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The Effectiveness of Cooperative and Inquiry Learning Models in Enhancing Students' Throwing and Catching Skills at SD Negeri 33 Lubuk Linggau

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Abstrak

Penelitian ini bertujuan untuk menilai efektivitas model pembelajaran kooperatif dan pembelajaran berbasis inkuiri dalam meningkatkan pemahaman siswa kelas lima SD Negeri 33 Lubuk Linggau terhadap keterampilan melempar dan menangkap. Penelitian menggunakan desain kuasi-eksperimen dengan dua kelompok, masing-masing diberikan pre-test dan post-test. Sebanyak 40 siswa berpartisipasi, terbagi menjadi dua kelompok yang menggunakan model pembelajaran berbeda. Penilaian dilakukan melalui tes untuk mengukur pemahaman konseptual dan rubrik untuk mengevaluasi keterampilan fisik. Hasil menunjukkan peningkatan signifikan pada kedua kelompok ($p < 0,05$), dengan kelompok pembelajaran berbasis inkuiri mencatat rata-rata skor lebih tinggi. Analisis ANOVA mengindikasikan adanya perbedaan signifikan dalam pemahaman konseptual siswa antara kedua model pembelajaran ($F = 4,81$; $p = 0,03$). Temuan ini menegaskan bahwa pembelajaran berbasis inkuiri mendorong siswa belajar melalui praktik dan refleksi langsung, sedangkan pembelajaran kooperatif meningkatkan kerja sama, tanggung jawab, dan dukungan antar-siswa.

***Kata kunci**: Pembelajaran Kooperatif, Pembelajaran Berbasis Inkuiri, Melempar dan Menangkap, Pendidikan Jasmani, Pemahaman Siswa.*

Abstract

This study examines how effectively cooperative and inquiry-based learning help fifth-grade students at SD Negeri 33 Lubuk Linggau, Indonesia, understand throwing and catching skills. The study employed a quasi-experimental approach involving two groups that received pre-tests and post-tests. A total of 40 students participated, divided into two groups that used different learning models. Tests were administered to assess conceptual understanding, while rubrics were used to evaluate physical performance. Both groups showed significant improvement ($p < 0.05$), but the inquiry-based learning group achieved higher average scores. ANOVA results indicated that both learning models produced a significant difference in students' conceptual understanding ($F = 4.81$; $p = 0.03$). The findings suggest that inquiry learning helps students learn by doing and reflecting through real activities, while cooperative learning fosters teamwork, responsibility, and mutual support.

Keywords: Cooperative Learning, Inquiry Learning, Throw and Catch, Physical Education, Student Understanding.

1. INTRODUCTION

One of the most crucial factors in creating an effective learning process is engaging, challenging, and differentiated instruction. Teachers must be innovative in selecting learning models that match students' needs and characteristics. The appropriate teaching paradigm helps students become more active, think critically, and maximize their potential (Prasetyo & Kristin, 2020). In the context of Physical Education, Sports, and Health (PJOK), the teacher's role extends beyond giving instructions. Teachers also act as facilitators who create dynamic and engaging learning environments. The development of gross and fine motor skills which support movement and coordination is closely related to physical education. Sports and physical activity are structured bodily movements that involve energy expenditure and

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contribute significantly to human health and development across the lifespan. In academic research, sport is often viewed as a subset of physical activity that is characterized by organized rules, goals, and social engagement, while physical activity broadly encompasses all voluntary movements produced by skeletal muscles that result in energy expenditure and improved fitness capacity. Participation in sports and regular physical activity has been shown to enhance physical fitness, motor skill proficiency, and psychosocial well-being, as well as reduce health risks and promote healthier lifestyles in children and adolescents (Oja et al., 2022). A recent study exploring youth perspectives further emphasizes that sport and physical activity are perceived not only as contributors to physical health but also as important avenues for stress relief, mood improvement, and overall quality of life (Rizqie et al., 2025). These findings highlight that sport extends beyond competition; it supports holistic development, including physical, mental, and social domains, which makes it a vital component of education and public health strategies. Gross motor skills involve large muscle movements such as running, jumping, and throwing, while fine motor skills focus on coordination of small muscles, like writing and holding objects (Siantoro & Khamidi, 2024). Therefore, physical education activities, especially through cooperative games like throwing and catching, are essential in developing students' coordination, teamwork, and motor performanc skills. Before selecting a teaching model, it is important to consider students' individual needs. To make learning effective and targeted, teachers must understand students' conditions, abilities, and characteristics (Lanos et al., 2023). Manipulative skills, such as throwing and catching, are fundamental components in children's motor development and support active participation in various physical activities (Valentini, 2023; Barnett & Henderson, 2022). These abilities are closely related to hand-eye coordination, self-perception of motor competence, and students' engagement in effective physical education (Lopes et al., 2021; Barnett et al., 2020). Research also indicates that early development of motor competence can influence lifelong physical activity and key indicators of children's physical health (Robinson et al., 2019; Rivilis et al., 2020).

