this value, the instrument can be said to have almost perfect agreement among experts in assessing the quality of the statement items.

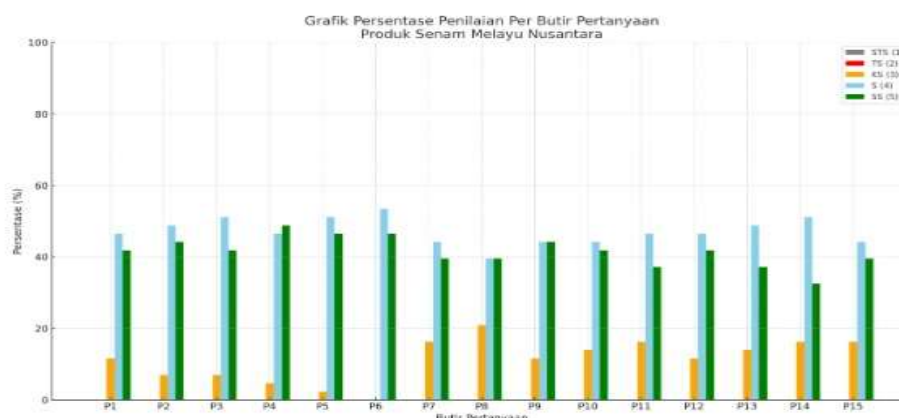
The maximum score difference of 3 out of a total of 291 indicates that the experts' assessments were highly consistent. The disagreements were minimal and did not affect the final reliability of the instrument. This indicates that the instrument was well-designed and could be understood in the same way by all assessors, increasing the level of agreement among them.

The field trial phase is the next step after the developed model has received expert approval. This phase aims to test the results of the developed product in a small group of research subjects. The sample used in this trial was 1 class at SMA N 12 Jambi city and 1 fitness club . Based on the results of a small-scale trial of 15 questions regarding the Senam Melayu Nusantara product, data obtained showed that the majority of respondents gave a positive assessment. All items did not receive responses in the Strongly Disagree (STS) or Disagree (TS) category, indicating that no respondents firmly rejected or felt this product was inappropriate.



Based on the results of a small-scale trial data analysis of 30 statements completed by 43 respondents, it was found that the majority of respondents responded in the Agree (S) and Strongly Agree (SS) categories. The average percentage for the Agree category reached 46.57%, while the Strongly Agree category was 42.81%. This indicates that most of the statements in the questionnaire were understood and agreed to by respondents, reflecting the suitability of the instrument's contents to the expected objectives.

Meanwhile, the Less Agree (DS) category only received an average percentage of 10.62%, indicating that a small number of respondents felt that there were statements that were inappropriate, but the figure was still within reasonable limits for the instrument development process. Interestingly, in the Strongly Disagree (STS) and Disagree (TS) categories, not a single respondent chose, so that these two categories received a percentage of 0%, strengthening the suspicion that this questionnaire had met the aspects of readability, clarity, and relevance of the material to the respondents' needs.



The Development of Melayu Nusantara Gymnastics as an Innovative Model for Cultural Preservation

In the aspects of movement suitability, clarity of instructions, and cultural relevance as measured through items P1 to P6, the majority of students gave assessments in the Agree (S) and Strongly Agree (SS) categories with percentages ranging from 46.51% to 53.49% for Agree and 41.86% to 48.84% for Strongly Agree, while the Less Agree (KS) score was recorded as low, for example in P5 (2.33%) and P4 (4.65%). This indicates that in this section the product was assessed as very good by respondents.

In items P7 to P11, which assess the safety, comfort, and ease of exercise movements, ratings of Disagree (DS) began to emerge with a percentage range of 11.63% to 20.93%, the highest in P8 at 20.93%, indicating some respondents' doubts regarding certain parts of the product. However, respondents who chose Agree (S) and Strongly Agree (SS) still dominated with a cumulative total of more than 80% for each item.

In items P12 to P15, which evaluate elements of uniqueness, novelty, and cultural preservation, the distribution of ratings also showed a positive trend. However, the Disagree (DS) score tended to increase in items P14 and P15, reaching 16.28%, while the Strongly Agree (SS) score decreased slightly to 32.56% to 39.53%. This indicates that although respondents generally appreciated the Malay cultural elements in this exercise, a small number of students still felt that improvements were needed in the integration of this culture.

