

A Holistic Approach to Learning Through Traditional Games: Designing and Validating an Engaging Module for Physical Education

**Agam Akhmad Syaukani^{1*}, Asha Hasniny Mohd Hashim², Nur Subekti¹, Rita Arni³,
Ratko Pavlović⁴, Nikola Radulović⁵**

¹*Department of Physical Education, Faculty of Teacher Training and Education, Universitas Muhammadiyah Surakarta, INDONESIA*

²*Department of Physical Education and Sports Science, Faculty of Educational Sciences and Technology, Universiti Teknologi Malaysia, MALAYSIA*

³*Departement of English language and literature, Faculty of language and arts, Universitas Negeri Padang, INDONESIA*

⁴*Faculty of Physical Education and Sport, University of East Sarajevo, BIH*

⁵*Faculty of Sport and Physical Education, University of Novi Sad, Serbia*

KEYWORDS

Module,
Physical
Education,
Traditional
Games,
Research and
Development

ABSTRACT:

Physical Education (PE) is a compulsory subject in the education curriculum that can facilitate holistic learning to students. Holistic education is relevant to current demand of high skilled human capital to face modern era of society 5.0. This study aims to design a learning module that deliver holistic learning in form of traditional games. The selected traditional games are *Gobak Sodor* and *Bentengan* that require intense physical movement as well as serve as cultural introduction to younger generation. The module is tailored toward student in the first grade of junior high school. Need analysis is conducted to picture the initial condition and user expectation of the module. The results showed that traditional games have been widely implemented in PE class. PE teacher and students perceive traditional games in positive way highlighted of its benefit to socio-emotional and physical aspect. Teachers suggested a creative way of using multimedia to gain learning engagement of students. The newly-designed module comprises of learning plan, reading material, student activity and evaluation. To validate the module, 2 experts were recruited to assess the quality of the module. The Aiken's V coefficient resulted CVI=0.94 indicating a strong validity. Experts suggested a minor revision prior to feasibility study including to simplify reading material, adding more images, and secure image copyright. The module should complement the existing module on PE especially one that do not contain traditional games. Therefore, holistic education combined with cultural education through traditional games will eventually be attributed to student's overall development of cognitive, affective, psychomotor and cultural awareness.

1. Introduction

Holistic education is an effort to develop students' potential holistically. Through holistic education, students are expected to become well-rounded individuals who not only possess cognitive intelligence but are also capable of developing intelligence in other aspects, including socio-emotional, physical, and spiritual(1). Several experts have suggested that holistic education is highly relevant to current developments, where there is a need for human resources who are not only cognitively intelligent but also possess social sensitivity, psychological maturity, and motor skills(2–6). Moreover, for a religious country like Indonesia, holistic education means a state effort to prepare the younger generation to become a generation that is faithful and devout to God Almighty(7). This is in line with the main objective of education in Indonesia, which states that students must develop their potential in the cognitive, affective, psychomotor, and spiritual domains (Law No. 20 of 2003).

The school curriculum implies that the fulfilment of educational goals as mandated by law must be pursued by every subject taught in school. Physical Education (PE) in the context of primary and secondary education in Indonesia is a compulsory subject. It is imperative for PE to contribute to the achievement of national education goals through education that is oriented towards the holistic

development of students(1,6,8). The role of physical education in promoting holistic development is inevitable. Physical education through structured physical activity and sports offered lesson that potentially improve student's overall development. The importance of sports in educational context is also mentioned in Law Number 11 of 2022 concerning sports, Article 18 states that the purpose of conducting sports in schools is to instill character values (affective), knowledge (cognitive), and skills needed to build a healthy and active lifestyle throughout life. Therefore, it needs careful planning and evaluation to guarantee the learning could achieved the expected outcomes.

Physical education, as a subject primarily taught outdoors, offers several advantages compared to other school subjects. Physically, it's clear that physical education plays a dominant role. Through this subject, students are engaged in physical activity to develop motor skills, improve health and fitness, and develop the ability to play various sports such as soccer, basketball, and volleyball(8–11). Cognitively, PE plays a role in developing students' critical thinking to understand the rules and regulations of sports, and students are equipped with the ability to strategize to win sports competitions(12–16). Socio-emotionally, through PE, students can learn to develop communication and cooperation skills(17–22). This directly impacts the development of self-confidence, character building and positive values, and the development of leadership skills. Given the vast potential of PE in achieving educational goals oriented towards holistic education, it is no wonder that this subject is considered important and mandatory for elementary and secondary education in Indonesia.

