ACPES Journal of Physical Education, Sport, and Health 4 (2) (2024)

ACPES Journal
of Physical Education, Sport, and Health

http://journal.unnes.ac.id/journals/ajpesh

Development of Fun-Trastic Physical Activity Model: An Innovative Approach for Children Aged 9-10 Years

Gizalias Kusnanda Nurrafi'u*, Andry Akhiruyanto

Universitas Negeri Semarang, Indonesia

DOI: https://doi.org/10.15294/ajpesh.v4i2.16496

Keywords

Physical Activity, Student Engagement, Fun-Trastic, Educational Model, Elementary School

Abstract

The importance of physical activity in enhancing student engagement in the learning process has prompted the development of the Fun-Trastic model, a fun, traditional, music, and energetic physical activity designed for the early childhood phase. This study aims to evaluate the effectiveness of the Fun-Trastic model in engaging students, measuring their enthusiasm and preferences, and assessing its feasibility in educational contexts. A Research and Development (R&D) approach was employed, consisting of three stages: model trial, expert validation, and student preference evaluation. The participants in the study were 9-10-year-old elementary school students from Central Java and the Special Region of Yogyakarta. Data collection involved a Likert-scale questionnaire administered after students performed the Fun-Trastic activities, with a focus on measuring engagement, enjoyment, and intensity levels. Results showed that students found the Fun-Trastic activity to be highly enjoyable and engaging, with positive responses regarding their enthusiasm and participation. Additionally, the activity was considered appropriately challenging without causing excessive exertion, indicating its potential as an effective physical activity model for elementary school students. The study concluded that Fun-Trastic could be a valuable addition to physical education programs, promoting student engagement without overwhelming them.

*Correspondence Author:
E-mail: gizalias123@students.unnes.ac.id

e-ISSN 2797-0426

INTRODUCTION

The developmental phase of early childhood is a critical period requiring targeted attention, particularly in areas such as physical development, encompassing both gross and fine motor skills, cognitive progress, and social growth (Erick Burhaein, 2017). To ensure optimal growth, these aspects must be comprehensively nurtured, with particular emphasis on maintaining physical fitness and overall health. Introducing physical activities at an early age significantly impacts their well-being, supporting better physical and mental health outcomes in adolescence and adulthood (Zech et al., 2018). Children in early childhood are naturally drawn to activities that involve elements of play, dynamic movement, music, and imitating actions, which are integral to their learning and engagement (Barney & Prusak, 2015; Resaland et al., 2019). These preferences emphasize the importance of integrating interactive and stimulating physical activities into their educational and developmental practices to maximize their potential (Lindon, 2012).

Based on a preliminary study conducted through a closed questionnaire with 53 elementary school teachers in Central Java, it was found that 52.8% of the teachers reported that students often appeared to be bored during the learning process. This finding suggests a need to address boredom and refocus students' attention on the lesson content. In response to this issue, 96.2% of teachers reported providing ice-breaking sessions during lessons as an effort to alleviate students' boredom. Furthermore, 66% of students expressed a preference for ice-breaking activities in the form of physical activities rather than brain games. These findings are consistent with the characteristics of elementary school-aged children, who generally enjoy activities involving movement.

The preliminary study also revealed that 92.3% of teachers reported that the use of music in ice-breaking activities enhanced students' enthusiasm. It is known that energetic music can stimulate students, particularly when using songs that are popular and familiar to them. This finding indicates that physical activities involving music play a role in boosting students' enthusiasm during classroom learning. This is supported by the questionnaire results, which showed that 81.1% of teachers acknowledged that their students became more motivated to participate in classroom activities after completing Physical Education lessons. The full findings of the preliminary study are presented in Table 1.

Table 1. Results of the Preliminary Closed-Ended Questionnaire Survey of Primary School Teachers in Central Java

Statement	Yes	No
Students often appear bored during lessons	52.8%	47.2%
Teachers provide ice-breaking activities during lessons	96.2%	3.8%
Students prefer ice-breaking activities in the form of physical activities	66%	34%
Students prefer ice-breaking activities in the form of brain games	34%	66%
Teachers provide music during ice-breaking activities	43.4%	56.6%
Students are more enthusiastic when music is played during ice-breaking	92.3%	7.7%
Teachers agree that students should be given physical activities before the lesson begins	92.5%	7.5%
Students tend to be more enthusiastic after Physical Education lessons	81.1%	18.9%

Based on the preliminary research, a phenomenon of boredom was found to frequently occur among students during classroom learning. This boredom is influenced by various factors, including the lack of physical activity that involves body movement, monotonous methods of content delivery, and insufficient physical stimuli to engage the brain, all of which lead to reduced student focus. Such conditions can potentially hinder the smooth progress of learning and the understanding of the material by students. It was also found that students prefer ice-breaking activities that involve physical movement. This finding presents an opportunity to integrate physical activity into the learning process

outside of Physical Education classes.

