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DEVELOPMENT OF A MODEL AND IMPLEMENTATION OF A SHADOW PUPPET-BASED SPORTS GAME TO INTRODUCE SHADOW PUPPETS TO ADOLESCENTS

How to cite [jak cytować]: Wibowo, A.T., Sukarmin, Y., Purwanto, S., Saputro, Y.A., Sulistiya, F. (2024). Development of a Model and Implementation of a Shadow Puppet-Based Sports Game to Introduce Shadow Puppets to Adolescents. *Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe*, 7(4), 91–109.

Opracowanie modelu i wdrożenie gry sportowej opartych na lalkach-cieniach w celu zapoznania młodzieży z lalkami cieniowymi

Streszczenie

Lalki cieniowe zaczynają być porzucane przez nastolatków w Indonezji z powodu globalizacji. Niniejsze badanie ma na celu opracowanie jawańskiej gry sportowej opartej na lalkach cieniowych, aby zapoznać z nimi nastolatki – badania rozwojowe Borga i Galla. Etapy badań obejmują badania wstępne, ocenę walidacyjną przeprowadzoną przez sześciu ekspertów w dziedzinie gier sportowych, ekspertów od lalek cieniowych i ekspertów od projektowania graficznego. Walidacja przy użyciu techniki Delphi, z analizą danych przy użyciu współczynnika ważności treści V Aikena. Ponadto przeprowadzono etap próbny na próbie 34 nastolatków w wieku od 12 do 19 lat, podzielonych na 14 w próbie na małą skalę i 20 w próbie na dużą skalę. Technika gromadzenia danych wykorzystywała ankietę z kwestionariuszem wykorzystującym skalę Likerta z zakresem

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wyników 1–5. Wyniki tego badania zaowocowały stworzeniem gry sportowej Javanese Kigfun Game (J-KIG), która łączy gry sportowe w piłkę nożną i softball z postaciami z Ramajany. Gra J-KIG uzyskała prawidłowe wyniki z wynikiem 0,8–1. Próba na małą skalę uzyskała ocenę wykonalności na poziomie 87% z kryteriami „Bardzo wykonalne”, podczas gdy próba na dużą skalę uzyskała ocenę wykonalności na poziomie 83% z warunkami „Wykonalne”.

Słowa kluczowe: prototyp, gra sportowa, Jawajska Lalka Cieni, J-KIG.

Abstract

Shadow puppets are starting to be abandoned by teenagers in Indonesia due to globalization. This study aims to develop a Javanese shadow puppet-based sports game to introduce shadow puppets to teenagers – Borg & Gall development research. The research stages are preliminary studies, validation assessment by six experts in the field of sports games, shadow puppet experts, and graphic design experts. Validation using the Delphi technique, with data analysis using Aiken's V content validity coefficient. Furthermore, the trial stage with a sample of 34 adolescents aged 12–19 years, divided into 14 on a small scale trial and 20 on a large scale trial. The data collection technique used a survey with a questionnaire instrument using Likert scale with a score range of 1–5. The results of this study produced a Javanese Kigfun Game (J-KIG), a sports game product that combines soccer and softball sports games with shadow puppet characters from the Ramayana story. The J-KIG game obtained valid results with a score of 0.8–1. The small-scale trial received a feasibility assessment of 87% with the criteria "Very Feasible," while the large-scale trial obtained a feasibility assessment of 84% with the terms "Feasible."

Keywords: prototype, sports game, Javanese Shadow Puppet, J-KIG.

Introduction

The era of world globalization influenced our nation to make the process of integrating local culture into adolescents constrained, especially with the development of technology and social media in the adolescent environment, making them open to outside cultures (Nahak, 2019) and attracted to outside cultures so that they forget their nation's culture (Gentina & Parry, 2020). Indeed, globalization has a positive and negative impact on any nation. The positive impact is that they will be able to develop with the world of renewable technology for the development of their nation. However, the negative impact can make the teenage generation easily attracted to outside cultures and abandon their local culture (Husnul Hidayat, 2020).

