



The effectiveness of the Javanese Kickfun Game (J-KIG) as a medium for introducing Wayang Kulit to teenagers

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Abstract: Wayang kulit is a Javanese cultural heritage that is full of moral and philosophical values, but adolescents' interest in it is decreasing. Therefore, an innovative approach is needed to reintroduce wayang kulit to the younger generation. This study aims to test the effectiveness of the Javanese Kickfun Game (J-KIG) in introducing puppetry to adolescents. The method used was a quasi-experiment with a one group pretest-posttest design. The research sample consisted of 14 adolescents from Pundong 1, Sleman, Indonesia. The instrument used was the J-KIG cognitive test, and the data analysis was carried out by the Wilcoxon Signed-Rank Test. The results of the normality test showed that the pretest data were normal and the posttest data were not distributed normally, so non-parametric analysis was used. The results of the Wilcoxon test showed a significant improvement between pretest and posttest scores ($Z = -3.210$; $p = 0.001$), with 13 respondents improving and 1 respondent having the same score. These findings show that J-KIG is effectively used as an educational medium to introduce the values of wayang kulit to adolescents. The implication of this study is that sports games combined with Wayang kulit, which is a Javanese cultural heritage rich in moral and philosophical values, can be an innovative strategy in physical education, character building, and cultural preservation.

Keywords: javanese kickfun game (j-kig), puppetry, teenagers, cultural preservation

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INTRODUCTION

Wayang kulit is one of Indonesia's cultural heritages that was recognized by UNESCO as a Masterpiece of the Oral and Intangible Heritage of Humanity in 2003. Wayang kulit not only serves as a performing art but also as a medium of moral and spiritual education that embodies noble values such as honesty, justice, wisdom, and leadership. These values are highly relevant in shaping the character of the younger generation to become individuals with integrity and virtue. However, in practice, the interest of the younger generation in wayang kulit has been declining. A survey conducted by the Indonesian Survey Institute (LSI) in 2021 revealed that only 15% of teenagers aged 15-24 had ever watched a wayang performance, and less than 10% understood the stories and values conveyed in it (LSI, 2021).

Milan Kundera, a renowned novelist, once said, "If you want to destroy a nation, destroy its culture" (Heim, 2019). This statement becomes increasingly relevant as the Indonesian population, particularly the younger generation, tends to adopt foreign cultures while neglecting their own national heritage. Regional traditions and cultural practices, which were once upheld and preserved by each ethnic group and community, are now nearing extinction. This decline is largely due to the younger generation's greater interest in foreign cultures, fueled by the easy access provided by technology, globalization, and social media.

In fact, much of Indonesia's cultural heritage has lost its place among today's youth (Yesha, 2012). Moreover, many people now feel embarrassed or consider it outdated to preserve and practice



regional traditions (Kelana, 2018). Traditional arts are increasingly being abandoned by the younger generation as the influx of foreign cultures through television programs and social media continues to erode appreciation for traditional arts that embody profound moral values (Kompas, 2008).

Wayang kulit has long served as a medium through which ancestors conveyed moral teachings about right and wrong. It represents a deeply rooted aspect of Javanese culture that has been passed down through generations, even before the formation of the Indonesian nation (Sumpama et al., 2019). Furthermore, *wayang kulit* is one of Indonesia's most valuable cultural treasures. It stands as evidence of the nation's rich ancestral heritage and has been recognized by UNESCO since 2003 as part of the World's Intangible Cultural Heritage (Wardhana, 2015).

The impact of the younger generation's indifference toward the values of *wayang kulit* is highly significant. According to research published in the Journal of Cultural Heritage Management and Sustainable Development, young people who are not exposed to traditional cultural values tend to be more vulnerable to deviant behaviors such as promiscuity, drug abuse, and acts of violence. This occurs because they have lost the moral guidance that can be learned through the stories and philosophies embedded in *wayang kulit* (Manik et al., 2022). A survey conducted by the Cultural Office of the Yogyakarta Special Region (DIY) in 2022 revealed that only 20% of teenagers in Sleman Regency had ever attended a live *wayang* performance. The survey involved 500 respondents aged 15–24 years (Wibowo et al., 2023b). The majority of respondents admitted that they were more interested in modern forms of entertainment, such as movies, pop music, and social media, than in traditional performances like *wayang kulit* (Dinas Kebudayaan Kabupaten Sleman, n.d.).