Moderate to Vigorous Physical Activity (MVPA) has a significant positive impact on long-term health. Previous studies have shown that MVPA in adolescents is associated with improved bone strength, respiratory function, blood pressure, lipid profiles, and insulin sensitivity, and plays a key role in preventing and treating childhood obesity (Farooq et al., 2020). Furthermore, physical activity can enhance dopamine production, which contributes to improved mood and feelings of happiness. Dopamine, a primary neurotransmitter in the nervous system, plays a significant role in motor and cognitive functions (Marques et al., 2021). Physical activity has also been shown to have a positive relationship with improved cognitive function (Sneck et al., 2019; Garciá-Hermoso et al., 2021).

The World Health Organization (WHO) currently recommends that children and adolescents engage in Moderate to Vigorous Physical Activity (MVPA) for approximately 60 minutes per day. However, in reality, many children and adolescents fail to meet this recommendation (Daly-Smith et al., 2021). One way to achieve this MVPA recommendation is through Physical Education (PE) at school (Fairclough & Stratton, 2005; Lee et al., 2019; de Bruijn et al., 2023). In Indonesia, the current curriculum, known as the Kurikulum Merdeka, allocates only 70 minutes per week for Physical Education at the elementary school level, which is far from the WHO's recommended duration. Given the importance of MVPA for elementary school children, it is essential that schools recognize the need for physical activities that can help fulfill the MVPA recommendation. Schools can play a pivotal role in providing opportunities for children to meet these MVPA guidelines (Hills et al., 2015).

The Fun-Trastic physical activity model combines hand movements, jumping, clapping, and dancing, accompanied by music, incorporating four elements: Fun, Traditional, Music, and Energetic. First, "Fun" creates an enjoyable atmosphere through familiar movements for elementary school children. Second, "Traditional" incorporates traditional Indonesian dance styles. Third, "Music" utilizes local songs that resonate with children's characteristics. Fourth, "Energetic" encourages vigorous movements aligned with the music's rhythm. The Fun-Trastic activity lasts approximately 11 minutes and can be performed in various spaces without the need for large areas, making it suitable for classroom settings, either before lessons begin or during breaks. This activity is designed not to induce excessive fatigue and is expected to serve as an effective strategy for teachers to address student boredom. Through Fun-Trastic, it is anticipated that dopamine production will be stimulated, and that students will be able to meet the daily MVPA recommendation on a regular basis in elementary schools.

METHOD

Study Design

This study utilizes a Research and Development (R&D) approach to develop the Fun-Trastic physical activity model. The primary aim of R&D research is to produce a product that can be implemented in educational contexts and to evaluate its effectiveness. The study consists of three main stages: (1) model trial, (2) expert validation, and (3) student preference evaluation of the Fun-Trastic physical activity model. In the first stage, model trial, the feasibility and effectiveness of the developed model are assessed through trials conducted with elementary school students. The second stage, expert validation, involves input from experts in physical education and elementary school physical education teachers to evaluate the appropriateness and application of the model. The third stage evaluates student preferences to understand how well the activity is received and how engaged and interested students are in participating in the Fun-Trastic activity.

Data Collection Techniques and Data Sources

Data collection was conducted at each stage, involving children aged 9-10 years. To facilitate this research, participants were selected from third and fourth-grade students, aged 9-10 years. Simple Random Sampling was used in the model trial stage to ensure that every individual in the population had an equal chance of being selected (Ghayab et al., 2016; West, 2016; Noor et al., 2022). In this trial, participants used smartwatches with a heart rate monitor to measure changes in heart rate before and after performing the Fun-Trastic physical activity. The Fun-Trastic physical activity model can be categorized as Moderate to Vigorous Physical Activity (MVPA) if it increases heart rate by 64% of the maximum heart rate (Gilbert et al., 2023). The heart rate data obtained from the sample is expected to represent the overall population being studied.

The second stage involves expert validation to evaluate the Fun-Trastic physical activity model.