The Indonesian nation is a large nation with a population of thousands of islands. It takes pride in its cultural diversity with uniqueness and distinctive characteristics that differ from other countries (Idianto Muin, 2013). The Indonesian state has a tribe that dominates this country, namely the Javanese because it is spread throughout the territory of Indonesia and constitutes almost 40% of the total population of Indonesia (BPS, 2021). The ancestors of the Javanese tribe taught their descendants about Javanese cultural values through

many symbols (Sumpna et al., 2019), one of which was shadow puppets (Nugraha et al., 2018; Ruastiti et al., 2020). Shadow puppets themselves are the work of Adiluhur from the ancestors of the Indonesian people, and in 2003, wayang received an award from the UNESCO as part of the World Heritage (Ruastiti et al., 2020).

The ancestors of Javanese people used shadow puppets to convey noble teachings, knowledge, and experience of good and bad life so that humans can live harmoniously side by side with others, in the world where the universe is called guidance (Kiswanto, 2022). Shadow puppets are used for modeling people's life behavior carried out to get peace, harmony, and welfare. In the Javanese language, it is known as *upload-ungguh* or manners, it is also called order. Shadow puppets function as entertainment in the community, so that all groups favor puppets as a spectacle (Kiswanto, 2022). Javanese people believe that the teachings of their ancestors taught through lectures, dances, shadow puppets, traditional clothing, traditional buildings, art, and language have good things to do and can improve critical thinking skills (Farida et al., 2023).

The data above shows that the phenomenon of shadow puppets is very important in the civilization of the Indonesian nation because it has noble values contained in philosophy and physical form. However, shadow puppets are being gradually forgotten by younger generations nowadays (Setiawan et al., 2020). Many parties realize that it is not easy to attract teenagers to get to know Javanese culture for various reasons such as looking old-fashioned, being challenging to learn, dull, young people more interested in outside culture, interested in modern games, being busy with gadgets, lack of parental guidance (Helmi, 2019). The researchers' preliminary data demonstrates that adolescents interested in shadow puppets tend to be moderate and to see and participate in shadow puppet performances in the low category (Wibowo, Sukarmin, Purwanto, & Iwandana, 2023). The same research found out that adolescents like games that tend to be physical and non-physical; physical games are traditional games and sports, while non-physical games are games using gadgets (Wibowo, Sukarmin, Purwanto, & Iwandana, 2023). The data above shows that great effort is urgently needed to introduce Javanese culture to adolescents in the era of globalization (Nahak, 2019).

Sport is a series of regular, planned movements to maintain motion, improve movement ability, and exercise aims to stimulate physical, spiritual, and social growth and development (Morela et al., 2016). Besides being able to be used for competition and recreation, sports can also be used as a means to introduce culture because sport itself is culture in many ways; through sports, we can share our culture with others (Francesca Butt, 2019).

The novelty of this study is to create a sports game by combining football and softball games and then including shadow puppet characters from the Ma-

habarata story in the game. The reason researchers include football and softball sports games is that adolescents have an interest in team sports games, which is proven by the results of preliminary research (Wibowo, Sukarmin, Purwanto, Agung, et al., 2023). Besides that, football and softball are popular sports games (Isdianto & Tendy, Y. R, 2014; Wibowo & Kushartanti, 2013). Researchers see that there have not been many studies that examine and implement sports games used to introduce shadow puppets, so this research is fundamental to be the beginning of a new focus on sports games used to introduce shadow puppets.

Materials and Methods

Research Design. This research uses research and development methods (Borg, W. R & Gall, 2003) to create a shadow puppet-based sports game product, Javanese Kigfun Game (J-KIG). Initial research was done, seven experts carried out prototype validation, and then small-scale trials and large-scale trials were conducted; the trials aimed to assess the feasibility of J-KIG sports games by users, namely teenagers, and coaches, so the final game product is ready to be tested for effectiveness. As for data collection techniques, the authors used surveys (Sugiyono, 2016). As for the data collection tool, they used questionnaires.