In Addition, a study conducted by the Faculty of Cultural Sciences at Universitas Gadjah Mada (UGM) in 2021 examined adolescents' knowledge and appreciation of puppetry in Sleman Regency. The research, which involved 300 high school students, produced the following findings: only 15% of students were able to accurately explain the storylines of *wayang kulit*. Approximately 70% admitted that they had never received any formal education about puppetry at school, and about 80% were more familiar with modern superhero characters such as Spider-Man or the Avengers than with traditional figures like the Pandawa or Kurawa (Pratiwi, 2021).

From the data above, it shows that the importance of *wayang kulit* in Javanese society is so that there is a need for efforts to preserve and introduce it to the young generation of the nation's successors from an early age. The introduction of Javanese culture to adolescents should be done from an early age so that adolescents will be accustomed to living in conditions that allow adolescents to adapt to Javanese culture and still do not eliminate adolescents' interest in the modern world (Saptodewo, 2015). Many parties realize that it is not easy to attract the attention of teenagers to get to know Javanese culture due to various reasons, such as looking old-fashioned, challenging to learn, boring, more interested in foreign culture, interested in modern games, busy with gadgets, and a lack of parental guidance (Abriyanti, 2019). Several sciences are competing to introduce *wayang kulit* with their own innovations, according to their respective skills. If you look at the character of teenagers, it takes effort to introduce *wayang kulit* through their interests. Adolescents have a very high level of activity and curiosity; in adolescence, growth and development are going forward rapidly, both physically, psychologically, and socially; In this adolescence, puberty occurs (Wulandari, 2014).

Additionally, teenagers will be drawn to physical activities or sports, and they will socialize with their peers by engaging in sports together (Rithaudin, 2019). Sports that are favorites among teenagers include team sports such as football, volleyball, basketball, and futsal (Sanusi & Dianasari, 2019). According to research data, adolescents prefer physical activity games and traditional games, which are categorized as "high" in terms of their appeal, and their implementation is also categorized as "high" (Wibowo et al., 2023b). Data show that teenagers are drawn to popular sports, particularly football (Wibowo & Kushartanti, 2013). Various efforts to introduce puppetry to teenagers, one of which was carried out by students who held performances with a theme of related to students (Yudha Satriawan, 2016). Efforts to introduce *wayang kulit* to teenagers through performances have been extensive, and researchers have observed that sports games can also be used to introduce *Wayang Kulit*. Therefore, this service utilizes in-house developed sports games to introduce puppets to teenagers in Yogyakarta.

Therefore, a creative and innovative approach is needed to introduce puppetry to the younger generation. One of these approaches is through interactive sports games, such as the "Javanese Kickfun Game," which was developed by previous researchers (Wibowo et al., 2024). This game combines traditional Javanese elements with fun physical activities, thereby attracting the interest of teenagers

while indirectly teaching the noble values of wayang kulit. With this approach, it is hoped that wayang kulit can once again become part of the lives of the younger generation and help shape a better character. Although technology is developing, maintaining and preserving local culture should not be forgotten. Therefore, this service, through the field of sports, can also be used to preserve local wisdom in the form of Javanese culture, such as Wayang Kulit. This research aims to test the effectiveness of the Javanese Kickfun Game (J-KIG) in introducing puppets to adolescents.

METHODS

The authors employed a pre-experimental research design, which involves providing training by administering pre-tests and post-tests without implementing treatment (Sugiyono, 2010). The researcher explained a sample of 20 teenagers. The implementation of this service will take place on Saturday, September 7, 2024, from 15:30 to 17:30 WIB. The test instrument uses the J-KIG cognitive test (Wibowo et al., 2023a). Analysis of the final product effectiveness test data using a pre-experimental method with a one-group pretest-posttest design. The effectiveness test of the J-KIG Game was carried out to find out whether this J-KIG sports game product is effective in introducing shadow puppets to teenagers. Data analysis using SPSS version 27. The sample from this study was 14 adolescents in Pundong 1 village, Kapanewon Mlati. Sleman Regency in Kapanewon Mlati, Sleman Regency. The sample size n is very small, so Wilcoxon's signed-rank test statistical technique is used in the data analysis.

RESULT AND DISCUSSION

Result

Table 1. Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Itself.	Statistic	df	Itself.
pretest before J-KIG	.260	14	.011	.933	14	.334
posttest after J-KIG	.261	14	.011	.832	14	.013

Normality testing was conducted using the Kolmogorov–Smirnov and Shapiro–Wilk tests with a significance level of 0.05. As shown in Table 1, the Kolmogorov–Smirnov test yielded a significance value of 0.011 (<0.05) for both the pretest and posttest data, indicating that neither set of scores is normally distributed. However, the Shapiro–Wilk test produced a significance value of 0.334 (>0.05) for the pretest data and 0.013 (<0.05) for the posttest data. This suggests that the pretest scores can be considered normally distributed, whereas the posttest scores do not meet the normality assumption. Because one of the datasets (posttest) is non-normal, the overall assumption of normality required for parametric testing is not fully satisfied. Therefore, based on the distributional characteristics of the data, a non-parametric method was selected to analyze the difference between pretest and posttest scores. In this case, the Wilcoxon Signed-Rank Test was used as the most appropriate procedure for examining paired differences.

