

PRACTICAL STUDY ON THE INTRODUCTION OF THE JAPANESE TRADITIONAL SCHOOL SPORTS EVENT “UNDOKAI” TO AN INDONESIAN JUNIOR HIGH SCHOOL

ESTUDO PRÁTICO SOBRE A INTRODUÇÃO DO EVENTO ESPORTIVO ESCOLAR TRADICIONAL JAPONÊS “UNDOKAI” EM UMA ESCOLA SECUNDÁRIA INDONÉSIA

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RESUMO

O objetivo deste estudo foi examinar a sua eficácia e os problemas a serem abordados no futuro da realização de um Undokai, um evento desportivo escolar tradicional japonês, numa escola secundária indonésia. As cinco competições realizadas como parte dele foram “Beanbag Toss”, “Long Jump Rope”, “Tug of War”, “Centipede Race” e “Backcrossing Race”, das quais o “Tug of War” foi o mais popular. Quando os alunos foram questionados sobre as suas experiências e os benefícios de aprendizagem do Undokai, geralmente deram notas altas a muitas categorias, tais como Experiências Emocionais, Melhoria de Competências e Aprendizagem Cooperativa, mas as suas classificações baixas para Aprendizagem Orientada para Objectivos indicaram a necessidade melhorar a forma como os alunos praticam as atividades isoladamente antes de seu engajamento no Undokai.

Palavras-chave: Evento Esportivo na Escola, Educação Física. Competência Física. Atividade física.

ABSTRACT

The purpose of this study was to examine the its effectiveness and problems to be addressed in the future of holding an Undokai, a traditional Japanese school sports event, at an Indonesian junior high school. The five competitions held as a part of it were “Beanbag Toss”, “Long Jump Rope”, “Tug of War”, “Centipede Race”, and “Backcrossing Race,” of the which the “Tug of War” was the most popular. When the students were surveyed about their experiences and the learning benefits from the Undokai, they generally gave high marks to many categories, such as Emotional Experiences, Improvement of Skills, and Cooperative Learning, but their low ratings for Goal-Oriented Learning indicated the need to improve the way students practice activities individually before their engagement in Undokai.

Keywords: Sports Event in School, Physical Education. Physical Competence. Physical activity.

Introduction

In recent years, the main causes of death in Indonesia have changed dramatically because of economic development and other factors. For example, according to the Global Burden of Disease Study published by the Institute for Health Metrics and Evaluation¹, the five top causes of death in Indonesia in 1990 were cerebrovascular diseases, diarrheal diseases, tuberculosis, neonatal disorders, and ischemic heart disease, three of which are related to infections and nutrition. In 2019, however, cerebrovascular disease, ischemic heart disease, diabetes, liver cirrhosis, and tuberculosis were the five top causes of death, four of which were non-communicable diseases, so-called lifestyle related.

According to the “Global Health Expenditure Database,” a database of healthcare expenditures provided by the World Health Organization², the total healthcare expenditure in Indonesia was \$33.26 billion in 2000, when the statistical survey began. However, it was \$439.76 billion in 2021, approximately 13 times higher than 20 years earlier. Thus, as Indonesia’s economy grows, its population begins to face health problems caused by the

lifestyles, and so developing preventive strategies to reduce medical costs and promote the healthy living become urgent issues.

The effectiveness of physical activities as a method to prevent lifestyle-related diseases has been demonstrated by many studies. In addition, since it has been proven that the presence and amount of habitual physical activity in childhood have a “Carryover Effect” on the amount of physical activity and health condition not only in childhood but also in adulthood,³⁻⁴ the approach to enhance physical activity and exercise targeting children and students can be expected to have long-term effects on the health of the Indonesians. Furthermore, because the interventions aimed at preventing lifestyle-related diseases and increasing physical activity among children and students are mainly conducted in the school settings,⁵ it is desirable to implement similar strategies to increase physical activity in schools in Indonesia. In particular, school physical education and school events related to physical education and sports can directly convey the importance of physical activities to children.

Therefore, in this study, we conducted a practice to develop a positive attitude toward exercise in an Indonesian junior high school. To implement this practice, we used *undokai*, which is one of the school events unique to Japan.