The prototype development was initially validated by the participants, and then by six experts with the title of professor of sports, PhD in game sports, M.A. in shadow puppets, and B. A. in graphic design. Sports experts were Prof. Komarudin, PhD, S. Pd., M.A, Agus Susworo Dwi Marhaendro, PhD, S. Pd., M. Pd., Bernadeta Suhartini, PhD, M. Kes. Shadow puppet expert Ki Aneng Kiswantoro, MS. The small Sakal trial research involved 34 adolescents divided into 14-adolescent groups for small-scale trials in Sleman Regency, Yogyakarta, and 20 adolescents for large-scale problems in Bantul Regency. For sample criteria, the authors used purposive sampling techniques with age limits for adolescents aged 12–19 years spread across Yogyakarta Province. The time for the implementation of this research was validation on September 1–5, 2023, and for the performance of small-scale and large-scale trials it was October 12–20, 2023.

The data obtained are quantitative data for prototype assessment data from experts in validation and feasibility assessment of sports products in small-scale trials or large-scale trials, while qualitative data was obtained from expert input when assessing prototypes and input from samples of adolescents and coaches in small-scale or large-scale trials. The validation instrument uses a Likert scale consisting of 7 questions rated by experts on a scale of 5 consisting of 1 “Strongly Disagree,” 2 “Disagree,” 3 “Neutral,” 4 “Agree,” 5 “Strongly Agree.” Statistical Analysis was obtained from experts in the form of qualitative data for input on

improvements and quantitative data to assess the feasibility of this prototype. For validation the authors used the Delphi technique and for data analysis it was Aiken's V content validity coefficient (Azwar, 2021; Dewanti et al., 2023). The content-validity coefficient based on the assessment results of 6 experts was calculated in the following way:

$$V = \sum s / [n(c-1)]$$

$$S = r - lo$$

Information:

Lo: the lowest validity rating number (e.g., 1)

C: highest validity assessment number (e.g., 5)

R: The number given by the appraiser/expert

While assessing the feasibility of this J-KIG sports game product, the formula below was used:

Formula for processing per item: $P = \left(\frac{X}{X_i} \right) \times 100\%$

Q: Introduce yourself

X: Respondent's answer in one item

xi: Ideal value in one item 100%: Constant

The formula for processing or item cap $P = \left(\frac{\sum X}{\sum X_i} \right) \times 100\%$

$\sum x$: Total number of respondents in all items

$\sum x_i$: The ideal overall amount of chlorine in one item

100%: Constant

Norms for the presentation of feasibility trials of J-KIG game products were depicted as follows, according to (Sugiyono, 2016).

Table 1
Norms of data analysis results

No	Test Results			Follow-up
	Category	Presented	Qualification	
1	4	86%-100%	Very Worth It	Implementation
2	3	76%-85%	Proper	Implementation
3	2	56%-76%	Pretty Decent	Revision
4	1	<55%	Less Decent	Revision

Results

Expert validation

The assessment data on the prototype of sports games to introduce shadow puppets was obtained from 6 experts consisting of sports professors, sports

players, PhD degree holders, masters of culture and shadow puppets, and graphic design education graduates.

Table 2
Quantitative data from experts

NO	Material Expert	Number of questions													
		1	s	2	s	3	s	4	s	5	s	6	s	7	s
1	Football Expert	5	4	5	4	5	4	4	3	5	4	4	3	5	4
2	Softball Game Expert 1	4	3	5	4	3	2	4	3	3	2	4	4	5	4
3	Softball Game Expert 2	5	4	5	4	5	4	5	4	5	4	5	4	5	4
4	Movie Member 1	4	3	4	3	5	4	5	4	5	4	4	3	5	4
5	Movie Member 2	5	4	5	4	5	4	5	4	5	4	5	4	5	4
6	Graphic design experts	5	4	5	4	5	4	4	3	5	4	4	3	5	4
Σs		20		23		21		23		22		23		24	
In		0.83		0.95		0.87		0.95		0.91		0.95		1	

The range of V numbers (Validity) obtained is between 0-1, so the results of the V value of the data above 0.8–1 can be interpreted as a “very high” coefficient because it is close to the highest number 1. This means that the results of the expert validation assessment of the Javanese Kigfun Game (J-KIG) sports game prototype are excellent and support trial continuation at the next stage.