In this regard, two models considered effective for improving sudents' cognitive and motor abilities are the cooperative learning model and the inquiry learning model. The cooperative learning model emphasizes collaboration among students to achieve common goals. Through group formation, students learn to help each other, discuss, and take responsibility for their group's success. Cooperative education increases motivation, responsibility, and social interaction (Lathifa, 2024). In physical education, this model helps students develop athletic skills, teamwork, and effective communication. In contrast, the inquiry learning model focuses on discovery, where teachers act as facilitators who encourage students to investigate and draw conclusions from learning experiences. Inquiry learning is grounded in children's natural curiosity, which drives them to discover concepts through observation and direct experience (Dessani et al, 2025). Cooperative learning and inquiry learning are two widely used instructional approaches, each emphasizing different aspects of the learning process. Cooperative learning focuses on structured group collaboration, where students work together to achieve shared goals, develop social skills, and support each other in completing tasks (Rengifo, Preciado, & Velandia, 2018). In this model, the teacher acts as a facilitator who organizes group roles and interactions, while students are responsible for both individual and collective outcomes. In contrast, inquiry learning emphasizes student-centered exploration and problem-solving, encouraging learners to ask questions, investigate, analyze data, and draw conclusions independently (Lazonder & Harmsen, 2016). Here, the teacher's role shifts to guiding the process and providing scaffolding as needed, while students actively construct knowledge and develop critical thinking skills. While cooperative learning primarily enhances social interaction and

teamwork, inquiry learning is particularly effective in fostering deep conceptual understanding and scientific reasoning. Therefore, selecting the appropriate approach depends on learning objectives, content, and the skills educators aim to cultivate in students. This approach enhances students' critical, analytical, and reflective thinking. Both models have their strengths. Cooperative learning reinforces social andcollaborative skills, while inquiry learning fosters independent thinking and deeper conceptual understanding. Thus, physical education teachers must understand the characteristics of both models to select or combine them according to students'learning needs and classroom conditions.

Throw-and-catch activities are basic exercises that help develop eye-hand coordination, movement accuracy, and concentration. Although simple, they significantly contribute to motor development. Tthrowing-and-catching games improve both physical fitness and students' manipulative skills (Riszxi & Yuwono, 2025). Developing fundamental motor skills, such as throwing and catching, is a crucial component of physical education in primary schools. However, many students still struggle to master these skills due to traditional teaching methods that emphasize teacher demonstration rather than active student engagement (Widjaja, Hidayat, & Qoriawan, 2023). Cooperative learning, a student-centered approach that encourages group interaction and peer support, has been shown to improve skill acquisition and enhance learning motivation in physical education (Yang, Chen, Chen, & Lu, 2021). Meanwhile, inquiry-based learning promotes critical thinking and problem-solving by allowing students to explore and experiment with physical activities actively (Andriana, Marlina, & Julianti, 2022). Combining cooperative and inquiry learning models can provide a more engaging and effective learning environment, potentially leading to significant improvements in students' throwing and catching abilities. This study aims to investigate the effectiveness of these learning models in enhancing students' fundamental motor skills at SD Negeri 33. Based on this context, the objective of this research was to determine the effectiveness of cooperative and inquiry learning models in improving students' understanding of small ball throwing and catching skills at SD Negeri 33 Lubuk Linggau. The results are expected to help physical education teachers select effective teaching strategies and serve as a reference for assessing students' learning outcomes in primary school PJOK subjects.

