

EFFECTIVENESS OF NET GAMES LEARNING MODEL ON AFFECTIVE RESPONSES OF GRADE V ELEMENTARY SCHOOL STUDENTS

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ABSTRACT

Physical education learning in elementary schools requires an innovative and enjoyable approach to increase students' affective engagement during the learning process. Net Games learning, particularly pickleball-based activities, has the potential to create active, interactive, and meaningful learning experiences for students. This study aimed to determine the effectiveness of the pickleball-based Net Games learning model on the affective responses of fifth-grade elementary school students. This study employed a quantitative approach using a one-group post-test only design involving 50 fifth-grade elementary school students.

The research instrument was an Affective response questionnaire consisting of five indicators: joyful expression, learning satisfaction, voluntary participation, enjoyment, and willingness to repeat learning activities. Instrument validity was evaluated through expert judgment, while reliability testing using Cronbach's Alpha showed a coefficient of 0.89, indicating high reliability. Data were analysed using descriptive statistics and the One-Sample Wilcoxon Signed Rank Test with the assistance of SPSS version 25. The findings revealed that students' affective responses were categorised as effective to very effective, with an overall mean score of 3.44. The Wilcoxon test showed a significant result ($p < 0.05$), indicating that the Net Games learning model effectively improved students' affective responses. Students demonstrated positive emotional engagement, active participation, and strong motivation to repeat the learning activities. The pickleball-based Net Games learning model was effective in enhancing elementary school students' affective responses in physical education learning through enjoyable, active, and interactive learning experiences.

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INTRODUCTION

Approach learning based games (game-based learning) are believed capable create experience learn more meaningful and enjoyable for participant educate age school basic approach This Give chance to student For Study through active, creative and interactive activities so that the learning process No only focuses on results, but also on experience

experienced learning students. Games allows student actively involved, interacting social, as well as express emotion positive during learning ongoing. Activities based game in learning can increase involvement active , interaction social , as well as emotion positive students , who ultimately contribute to increasing interest Study (Imawati & Maulana, 2021) . In addition, the use of game in learning is also capable help student understand draft with more easy, Because material delivered through interesting and close activities with world child. In the context learning Physical Education, Sports, and Health (PJOK), approach based game own very relevant tall Because characteristics of the PJOK subject which emphasizes activity movement, cooperation, sportsmanship, and development skills motoric .

Effective PJOK learning methods , including activity based games , can increase involvement active and interactive social student as well as create experience positive learning , which contributes to the formation of discipline Study (Murjani, 2025) . Packaged learning in form the game is also capable reduce student boredom to activity monotonous physical so that student become more enthusiastic follow learning . With Thus , the use of game No only support achievement aspect psychomotor , but also helpful development aspect affective and social student .

One of form potential game implemented in PJOK learning is game net- based (net games). Games net -based is activity games that use barrier in the form of a net and demanding coordination movement, precision, strategy, and Work The same between players. In the context of education physical, games net -based (net games) is one of the form Potential activities Because blend element coordination movement, work equal, and healthy competition (Harvey & Jarrett, 2014). In addition , the game as a learning medium can increase interactivity and motivation student so that support use activity like net games in learning (Martins et al., 2024). Activity game this also provides experience challenging learning However still pleasant for student school base.

However thus, some type net games like tennis field or badminton often need facilities, techniques, and capabilities physique certain things that have not been fully in accordance with characteristics student school basis. Therefore that, is necessary alternative form more net games simple, fun, safe, and easy applied in the environment school basic. One of the solution Potential is through pickleball net game. The sport of pickleball is game results modification from badminton, tennis table tennis and tennis field with use field the same size badminton, net like tennis, plastic ball hollow (wiffle ball) like a floorball, as well as racket shaped board flat (paddle). Characteristics A simple, easy pickleball game studied,

and not need ability too much technique complex make sport This suitable applied to Students school basic. In addition to being able to increase activity physique students, the game of pickleball also has the potential develop motor coordination, concentration, work the same, and a sense of trust Self Student during the PJOK learning process.