This stage involves two experts in physical education and physical activity for elementary school children. The validation process uses a specific evaluation sheet that includes fundamental aspects of the Fun-Trastic activity, such as conceptual alignment, feasibility of implementation, and the design of the activity intended to engage students and enhance their physical activity. Each expert provides an assessment based on these criteria, and their feedback will be used to make improvements or refinements (Cahyo Nugroho & Hendrastomo, 2021) to the Fun-Trastic physical activity model. This evaluation aims to enhance the accuracy, relevance, and effectiveness of the model when applied in elementary schools.

The third stage focuses on student preferences to gauge students' perspectives on the Fun-Trastic activity. The subjects in this study were selected using purposive group random sampling, ensuring that the sample is relevant to the research objectives (Owusu et al., 2023). This involves children aged 9 years (third grade) and 10 years (fourth grade) from several randomly selected schools in Central Java and the Special Region of Yogyakarta (DIY), which increases the representativeness of the results for a broader population in these two regions (Etikan, I., Musa, S.A., Alkassim, 2016; Creswell & David Creswell, 2018). Data collection was carried out using a Likert-scale questionnaire containing simple statements, tailored to the comprehension level of elementary school students. The response options included Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA), presented with emojis to engage students and enhance their involvement. This questionnaire was administered after students performed the Fun-Trastic physical activity to gather immediate feedback about their experiences.

Data Analysis

In this study, descriptive analysis was employed, utilizing SPSS software to process all collected data. The purpose of this analysis was to provide a clear depiction of students' perceptions and preferences regarding the Fun-Trastic activity model (Karimullah & Mahesti, 2021). Descriptive statistics, including mean, median, and standard deviation, were used to summarize the results for each statement in the questionnaire. This approach allows for a systematic presentation of the research findings, offering insights into the effectiveness of the Fun-Trastic physical activity model in elementary schools.

RESULT AND DISCUSSION

Model Trial

The trial of the Fun-Trastic physical activity model measured the participants' heart rate before and after the activity. These measurements were used to evaluate heart rate progression as an indicator of whether the activity meets the criteria for moderate to vigorous physical activity (MVPA). The MVPA threshold was set at >135.04 bpm for 9-year-olds and >134.4 bpm for 10-year-olds. The results of the model trial are shown in Table 2 and Figure 1.

Table 2. Heart Rate Changes during Fun-Trastic Trial

Age	Name	Heart Rate			
		MVPA	Initial HR	Final HR	Progression
9	Zo	>135,04	86	112	+26
9	Ma	>135,04	88	144	+56
9	Bm	>135,04	126	138	+12
9	En	>135,04	122	156	+34
10	Du	>134,4	110	170	+60
10	At	>134,4	97	117	+20
10	Yn	>134,4	87	139	+52
10	Rt	>134,4	86	103	+17
10	Ka	>134,4	96	86	-10