Table 3
Qualitative data from experts

NO	Material Expert	Input
1	Football Expert	1. Considering the use of the ball adjusted to the width of the field, it is better to use a plastic ball
2	Softball Game Expert 1	1. The rules try to see the reference to the game of Kickball. 2. The size of the field can look like the size of Baseball 5 for <i>street numbers in baseball</i> 3. It should be specific to the <i>Javanese Kickfun Game</i> , not sports games. 4. The size of the ball must be tested first.

Table 3
Qualitative data from experts (cont.)

NO	Material Expert	Input
3	Softball Game Expert 2	1. Rules are made separately so that teenagers can easily understand them. 2. The rules for substitution in the game should use time limits and turn off as many as three players only at a time. 3. The number of players should be emphasized for the limit so that it is not confusing, given a minimum limit of 5 according to the number of <i>bases</i>.
4	Puppet master and puppeteer practitioner 1	1. The picture of the puppet model is only the original photo of the shadow puppet. 2. Enter the color of the character to be included in each <i>base</i>. 3. The semar image should not be included on the ball but replaced with a batik motif as a typical Javanese symbol.
5	Wayang expert and Dalang 2 practitioner	1. The image of the semar should not be included on the ball because its ethics will be incorrect. 2. Put the names of the Pandava and Kurawa teams on their vests.
6	Graphic design experts	1. Adjust the image size so that it is clearer 2. Play with the sharpness and color of the image 3. Position the leaflet design between the image and the writing closer; for example, in the stamping or below the image, there is an explanation

All input from the experts is used as data to revise the prototype to make it ready to be tested in the field. The results and prototype form of the sports game are named J-KIG sports game (Javanese Kigfun Game) with an explanation of the rules of the game shown by Figure 1.

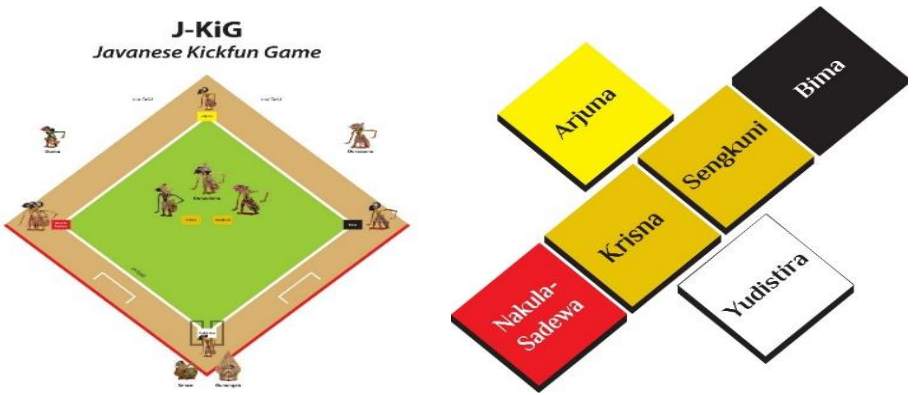


Figure 1
J-KIG Field Picture and Base

The shape of the field is like a softball field with a size of 10m x 4, with each base named after one shadow puppet character, namely Base Yudistira, Base Bima, Base Arjuna, base Nakula&Sadewa with colors according to the characters of the Pandavas in the Ramayana story. Then, in the field, symbols of shadow puppet figures, namely Pandava figures, are installed at each base and Kurawa figures are installed in the spread at guard positions. The characters Pandava, Kurawa, Semar, Krisna, and Gunungan are the designs in this game.