Test group big in study This involving 120 people consisting of from club And school as subject study . Instruments used is results development consisting of on exercise Malay archipelago . Test This aim For evaluate effectiveness movement in activity exercise in a way comprehensive , at once test validity And practicality field implementation on larger scale big .

Overall, the results of this large-scale trial further strengthen the validity and feasibility of the product developed for use in further research or practical implementation in the field.

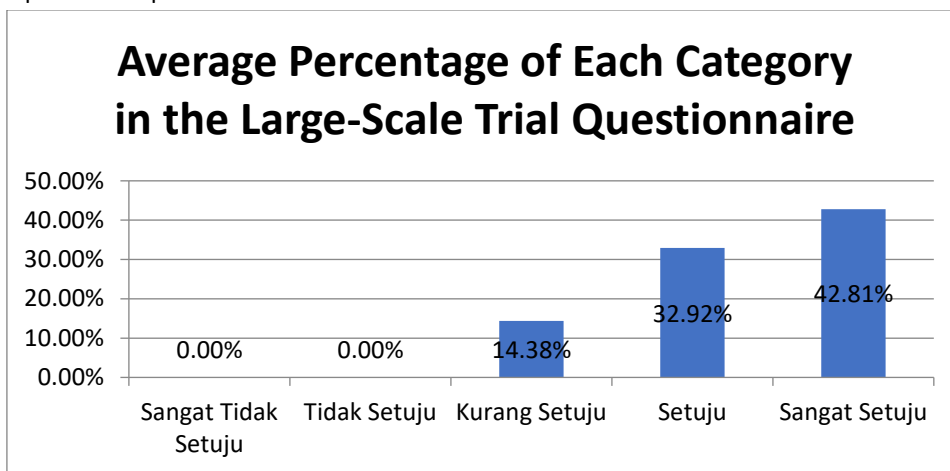


Image: Results of large-scale trials

- scale trial data analysis of 15 statement items filled out by 120 respondents, it was found that the majority of respondents responded in the Strongly Agree (SS) category with an average percentage of 42.81% , followed by the Agree (S) category of 32.92%. These results indicate that the product or instrument developed has been understood and accepted very well by the majority of respondents. Meanwhile, the Less Agree (KS) category only obtained an average of 14.38%, indicating that a small number of respondents felt they disagreed with several statements. However, there were no respondents who chose the Strongly Disagree (STS) or Disagree (TS) category, so that both categories obtained a percentage of 0%. This indicates that there was no significant rejection of the statement items in the questionnaire.

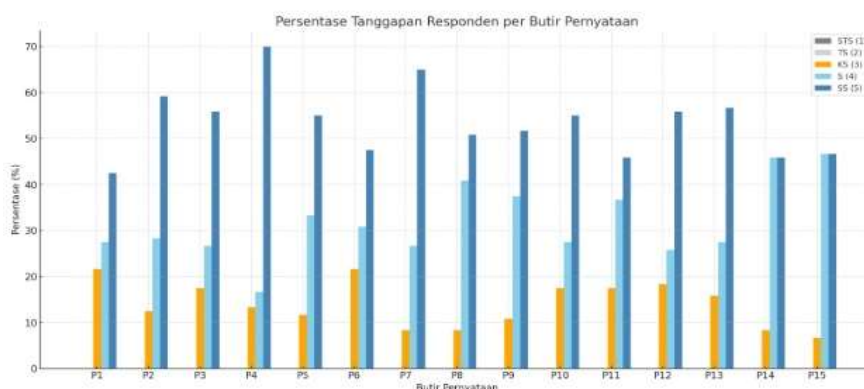


Figure: Percentage Graph Per Question Item of Large Scale Trial

The Development of Melayu Nusantara Gymnastics as an Innovative Model for Cultural Preservation

In the Strongly Disagree (STS) and Disagree (DS) categories, not a single respondent chose this option for any of the statement items. Therefore, both categories received a percentage of 0%. This indicates that, in general, there was no extreme rejection from respondents regarding the content and wording of any statement item presented in the questionnaire.