Therefore net *pickleball* game own potential big for implemented in schools base Because:

1. Simple and easy played. Rules game easy understood children , even for beginners who haven't Once play sport *pickle* (Cerezuela et al., 2023).
2. Adaptive to limitations facilities. The game Can carried out in the field school, hall, or page without need equipment special.
3. Fertilize collaboration and sportsmanship . Because it is played in pairs or team small , students trained For cooperate and communicate .
4. Growing pleasure learning . Games This emphasize element recreational and exploratory , not competition solely .

With characteristics said , *pickleball* can become alternative innovative for conventional net games that have been This implemented physical education teacher , as well as answer challenge monotonous and less learning interesting at school basic . Modified and adapted net games learning model with characteristics student school base great opportunity to increase response affective student to physical education learning .

Response affective is component important in learning Because related close with motivation intrinsic students . According to theory self-determination , experience Study capable fulfil need base will competence , autonomy , and connectedness social will increase feeling joy and involvement students on an ongoing basis (Yang et al., 2025). Therefore that , development and implementation model net games learning need evaluated No only from aspect eligibility , but also from its effectiveness in increase response affective students . Based on background behind said , research This aim For analyze effectiveness model net games learning to response affective student class V school base.

Although various studies have shown that game-based learning can increase student motivation and engagement in physical education, most previous research has focused on motor skills and psychomotor learning outcomes. Research specifically examining the effectiveness of the pickleball-based Net Games model on the affective responses of elementary school students is still relatively limited. Thus, there is a research gap regarding the development of a Physical Education (PJOK) learning model that emphasizes not only

motor skills but also students' emotional experiences and affective engagement during the learning process.

The urgency of this research lies in the importance of creating PJOK learning that can increase intrinsic motivation, enjoyment, and active participation in elementary school students. Monotonous PJOK learning often leads to low student enthusiasm for physical activity at school. Therefore, learning innovations are needed that are more interactive, enjoyable, and appropriate to the developmental characteristics of elementary school children.

The scientific contribution of this research lies in the development of the pickleball-based Net Games model as an innovative learning approach to enhance students' affective responses in physical education. This research provides empirical evidence regarding the effectiveness of game-based learning on students' affective aspects and strengthens the study of student-centered learning in the context of elementary school PJOK.

RESEARCH METHODS

This study employed a quantitative approach using a one-group post-test only design to evaluate the effectiveness of the pickleball-based Net Games learning model on students' affective responses in physical education learning. The subjects consisted of 50 fifth-grade elementary school students selected purposively based on the characteristics required in this study.

The research instrument was an Affective response questionnaire developed based on indicators of affective engagement in physical education learning, including joyful expression, learning satisfaction, voluntary participation, enjoyment, and willingness to repeat learning activities. The affective indicators were adapted from the self-determination theory proposed by Richard Ryan and Edward Deci as well as affective learning indicators in physical education studies.

Instrument validity was tested through expert judgment involving two physical education lecturers and one learning evaluation expert. The validation results indicated that the instrument was appropriate for data collection. Instrument reliability was tested using Cronbach's Alpha and obtained a coefficient value of 0.89, indicating high reliability. The research procedure was conducted in several stages:

1. Preparation stage, including instrument development, validation testing, and learning design preparation.

2. Implementation stage, where students participated in pickleball-based Net Games learning activities during physical education classes.
3. Data collection stage using affective response questionnaires after the intervention was completed.
4. Data analysis stage using descriptive statistics and the One-Sample Wilcoxon Signed Rank Test with SPSS version 25.

The Wilcoxon test was selected because the data were ordinal and did not assume normal distribution.