While PE has the potential for holistic development, its implementation often falls short due to a lack of understanding among teachers(23–25). Besides, Osborne et al., (2016) on their study claimed that teachers are often teach without planning, therefore, make the activity is meaningless and far toward achieving the desired outcomes. Teachers are more accustomed to traditional teaching methods that focus more on physical exercise alone, so that students only develop physical aspects in a limited way, without benefiting from cognitive, social, and emotional development through physical activity(27). Holistic education that can be presented from physical education should be easily implemented because it has been widely studied in research(3,6,8,17). The starting point for its implementation is very simple, namely by convincing every PE teacher that holistic education is very beneficial for students while providing a deep understanding of the concept of holistic education in the realm of physical education.

Holistic education within PE can be applied to any learning material including but not limited to traditional sports. We view traditional sports as an important cultural heritage that must be preserved. Efforts to preserve traditional sports can be done by introducing them to the younger generation through learning in the classroom. There have been many studies highlighting the application of traditional sports in school learning(9,10,28,29). The majority of these studies express concern that traditional sports are increasingly marginalized by modern games that are easily played by children. If left unchecked, children will grow up without knowing their culture, so they may lose their identity and national identity(30–32). This phenomenon is known as "cultural homogenization", which is the tendency for values, lifestyles, and cultural products to become increasingly similar in various parts of the world(33). This arises as a common impact of easy access to information(34). The application of traditional sports in learning will certainly be able to contribute to minimizing the effects of cultural homogenization. Through traditional sports, students will be invited to actively move and play within the framework of local culture, so in addition to being able to develop cognitive, affective, and psychomotor aspects, they can also increase cultural awareness that benefit students pertaining their identities among globalization effect(35).

To effectively address the challenges associated with integrating traditional sporting games into physical education, we require a well-designed learning module. This module must be practical and systematically usable by both teachers and students. To ensure the module's effectiveness and user-friendliness, a thorough preliminary study is essential. This study aims to identify and address real-world challenges on module creation. By understanding the specific needs and expectations of teachers

and students, we can minimize the risk of developing a module that is not suitable for their context. Ultimately, this research endeavors to create a learning module that effectively integrates traditional sporting games into physical education programs, thereby promoting the holistic development of students.

2. Methods

This research employed a Research and Development (R&D) design using Thiagarajan's 4-D model, which consists of four stages: Define, Design, Develop, and Disseminate. This model was chosen for its systematic nature and widespread use in educational research(36–39). On this article we would describe the process of module creation that encompassing Define and Design stage.

Define Stage

The Define stage began with an initial analysis of existing problems, providing the rationale for the development of the product. This stage involved defining traditional sports learning activities as an alternative to holistic education-oriented learning. Additionally, the characteristics of the target learners (junior high school students) were analyzed, considering factors such as academic ability, motivation, socioeconomic background, and prior experience with traditional sports. Content analysis was also conducted on the learning materials and tasks included in the learning module to ensure alignment with the stated learning objectives. At this stage, physical education teachers and students were involved to obtain their perspectives on the traditional games as part of the needs analysis. There are 4 PE teachers and 4 student representatives involved in the interview sessions. The teachers involved in the interview sessions are those who have had experience teaching traditional sports in their classes. Meanwhile, we used snowball sampling to select students as interview sources. There were 4 students recruited in this stage. The interviews were conducted in a semi-structured style, with interviews with teachers and students conducted separately. The researcher wrote field notes to summarize the contents of the interview. The interview process was recorded using a voice recorder with the consent of each source. The interview results were analyzed using a narrative technique. This technique focuses on a deep understanding of the research subjects' experiences through the stories they tell. In this analysis, the researcher does not only view the data as a set of information but also as a narrative or story constructed by the research subjects to give meaning to their life experiences(Creswell, 2018).