Figure 2
Picture of the ball and Players' vests

The vests used for in-game clothing are given a symbol of hittam and white colors with the name on the front of the chest in white for the Pandava team and black for the Kurawa team. The game uses a size 4 ball with Kawung batik design that has become a characteristic of Javanese batik culture. The game time is 15 minutes x 2, and this J-KIG game is played by throwing the ball which is passed to the opponent and throwing the ball to the players who play; the rules of the game are a combination of softball and football.

Implementation of small-scale trials and large-scale trials

Table 4
Quantitative data on small-scale trials

Sam- ple	Number of scores obtained (X)	Max number of scores (Xi)	%	Percentage per item	Qualifica- tion	Percentage of Total Results	Qualifi- cation
1	35	35	100	100	Very Worth It	87	Very Worth It
2	24	35	100	69	Pretty Decent		
3	33	35	100	94	Very Worth It		
4	29	35	100	83	Proper		
5	32	35	100	91	Very de- cent		
6	29	35	100	83	Proper		

Table 4
Quantitative data on small-scale trials (cont.)

Sam- ple	Number of scores obtained (X)	Max number of scores (Xi)	%	Percentage per item	Qualifica- tion	Percentage of Total Results	Qualifica- tion
7	28	35	100	80	Proper	87	Very Worth It
8	30	35	100	86	Very de- cent		
9	29	35	100	83	Proper		
10	26	35	100	74	Pretty Decent		
11	33	35	100	94	Very de- cent		
12	32	35	100	91	Very de- cent		
13	33	35	100	94	Very de- cent		
14	32	35	100	91	Very de- cent		
Total amou nt	425	490	100				

As for the small scale trial results, eight samples give a value of “very feasible,” and four samples give a value of “feasible.” In comparison, two samples give a value of “Decent enough,” and from the overall data, it can be concluded that this J-KIG sports game is ‘very feasible’ to be continued in large-scale trials with minor revisions. The feasibility data is graphically illustrated by the bar chart (Figure 2).

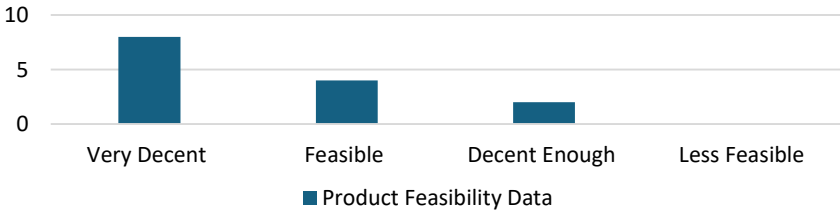


Figure 3
J-KIG game product eligibility data diagram

The quantitative results of the large-scale trial were obtained by filling in 19 adolescent samples and one adolescent supervisor sample so that the total sample in the large-scale trial was 20.

Table 5
Data on the results of the large-scale feasibility assessment test

Sample	Number of scores obtained(X)	Max number of scores(Xi)	%	Percentage per item	Qualifi- cation	Grand item totals	Qualifi- cation
1	29	35	100	83	Proper	84	Proper
2	33	35	100	94	Very de- cent		
3	28	35	100	80	Proper		
4	28	35	100	80	Proper		
5	30	35	100	86	Very de- cent		
6	26	35	100	74	Pretty Decent		
7	32	35	100	91	Very Worth It		
8	28	35	100	80	Proper		
9	32	35	100	91	Very Worth It		
10	28	35	100	80	Proper		
11	27	35	100	77	Proper		
12	30	35	100	86	Very Worth It		
13	28	35	100	80	Proper		
14	28	35	100	80	Proper		
15	30	35	100	86	Very Worth It		
16	33	35	100	94	Very Worth It		
17	28	35	100	80	Proper		
18	31	35	100	89	Very Worth It		
19	27	35	100	77	Proper		
20	28	35	100	80	Proper		
Total amount	584	700					

The data above shows 14 samples assessing this J-KIG game as “Decent” and to be continued to the next stage, and six samples assessing this J-KIG game as “Very Decent” and to be continued. Thus, the overall total qualification states that this J-KIG game is in the “Decent” category. The above data can be pre-
sented with the help of a bar chart (Figure 4).

