

Development of the Traditional Game Esgrang (*Estafet Egrang*) for Elementary School Students

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Abstrak

Penelitian ini bertujuan untuk mengembangkan permainan tradisional bernama Esgrang (*Estafet Egrang*) sebagai media pembelajaran pendidikan jasmani yang inovatif, menyenangkan, dan edukatif bagi siswa sekolah dasar. Permainan ini merupakan modifikasi dari permainan tradisional *Estafet Egrang*, yang dirancang untuk meningkatkan keterampilan motorik kasar seperti keseimbangan, daya tahan, kelincahan, dan koordinasi. Metode penelitian yang digunakan adalah Penelitian dan Pengembangan (R&D) dengan menggunakan model ADDIE (*Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi*). Proses pengembangan meliputi identifikasi kebutuhan, desain produk, validasi ahli, pengujian skala kecil, dan pengujian skala besar. Hasil penelitian menunjukkan bahwa permainan Esgrang, sebagai versi modifikasi dari *Estafet Egrang*, diterima dengan baik oleh siswa, mencapai tingkat kelayakan 93% berdasarkan validasi ahli materi dan 92% berdasarkan validasi ahli media. Lebih lanjut, permainan Esgrang berhasil meningkatkan minat siswa terhadap permainan tradisional, dengan hasil pengujian skala besar menunjukkan tingkat kelayakan 95%.

Kata kunci: *Estafet Egrang, Permainan tradisional, Pengembangan,*

Abstract

This study aims to develop a traditional game called Esgrang (*Estafet Egrang*) as an innovative, enjoyable, and educational physical education learning medium for elementary school students. This game is a modification of the traditional *Estafet Egrang* game, designed to improve gross motor skills such as balance, endurance, agility, and coordination. The research method used is Research and Development (R&D) employing the ADDIE model (*Analysis, Design, Development, Implementation, and Evaluation*). The development process includes needs identification, product design, expert validation, small-scale testing, and large-scale testing. The results indicate that the ESGRANG game, as a modified version of the *Estafet Egrang*, was well received by students, achieving a feasibility level of 93% based on material expert validation and 92% based on media expert validation. Furthermore, the Esgrang game successfully increased students' interest in traditional games, with large-scale testing results showing a feasibility level of 95%.

Keywords: *Estafet Egrang, Traditional games, Development.*

1. INTRODUCTION

Physical Education, Sports, and Health (PJOK) is an essential subject that contributes significantly to students' overall development. However, students' interest in this subject is often relatively low. One effort to increase students' learning interest in PJOK is by integrating traditional games into the learning process. Traditional games can be used as an

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effective strategy to enhance elementary school students' motivation to learn (Putri et al., 2025). In addition, traditional games introduce and strengthen the value of "Unity in Diversity" among Indonesian children from an early age. One traditional game that continues to exist and is still widely played in the community is egrang (stilts).

Egrang is one of the many traditional Indonesian games that should be preserved and maintained as part of the nation's cultural heritage. This game has been passed down from previous generations and remains practiced today. Preserving the egrang game also reflects a sense of nationalism and love for the homeland (Azis et al., 2024). Egrang is considered unique and challenging because it is played using a pair of bamboo stilts with footrests attached near the bottom. Players must stand on these footrests and walk while maintaining body balance. The uniqueness of the game lies in the skills required to maintain stability while moving. Furthermore, the egrang game contains important cultural values such as perseverance, hard work, and sportsmanship (D. A. M. Sari & Kurniawan, 2024). In addition, playing egrang helps train students' body balance (Salam et al., 2019), which is an important component of gross motor skills and plays a crucial role in physical activities and sports.