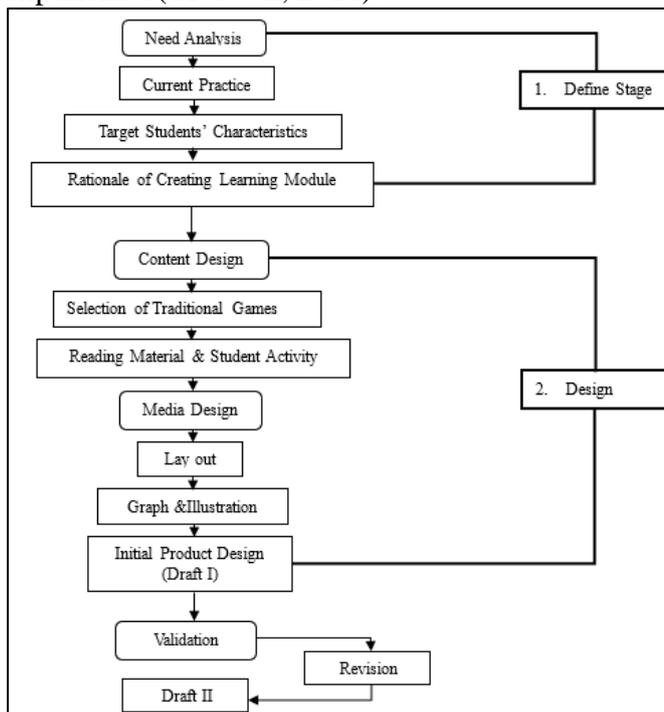


Figure 1 Study Design

The Design Stage

The Design stage involved creating an initial draft of the learning module based on the needs analysis. The design included creation of content section, media, student activities, and evaluation. The content was developed by referring to primary literature on guidelines for traditional sports implementation published by the Indonesian Ministry of Youth and Sports. The selection of content included in the module was based on the needs of students who were assumed to have little to no experience in playing traditional sports. The volume of content was also adjusted to the allocation of physical education class hours in accordance with the junior high school curriculum. The media design included the selection of images, page layout, and writing style that could attract the attention of junior high school students. Meanwhile, the design of student activities consisted of group tasks and individual tasks aimed at enhancing understanding, knowledge, and skills in playing traditional sports. There were two types of evaluation included in the module namely formative and summative evaluation. Many believe that a combination of formative and summative assessment is ideal to improve student's achievement in learning (41–43). Formative evaluation took form in a short quiz, class discussion, and self-assessment as well as peer assessment. Summative evaluation took form in a multiple-choice quiz to assess student learning at the end of a learning unit.

At the end of this stage, as part of the validation process, the successfully designed learning module was submitted to a team of experts for review and evaluation. To conduct this validation, we consulted two experts: a university professor (Expert 1) and a senior physical education teacher (Expert 2). Experts possess in-depth knowledge and understanding of the specific topic or domain the content covers. This allows them to assess accuracy, evaluate comprehensiveness, and judge relevance. Many RnD studies have indicated that validation from experts is needed to create a strong justification of the product before it is being tested to target population (44–46). On this study, the university professor was selected based on their doctoral qualification, research experience, teaching experience at both school and university levels, and expertise in traditional sports. The PE teacher was chosen for their extensive teaching experience (over 15 years), teaching certification, and familiarity with traditional games.

The experts were given the opportunity to review the initial draft and provide feedback both quantitatively through a questionnaire and qualitatively through written statements. The questionnaire consisted of a total of 36 items to assess several aspects, including Language (7 items), Writing (5 items), Images (10 items), Presentation (3 items), and Module Content (11 items). Quantitative validation analysis was conducted using Aiken's CVI formula.

3. Results

Creation of the module

The module development was based on a preliminary study involving a literature review and interviews with students and physical education teachers. The aim was to identify games that meet the criteria of sporting games. The stipulated criteria were that the selected traditional games must have universally applicable rules, be played in groups, be frequently competed in championships, and involve intense physical movement.

Based on the literature review conducted, it was found that two games met these criteria, namely *Gobak Sodor* and *Bentengan*. Interviews with students and teachers were intended to find out about students' learning habits in Physical Education and their experiences in playing traditional games. The results showed that both students and teachers confirmed that they were familiar with these two traditional games and acknowledged the positive benefits of these games.

Table 1 List of relevant studies

Authors	Traditional Games (Independent variable)	Dependent variable
(47)	<i>Gobak Sodor</i>	Gross Motor Skill
(29)	<i>Gobak Sodor</i>	Speed & Agility
(48)	<i>Gobak Sodor</i>	Speed & Agility
(49)	<i>Bentengan</i>	Speed
(50)	<i>Gobak Sodor & Bentengan</i>	Physical Fitness

The students we interviewed stated that traditional sports have become a part of their Physical Education lessons at school, so they are quite familiar with various traditional games. The benefits they can feel are increased self-confidence and teamwork among friends. Meanwhile, teachers explained that two traditional games, Gobak Sodor and Bentengan, contain intense physical movements that can be used to improve students' physical fitness. Through the design phase, we have chosen Gobak Sodor and Bentengan as the learning objects to be included in the module. We have structured our module with three main components: learning plan, reading material, and student activity. We have adjusted the learning materials and the number of student activities to fit the allocated PE lesson time, which is 3 hours per week. We have also included images and graphics to clarify the learning materials and enhance the visual appeal of the module.