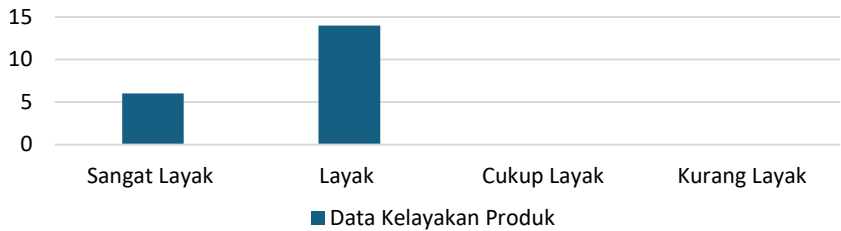


Figure 4
The product bar chart and its diligence results

Table 6
Qualitative data of input from users and coaches on small-scale and large-scale trials

NO	Input	
	User	Designer
1	Time is too short; it needs to be added	Time extended again
2	The field area is too close	Costtim is made interesting again.

The implementation assessment data on small-scale and large-scale trials shows that users, namely adolescents, and coaches, assessed that the J-KIG sports game was “feasible” and finally became a product of the Javanese Kigfun (J-KIG) sports game. After the feasibility assessment and input from the users, the Javanese Kigfun Game (J-KIG) game product was produced (Figure 5).

Field size

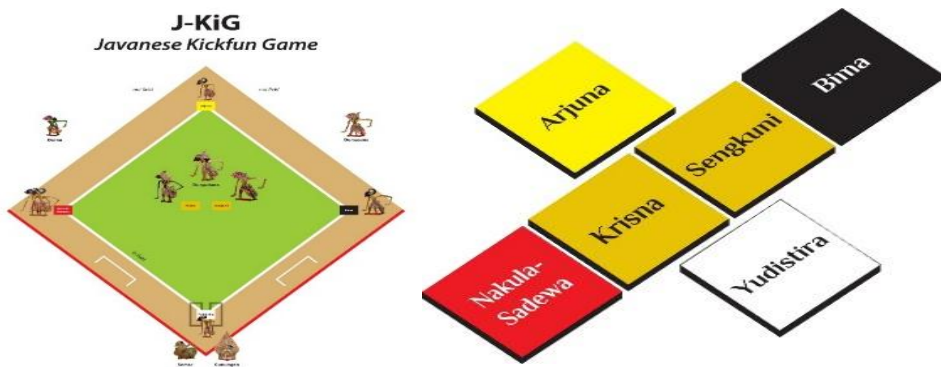


Figure 5
J-KIG Field and Base Picture

The shape of the field is like a softball field with a size of 15m x 4, with each base named after the shadow puppet characters, namely Base Yudistira, Base

Bima, Base Arjuna, base Nakula&Sadewa, with colors matching the characters of the Pandavas in the Ramayana story. Then, in the field, it was given a symbol of shadow puppet figures, namely Pandava figures installed at each base and Kurawa figures installed in the spread at guard positions. The characters Pandava, Kurawa, Semar, Krisna, and Gunungan are the designs in this game.

Gaming equipment



Figure 6

The ball and players' vests

The vests used in the game are given a symbol of Uttam and white colors with a name on the front of the chest in white for the Pandava team and black for the Kurawa team; behind the vest are given the names and pictures of other puppet figures who are teams from the Pandava and Kurawa. The game uses a size 4 ball with a Kawung batik design which has become a characteristic of Javanese batik as Javanese culture.