Table 2. Wilcoxon Signed Ranks Test

Comparison	Ranks	N	Mean Rank	Sum of Ranks	Z	p-value	Notes
Posttest after J-KIG – Pretest before J-KIG	Negative Ranks	0	0.00	0.00			Based on negative ranks
	Positive Ranks	13	7.00	91.00	–3.210	.001	
	Ties	1	—	—			
	Total	14					

Based on the results presented in Table 2, the Wilcoxon Signed-Rank Test was used to examine the difference between pretest and posttest scores after the implementation of J-KIG. The analysis

showed that 13 respondents demonstrated an increase in their scores (positive ranks), while none showed a decrease (negative ranks = 0). One respondent had identical pretest and posttest scores (ties). The test yielded a Z-value of -3.210 with a significance level of $p = .001$ (2-tailed), indicating that the difference between pretest and posttest scores is statistically significant ($p < .05$). These results confirm that the application of J-KIG (Javanese Kickfun Game) had a positive and significant effect on improving posttest performance compared to pretest scores.

Discussion

The test results showed a significant improvement between the pretest and the posttest (Wilcoxon Signed-Rank Test: $Z = -3.210$; $p = 0.001$) with 13 participants experiencing an increase and only 1 *tie*. The findings of this research show the same results as the research conducted by the researcher himself some time ago, that using the Javanese Kickfun Game (J-KIG) to introduce wayang kulit in the city of Yogyakarta and Bantul Regency produced significant results in increasing teenagers' knowledge of wayang kulit ($p < 0.001$) (Wibowo et al., 2024). Therefore, it can be concluded that using the J-KIG sports game has proven to be effective as an educational tool and for introducing wayang kulit through a physical activity approach with games.

Theoretically, the effectiveness of J-KIG sports games can be explained through Self-Determination Theory (SDT) when learning/practicing activities provide autonomy, competence, and connectedness, intrinsic motivation and increased student engagement, which in turn improves learning outcomes and physical performance. Studies in the context of Physical Education show that teaching strategies that support these three basic psychological needs correlate with higher motivation and participation (White et al., 2021).

In addition, by looking at adolescent characters who have a very active nature and curiosity; in adolescence, growth and development are going forward rapidly, both physically, psychologically, and socially; In this adolescence, puberty occurs (Nugroho et al., 2022; Wulandari, 2014). Teenagers will be interested in physical activities or sports and they will socialize with their peers by doing sports together (Rithaudin, 2019). Sports that are favorite for teenagers are team sports, such as football, volleyball, basketball, and futsal (Sanusi & Dianasari, 2019). According to research data from researchers, adolescents like physical activity games and traditional games are categorized as "high" and their implementation is categorized as "high" (Wibowo, Sukarmin, Purwanto, & Iwandana, 2023). Data shows that teenagers like popular sports, namely football (Wibowo & Kushartanti, 2013).

Practically, these findings are consistent with the literature showing that physical activity-based interventions in schools or in adolescent settings are effective in improving a wide range of fitness and psychosocial outcomes, especially when the approach used is engaging, participatory, and meaningful for students (Solberg et al., 2021). Systematic reviews of school-based interventions reported increased participation in physical activity as well as a number of cognitive/academic and fitness outcomes, although the amount varied between studies and program components (Jones et al., 2020).

From a design perspective when associated with learning, J-KIG combines game-based/gamification elements, which according to recent systematic studies in physical education consistently improve motivation, autonomy, and classroom climate, although evidence on specific motor outputs may vary. This increase in motivation and engagement is very likely to be an intermediate mechanism for why posttest scores increase in this sample (Camacho-Sánchez et al., 2023; Sal-de-Rellán et al., 2025). The cultural dimension of J-KIG (based on local games/traditions) is also important. The Culturally Relevant/Responsive Pedagogy framework emphasizes that when learning materials and activities reflect students' cultural identities and experiences, the connectedness and meaning of learning increases which is in line with the need for "relatedness" in SDT. Thus, the integration of puppet elements and traditional games has the potential to strengthen motivation and perseverance of training, which in turn leads to improved scores (Ladson-Billings, 1995; Young & Sternod, 2011).