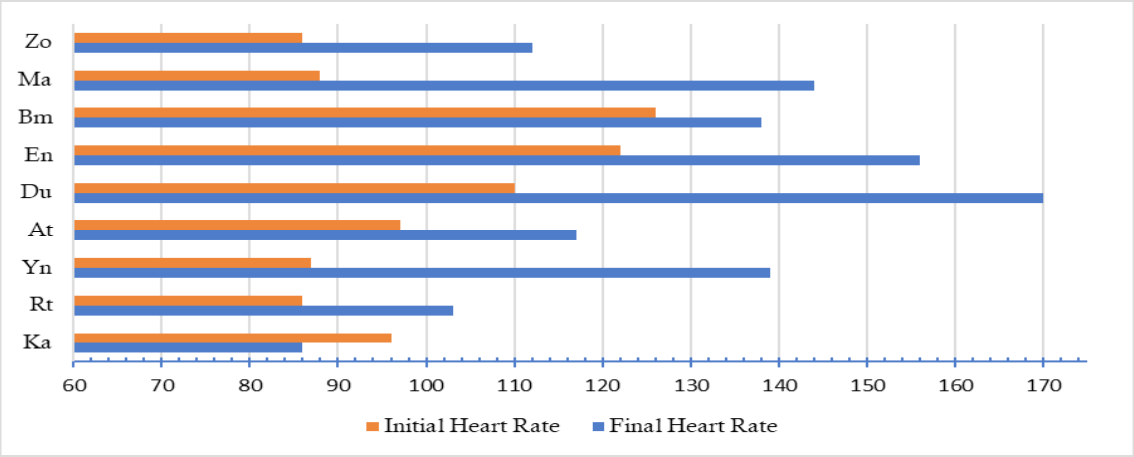

Figure 1. Horizontal Bar Chart of Heart Rate Changes during Fun-Trastic Trial

Out of the total population of 35 students, nine were selected as samples using smartwatches with heart rate monitoring features. The heart rate progression for 9-year-olds ranged from +12 bpm to +56 bpm. All participants in this group achieved a final heart rate that exceeded the MVPA threshold. Meanwhile, the heart rate progression for 10-year-olds varied from -10 bpm to +60 bpm. Most participants in this group met the MVPA criteria, except for one student (Ka), who showed a decrease of -10 bpm in their heart rate. The average heart rate progression for 9-year-olds was +32 bpm, while for 10-year-olds, it was +27 bpm (excluding data from students with negative progression). Overall, 88.89% of the sample met or exceeded the MVPA criteria, indicating that Fun-Trastic is effective in increasing the intensity of physical activity for students.

These results suggest that Fun-Trastic can elevate students' heart rate to reach the MVPA threshold, making it a suitable physical activity model for elementary school children. However, the decrease in heart rate for one student highlights the need for further evaluation of factors that could influence individual responses, such as initial physical condition or the level of engagement during the activity.

Expert Validation

The validation process of the Fun-Trastic physical activity model was carried out by two experts with competencies in physical education and physical activity for elementary school-aged children. The first expert is a lecturer in the Elementary School Physical Education program with a specialization in developing physical activities for early childhood, while the second expert is an experienced physical education teacher at the elementary school level. Validation was conducted using an assessment sheet that covered three main indicators: Conceptual Accuracy, Implementation, and Design. Each indicator consisted of several sub-indicators designed to evaluate the sustainability and effectiveness of the Fun-Trastic model. The validation scores are presented in **Table 3.**

Table 3. Expert Validation Scores for the Fun-Trastic Physical Activity Model

Indicator	Maximum Score	Achieved Score	Value	Remarks
Concept Accuracy	32	28	87,5	Excellent, aligns well with the needs of children
Implementation	24	20	83,3	Good, easy to apply in classroom settings
Design	24	21	87,5	Clear design, supports the activity, and is easy to understand

The Conceptual Accuracy indicator includes four sub-indicators that assess the alignment of objectives, needs, motor skills, and the potential for improving children's movement abilities. The total score obtained for this indicator was 28 out of a maximum score of 32, with an average value of 87.5%

(excellent category). The sub-indicator related to the alignment of the model's objectives with the needs of 9-10-year-old children received a perfect score (8/8), indicating that the model is considered relevant to the target age group's needs. However, the score for the sub-indicator on the enhancement of children's motor movement skills was relatively lower (6/8), suggesting an area for improvement to optimize the model.

The Implementation indicator consists of three sub-indicators that evaluate the ease of implementation, attractiveness, and motivation to engage in physical activity. The total score obtained was 20 out of a maximum score of 24, with an average value of 83.3% (excellent category). The model's ability to capture the attention of 9-10-year-olds scored highly (7/8), but the sub-indicator related to the model's ability to motivate physical activity received a score of 6 out of 8, indicating a need for certain modifications to further boost students' enthusiasm.

The Design indicator consists of three sub-indicators that assess the appropriateness of music selection, duration, and clarity of movements in the Fun-Trastic model. The total score for this indicator was 21 out of a maximum score of 24, with an average value of 87.5% (excellent category). All sub-indicators in this category showed consistent scores (7/8), indicating that the Fun-Trastic model's design is well-developed in terms of clarity and duration, although there is still room for minor improvements.

Overall, the expert validation results indicate that the Fun-Trastic model was rated highly across the three main indicators evaluated. The total average score of all indicators was 84.4%, suggesting that the model has a high level of sustainability for implementation in physical activities for 9-10-year-old children. However, some sub-indicators, such as the potential to enhance motor skills and motivation for physical activity, require further attention to ensure the optimal success of the model's implementation.

Student Preferences

Data on student preferences for the Fun-Trastic activity model was collected through a simple Likert-scale-based questionnaire. To enhance engagement and understanding among 9–10-year-old students, the Likert scale employed emoji representations, encompassing four categories: Strongly Disagree (SD), Disagree (D), Agree (A), and Strongly Agree (SA). The questionnaire was structured around three main dimensions: attractiveness, ease of implementation, and appropriateness of the model, comprising a total of eight relevant statements.