Number of players, game time, and substitutions

The game time is 18 minutes x 2., As this sports game is not ready for official competition yet, there are free substitutions for free substitutions. As for the number of players, there is a minimum of 5, and the maximum is not defined, depending on the number of players available in the community.

How to play it

To play this J-KIG game, one should use a combination of techniques taken from football and softball games. The two teams are divided into a group of players and a group of guards. The guard player places his player as a ball thrower and can use ball throwing techniques such as the throw-in technique with both hands or one hand throwing the ball to the player who starts the game. The group of players starts the game sequentially, kicking the ball from the thrower. To start this game one does not need a bat stick like in a softball game, but players use their feet to kick the ball thrown by the guard team. As for the guards in positions on the field and off the field, they can combine kicking techniques, catching techniques, and throwing techniques.

How to turn off the opponent so that they change position in the game? It can be done by (1) burning the base when the player runs to the base, (2) the ball touching the body of the running player, (3) the kicker player failing to kick three times. Everything can happen to change guards and players if the player who is playing eliminates three players.

Discussion

Indonesia is a large country with a population of 267 million people and is an archipelagic country consisting of 17,000 islands with various tribes and cultures (Bapenas, 2019). Javanese culture contains life teachings that have inherited noble values from ancestors, which are guidelines for the behavior and philosophy of community or state life, with their nobility being a guide in statehood (Nugraha et al., 2018; Rahayu et al., 2014). Javanese people are the largest ethnic group both in Indonesia and in Southeast Asia as a whole; their mother tongue is Javanese, which is the largest Austronesian language as far as the number of native speakers is concerned, and also the most significant regional language in Southeast Asia (Ananta et al., 2015).

The ancestors of Javanese people used shadow puppets to convey noble teachings, knowledge, and experience of good and bad life so that humans can live harmoniously side by side with others, in the world where the universe is called guidance (Kiswanto, 2022). Shadow puppets are used for modeling people's life behavior carried out to get peace, harmony, and welfare. In the Javanese language, it is known as *upload-ungguh* or manners, it is also called order. Shadow puppets function as entertainment in the community, so that all groups favor puppets as a spectacle (Kiswanto, 2022).

Efforts to introduce shadow puppets to adolescents require innovation and breakthroughs through the use of technology (Prilosadoso et al., 2019), performance innovation (Hendriana & Aziz, 2016), the development of puppet-themed projects (Utomo, 2020), and many more businesses so that shadow puppets are in demand and not abandoned by teenagers (Grehenson, 2013). The real challenge faced by the Indonesian nation in this era of globalization is to prepare the nation's next generation of young people with a high spirit of nationalism to maintain the existence of their regional culture. The efforts that can be made to maintain the existence of regional culture can take various forms, including efforts to teach the traditional culture to each individual, examine the values contained in traditional culture, add insight by learning about cultures from other regions, instill values in the younger generation to be proud of the traditional culture of the archipelago, and create a forum or institution to channel the talents and creativity of younger generations in terms of culture (Ermawan T, 2017).

Adolescents get access to all information and media from all over the world, making them have a greater interest, especially in outside cultures and sacrifice their own culture (Slepneva et al., 2019). Two thousand twenty-two research data found that adolescents in the Yogyakarta region interested in shadow puppets in the “medium” category tended to go to the low limit. In contrast, as for the implementation of seeing shadow puppets in the “low” category in the same research, it was found that adolescents like traditional sports games in the “high” category (Wibowo, Sukarmin, Purwanto, & Iwandana, 2023). Sports games, some of which are traditional games, are characterised by sports competition. In addition to traditional games forming the players’ physique, another positive impact, especially for adolescents who are school students, is training to focus on learning. What is more, one can increase emotional control or emotional intelligence due to regular practice and participating in sports matches (Gatsis et al., 2021).