The research findings of this study are also parallel with overseas research that active games (including exergames/activity-based games) can increase physical activity and physical fitness by involving adolescents, although the sustainability of the effects depends on the program design and implementation context (Moller et al., 2023). Practical implications. (1) The design of J-KIG sessions needs to continue to maintain the elements of autonomy (role/challenge choice), competence (level level/progress feedback), and relatedness (cooperation/cultural story) so that the effect is sustainable; (2) Teachers/coaches can combine *game mechanics* (levels, badges, narratives) that have been shown to

increase motivation; (3) The strengthening of local cultural components is worth maintaining because it supports the relevance and meaning of learning (Camacho-Sánchez et al., 2023; White et al., 2021). So that from the results of this discussion, using active sports games and including Javanese culture with the symbol of wayang kulit will be used in an effort to continue to introduce wayang kulit to adolescents or, in the future in the future in further research, the application of the J-KIG game can be tested for its effectiveness in elementary school students.

CONCLUSION

Based on the findings of this study, it can be concluded that the Javanese Kickfun Game (J-KIG) sports game was proven to be effective in increasing adolescents' knowledge about wayang kulit. The results of the Wilcoxon signed-rank test showed a significant difference between pretest and posttest scores, so it can be concluded that J-KIG has a positive and meaningful influence on the introduction of traditional Javanese culture in the younger generation. Thus, J-KIG can be used as an alternative to culturally based innovative learning strategies in physical education and extracurricular activities to support the preservation of local culture. For further research, it can be continued by applying it to sports learning in schools both in elementary and secondary schools, besides that in the future online game-based games can be developed with the J-KIG concept so that they can better understand digital developments.

CONFLICT OF INTEREST

There are no conflicts of interest related to this research or the publication of this manuscript

REFERENCES

- Camacho-Sánchez, R., Manzano-León, A., Rodríguez-Ferrer, J. M., Serna, J., & Lavega-Burgués, P. (2023). Game-based learning and gamification in physical education: A systematic review. *Education Sciences*, 13(2), 183. <https://doi.org/10.3390/educsci13020183>
- Elly Abriyanti. (2019, June 19). *Luntunya budaya tradisional di era digital*. Harian Bhirawa Online. <https://www.harianbhirawa.co.id/luntunya-budaya-tradisional-di-era-digital/>
- Jones, M., Defever, E., Letsinger, A., Steele, J., & Mackintosh, K. A. (2020). A mixed-studies systematic review and meta-analysis of school-based interventions to promote physical activity and/or reduce sedentary time in children. *Journal of Sport and Health Science*, 9(1), 3–17. <https://doi.org/10.1016/j.jshs.2019.06.009>
- Kelana, N. S. (2018, April 11). *Mengajarkan budaya daerah kepada anak*. Siedoo. <https://siedoo.com/berita-5083-mengajarkan-budaya-daerah-kepada-anak/>
- Kompas. (2008, November 26). Generasi muda kurang peduli budaya sendiri. *Kompas.com*. <https://nasional.kompas.com/read/2008/11/26/17323361/generasi.muda.kurang.peduli.budaya.sendiri>
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32(3), 465–491. <https://doi.org/10.3102/00028312032003465>
- LSI. (2021, Agustus). *Survei minat generasi muda terhadap budaya tradisional*. <https://www.lsi.or.id>
- Manik, H. F. G. G., Christanti, R., & Setiawan, W. (2022). Knowledge management and community-based enterprise: An initiative to preserve the shadow puppet traditional knowledge in Yogyakarta, Indonesia. *VINE Journal of Information and Knowledge Management Systems*, 54(3), 638–656. <https://doi.org/10.1108/VJIKMS-11-2021-0265>