The *undokai* is a sports event widely held in Japanese schools throughout the country. The word “*Undokai*” is a composite word made up of the words *undo*, which means “exercise,” and *kai*, which means “meeting”⁶. Based on the uniqueness of these events, Yamahira⁷ argues that *undokai* has advantages as an introductory tool to familiarize children with the exercises because¹ everyone can participate in them², individuals can participate in multiple events, and it provides an opportunity³ for all the children, students, and teachers to come together. In addition, Kimura et al.⁸, in a historical review of the events held during *undokai*, reported that the competitive nature of the events was mitigated by the principle of participation by all. Thus, we considered *undokai* as an effective tool to promote exercise in the school settings where children with diverse attitudes toward exercise and sports would come together as *undokai* as it is designed in a way so that anyone could easily participate, regardless of their motor skills, knowledge, or attitude toward exercise.

Therefore, the purpose of this study was to conduct an *undokai*, unique to the sports school culture in Japan, for Indonesian junior high school students and to examine its impact and issues involved.

Methods

Sample

In late August 2023, *undokai* was held for 256 first year junior high school students (119 boys and 137 girls) who attended 1 public junior high school in Yogyakarta Special Region, Indonesia. On the day of the *undokai*, 16 students (11 boys and 5 girls) were absent, so in the end, 240 students (108 boys and 132 girls) participated in this. We, then, asked the 240 students who participated in the *undokai* to respond to a questionnaire. Since this study was designed to examine its effectiveness and problems to be addressed in the future of *undokai*, the inclusion criteria were students who participated in *undokai*. So the 16 students who did not participate in *undokai* were excluded from this study. After explaining the purpose of the survey and the content of the questionnaire to the school principal and the physical education teachers, the permission to participate in the survey was obtained. As an ethical consideration, the questionnaire clearly stated that the survey was not a test, had nothing to do with academic performance in the school, the results of the individual survey would be kept confidential, and that the survey results would not be used for any purpose other than research. In addition, the teacher in charge informed the students that answering the questions would be regarded as obtaining consent and that they would not be penalized if they withdrew from the survey in the

middle of answering the questions. The 202 students (88 boys and 114 girls; mean age 12.49 years; valid response rate 84.2%) who agreed to participate in the study and responded completely to the questionnaire were included in the analysis.

Description of the undokai

Five events were held at the *undokai*: Beanbag toss, Long Jump Rope, Tug of War, Centipede Race, and Back Crossing Race. The descriptions of each of the events are as follows.

1) Beanbag Toss

A competition in which a ball is thrown into a basket at a certain distance. In this study, a basket was set at approximately 5 m from the ground, and balls were thrown into it from a distance of 3 m from the center of the basket.

2) Long Jump Rope

It is a competition in which a jumper jumps inside a long, spinning rope, similar to Double Dutch. Usually, two ropes are used in Double Dutch, but only one rope is used in the long jump rope. In addition, the long jump rope used in this study differs from the Double Dutch in that the jumper does not stay inside the spinning rope, but rather jumps out of the rope after one jump. As soon as the jumper steps out of the rope, the next jumper enters the rope and jumps. The action is repeated, and the competitors try to see how many jumps they could make within the time limit.

3) Tug of War

It is a competition in which a jumper jumps inside a long, spinning rope, similar to Double Dutch. Usually, two ropes are used in Double Dutch, but only one rope is used in the long jump rope. In addition, the long jump rope used in this study differs from the Double Dutch in that the jumper does not stay inside the spinning rope, but rather jumps out of the rope after one jump. As soon as the jumper steps out of the rope, the next jumper enters the rope and jumps. The action is repeated, and the competitors try to see how many jumps they could make within the time limit.

4) Centipede Race

In this competition, multiple people line up in front of and behind one another and compete for speed by moving forward in unison, as their legs are bound by ropes and other binders. In this study, five people lined up vertically and tied their ankles to those in front and behind them with a rope to form a pair. Each team was divided into six pairs for the contest.

5) Backcrossing Race

In this competition, a representative of a team runs a route made from the backs of other members. In this study, teams competed to see which team could cross the finish line faster on a 20m turnaround course.