Table 4. Questionnaire Results on Student Preferences After Performing Fun-Trastic

Statement	SD	D	A	SA
I liked participating in the Fun-Trastic activity	1,7%	1,7%	44,8%	51,7%
I felt happy after performing Fun-Trastic	0,0%	5,2%	44,8%	50,0%
I found the Fun-Trastic activity easy to do	3,4%	12,1%	43,1%	41,4%
I felt more enthusiastic after Fun-Trastic	5,2%	8,6%	37,9%	48,3%
I felt strong while performing Fun-Trastic	10,3%	20,7%	27,6%	41,4%
I sweated after doing Fun-Trastic	20,7%	20,7%	25,9%	32,8%
I want to perform Fun-Trastic daily	17,2%	29,3%	25,9%	27,6%
I liked the songs used in Fun-Trastic	0,0%	3,4%	53,4%	43,1%
SD = Strongly Disagree; D = Disagree; A = Agree; SA = Strongly Agree				

Table 5. Statistical Analysis Results of Student Preferences

		S.1	S.2	S.3	S.4	S.5	S.6	S.7	S.8
N	Valid	58	58	58	58	58	58	58	58
	Missing	0	0	0	0	0	0	0	0
Mean		3.47	3.45	3.22	3.29	3.00	2.71	2.64	3.40
Median		4.00	3.50	3.00	3.00	3.00	3.00	3.00	3.00
Std. Deviation		.627	.597	.796	.838	1.026	1.140	1.071	.560
Variance		.394	.357	.633	.702	1.053	1.299	1.147	.314

The respondents consisted of 58 students from three different elementary schools who had participated in the Fun-Trastic activities beforehand. Data collection was conducted immediately after the activities to capture direct responses regarding their experiences. The collected data was analyzed descriptively to illustrate the distribution of student preferences toward the developed model. The results of the student preference questionnaire are presented in **Table 4**, while the processed data on student preferences is shown in **Table 5.**

Statement 1 measured the students' level of liking toward the Fun-Trastic activity. The analysis revealed that 51.7% (30 students) responded with SA (Strongly Agree), followed by 44.8% (26 students) who chose A (Agree). Meanwhile, only 1.7% (1 student) each gave responses of D (Disagree) and SD (Strongly Disagree). Statistical calculations showed a mean value of 3.47, a median of 4.00, and a standard deviation of 0.627. The high mean value, approaching the highest category (SA), indicates that the majority of students had a very high level of liking for the Fun-Trastic activity. The low standard deviation reflects good consistency in student responses. This result suggests that Fun-Trastic successfully created a positive and enjoyable experience, meeting children's psychological needs for engaging and cheerful activities. The high level of liking indicates that Fun-Trastic holds strong potential for broader implementation as an innovative physical activity model.

Statement 2 assessed students' happiness levels after participating in the Fun-Trastic activity. The results showed that no students selected the SD (Strongly Disagree) category, while 5.2% (3 students) chose D (Disagree), 44.8% (26 students) selected A (Agree), and 50% (29 students) responded with SA (Strongly Agree). Statistical analysis yielded a mean of 3.45, a median of 3.50, and a standard deviation of 0.597. With a mean score approaching the A to SA categories, the data indicates that most students experienced significant happiness after participating in the Fun-Trastic activity. The slightly higher median compared to the mean suggests a tendency for more students to feel very happy after the activity, as opposed to feeling neutral. These findings demonstrate that Fun-Trastic successfully provided a positive and enjoyable experience for the students, with the majority reporting feelings of happiness following the activity. This underscores Fun-Trastic's role not only as an enjoyable physical activity but also as an effective mood booster, enhancing students' motivation to engage further with the program.

Statement 3 evaluated the students' perceptions of the ease of performing the Fun-Trastic activity. The results indicated that 3.4% (2 students) selected SD (Strongly Disagree), 12.1% (7 students) chose D (Disagree), 43.1% (25 students) selected A (Agree), and 41.4% (24 students) responded with SA (Strongly Agree). Statistical calculations yielded a mean value of 3.22, a median of 3.00, and a standard deviation of 0.796. The mean score, positioned between A and SA, suggests that the majority of students found the Fun-Trastic activity relatively easy to perform. However, the proportion of students selecting D (12.1%) and SD (3.4%) indicates that some participants may have encountered difficulties. These challenges could stem from factors such as the complexity of movements or physical limitations. Consequently, while most students perceived the activity as easy, further evaluation and adjustments to movement difficulty might enhance accessibility for all participants, particularly those who found it challenging.