Traditional egrang games also provide significant benefits for the development of children's motor skills while simultaneously preserving local culture. Therefore, it is appropriate for teachers to integrate the egrang game into learning activities in elementary schools (Maryati et al., 2023). Traditional games also promote important social values such as cooperation, honesty, and sportsmanship, which contribute to students' character development (Ragil et al., 2025). This is in line with national education policies that encourage the integration of local cultural values into children's education. Studies have shown that implementing the egrang game in learning activities can significantly improve students' balance and muscle strength (Bina et al., 2022). Moreover, the use of traditional games has been proven to be an effective strategy for increasing students' interest in learning (Putri et al., 2025). According to Kamaruddin et al. (2024), developing learning models based on traditional egrang games can improve students' physical fitness components such as agility, endurance, balance, and coordination. These findings indicate that traditional games not only possess cultural significance but also remain relevant in modern educational contexts.

Numerous studies have highlighted the positive contributions of traditional games to children's development. Traditional games can improve children's social skills through direct interaction with peers (Rut et al., 2020). Additionally, when integrated into physical

education, traditional games help instill moral values such as honesty, cooperation, and sportsmanship (Cahyani et al., 2023). In the context of physical education, incorporating traditional games into elementary school learning can also address the declining participation of children in physical activities, particularly in the current digital era (Handayani & Munastiwi, 2022). Considering the importance of traditional games in physical education, the development of the **Esgrang** game is intended as an effort to both preserve traditional culture and improve the quality of physical education learning.

A game-based approach in physical education has been proven to be more effective in increasing students' motivation and engagement in learning activities. Research indicates that students tend to show greater enthusiasm when learning through games compared to conventional teaching methods (Karimah et al., 2025). This is because games provide more engaging, enjoyable, and challenging learning experiences. Psychologically, games also have a significant role in enhancing emotional intelligence (Suriyah Hanafi, 2023). Therefore, the development of the Esgrang game in physical education learning is expected to provide not only physical benefits but also enjoyable and meaningful learning experiences for students. The development of Esgrang also aligns with the concept of activity-based learning, which is recommended in modern physical education curricula. Theoretically, children's development is greatly supported by active learning through direct experiences and physical activities that involve exploration and interaction with the environment (Nuha et al., 2022). The Esgrang game involves walking using bamboo stilts, which stimulates motor development and supports children's kinesthetic abilities. These kinesthetic activities also contribute to children's cognitive development (Bakhtiar, 2018).

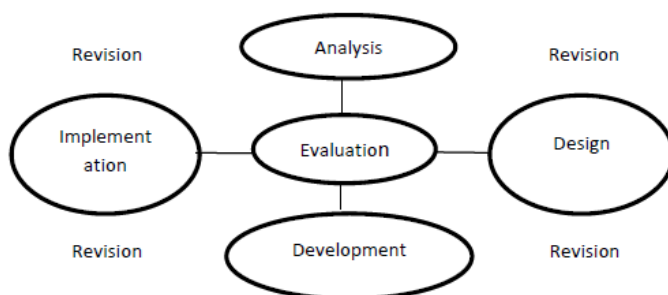
Physical Education, Sports, and Health (PJOK) is an important subject within the elementary school curriculum that aims to develop students' physical, motor, psychological, and social aspects in a comprehensive manner (Y. Y. Sari et al., 2024). However, observations in the field indicate that students' interest in PJOK tends to decline. This situation is influenced by several factors, including monotonous teaching approaches, limited variations in learning activities, and the dominance of formal and competitive activities. In addition, there are still limited learning models that systematically integrate the esgrang game into PJOK learning. Therefore, it is necessary to develop an innovative and contextual learning model that not only revitalizes local cultural values but also increases students' interest in PJOK. Based on these considerations, the researcher intends to develop the **ESGRANG (Estafet Egrang)** game to make traditional games more engaging and attractive for students. This idea forms

the basis for conducting research on elementary school students entitled **“Development of the Traditional Game ESGRANG (Estafet Egrang) for Elementary School Students.”**

Through this research, the Esgrang game is expected to serve not only as an alternative and engaging learning medium for students but also as a model for the development of other traditional games in educational settings. This study therefore contributes to the advancement of physical education, the preservation of cultural heritage, and the holistic development of children. Furthermore, the findings of this research may serve as a reference for educators and educational practitioners in integrating traditional games into more innovative learning processes. By introducing innovations in traditional games such as Esgrang, it is hoped that younger generations will become more familiar with and interested in playing traditional games as part of a valuable cultural heritage that should be preserved. In addition to providing entertainment, these games can also function as enjoyable educational tools that offer physical, social, and cognitive benefits for students. Therefore, the development of the Esgrang game represents a strategic step in preserving local culture while simultaneously improving the quality of physical education learning in elementary schools.