RESULTS AND DISCUSSION

Results

1. Statistics Descriptive (SPSS Output)

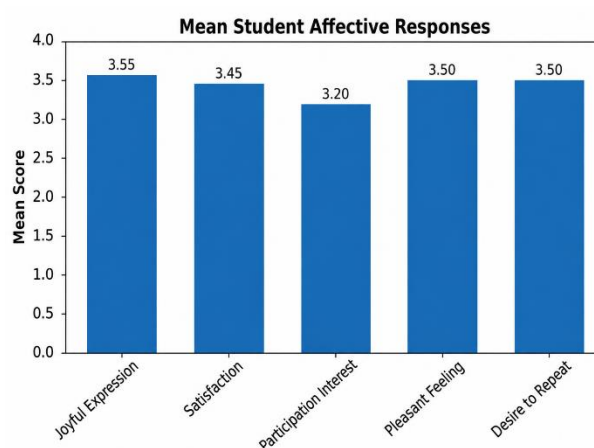


Table 1. Statistics Descriptive Response Affective Student

Indicator	Mean	Median	Mode	Category
Happy Expression	3.56	4	4	Very Effective
Satisfaction	3.44	3	3	Effective
Participation Voluntary	3.18	3	3	Effective
Satisfaction	3.52	4	4	Very Effective
The Desire to Repeat	3.5	4	4	Very Effective
Average Total	3.44	3	3-4	Effective - Very Effective

Criteria Effectiveness (Scale 1-4):

- 1.00-1.75 = Ineffective
- 1.76-2.50 = Less Effective
- 2.51-3.25 = Effective
- 3.26-4.00 = Very Effective

Net Games Effectiveness Test

(One-Sample Wilcoxon Signed Rank Test)

Hypothesis:

- H_0 : Median response student ≤ 3.00 (Net Games not effective)
- H_1 : Median response students > 3.00 (Net Games effective)

Test Value = 3.00

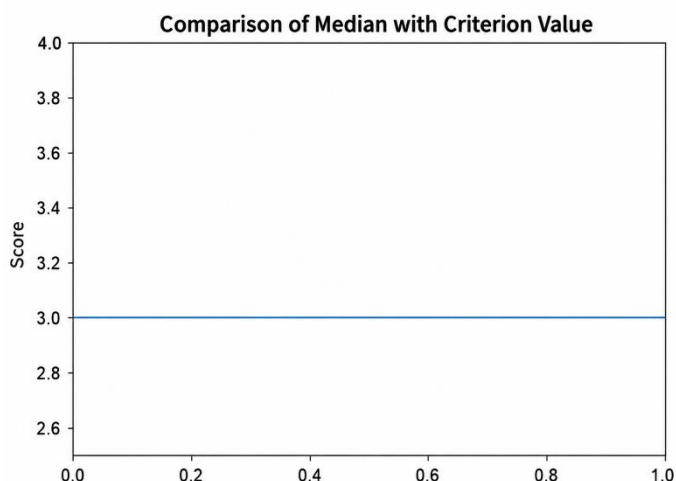


Table 2. Wilcoxon Test Results

Variables	Z	Asymp . Sig. (2-tailed)	Decision
Total Affective Score	-6,214	0,000	H_0 rejected

Because **Sig. < 0.05**, then **Net Games proven effective** increase response affective student fifth grade elementary school.

2. Interpretation Effectiveness

Analysis results statistics show that Physical Education learning using *the Net Games Pickleball* model give impact positive to aspect affective students. The median value of all indicator is in the category agree to strongly agree, with The Wilcoxon test results show significant difference to mark criteria effectiveness ($p < 0.05$). With Thus, Net Games learning is stated effective in increase expression happy, satisfied learning, participation voluntary, satisfaction, and desire student for repeat learning.

Analysis results descriptive show that response affective student to learning net games is in categories effective to very effective. The average value of the total response high affective indicates that student feel experience fun and meaningful learning during follow Net games- based physical education learning. Indicators expression joy and

satisfaction get score highest, which shows that activity game capable awaken emotion positive student during learning ongoing.