For the Less Agree (LS) category, there was variation in respondent responses, albeit at relatively low percentages. The average percentage in this category was 14.38%. The statement items with the highest "Less Agree" scores were P1 and P6, with 26 respondents (21.67%) each, and P10 with 21 respondents (17.5%). Meanwhile, the item with the lowest "Less Agree" score was P15, with 8 respondents (6.67%). This indicates that a small proportion of respondents disagreed with several aspects of the instrument, which may be related to the clarity of the wording, the context of the item, or the relevance of the material to real-world conditions.

In the Agree (S) category, the distribution of responses shows a fairly dominant figure, with an average percentage of 32.92%. The statement item with the highest percentage of the "Agree" category is P15 (46.67%), followed by P14 (45.83%), and P8 (40.83%), which indicates that most respondents agree with the statements in these items. Meanwhile, the statement item with the lowest "Agree" category is P4 (16.67%), which means that the majority of respondents on this item tend to give a higher rating in the Strongly Agree (SS) category.

The Strongly Agree (SS) category had the highest percentage compared to the other categories, with an average of 52.71%. This indicates a very good level of acceptance and understanding among respondents regarding all items in the instrument. The statement item with the highest percentage of "Strongly Agree" was P4 (70%), followed by P7 (65%), and P13 (56.67%). Meanwhile, the item with the lowest percentage of "Strongly Agree" was P11 (45.83%), although it still showed a high value compared to the other categories.

Overall, these results indicate that respondents gave more assessments in the Agree (S) and Strongly Agree (SS) categories, with a combined average total of 85.63%, which indicates that the majority of statement items have been understood, accepted, and are in accordance with the context of measurement needs. The percentage of Less Agree (LS) which still appears in a small number of statement items becomes input for editorial refinement or further technical explanation.

The absence of respondents selecting the Strongly Disagree (STS) and Disagree (DS) categories is a positive indicator that no statement items were extremely rejected by respondents. This indicates that, both substantively and wording-wise, the instrument meets the needs and expectations of users or respondents.

Thus, the results of this large-scale trial strengthen the validity of the content of the product that has been developed and provide confidence that the product is suitable for use in the next stage, both for wider-scale trials and implementation in actual research settings.

DISCUSSION

The development of Melayu Nusantara Gymnastics was carried out in stages and systematically through a research and development approach. The initial stage began with the identification of Malay cultural elements that could be adapted into gymnastics movements. This identification was carried out through literature studies and visual analysis of previous Malay gymnastics forms such as Jambi Malay Gymnastics, Malay Dendang Gymnastics, and others. The goal was to determine the movement forms and music typical of existing Malay gymnastics, so that they could be refined, developed, and adapted into a more systematic and widely applicable Melayu Nusantara Gymnastics concept.

The next step was designing the gymnastics movements based on physiological and pedagogical principles. The movements were systematically structured into three main phases: warm-up, core, and cool-down. Each phase was tailored to the intensity level and goal of the movement, and combined with elements of Malay dance to ensure that the movements were not only functional for fitness but also displayed artistic and cultural values, in keeping with the primary goal of developing this gymnastics.

The selection of accompanying music is a crucial element in this process. Traditional songs such as "Lancang Kuning" from Riau, "Ya Saman" from Aceh, and "Pucuk Pisang" from North Sumatra were chosen for their rhythmic beats and appropriate for gymnastics. These songs were rearranged to maintain a consistent tempo and support the gymnastics movements being developed.

The development process also involved collaboration with experts, such as cultural experts, movement experts, and gymnastics coaches, to ensure the product developed adhered to cultural values and met physical fitness standards. The movements were then piloted to assess their feasibility and understanding by participants.

The final stage of this process is the production of an exercise video, which serves as a dissemination tool and visual guide. The video showcases the entire exercise sequence, combined with Malay music from the Indonesian archipelago, and is presented

The Development of Melayu Nusantara Gymnastics as an Innovative Model for Cultural Preservation

in an engaging way for individuals to use independently at home, school, or in the community. This video medium is an effective strategy for introducing exercise while preserving Malay culture in a more adaptive and applicable form.