Statement 4 assessed the extent to which students felt more energized after participating in the Fun-Trastic activity. The results showed that 5.2% (3 students) selected SD (Strongly Disagree), 8.6% (5 students) chose D (Disagree), 37.9% (22 students) responded with A (Agree), and 48.3% (28 students) selected SA (Strongly Agree). Statistical analysis revealed a mean value of 3.29, a median of 3.00, and a standard deviation of 0.838. These scores indicate that the average response falls between the A and SA categories, suggesting that most students felt a significant increase in energy after the

activity. The relatively high mean highlights the activity's effectiveness in stimulating motivation and enthusiasm among the majority of participants. However, the small proportion of students selecting SD (5.2%) and D (8.6%) suggests that not all students experienced the same level of impact. Factors such as fatigue, individual interest, or external influences may have played a role in moderating their responses. Overall, the findings demonstrate that the Fun-Trastic activity successfully enhanced students' energy levels, though its effects were not uniformly intense across all participants.

Statement 5 assessed the extent to which students felt strong during the Fun-Trastic activity. Results indicated that 10.3% (6 students) selected SD (Strongly Disagree), 20.7% (12 students) chose D (Disagree), 27.6% (16 students) responded with A (Agree), and 41.4% (24 students) selected SA (Strongly Agree). Statistical analysis revealed a mean value of 3.00, a median of 3.00, and a standard deviation of 1.026. These findings suggest that the average response aligns with the A (Agree) and SA (Strongly Agree) categories, indicating that the majority of students felt sufficiently strong while engaging in the activity. However, a notable proportion (31%, comprising students who selected SD or D) reported not experiencing a significant sense of strength. This disparity suggests variability in physical abilities, which may influence how students perceive the activity. Consequently, adjustments to the intensity or type of exercises within the Fun-Trastic model may be necessary to ensure inclusivity and a universally positive experience.

Statement 6 evaluated the extent to which students experienced sweating as an indicator of the activity's intensity. The findings revealed that 20.7% (12 students) selected SD (Strongly Disagree), 20.7% (12 students) chose D (Disagree), 25.9% (15 students) responded with A (Agree), and 32.8% (19 students) selected SA (Strongly Agree). Statistical results showed a mean value of 2.71, a median of 3.00, and a standard deviation of 1.140. The mean score suggests that most students found the activity moderately intensive, with many responses falling within the A (Agree) and SA (Strongly Agree) categories. However, the relatively high standard deviation indicates significant variability in how students experienced the activity's intensity. Notably, 41.4% of students selecting SD or D indicated that they did not perceive the activity as highly intensive or sweat-inducing. It is important to note that Fun-Trastic was intentionally designed with a moderate intensity to avoid excessive fatigue or excessive sweating. This ensures that the activity remains refreshing and suitable for use at various points during the school day-before, during, or after lessons. While some students reported experiencing sufficient intensity to sweat, this aligns with the activity's objective of providing enjoyable, light physical engagement without causing undue exhaustion.

Statement 7 assessed the extent to which students were interested in performing the Fun-Trastic activity daily. The results showed that 17.2% (10 students) selected SD (Strongly Disagree), 29.3% (17 students) chose D (Disagree), 25.9% (15 students) responded with A (Agree), and 27.6% (16 students) selected SA (Strongly Agree). Statistical analysis revealed a mean score of 2.64, a median of 3.00, and a standard deviation of 1.071. These findings indicate variability in students' preferences regarding the frequency of this activity. A majority of students chose the SD and D categories, suggesting lower interest in performing the activity daily. Conversely, a significant proportion of students selected A and SA, demonstrating higher interest in engaging with it regularly. The relatively high standard deviation reflects diverse responses, possibly influenced by factors such as the novelty of the activity, which may initially appeal to students but lose its charm over time. Factors like boredom or a desire for variety in physical activities may also impact students' decisions. Consequently, while many students may enjoy the activity, their willingness to perform it daily requires further examination, including the introduction of modifications or variations to sustain interest and reduce monotony.