Table 2 Comments on benefit of traditional game perceived by pe teachers and students

Subjects	Comments
PE Teacher (1)	<i>"The values embedded in traditional sports are mutual cooperation, and tolerance"</i>
PE Teacher (2)	<i>"Traditional sports inherently involve teamwork and cooperation. These skills are crucial in our daily lives as they help to make tasks easier. When we work together, the workload is shared, and the overall outcome is often improved"</i>
PE Teacher (3)	<i>"I encourage my students to practice traditional sports so they can participate in traditional sports competitions that are currently being held frequently. Traditional sports competitions can be an alternative way to achieve achievements through sports"</i>
PE Teacher (4)	<i>"I used traditional game of Engklek (Hopscotch) to improve student's athletic ability"</i>
Student (1)	<i>"We learn the value of friendship from playing traditional sports together"</i>
Student (2)	<i>"... so that we can keep our nation's culture alive for generations to come"</i>
Student (3)	<i>"The values contained in traditional sports, in my opinion, are teamwork and sportsmanship"</i>
Student (4)	<i>"The value of teamwork in traditional sports can be applied in everyday life, for example, working together on assignments or group projects."</i>

This is in line with the practices already carried out by several teachers who became our respondents in the need analysis. They conveyed the need for creativity in teaching traditional sports to students so that the lesson becomes interesting.

"The strategy I use during traditional sports learning is a competition. From there, students will be motivated and motivate each other to compete fairly in becoming the champion." (PE Teacher 01)

"I typically use PowerPoint, Canva, and engaging apps to present the material. Students tend to be more interested in content that's presented in video format or other creative ways." (PE Teacher 02)



Figure 2 Front cover of the learning module
Validation of The Module

The initial draft of the module was subjected to a validation process to assess its suitability as a teaching resource. The Aiken's coefficient for each item is presented in Table 3.

Table 3 Aiken's Coefficient on 36 Items

Item	V-Aiken Coefficient	Category	Item	V-Aiken Coefficient	Category
1	0.89	VALID	19	0.94	VALID
2	0.89	VALID	20	1.00	VALID
3	1.00	VALID	21	1.00	VALID
4	0.94	VALID	22	1.00	VALID
5	1.00	VALID	23	0.94	VALID
6	1.00	VALID	24	1.00	VALID
7	0.78	VALID	25	0.94	VALID
8	0.94	VALID	26	0.94	VALID
9	1.00	VALID	27	0.89	VALID
10	0.72	VALID	28	1.00	VALID
11	0.94	VALID	29	0.94	VALID
12	1.00	VALID	30	0.94	VALID
13	0.94	VALID	31	0.94	VALID
14	0.94	VALID	32	0.94	VALID
15	0.94	VALID	33	0.94	VALID
16	0.89	VALID	34	1.00	VALID
17	0.89	VALID	35	0.89	VALID
18	0.89	VALID	36	1.00	VALID

Although experts gave a positive evaluation of the module we created, as indicated by high score of CVI, both experts still provided various suggestions for improvement to perfect this learning module. These suggestions were submitted in writing at the end of the questionnaire. Table 4 presents the improvement suggestions from each expert.

Table 4 Expert's suggestion and feedback

Expert 1 (University Professor)	Suggestion and Feedback
1	<i>“Any foreign language words or phrases in the module should be italicized.”</i>
2	<i>“Please provide a source citation for each image, whether it's your own (personal documentation) or from another source. This is essential to avoid copyright issues.”</i>
3	<i>“Include more images in Section 1, Student Activity 1 to enhance understanding.”</i>
4	<i>“Each table should have a clear and concise caption explaining its content.”</i>
Expert 2 (Senior PE Teacher)	Suggestion and Feedback
1	<i>“Traditional games are typically taught in elementary school, to attract more of secondary school student, therefore create a simple description and image to make students attracted and easy to understand”</i>