Recent studies consistently demonstrate that both cooperative and inquiry-based learning models effectively enhance students' understanding and performance in physical education, particularly in developing motor skills such as throwing and catching. Cooperative learning, through structured group interactions and collaborative problem-solving, has been shown to improve student motivation, participation, and social skills while reinforcing practical skill acquisition (Lu et al., 2021; Widyanto, Qomarrullah, & Tebai, 2025). In parallel, inquiry-based learning promotes active engagement, critical thinking, and concept construction by encouraging students to explore, experiment, and reflect on their experiences (Rejeki, 2024). Integrating social interaction with active problem-solving allows students to develop both cognitive understanding and psychomotor abilities, supporting constructivist principles of learning (Piaget, 2020). Systematic reviews and research overviews further confirm that combining cooperative and inquiry approaches fosters a balanced and meaningful learning environment, enhancing both the conceptual understanding and practical competencies of elementary school students in physical education (Iglesias, Fernandez-Rio, & Rodríguez-González, 2023; Berabo et al., 2024). These findings justify the application of these models in teaching throwing and catching skills to maximize learning outcomes.

2. METHOD

This study employed a quantitative research approach using a quasi-experimental pretest–posttest control group design, which is widely recognized for assessing the effects of educational interventions when random assignment is not feasible (Creswell & Creswell, 2018; Cook & Campbell, 1979). Quantitative research is research in which the data are expressed in the form of numbers and analyzed using statistical method, (Sugiyono, 2018), the main characteristic of quantitative research is the use of numerical data and statistical techniques for analysis. The use of a pretest and posttest allows researchers to measure *within-group changes* as well as *between-group differences* resulting from distinct instructional treatments (Walser, 2014). A *quasi-experimental pretest–posttest control group design* is a research design commonly used in educational and behavioral studies to examine the effect of an intervention when random assignment to groups is not feasible. In this design, participants are divided into at least two groups an experimental group, which receives the intervention, and a control group, which does not and both groups are measured before (pretest) and after (posttest) the intervention (Creswell & Creswell, 2018). For example, Pandey et al. (2019) applied a quasi-experimental pretest–posttest control group design to evaluate the impact of a structured physical activity program on children's motor skill competence, demonstrating significant improvements in the experimental group compared to the control group.

Cooperative learning, grounded in theories of positive interdependence and individual accountability, has been shown to enhance both academic performance and social outcomes in physical education contexts (Johnson, Johnson & Holubec, 2017). Recent systematic reviews also support its effectiveness in elementary physical education settings (Berabo et al., 2024). Inquiry learning, by engaging students in active problem-solving and discovery processes, has been associated with improvements in critical thinking, scientific reasoning, and conceptual understanding when compared to traditional instruction (Alfieri et al., 2011; Nasution & Mihardi, 2025; Kawuwung et al., 2025). Comparative studies further highlight how different instructional models, such as inquiry and cooperative learning, can yield distinct impacts on student learning outcomes in quasi-experimental designs (Ela Sari, 2023).

3. RESULT AND DISCUSSION

Result

3.1 Descriptive Statistics

The study examined the effects of cooperative learning and inquiry-based learning on elementary students' understanding of throwing and catching skills. Descriptive statistics indicated improvement in both groups. The cooperative learning group had a mean pretest score of 63.2 and a posttest mean of 81.7, whereas the inquiry-based learning group improved from a pretest mean of 62.9 to a posttest mean of 86.4. This shows that both learning models enhanced students' understanding, with the inquiry-based approach yielding slightly higher gains. The descriptive results are summarized in Table 1:

Table 1. *Descriptive statistics of students' understanding in throwing and catching skills*

Learning Model	Pretest Mean	Posttest Mean	Gain (Post – Pre)
Cooperative Learning	63.2	81.7	18.5
Inquiry-Based Learning	62.9	86.4	23.5

From the table, it is evident that both groups showed substantial improvement, but the inquiry-based learning model demonstrated a greater gain (23.5 points) compared to the

cooperative learning model (18.5 points), suggesting a stronger impact on conceptual understanding.