2. METHOD

The method used by the researcher in this developmental study is Research and Development (R&D) with the ADDIE model, which stands for Analysis, Design, Development or Product, Implementation or Delivery, and Evaluation (Sugiyono, 2019). In this development model, students serve as the center of the learning process, and the applied learning innovations are expected to inspire students and foster their interest in traditional games. The following are the stages of the ADDIE model:



Sumber: (Sugiyono, 2019)

- 1) *Analysis* – Identifying and collecting information, including needs analysis and a review of related literature in the developmental research to be conducted, so that the type of product that needs to be developed can be determined.
- 2) *Design* – Planning the required or potential product to be developed in order to solve the identified problem, as well as determining the methods and strategies to be used in the research.
- 3) *Development* – Developing the product and validating the learning resources, as well as creating the necessary materials and supporting strategies.
- 4) *Implementation* – Applying the content of the developed product during the development phase by involving teachers and students in the learning environment.
- 5) *Evaluation* – This stage aims to assess the quality of the product during the learning implementation process, both before and after the application of the developed model.

This method was chosen because it can produce an effective and feasible product through systematic stages. The development process in this study includes needs analysis, product design, expert validation, trials, and product effectiveness evaluation. The trials were conducted in two stages, namely small-scale trials and large-scale trials, to evaluate the effectiveness and feasibility of the game before it is widely implemented in elementary schools.

The data analysis technique used in this study employs a quantitative approach with a percentage feasibility calculation based on the formula of Calculated Score (SH) compared to Criterion Score (SK), then multiplied by 100%. The feasibility of the game is categorized into four levels: very unfeasible (<40%), less feasible (40%–50%), fairly feasible (51%–75%), and feasible (76%–100%). The instruments used include expert evaluation questionnaires and student response questionnaires, with a rating scale ranging from *strongly disagree* to *strongly agree*. The following are the feasibility categories used in this study:

Table 1. Feasibility Categories

Score Percentage	Feasibility Category
< 40%	Poor / Not Feasible
40% - 50%	Fair / Less Feasible
51% - 75%	Good Enough / Fairly Feasible
76% - 100%	Good / Feasible

The questionnaire used in this study is an evaluation or response questionnaire consisting of answer options and rating descriptions, namely: 1. Poor / Infeasible, 2. Fairly Poor / Less Feasible, 3. Fair / Quite Feasible, 4. Good / Feasible.

3. RESULT AND DISCUSSION

This study successfully developed the ESGRANG game, also known as Estafet Egrang. The development process involved experts, small-scale trials, and large-scale trials. The detailed results of the study are as follows:

Table 2. *Material Expert Validation*

No	Assessment Aspect	Calculated Score	Maximum Score	Percentage	Category
1.	Alignment of material with learning objectives	14	15	93%	Good / Feasible
2.	Depth and breadth of material	15	15	100%	Good / Feasible
3.	Accuracy and correctness of material	13	15	86%	Good / Feasible
4.	Coherence and meaningfulness of material	14	15	93%	Good / Feasible
5.	Language and presentation of material	13	15	86%	Good / Feasible
6.	Usefulness of learning material	15	15	100%	Good / Feasible
Total Score		84	90	93%	Good / Feasible

The material expert assessment focused on the learning content. The validation results show that the Esgrang game is highly suitable for use in physical education learning. The assessed aspects include the relevance of the material to the curriculum and the feasibility of the tools or media used. The validation results obtained a feasibility score of 93%.