For the preparation and practice of the athletic events, an instruction manual showing how to conduct each competition was prepared and shared with the physical education teachers at the host school, along with an instructional video. The physical education teachers at the host school used the instruction manuals and instructional videos to have their students practice the activities during their physical education and other classes. On the day of the *undokai*, to reconfirm the implementation methods and rules of the competitions, the administrative staff explained and demonstrated the method to the students before the events began, so that they

fully understood their methods and rules before competing. The above procedure was repeated for all events

Measurement

1) Evaluation of *undokai*

To evaluate the experience and the degree of learning at the *undokai*, the formative evaluation scale for physical education classes developed by Hasegawa et al.⁹ was used, modified to reflect the actual conditions of the experience and the learning process at the *undokai*. The scale consists of four categories: the “Outcome” category consisting of subcategories related to “Experiencing Emotions,” “Growth of the Motor Skills,” “New Discoveries about Exercises,” and the “Motivation” factor consisting of subcategories related to “Exercising the Exercises to the Fullest” and “Enjoyment,” “Way of Learning” category consisting of subcategories related to “Self-Directed Learning” and “Goal-Oriented Learning,” and the “Cooperation” category, consisting of subcategories related to “Learning to Get Along” and “Cooperative Learning.” Although this scale was designed to evaluate physical education classes, Yamahira¹⁰ reviewed past literature on the educational significance of *undokai* in Japan and stated that “*Undokai*” was not simply a sports event in schools, but something effectively linked to educational effects, and their relevance to physical education could be understood. Therefore, we inferred that there is a relationship between the *undokai* and physical education classes and modified the wording of this scale to make it an evaluation scale for the *undokai*. Responses were rated on a three-point scale of “Yes,” “Neutral,” and “No.”

2) Physical competence

To examine the relationship between the experiences and the learning process at *undokai* and their relationship to physical competence, we used the physical competence scale developed by Okazawa et al.¹¹. This scale consists of three categories: the “Perceived Physical Competence” category, consisting of several subcategories, including statements such as “I think I have excellent motor skills” and similar, and a “Feeling of Control” category, consisting of several subcategories, such as the statement “Even if I cannot do an exercise, I think I can do it if I practice without giving up,” and an “Peer and Teacher Acceptance” factor consisting of items such as “My friends encourage and support me when I do an exercise.” Subjects were asked to respond to each question item on a 5-point scale from “not at all applicable (1 point)” to “very applicable (5 points).”

Data analysis

In order to examine how students gained experiences and learning through the *undokai*, we analyzed formative evaluation scale for *undokai*. First, a simple tabulation was conducted for each response category (“Yes,” “Neutral,” and “No”) in order to identify response trends for each question item. Next, in accordance with Hasegawa et al.⁹, 3 points were assigned to “Yes,” 2 points to “Neutral,” and 1 point to “No,” for each response category, and the average was calculated for each question item. The averages were then compared to the diagnostic criteria for formative evaluation developed by Hasegawa et al.⁹ and rated on a 5-point scale. Finally, in order to examine how students' experiences and learning gained from the *undokai* were related to their physical competence, multiple regression analysis was conducted with each subscale of the formative evaluation scale for *undokai* scale as the independent variable and the physical competence scale as the dependent variable.

Results

Evaluation of undokai

Using the formative evaluation scale for *undokai*, the participants were asked to self-evaluate their experiences and the learning of physical skills at *undokai*. The results showed that 70%–80% of the total respondents answered that they gained experience in physical activities and learned many skills especially the “Outcome” category consisting of subcategories related to “Experiencing Emotions,” “Growth of the Motor Skills,” “New Discoveries about Exercises,” and the “Motivation” category consisting of subcategories related to “Exercising the Exercises to the Fullest” and “Enjoyment,” (Figure 1). When viewed against the diagnostic criteria for formative evaluation developed by Hasegawa et al.⁹, the students scored 5, the highest score on a 5-point scale for the outcome category, and 4 for the motivation category, indicating that those were generally rated highly (Table 1). Conversely, 44.1% of the students reported that they had experienced the “Goal-Oriented Learning” in “Way of Learning” category, and their rating based on the diagnostic criteria was also low, at 2-points.