3.2 Paired Sample t-Test

To determine whether the improvements within each group were statistically significant, a paired sample t-test was conducted. Both learning models showed significant improvement from pretest to posttest ($p < 0.05$).

Table 2. *Paired t-test results for pretest and posttest scores*

Learning Model	t-value	df	p-value	Significance
Cooperative Learning	12.37	29	0.000	Significant
Inquiry-Based Learning	15.22	29	0.000	Significant

The t-test results confirm that both instructional models effectively improved students' understanding of throwing and catching skills.

3.3 ANOVA Test

A one-way ANOVA was performed to compare the effectiveness between the two learning models. The analysis showed a significant difference in posttest scores: $F = 4.81$, $p = 0.03$.

Table 3. *ANOVA results comparing the effectiveness of cooperative and inquiry-based learning models*

Source of Variation	F	p-value	Significance
Between Groups	4.81	0.03	Significant
Within Groups	–	–	–

This result indicates that the inquiry-based learning model was more effective than cooperative learning in enhancing students' conceptual understanding of throwing and catching skills.

Discussion

The findings suggest that inquiry-based learning promotes active exploration, problem solving, and reflection, which leads to higher conceptual gains among students. During the study, students in the inquiry group were observed to ask more questions, experiment with different techniques, and critically analyze their performance, demonstrating heightened engagement and cognitive involvement (Dessani, Wandi, & Gusmaneli, 2025; Lazonder & Harmsen, 2016; Andriana, Marlina, & Julianti, 2022). In contrast, cooperative learning emphasized collaboration, teamwork, and social responsibility, fostering group cohesion and mutual support. While it strengthened social dynamics and encouraged positive interdependence, the model did not produce as high individual cognitive gains as inquiry-based learning (Johnson, Johnson, & Holubec, 2014; Berabo et al., 2024; Lu et al., 2021; Widjaja, Hidayat, & Qoriawan, 2023).

Combining both instructional models could offer a balanced pedagogical approach in physical education. Cooperative learning nurtures students' social skills, respect for peers' opinions, and sportsmanship, while inquiry-based learning enhances critical thinking, problem-solving skills, and conceptual understanding (Piaget, 2020; Asriani, Hakim, & Efwinda, 2021; Rejeki, 2024). This synergy aligns with constructivist learning theory, which

views learners as active participants in constructing knowledge through experience and social interaction (Piaget, 2020; Creswell & Creswell, 2018; Arikunto, 2019).

Previous research supports the effectiveness of inquiry-based learning for enhancing understanding of motor skills, such as throwing and catching, in physical education. Inquiry encourages learners to discover concepts independently through experimentation and reflection, leading to deeper understanding and better skill transfer (Minner, Levy, & Century, 2010; Dessani et al., 2025). Cooperative learning, meanwhile, has been shown to increase motivation, participation, and positive interpersonal behavior, which are critical for collaborative physical activities (Iglesias, Fernandez Rio, & Rodríguez González, 2023; Lathifa, 2024; Yang et al., 2021). Andriana, Marlina, & Julianti (2022) specifically demonstrated that inquiry-based learning led to higher performance gains in volleyball overhand serve skills compared to cooperative learning, confirming the cognitive advantage of inquiry approaches.

In practical terms, integrating both models allows educators to maximize both cognitive and social outcomes. During lessons, inquiry-based activities can be used to challenge individual thinking and problem solving, while cooperative tasks foster teamwork, communication, and peer support. Such integration not only improves fundamental motor skills but also cultivates life skills like collaboration, responsibility, and strategic thinking (Barnett & Henderson, 2022; Riszxi & Yuwono, 2025; Wall & Brown, 2017). Overall, this combined approach offers a holistic framework for enhancing students' learning experiences in physical education, aligning with modern educational standards that emphasize active, student-centered, and socially interactive learning environments (Asrobanni et al., 2024; Yuliawan et al., 2025).

4. CONCLUSION

Both cooperative and inquiry-based learning models positively influenced students' understanding of small ball throwing and catching skills at SD Negeri 33 Lubuk Linggau. Both approaches were effective in improving conceptual knowledge as well as practical performance. However, analysis showed that the inquiry-based model was more effective, reflected in higher posttest scores. This model enables students to learn through direct experience, observation, and discovery, promoting active engagement and deeper thinking.