Researchers also conducted preliminary research by conducting systematic literature reviews (SLR) with the theme of preserving Javanese culture and traditional Javanese games, obtaining 705 articles with appropriate themes. After being sorted and filtered based on the theme’s suitability, 21 articles were reviewed. The author concludes that Javanese culture is a noble teaching that has a good philosophy. The introduction of Javanese culture is carried out in various ways, for example, by creating shadow puppet animations, developing traditional clothing, designing Javanese houses, making Javanese dance creations, presenting the Javanese social environment, and efforts from various other areas made for the benefit of Javanese culture.

SLR research and preliminary research show that sports games have not been touched a lot as the research focused on traditional games (Hayati et al., 2017). Traditional games are widely used for research purposes because they are widely used to improve students’ character and the quality of student learning both in early childhood and in case of upper secondary students (Pratiwi & Kuryanto, 2019). In addition, in the world of sports, many focus on cultivating sports in the community by implementing sports culture so that it becomes a daily habit (Masyhuri & Suherman, 2020). In this study, the logic is reversed as sports games are used to introduce Javanese culture, especially shadow puppets. Sports games can be played in everyday life, starting from PE lessons and community activities. They can permeate social life by using sports for health, education, achievement and recreation (Małolepszy & Drozdek-Małolepsza, 2023). Therefore, introducing Javanese culture in games can be a way of introducing shadow puppets to adolescents, especially in sports games with teams and matches favored by adolescents, such as football and other games (Böge et al., 2022). Games using teams and played with a small-sided games (SSG) game model attract children’s attention and, at the same time, improve their physical

abilities (Tajudin et al., 2022) so that the type of team sports game becomes an alternative for development.

The focus of this research is on developing sports games based on Javanese culture to introduce shadow puppets to adolescents. Apart from that, this development will be an alternative to preserve and introduce shadow puppets to adolescents through this developed sports game. The sports game product named J-KIG (Javanese Kigfun Game) has received its validation from experts. It has been implemented in small-scale trials and large-scale trials. Then, from the two trials, it was revised to produce a finished product named the Javanese Kigfun Game (J-KIG) sports game.

Conclusions

The results of this research resulted in a shadow puppet-based sports game product called J-KIG (Javanese Kigfun Game), which is a sports game combining Football and Softball sports games with shadow puppet characters from Ramayana stories. The characters included are Pandavas, Kurawa, Semar, Krisna, and Kayon (Gunungan). The J-KIG game obtained valid results from experts with a score of 0.8-1 and, in small-scale trials, received a feasibility rating from users of 87% with the criteria of "Very feasible", while in large-scale trials received a feasibility rating of 83% with the criteria of "Eligible." So, this J-KIG game product has become the final product that is ready to be used for effectiveness test research so that it can convince the public it is worth publishing.

Acknowledgment

I would like to exceed my thanks to Yogyakarta State University as the place where researchers complete doctoral programs and Mercu Buana University Yogyakarta as the institution where researchers work and are provide with cost assistance. The researcher also expresses his gratitude to the research students who have helped in the process of preparing equipment to design the prototype of this J-KIG sports player.

STATEMENT OF ETHICS

This study was conducted in accordance with the Declaration of Helsinki of the World Medical Association. This research protocol has been reviewed and approved by the Faculty of Sport and Health Sciences, Yogyakarta State University (B/73/U34.16/PT.01.04/2023, Yogyakarta, Indonesia). And all samples gave written consent to participate in this study with proof of availability to be a research sample in the form of an attendance signature.

DECLARATION OF CONFLICTING INTERESTS

The authors declared no potential conflicts of interests with respect to the research, authorship, and/or publication of the article *Development of a Model and Implementation of a Shadow Puppet-Based Sports Game to Introduce Shadow Puppets to Adolescents*.

FUNDING

The authors received no financial support for the research, authorship, and/or publication of the article *Development of a Model and Implementation of a Shadow Puppet-Based Sports Game to Introduce Shadow Puppets to Adolescents*.

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