Statement 8 evaluated the extent to which students liked the songs used in the Fun-Trastic activity. Results indicated that no students selected SD (Strongly Disagree), while 3.4% (2 students) chose D (Disagree), 53.4% (31 students) responded with A (Agree), and 43.1% (25 students) selected SA (Strongly Agree). Statistical analysis showed a mean score of 3.40, a median of 3.00, and a standard deviation of 0.560. The high mean score suggests that the majority of students enjoyed the music used in the activity. The relatively low standard deviation indicates a strong consensus among students regarding the choice of songs. This result highlights the importance of music in creating an enjoyable atmosphere and fostering engagement during the activity. Appropriate song selection appears to enhance students' enthusiasm and overall experience, emphasizing the role of music as a key element in the Fun-Trastic activity. By aligning song choices with students' preferences, the activity successfully promotes participation and positively influences the quality of their physical activity experience.

CONCLUSION

The findings of this study conclude that the Fun-Trastic activity, designed as an enjoyable and energetic physical activity model, received predominantly positive responses from students. Overall, most students demonstrated a high level of enjoyment, with average scores tending towards the "Strongly Agree" category in statements related to enjoyment and enthusiasm post-activity. These results suggest that Fun-Trastic effectively creates an engaging and enjoyable experience for students, contributing to their motivation and focus in the learning process.

Nevertheless, some areas warrant further attention, particularly regarding the intensity and students' willingness to engage in the activity daily. While most students found the activity enjoyable, there were indications that the activity's intensity might need adjustment to align with the physical needs and capacities of students. Some participants reported that the activity posed a moderate challenge and suggested the need for modifications in movement difficulty. Additionally, there were mixed responses regarding their interest in performing the activity daily, highlighting potential variability in student preferences.

Based on these findings, several recommendations are proposed. First, for future development of the Fun-Trastic model, it is recommended to maintain the elements of enjoyment that support students' enthusiasm without inducing excessive fatigue. Careful management of activity intensity is crucial, ensuring the primary goal of keeping students physically refreshed and mentally prepared for learning is met without compromising the quality of their experience. Second, for physical education practitioners or educators planning to implement this model, it is advised to account for varying student preferences in activity intensity and duration, allowing for flexible adaptations that better meet diverse student needs.

In summary, this study contributes significantly to understanding how enjoyable physical activity models can enhance student engagement in learning. Furthermore, it provides valuable guidance for the development of more effective and student-centered physical activity programs in the future.

ACKNOWLEDGEMENT

Deepest gratitude is extended to all parties involved in this study, including the schools and teachers who contributed to the research implementation. Their support was instrumental in ensuring the smooth execution of the project. Special thanks are also given to the Ministry of Youth and Sports of the Republic of Indonesia for their significant administrative and financial assistance, which enabled the successful completion of this study. It is hoped that the findings will provide meaningful contributions and serve as a basis for further development in the future.

REFERENCES

Barney, D., & Prusak, K. A. (2015). Effects of Music on Physical Activity Rates of Elementary Physical Education Students. *Physical Educator*, *72*(2).

Cahyo Nugroho, M. K., & Hendrastomo, G. (2021). Pengembangan Media Pembelajaran Berbasis Google Sites Pada Mata Pelajasan Sosiologi Kelas X. *Jurnal Pendidikan Sosiologi Dan Humaniora*, *12*(2). https://doi.org/10.26418/j-psh.v12i2.48934

Creswell, J. W., & David Creswell, J. (2018). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. *Journal of Chemical Information and Modeling*, *53*.

Daly-Smith, A., Hobbs, M., Morris, J. L., Defeyter, M. A., Resaland, G. K., & McKenna, J. (2021). Moderate-to-Vigorous Physical Activity in Primary School Children: Inactive Lessons Are Dominated by Maths and English. *International Journal of Environmental Research and Public Health*, *18*(3), 990. https://doi.org/10.3390/ijerph18030990

de Bruijn, A. G. M., de Greeff, J. W., Temlali, T. Y., Oosterlaan, J., Smith, J., & Hartman, E. (2023). Objectively measured physical activity during primary school physical education predicts intrinsic motivation independently of academic achievement level. *British Journal of Educational Psychology*, *93*(S1). https://doi.org/10.1111/bjep.12527

Erick Burhaein. (2017). Aktivitas Fisik Olahraga untuk Pertumbuhan dan Perkembangan Siswa SD. *Indonesian Journal of Primary Education*, *1*(Vol 1 No 1 (2017) 51-58).

Etikan, I., Musa, S.A., Alkassim, R. S. (2016). Comparison of Convenience Sampling and Purposive Sampling Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1).