Table 3. *Data on the Results of Game Model Development*

No	Assessment Aspect	Calculated Score	Maximum Score	Percentage	Category
1.	Media appearance and design	15	15	100%	Good / Feasible
2.	Technical aspects	13	15	86%	Good / Feasible
3.	Ease of use	13	15	86%	Good / Feasible
4.	Alignment of objectives with learning	13	15	86%	Good / Feasible
5.	Creativity and innovation of media	15	15	100%	Good / Feasible
6.	Usefulness of media	14	15	93%	Good / Feasible
Total Score		83	90	92%	Good / Feasible

The media expert assessment focused on product design, visual appropriateness, and equipment safety. The validation results showed that the *Esgrang* game tools and design met the feasibility standards with a score of 92%.

Table 4. *Small-scale Trial*

No	Class	Score Obtained	Maximum Score	Percentage	Category
1.	V.A	35	40	87%	Good / Feasible
2.	V.B	34	40	85%	Good / Feasible
Total Score		69	80	86%	Good / Feasible

The small-scale trial involved 20 students. The results from the student response questionnaires regarding the development of the *Esgrang* game showed a feasibility percentage of 86%, categorized as Good/Feasible. This indicates that the learning media is suitable for further testing in the next phase.

Table 5. *Large-scale Trial*

No	Class	Score Obtained	Maximum Score	Percentage	Category
1.	V.A	38	40	95%	Good / Feasible
2.	V.B	38	40	95%	Good / Feasible
Total Score		76	80	95%	Good / Feasible

In the large-scale trial, which involved 40 students, the results showed a significant improvement in gross motor skills, particularly balance and coordination. The *Esgrang* game also enhanced social interaction among students. The success rate in the large-scale trial reached 95%, based on questionnaire and observation analysis, and was categorized as Good/Feasible. After conducting both small-scale and large-scale trials, the advantages and weaknesses of the *Esgrang Game Development* can be described as follows:

The *Esgrang* game has several advantages that make it an appealing alternative for teaching basic motor movements to elementary school students. Its main strength lies in its ability to provide a new variation in learning media, thus producing a product that supports physical education learning in schools. In addition, the game helps increase students' enthusiasm and confidence in physical activities since they can learn while playing without feeling bored. It also serves to introduce and preserve traditional cultural heritage. For teachers, the *Esgrang* game can be an effective teaching aid for creating engaging and innovative learning experiences. Using this different approach, teachers can more easily teach basic motor movements, making the learning process more enjoyable and interactive.

However, the *Esgrang* game has several weaknesses that should be considered. One of them is the lack of safety measures when played by students, especially since some students tend to ignore the rules or play carelessly without following teacher instructions. Therefore, teacher supervision is essential to ensure students' safety and maintain order during gameplay.

In implementing the *Esgrang* game, there are both supporting and inhibiting factors affecting its effectiveness. The main supporting factor is the enthusiasm and initiative of teachers or developers in creating a game that increases students' interest in traditional play. With a fun approach, students become more motivated and enthusiastic about physical activity. Meanwhile, the inhibiting factor in implementing this model is the continued need for teacher supervision during gameplay. Some students may not follow the rules properly, which can disrupt the learning objectives. Thus, stricter monitoring from teachers is required to ensure that the game runs safely and effectively.

The study shows that the *Esgrang (Estafet Egrang)* game is effective in improving gross motor skills of elementary school students. Validation by material and media experts yielded feasibility levels of 93% and 92%, respectively, indicating that the game is suitable for use in physical education learning. These findings are consistent with previous research, which demonstrated that integrating traditional games into physical education can enhance balance, coordination, and agility (Saputra et al., 2024). Movement-based games like *Esgrang* provide optimal motor stimulation for students, helping them develop physical abilities through fun and educational activities (Mahfud & Fahrizqi, 2020).

Increased student interest in traditional games is also one of the key findings of this study. The large-scale trial results showed that 95% of students were enthusiastic about participating in the *Esgrang* game. This finding is supported by previous research (Putri et al., 2025) which identified traditional games as an effective strategy to enhance students' learning interest in Physical Education. In the context of physical education, game-based approaches have proven to be more effective than conventional methods because they enhance motivation and create a more interactive learning environment (Sau et al., 2022).