The results of this study confirm that the development of **Senam Melayu Nusantara (Indonesian Malay Archipelago Gymnastics)** has met the criteria for validity, practicality, and effectiveness. In terms of validation, media experts, movement experts, and cultural experts gave it a very high rating, indicating that this gymnastics successfully integrates physical fitness principles with Malay cultural values harmoniously. This success demonstrates that sport can be an important medium for cultural preservation, as well as an innovative tool in physical education. School sports not only aim to improve physical abilities, but also play a role in forming students' social and cultural identities (Arifin, 2017).

Limited trials demonstrated high student enthusiasm, indicating that culturally-based gymnastics is more easily accepted than standard gymnastics such as SKJ. This condition can be explained through the theory of learning motivation, where students tend to be more interested in learning that is relevant to their social and cultural lives (Prihartini & Buska, 2019). The movements combined with Malay-Indonesian music create a pleasant learning atmosphere, so that students not only practice motor skills but also feel connected to their cultural identity. These results are in line with research by Setyawan et al., (2025) which found that the integration of local arts and culture in physical education can increase students' intrinsic motivation.

Findings from the field trial further strengthen the effectiveness of Senam Melayu Nusantara. A 12.3% increase in students' physical fitness demonstrates that this exercise is not only recreational but also has a significant impact on physical health. This improvement aligns with the WHO (2020) report that 60 minutes of moderate-to-high-intensity aerobic physical activity per day can improve children's cardiorespiratory fitness, muscle strength, and motor coordination. The structured movements in Senam Melayu Nusantara from warm-up, core, to cool-down - support the achievement of these physiological goals.

In addition to providing physical benefits, this exercise also serves as a vehicle for multicultural learning. By incorporating elements of music, dance, and Malay philosophy, students are introduced to the richness of local traditions, while simultaneously strengthening their national identity. Through exercise, students not only exercise but also internalize cultural values such as politeness, togetherness, and mutual cooperation, which are characteristic of Malay society. Thus, this exercise has the dual potential of developing physical health while simultaneously shaping culturally based character.

From a physical education perspective, Melayu Nusantara Gymnastics offers an alternative learning model that aligns with the national curriculum. The rhythmic gymnastics material included in the curriculum can be enriched with movements with local cultural nuances, thus making learning more contextual. This aligns with the goals of physical education, which emphasize the development of students' physical, psychomotor, cognitive, and affective aspects (Sari et al., 2024). Through this gymnastics, students not only develop motor skills but also gain aesthetic experiences, cultural understanding, and sportsmanship.

Within the broader community context, Senam Melayu Nusantara (Indonesian Malay Archipelago Gymnastics) has the potential to be developed as a recreational sport that can be practiced by all ages. Its relatively simple movements and familiar music make it inclusive, making it suitable for children, teenagers, and the elderly. This aligns with the vision of the Komite Olahraga Rekreasi Masyarakat Indonesia (KORMI), which promotes recreational sports as a means of building a healthy, fit, and cultured society. In fact, if packaged creatively, this exercise could be promoted at national and international events as part of Indonesia's cultural diplomacy.

Thus, this research makes important contributions to both sports and culture. Senam Melayu Nusantara not only addresses the need for innovative physical education learning models but also provides a solution for preserving Malay culture, which is increasingly being marginalized. This supports the notion that local culture-based education is an effective strategy for strengthening national identity while preparing the younger generation to face global challenges.

V. CONCLUSIONS

This research has successfully developed Senam Melayu Nusantara (Indonesian Malay Archipelago Senam) as an innovative gymnastics model that combines elements of physical fitness with Malay cultural values. Expert validation results indicate that this product is suitable for use in terms of movement, media, and cultural content. Limited and field trials have proven that this gymnastics is practical to implement, well-received by students, and provides a pleasant exercise experience. Furthermore, Senam Melayu Nusantara plays a strategic role as a medium for preserving local culture, a means of strengthening national identity, and an inclusive recreational vehicle for various groups in society. Thus, this gymnastics is not only relevant for implementation in physical education learning in schools, but also has the potential to be developed in public spaces, sports communities, and cultural activities, thereby contributing to the realization of a healthy, fit, character-based, and cultured society.

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The Development of Melayu Nusantara Gymnastics as an Innovative Model for Cultural Preservation

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