Fairclough, S., & Stratton, G. (2005). Physical activity levels in middle and high school physical

education: A review. In *Pediatric Exercise Science* (Vol. 17, Issue 3). https://doi.org/10.1123/pes.17.3.217

Farooq, A., Martin, A., Janssen, X., Wilson, M. G., Gibson, A. M., Hughes, A., & Reilly, J. J. (2020). Longitudinal changes in moderate-to-vigorous-intensity physical activity in children and adolescents: A systematic review and meta-analysis. In *Obesity Reviews* (Vol. 21, Issue 1). https://doi.org/10.1111/obr.12953

Garciá-Hermoso, A., Ramírez-Vélez, R., Lubans, D. R., & Izquierdo, M. (2021). Effects of physical education interventions on cognition and academic performance outcomes in children and adolescents: A systematic review and meta-analysis. *British Journal of Sports Medicine*, *55*(21). https://doi.org/10.1136/bjsports-2021-104112

Ghayab, H. R. Al, Li, Y., Abdulla, S., Diykh, M., & Wan, X. (2016). Classification of epileptic EEG signals based on simple random sampling and sequential feature selection. *Brain Informatics*, *3*(2), 85–91. https://doi.org/10.1007/s40708-016-0039-1

Gilbert, L. M., Dring, K. J., Williams, R. A., Boat, R., Sunderland, C., Morris, J. G., Nevill, M. E., & Cooper, S. B. (2023). Effects of a games-based physical education lesson on cognitive function in adolescents. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1098861

Hills, A. P., Dengel, D. R., & Lubans, D. R. (2015). Supporting Public Health Priorities: Recommendations for Physical Education and Physical Activity Promotion in Schools. *Progress in Cardiovascular Diseases*, *57*(4). https://doi.org/10.1016/j.pcad.2014.09.010

Karimullah, S. S., & Mahesti, L. E. (2021). PROBLEMATIKA HUTANG PADA MASA PANDEMI COVID-19 DI DESA SUKAWANGI. *Jurnal Asy-Syukriyyah*, *22*(1). https://doi.org/10.36769/asy.v22i1.122

Lee, S., Shin, M., & Smith, A. L. (2019). The Relationship of Physical Activity From Physical Education with Perceived Peer Acceptance Across Childhood and Adolescence. *Journal of School Health*, *89*(6). https://doi.org/10.1111/josh.12756

Lindon, J. (2012). *Understanding Child Development: 0-8 Years: Linking Theory and Practice*. Hachette UK.

Marques, A., Marconcin, P., Werneck, A. O., Ferrari, G., Gouveia, É. R., Kliegel, M., Peralta, M., & Ihle, A. (2021). Bidirectional association between physical activity and dopamine across adulthood—a systematic review. In *Brain Sciences* (Vol. 11, Issue 7). https://doi.org/10.3390/brainsci11070829

Noor, S., Tajik, O., & Golzar, J. (2022). Defining Simple Random Sampling in a Scientific Research. *International Journal of Education & Language Studies Collection*, *1*(November).

Owusu, R., Bonyah, E., & Arthur, Y. D. (2023). The Effect of GeoGebra on University Students' Understanding of Polar Coordinates. *Cogent Education*, *10*(1). https://doi.org/10.1080/2331186X.2023.2177050

Resaland, G. K., Aadland, E., Andersen, J. R., Bartholomew, J. B., Anderssen, S. A., & Moe, V. F. (2019). Physical activity preferences of 10-year-old children and identified activities with positive and negative associations to cardiorespiratory fitness. *Acta Paediatrica, International Journal of Paediatrics*, *108*(2). https://doi.org/10.1111/apa.14487

Sneck, S., Viholainen, H., Syväoja, H., Kankaapää, A., Hakonen, H., Poikkeus, A. M., & Tammelin, T. (2019). Effects of school-based physical activity on mathematics performance in children: a systematic review. In *International Journal of Behavioral Nutrition and Physical Activity* (Vol. 16, Issue 1). https://doi.org/10.1186/s12966-019-0866-6

West, P. W. (2016). Simple random sampling of individual items in the absence of a sampling frame that lists the individuals. *New Zealand Journal of Forestry Science*, *46*(1). https://doi.org/10.1186/s40490-016-0071-1

Zech, A., Venter, R., de Villiers, J. E., Sehner, S., Wegscheider, K., & Hollander, K. (2018). Motor skills of children and adolescents are influenced by growing up barefoot or shod. *Frontiers in Pediatrics*, *6*. https://doi.org/10.3389/fped.2018.00115