As to the *undokai* events conducted in this study, 78 (38.61%) students indicated that Tug of War was their favorite, followed by 47 (23.27%) of students who liked the Backcrossing Race, 42 (20.79%) of students who liked the Beanbag Toss, and 26 (12.87%) the Long Jump Rope. The Centipede Race had the lowest number of students who liked it with 9 (4.46%).

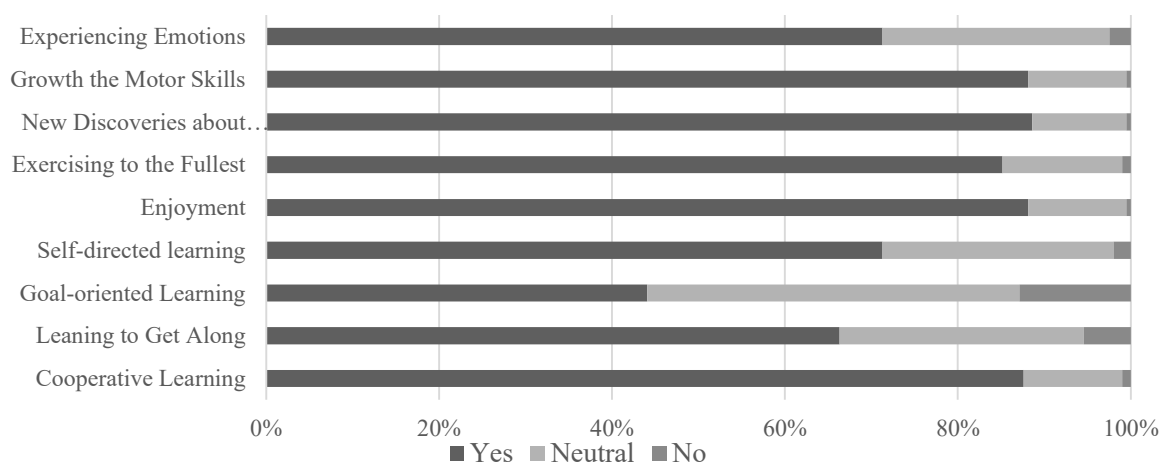


Figure 1. Formative evaluation of *undokai*

Source: Authors

Table 1. Mean and Evaluation for formative evaluation of undokai

		M	Evaluation (on a scale of 1 to 5)
Outcome	Experiencing Emotions	2.69	5
	Growth the Motor Skills	2.88	5
	New Discoveries about Exercises	2.88	5
	Evaluation of Outcome factor	2.82	5
Motivation	Exercising to the Fullest	2.84	4
	Enjoyment	2.88	4
	Evaluation of Motivation factor	2.86	4
Way of Learning	Self-directed learning	2.69	4
	Goal-oriented Learning	2.31	2
	Evaluation of Way of Learning factor	2.50	3
Cooperation	Learning to Get Along	2.61	3
	Cooperative Learning	2.87	5
	Evaluation of Cooperation factor	2.74	4
Comprehensive Evaluation		2.74	4

Note: M = Mean, Evaluation criteria from 1 to 5 point is shown in Hasegawa et al.¹⁰

Source: Authors

Influence of physical competence on the evaluation of undokai

To examine how the experience and learning gained from *undokai* influence on physical competence, a multiple regression analysis was conducted with formative evaluation of *undokai* as the independent variable and physical competence as the dependent variable. The results revealed that the “Outcome” category had a significant positive influence on “Feeling of Control” and “Peer and Teacher Acceptance,” “Motivation” category on “Feeling of Control,” “Way of Learning” category on all subscales of physical competence, and “Cooperation” category on “Peer and Teacher Acceptance” (Table 2).