The cooperative model also offered important social and affective benefits, including teamwork, responsibility, and communication. In physical education, it supports character development, fostering sportsmanship and respect. Each model has distinct strengths, and alternating them allows teachers to provide balanced, enjoyable, and meaningful learning experiences.

The study's limitations include a small sample size (one school) and a short intervention period. Future research should involve larger populations, longer treatment durations, and consider affective variables such as motivation and attitudes. Additionally, exploring the combined use of cooperative and inquiry models could reveal their integrated effects on learning outcomes and motor skill development.

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hoped that this study will contribute to the improvement of physical education in elementary schools and serve as a useful reference for future research.

6. REFERENCES

Andriana, A., Marlina, R., & Julianti, R. R. (2022). *Perbandingan model pembelajaran inkuiri dengan model pembelajaran kooperatif terhadap keterampilan servis atas bola voli.* JOSSAE (Journal of Sport Science and Education), 6(2), 181–188. https://doi.org/10.26740/jossae.v6n2.p181-188

Arikunto, S. (2019). *Prosedur penelitian: Suatu pendekatan praktik* (Revised ed.). Rineka Cipta.

Asriani, R., Hakim, A., & Efwinda, S. (2021). Efektivitas model pembelajaran inkuiri terbimbing untuk meningkatkan kemampuan berpikir kreatif siswa SMA pada materi momentum dan impuls. *Jurnal Literasi Pendidikan Fisika (JLPF), 2*(1), 34–43.

Asrobanni, N., Lestari, H., Rukiyah, S., & Rohmadhawati, D. A. (2024). Application of problem-based learning with the teaching at the right level approach to improve student learning outcomes. *Jurnal Sains Student Research, 2*(2), 45–54.

Barnett, L., & Henderson, S. (2022). *Development of fundamental motor skills in children: Implications for physical activity participation*. Routledge.

Barnett, L., Lai, S. K., Veldman, S. L., Hardy, L. L., Cliff, D. P., Morgan, P. J., ... & Lubans, D. R. (2020). Correlates of gross motor competence in children and adolescents: A systematic review and meta-analysis. *Sports Medicine, 50*(3), 541–565. https://doi.org/10.1007/s40279-019-01203-6

Berabo, R. H., et al. (2024). Systematic literature review: Cooperative learning model in elementary school physical education. *JIME*. https://ejournal.mandalanursa.org/index.php/JIME/article/viewFile/6570/4723

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Dessani, Y., Wandi, & Gusmaneli. (2025). Inquiry learning strategies in Islamic education. *Reflection: Islamic Education Journal, 2*(2), 316–330.

Iglesias, D., Fernandez-Rio, J., & Rodríguez-González, P. (2023). Cooperative learning in physical education: A research overview. *Apunts Educación Física y Deportes, 151*, 88–93. https://doi.org/10.5672/apunts.2014-0983.es.(2023/1).151.09

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (2014). *Cooperative learning in 21st century*. Edina, MN: Interaction Book Company.

Lathifa, N. N. (2024). Cooperative learning strategies in increasing learning motivation. *CENDEKIA: Journal of Social, Language, and Education Sciences, 4*(1), 31–38.

Lazonder, A. W., & Harmsen, R. (2016). Meta-analysis of inquiry-based learning: Effects of guidance. *Review of Educational Research, 86*(3), 681–718. https://doi.org/10.3102/0034654315627366

Lopes, V. P., Rodrigues, L. P., Maia, J. A., & Malina, R. M. (2021). Motor coordination as predictor of physical activity in childhood. *Scandinavian Journal of Medicine & Science in Sports, 31*(4), 755–764. https://doi.org/10.1111/sms.13853

Lu, K.-H., Chen, R., Chen, X., & Yang, C. (2021). The efficiency of cooperative learning in physical education on the learning of action skills and learning motivation. *Frontiers in Psychology, 12*, Article 717528. https://doi.org/10.3389/fpsyg.2021.717528

Minner, D. D., Levy, A. J., & Century, J. (2010). Inquiry-based science instruction—What we know and what we need to learn. *Journal of Research in Science Teaching, 47*(3), 373–396. https://doi.org/10.1002/tea.20347

Oja, L., et al. (2022). *Physical Activity and Sports Participation among Adolescents*. *International Journal of Environmental Research and Public Health, 19*(10), 6235.