This study also identified several challenges in implementing the *Esgrang* game. The main issue is the lack of safety measures, particularly for students who do not fully understand the rules. Some students tend to play on their own during teacher instructions, which increases the risk of injury. This finding aligns with (Prayitno et al., 2022) who stated that traditional games require supervision to ensure students' safety during play. Therefore,

the *Esgrang* game should always be conducted under teacher supervision to ensure safety and effectiveness.

Overall, this study makes an important contribution to the development of game-based physical education using traditional games. The *Esgrang* game not only improves students' gross motor skills but also fosters social interaction and sportsmanship. This supports learning theories that emphasize students learn more effectively through direct experience (Sahgal, 2024). Based on the results, future development of the *Esgrang* game should focus on enhancing safety features and creating a more comprehensive and systematic learning module, so that the game can be implemented more broadly across elementary schools.

4. CONCLUSION

Based on the findings of the research and development process, it can be concluded that the *Esgrang* (Estafet Egrang) game represents an effective, engaging, and educational innovation for physical education learning among elementary school students. The game was developed systematically through the stages of the ADDIE development model, which include analysis, design, development, implementation, and evaluation. The validation results provided by material and media experts indicated that the *Esgrang* game is appropriate and feasible to be utilized as a learning medium. Furthermore, the results of the field trials revealed that the game contributes to improving students' gross motor abilities, agility, balance, and cooperative skills. Therefore, the development of the *Estafet Egrang* game not only helps reintroduce traditional games to students but also offers an innovative alternative in physical education learning that encourages greater student interest, enthusiasm, and active involvement in physical activities.

5. REFERENCES

- Andriyani, R., & Hidayat, S. (n.d.). The influence of plyometric training on increasing shooting accuracy. *Champions Journal*. <https://ejournal.imbima.org/index.php/champions/article/view/163>
- Azis, R. M., Fauzi, R. A., & Rukmana, A. (2024). Upaya meningkatkan sikap cinta tanah air melalui permainan tradisional egrang. *Jurnal Porkes*, 7(2), 662–672. <https://doi.org/10.29408/porkes.v7i2.25862>
- Bakhtiar, A. M. (2018). Permainan tradisional egrang untuk melatih keterampilan kinestetik dan sosial anak. *JTIEE Journal*, 2(2), 76–84.
- Bina, U., Getsempena, B., & Kasar, M. (2022). Pengaruh permainan tradisional egrang terhadap perkembangan siswa. *Jurnal Ilmiah Mahasiswa*, 3(2).
- Cahyani, A. P., Oktaviani, D., Putri, S. R., Kamilah, S. N., Caturiasari, J., & Wahyudin, D. (2023). Penanaman nilai-nilai karakter dan budaya melalui permainan tradisional pada siswa sekolah dasar. *JUDIKDAS: Jurnal Ilmu Pendidikan Dasar Indonesia*, 2(3), 183–194.

<https://doi.org/10.51574/judikdas.v2i3.796>

Handayani, F. F., & Munastiwi, E. (2022). Implementasi permainan tradisional di era digital dan integrasinya dalam pendidikan anak usia dini. *Generasi Emas*, 5(2), 11–20. [https://doi.org/10.25299/ge:jpiaud.2022.vol5\(2\).10460](https://doi.org/10.25299/ge:jpiaud.2022.vol5(2).10460)

Hidayat, R., & Saputra, D. (n.d.). The effect of plyometric training on shooting accuracy and limb muscle strength of football athletes. *Journal of Physical Education*. <https://journal.tofedu.or.id/index.php/journal/article/view/34>

Kamaruddin, I., Rifai, M., Septiyani, R. D., & Ismawan, H. (2024). Pengembangan model pembelajaran PJKR berbasis permainan tradisional untuk meningkatkan kebugaran jasmani. *Indonesian Research Journal on Education*, 4, 899–906.