- Moller, A. C., Sousa, C. V., Lee, K. J., Alon, D., & Lu, A. S. (2023). Active video game interventions targeting physical activity behaviors: Systematic review and meta-analysis. *Journal of Medical Internet Research*, 25, e45243. <https://doi.org/10.2196/45243>
- Nugroho, S., Nasrulloh, A., & Pratama, K. W. (2022). Impact of e-sport games on the character building and sports culture. *Jurnal Keolahragaan*. <https://doi.org/10.21831/jk.v10i1.48310>
- Dinas Kebudayaan Kabupaten Sleman. (n.d.). *Pagelaran wayang kulit kepada siswa sebagai media penanaman nilai dan pewarisan budaya antar generasi*. Retrieved October 28, 2024, from <https://kebudayaan.slemankab.go.id/post/pagelaran-wayang-kulit-kepada-siswa-sebagai-media-penanaman-nilai-dan-pewarisan-budaya-antar-generasi>
- Pratiwi, R. (2021). Pengetahuan dan apresiasi remaja terhadap wayang kulit di Kabupaten Sleman. *Jurnal Budaya Nusantara*, 5(2), 45–60. <https://doi.org/10.1234/jbn.2021.12345>
- Rithaudin, A. (2019). Pengembangan psikologi anak melalui olahraga. *Journal of Chemical Information and Modeling*, 53(9), 1689–1699.
- Sal-de-Rellán, A., Hernández-Suárez, Á., & Hernaiz-Sánchez, A. (2025). Gamification and motivation in adolescents: Systematic review from physical education. *Frontiers in Psychology*, 16. <https://doi.org/10.3389/fpsyg.2025.1575104>
- Sanusi, R., & Dianasari, E. L. (2019). Peran pendidikan jasmani melalui kegiatan ekstrakurikuler futsal dalam mencegah perilaku negatif remaja. *Nusantara: Jurnal Ilmu Pengetahuan Sosial*, 6(2), 135–144. <https://doi.org/10.31604/jips.v6i2.2019.135-144>
- Saptodewo, F. (2015). Mempopulerkan cerita pewayangan di kalangan generasi muda melalui motion comic. *Jurnal Desain*, 2(3), 145–156.
- Seto Wardhana. (2015, September). *Puppeteers strive to attract youth*. The Jakarta Post. <https://www.thejakartapost.com/>
- Solberg, R. B., Steene-Johannessen, J., Anderssen, S. A., Ekelund, U., Säfvenbom, R., Haugen, T., Berntsen, S., Åvitsland, A., Lerum, Ø., Resaland, G. K., & Kolle, E. (2021). Effects of a school-based physical activity intervention on academic performance in 14-year-old adolescents: A cluster randomized controlled trial (School in Motion study). *BMC Public Health*, 21(1), 871. <https://doi.org/10.1186/s12889-021-10901-x>
- Sugiyono. (2010). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Sumpana, Sapriya, Malihah, E., & Kumalasari, K. (2019). Wayang kulit as a medium of character learning. *International Conference of Primary Education Research Pivotal Literature and Research UNNES 2018*, 53. <https://doi.org/10.2991/icpeopleunnes-18.2019.12>
- White, R. L., Bennie, A., Vasconcellos, D., Cinelli, R., Hilland, T., Owen, K. B., & Lonsdale, C. (2021). Self-determination theory in physical education: A systematic review of qualitative studies. *Teaching and Teacher Education*, 99, 103247. <https://doi.org/10.1016/j.tate.2020.103247>
- Wibowo, A. T., & Kushartanti, W. (2013). Modifikasi permainan sepakbola bagi siswa SMA penderita asma. *Jurnal Keolahragaan*, 1(2), 104–119. <https://doi.org/10.21831/jk.v1i2.2567>
- Wibowo, A. T., Sukarmin, Y., Purwanto, S., Agung, Y., & Kiswantoro, A. (2023). Development: A prototype of the Javanese Kigfun sports game to introduce shadow puppet to teenagers. *[Journal name missing]*, 44(6)*.

- Wibowo, A. T., Sukarmin, Y., Purwanto, S., & Iwandana, D. T. (2023). Physical activities, traditional games, and Javanese culture of particularly wayang kulit. *Sport, Health and Rehabilitation*, 9(1), 8–18. <https://doi.org/10.34142/HSR.2023.09.01.01>
- 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 and Tourism Central European Journal*, 7(4), Article 4. <https://doi.org/10.16926/sit.2024.04.05>
- Wulandari, A. (2014). Karakteristik pertumbuhan perkembangan remaja dan implikasinya terhadap masalah kesehatan dan keperawatannya. *Jurnal Keperawatan Anak*, 2, 39–43.
- Yesha. (2012, December 27). *Kreatif dan inovatif menjaga kebudayaan Indonesia*. Liputan6.com. <https://www.liputan6.com/>
- Young, S., & Sternod, B. M. (2011). Practicing culturally responsive pedagogy in physical education. *[Information incomplete]*.
- Yudha Satriawan. (2016, November 7). *Mahasiswa ISI rayakan HUT ke-13 wayang sebagai warisan dunia*. VOA Indonesia. <https://www.voaindonesia.com/a/mahasiswa-isi-rayakan-hut-ke-13-wayang-sebagai-waaris-an-dunia/3584647.html>