4. Discussion

A new learning module for traditional sports has been developed in this study using a structured approach. We brought traditional sports into PE learning in order to promote a holistic learning and cultural awareness. This holistic approach helps students become well-rounded individuals who are prepared to navigate the complexities of life(1,2,5,8). Meanwhile, cultural awareness fosters understanding and appreciation for diverse cultures and perspectives(30,35,51). Holistic development, encompassing intellectual, emotional, social, physical, and spiritual growth, ensures students possess a well-rounded skillset that extends beyond academic knowledge. This includes critical thinking, problem-solving, creativity, emotional intelligence, effective communication, teamwork, physical well-being, and a strong moral compass. Furthermore, cultivating cultural awareness is paramount(52). By fostering an understanding and appreciation for diverse cultures, students develop empathy, respect, and tolerance towards individuals from different backgrounds. This not only enriches their personal lives but also prepares them to become responsible global citizens who can contribute meaningfully to a diverse and interconnected world. In essence, a holistic approach to education, coupled with a strong emphasis on cultural awareness, empowers students with the knowledge, skills, and values they need to navigate the challenges of the 21st century successfully. They become well-rounded individuals who are not only academically proficient but also emotionally intelligent, socially responsible, and culturally sensitive – qualities that are essential for personal and professional success in today's globalized society(53,54).

This module is designed to make learning traditional sports more effective and engaging for students. In this study, an initial need analysis was conducted thoroughly through quantitative and qualitative approaches involving teachers, student representatives, and an expert panel. The results showed that traditional sports, which were made the main subject matter in the module, were perceived positively by teachers and students. While traditional sports were perceived to offer benefits similar to regular sports, their importance was often solely attributed to cultural preservation(55). However, several studies we reviewed also highlighted the significant developmental benefits of traditional sports for students. Fakhurozi et al., (2024) states that traditional game can be used to develop gross motor skill

of children. Similar to that, Aliriad et al., (2024) uses traditional game as to improve student's physical ability and learning motivation. Literature studies and interviews is conducted to justify the creation of traditional sports module. By doing so, we can prioritize our efforts and resources on the most critical areas. This prevents us from wasting time and resources on projects that are not truly relevant or impactful. For example, through in-depth interview with PE teachers regarding teaching traditional sports in schools, we know that there is a need for creative efforts through teaching strategies and interactive teaching materials to make learning traditional sports interesting for students. The effect of globalization on the setbacks of traditional game over modern games is undeniable. It is necessary to attract students to play traditional sports through an innovative teaching strategy. A shift toward new learning technique have a profound impact on student engagement in the classroom(56–58). Therefore, this learning module is designed with attention to colorful images and layout to increase its appeal to students. Not only that, student activity in the module have adopted notable approach of innovative learning including active learning(59–61), cooperative learning(62–64) and gamification(65,66). Overall, the module quality is determined through expert validation. The final stage described in this study involved two experts who assessed the feasibility of the module that had been created before it could be tested on students. Quantitative Aiken's V analysis revealed that the module was deemed suitable for testing, as evidenced by a high validity CVI score. Each expert provided valuable feedback, which will be followed up to further enhance the module. For example, given the target population is 7th grade students, expert suggest that we simplify the reading material to increase clarity and focus more on field activity. We believe that expert validation is important to ensure the module readiness. Besides, experts can identify and address potential biases within the module. Therefore, expert validation adds credibility and trustworthiness to the module, demonstrating its quality and rigor.

This research has a significant impact on the development of Physical Education, especially at the secondary school level. The module created can be used as a self-learning material for students to learn according to their individual abilities and learning styles. For teachers, this module can serve as a guide to apply holistic education in the form of traditional sports teaching that can develop cognitive, affective, psychomotor, and cultural awareness domains, which are important parts of the holistic aspect. This module is equipped with lesson plans that make it easier for teachers to deliver material that is in line with educational goals and the available teaching time. This research is conducted in the context of secondary education in Indonesia. The selection of traditional sports is also based on their popularity among Indonesian students. This is perhaps a limitation of this study. Given the diverse cultural landscapes and educational systems across the globe, researchers and practitioners in other countries may need to carefully adapt the selected traditional sports to align with the local context.

5. Conclusion

This research presents a description of the module development process in accordance with research and development principles. The developed module considers current practices in the implementation of traditional sports in schools. It is also tailored to the needs and characteristics of junior high school students as the target learners. The module is written in standard Indonesian and is equipped with interactive multimedia displays. Validators involved in this research provided assessments regarding the suitability of the module as a teaching material in physical education classes. The validity of the module is important to ensure accuracy, relevance, and alignment with learning objectives. The overall Aiken's CVI score of 0.94 indicates that the module has good content and reflects the intended educational goals. The validators provided suggestions for improvement to enhance the module's quality before conducting a feasibility study through a limited scale trial. The validated module provides evidence of its quality and effectiveness to educators, learners, and stakeholders. This builds confidence in the module's ability to achieve desired learning outcomes. It is expected that this module can pass through the subsequent processes to eventually be widely used in physical education learning that is oriented towards holistic education.

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