Karimah, L., Antika, W. T., & Nur, D. M. M. (2025). Meningkatkan keterlibatan siswa kelas VIII menggunakan media pembelajaran berbasis game. *RUKASI: Jurnal Ilmiah Perkembangan Pendidikan dan Pembelajaran*, 2(3), 107–113.

Mahfud, I., & Fahrizqi, E. B. (2020). Pengembangan model latihan keterampilan motorik melalui olahraga tradisional untuk siswa sekolah dasar. *Sport Science and Education Journal*, 1(1), 31–37. <https://doi.org/10.33365/v1i1.622>

Maryati, M., Kristiyandaru, A., & Arief, N. A. (2023). Pengaruh permainan tradisional terhadap kemampuan motorik kasar peserta didik sekolah dasar. *Jurnal Pendidikan Jasmani*, 11, 76–86.

Nuha, F. D., Anggriana, T. M., & Cristiana, R. (2022). Pengaruh lingkungan belajar dan motivasi belajar terhadap keaktifan belajar siswa sekolah dasar. *Tarqiyatuna*, 1(2), 83–91. <https://doi.org/10.36769/tarqiyatuna.v1i2.248>

Prayitno, H. J., Rahmawati, F. N., Intani, K. I. N., & Pradana, F. G. (2022). Pembentukan karakter anak usia sekolah dasar melalui permainan tradisional. *Jurnal Pemberdayaan Masyarakat*, 1(1), 1–9. <https://doi.org/10.46843/jmp.v1i1.261>

Putri, R. F., Adelia, A., Sagita, L., et al. (2025). Pemanfaatan permainan tradisional sebagai strategi untuk meningkatkan minat belajar PJOK pada siswa sekolah dasar. *Jurnal Pendidikan*, 9, 17560–17564.

Ragil, Y., Farida, S., Ayuningsih, Z. F., & Dwinata, A. (2025). Permainan tradisional sebagai perkembangan motorik anak sekolah dasar. *Jurnal Pendidikan Dasar*, 2.

Rut, N., Gaol, R. L., Abi, A. R., & Silaban, P. (2020). Pengaruh permainan tradisional terhadap keterampilan sosial anak SD. *Jurnal Educatio FKIP UNMA*, 6(2), 449–455. <https://doi.org/10.31949/educatio.v6i2.568>

Salam, A. F. B., Yunus, M., & Kinanti, R. G. (2019). Pengaruh permainan tradisional (egrang bambu) terhadap peningkatan keseimbangan pada anak kelas 5 SD. *Sport Science and Health*, 1(3), 243–250.

Saputra, T. J., Yuliawan, D., & Sukmana, A. A. (2024). Analisis permainan tradisional goboy terhadap gerak fundamental siswa SD Laboratorium UNP Kediri. In *Seminar Nasional Sains*,

Kesehatan, dan Pembelajaran (pp. 636–645).

Sari, D. A. M., & Kurniawan, D. (2024). Pentingnya pengenalan permainan tradisional dalam menanamkan nilai karakter dan budaya. *JIMAD: Jurnal Ilmiah Mutiara Pendidikan*, 2(1), 31–43.

Sari, Y. Y., Ulfani, D. P., Ramos, M., & Padli, P. (2024). Pentingnya pendidikan jasmani olahraga terhadap anak usia sekolah dasar. *Jurnal Tunas Pendidikan*, 6(2), 478–488. <https://doi.org/10.52060/pgsd.v6i2.1657>

Sau, R. A., Bili, L. D., & Lengo, M. D. (2022). Permainan tradisional hadang dapat meningkatkan motivasi belajar siswa kelas V SD. *Jurnal Sport & Science* 45, 4(2), 29–36.

Sugiyono. (2019). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.

Suriyah Hanafi. (2023). Permainan tradisional dalam meningkatkan kecerdasan emosi. *Edu Research*, 4(4), 39–49. <https://doi.org/10.47827/jer.v4i4.124>