Table 2. Multiple regression analysis

	Perceived Physical Competence	Feeling of Control	Peer and Teacher Acceptance
R (R ²)	.647(.406)	.683(.456)	.655(.418)
Standardized Partial Regression Coefficient (β)			
Outcome	.048	.246 **	.205 **
Motivation	.079	.312 ***	-.070
Way of Learning	.436 ***	.177 *	.231 **
Cooperation	.183 *	.088	.384 ***

***p<.001, **p<.01, *p<.05

Note: R = multiple correlation coefficient, R² = Coefficient of Determination

Source: Authors

Discussion

Evaluation of undokai

In this study, we explored a preventive method in healthcare through exercise to address health problems faced by Indonesians and conducted a practice using a traditional Japanese school sports event called “*undokai*.” The results showed that the students’ self-evaluations were high in the “Outcome” category, which represented the successful exercise experience at

the *undokai*, growth in motor skills, and new discoveries about exercises, and the “Motivation” category, which represented Experiencing the Exercises to the Fullest and Having Fun at the *undokai*. This suggests that the holding *undokai* may contribute to the formation of favorable attitudes toward exercise among students.

Conversely, “Goal-Oriented Learning” was rated low in the “Way of Learning” category. To achieve goal-oriented learning, it is necessary to set goals to be achieved at the *undokai*, and the students have to decide on their own how to use the time for practice during the *undokai* to achieve those goals. In addition, the physical education teachers must take steps to support students and encourage their physical activities. The only practical aim of this study as to the conduction of *undokai* was to provide the host school with information about it and explain the competitions in terms of how they should be to be held. We did not provide any information on the establishment of a system to encourage the students’ voluntary activities. In the future, it will be necessary not only to provide information on how to conduct the event, but also to consider the approaches to teacher education, such as instructional methods during the practice process leading up to the *undokai* and instructional methods to encourage the students’ voluntary involvement.

The most popular competition in this study was the Tug of War. It is familiar to many Indonesians because a similar event called “*Tarik Tambang*” is often held during the Indonesian Independence Day celebrations. Incorporating such traditional events rooted in the local culture may make *undokai* more familiar to the students in other countries and facilitate practice planning.

Influence of physical competence on the evaluation of undokai

To examine what experiences and learning at *undokai* are associated with students' increased physical competence in exercise, multiple regression analysis with formative evaluation of *undokai* as the independent variable and physical competence as the dependent variable. The results revealed that all categories in the formative evaluation had a positive influence on physical competence. In particular, feel of control, a subscale of physical competence, was significantly associated with all categories except cooperation in the formative evaluation, and peer and teacher acceptance was also significantly associated with all categories except motivation. Okazawa and Tsutiya¹² found that the young children’s “Perceived Physical Competence” and “Peer and Teacher Acceptance” were enhanced through the *undokai*, and argued that the effect of this was that when young children and their teachers practiced for the *undokai* day with a goal in mind, the young children themselves were motivated to become competent in various physical activities before that day, and their confidence in physical activities and the feeling that their teachers were watching them increased. Based on the findings of Okazawa and Tsuchiya¹², it is important for the teachers and students to share their goals for the *undokai*. In terms of the scale measured in this study, matters related to the goals of *undokai* fall under the “Way of Learning” category, which includes “goal-oriented learning” in the formative evaluation. The results of multiple regression analysis indicate that the “Way of Learning” category has a significant positive relationship with all subscales in physical competence. Therefore, it indicates that students' self-directed learning to achieve their goals in *undokai* enhances their physical competence. And this finding supports Okazawa and Tsuchiya's¹². In addition to improving physical competence, practice of Undokai also improves group cohesion in the classroom¹³, promotes normative awareness¹⁴, and forms activity norms.¹⁵ Thus, the practice process of *undokai* may contribute not only to the promotion of exercise and sports, such as physical competence, but also to the formation of independent individuals and the social skills in students. Therefore, future research should focus on the development and validation of programs that focus on practice for *undokai* and goal setting prior to the start of practice.

Conclusion

In this study, we held an *undokai* as a preventive method of using exercise to address health problems in Indonesia, and examined its effectiveness and problems to be addressed in the future. As a result, we found the possibility of forming a positive attitude toward exercise and improving physical competence in exercise. This is a preventive approach to the health problems caused by lifestyle habits and the accompanying increase in medical costs that Indonesia is currently facing, and we were able to propose a means of utilizing school education, which is experienced by almost all Indonesians. On the other hand, certain problems were found related to *undokai*, especially in respect to goal setting. It is necessary to establish an educational program that will enable the students to conduct self-directed and planned practice.

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