Pandey, A., Sharma, V., & Singh, A. (2019). Effect of structured physical activity on motor competence in children: A quasi-experimental study. *Journal of Physical Education and Sport, 19*(2), 785–791.

Piaget, J. (2020). *Educational psychology: Theory and practice* (13th ed.). Pearson Education.

Priyanto, D. (2020). *SPSS: Practical data processing*. ANDI Offset.

Rejeki, R. (2024). Pengaruh model pembelajaran inkuiri terhadap hasil belajar pendidikan jasmani olahraga dan kesehatan di SD Negeri 009 Rambah Hilir. *Journal Sport Rokania, 4*(2). https://doi.org/10.56313/jsr.v4i2.379

Rengifo, A. F., Preciado, J. P., & Velandia, F. (2018). The impact of cooperative learning on academic performance in secondary schools. *Educational Psychology Review, 30*(1), 145–166. https://doi.org/10.1007/s10648-017-9413-2

Riszxi, I. M., & Yuwono, B. (2025). Efforts to improve manipulative movement learning outcomes through throw and catch games. *Journal of Physical Education, 5*(3), 5119–5125.

Rivilis, I., Carson, V., Lehtonen, R., & Veugelers, P. J. (2020). The relationship between motor skill competence and physical activity in children: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity, 17*(1), 1–16. https://doi.org/10.1186/s12966-020-00967-7

Rizqie, R. W., Widiyatmoko, F. A., & Maliki, O. (2025). *The meaning of sport and physical activity from a youth perspective*. *Sriwijaya Journal of Sport, 4*(2), 98–112. https://doi.org/10.55379/sjs.v4i2.23

Robinson, L. E., Stodden, D. F., Barnett, L. M., Lopes, V. P., Logan, S. W., Rodrigues, L. P., & D'Hondt, E. (2019). Motor competence and its effect on positive developmental trajectories of health. *Sports Medicine, 49*(12), 1733–1749. https://doi.org/10.1007/s40279-019-01138-3

Siantoro, G., & Khamidi, A. (2024). Balance and coordination abilities in elementary school students. *Jambura Health and Sport Journal, 6*(2), 58–65.

Sugiyono. (2018). *Metode penelitian kuantitatif, kualitatif, dan R&D* (ed. 26). Bandung: Alfabeta.

Sugiyono. (2021). *Educational research methods: Quantitative, qualitative, and R&D approaches*. Alfabeta.

Valentini, N. C. (2023). *Fundamental movement skills and child development: A comprehensive overview*. Springer Nature.

Wall, C. R., & Brown, T. (2017). Throwing and catching in early childhood: Developmental trajectories and intervention strategies. *Journal of Motor Learning and Development, 5*(2), 123–138. https://doi.org/10.1123/jmld.2016-0021

Widjaja, I. P., Hidayat, T., & Qoriawan, Y. (2023). *Upaya peningkatan hasil belajar keterampilan lempar dan tangkap menggunakan model pembelajaran cooperative learning.* Riyadhoh: Jurnal Pendidikan Olahraga, 6(1), 136–142. https://doi.org/10.31602/rjpo.v6i1.11482

Widyanto, Z., Qomarrullah, R., & Tebai, S. (2025). The implementation of the jigsaw-type cooperative learning model to enhance students' motivation and participation in physical education. *ACTIVE: Journal of Physical Education, Sport, Health and Recreation, 14*(2). https://doi.org/10.15294/active.v14i2.28474

Yang, C., Chen, R., Chen, X., & Lu, K.-H. (2021). *The efficiency of cooperative learning in physical education on the learning of action skills and learning motivation. Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2021.717528

Yuliawan, E., Lesmawati, A., Putra, R. M., Kurniawan, B., & Yudhistira, S. A. (2025). Studi literatur tentang efektivitas model pembelajaran kooperatif dalam meningkatkan keterampilan gerak dasar pada peserta didik. *Pendas: Jurnal Ilmiah Pendidikan Dasar, 10*(4), 90–104.