Findings This reinforced by the results of the Wilcoxon test which shows mark significance $p < 0.05$, so in a way statistics can stated that effective net games learning increase response affective student compared to mark criteria effectiveness. The findings are consistent with previous studies indicating that game-based physical education learning significantly enhances students' enjoyment, engagement, and active participation during the learning process (Ezeddine et al., 2025). Modified game with simple rules and appropriate equipment with ability student school base allows student feel more believe self and comfort in participate .

From the perspective theory motivation , net games learning give room for student For experience autonomy in play, feel competence through success do movement , and build connectedness social with peers . Positive emotional experiences during learning are considered important factors in enhancing students' intrinsic motivation and positive affective responses. Students who experience enjoyable and meaningful learning environments tend to demonstrate higher engagement, satisfaction, and sustained participation in learning activities (Grassinger et al., 2024). With Thus , the effectiveness of net games in study This No only nature practical , but also has runway strong theoretical in study psychology education and education physical .

Discussion

Based on results research , indicators expression happy get highest mean value of 3.56 with category very effective . Findings This show that participant educate feel happy and enjoy process applied learning . The height expression happy indicates that approach learning based game capable create atmosphere learn more fun and not monotonous . The research conducted by Suwandi , Ridwan, and Muhammad stated that approach fun game can increase motivation Study students significantly Because student feel more comfortable and enthusiastic during follow Physical Education (Muhammad Suwandi, Mochamad Ridwan, 2026).

In addition , game -based learning give experience interactive learning so that student more active in follow activity learning . This is in line with Dese et al. 's research explains that learning based game capable increase motivation and skills movement base student school base through fun activities (Dese et al., 2025). Indicator satisfaction get mean value of 3.44 with category effective . This result show that student feel satisfied to process

learning carried out . Satisfaction Study appear Because student No only become object learning , but also engaging active in activity demanding game interaction social and cooperation . Research Komalasari et al. showed that use of modified learning media in PJOK able increase motivation and results Study student Because learning become more interesting and appropriate with characteristics child (Komalasari et al., 2025). Findings this is also reinforced that game based culture can increase motivation and enthusiasm student school base in PJOK learning (Ainur, 2025) .

On the indicator participation voluntary obtained mean value of 3.18 with category effective . This result show that most of the students follow learning without coercion and possession desire Alone For involved in activity games . Participation voluntary become Wrong One indicator important success learning based game Because student feel activities carried out in accordance with needs and interests They . Research by Arifin et al. proves that implementation game traditional in PJOK learning can increase motivation Study students significantly Because student feel more free and active during process learning ongoing (Arifin, 2025). In addition , innovation game in PJOK learning is also proven increase involvement students and make they more enthusiastic follow activity learning (Jhoni, 2026). Indicators of satisfaction get mean value of 3.52 with category very effective . This is show that student feel get experience positive and enjoyable learning during follow learning . Satisfaction in learning usually appear when student capable finish challenge games , working together with friends, and get experience Interesting new research by Setiawan and Soeharto explain that learning based game capable create experience learn more pleasant so that increase motivation Study student school base (Setiawan, 2020). Approach the game is also capable reduce saturation student compared to learning conventional which tends to monotonous indicator desire repeat get mean value of 3.50 with category very effective . This result show that student own interest tall For follow return activity the same learning . The height desire repeat show that learning succeed create experience positive and meaningful learning for students . Umami et al. 's research explains that implementation game small in PJOK learning can increase motivation Study student Because activity game give challenge at a time pleasure in learning . Game-based learning effective increase motivation and engagement student Because learning felt more interesting compared to traditional methods (López-fernández et al., 2023) .

Activity game give experience emotional positive during process learning ongoing . Activities play allows student For move active , interactive with friends, as well as feel atmosphere healthy competition so that learning become more interesting game in

education physical capable create motivating learning climate and generate emotional intensity more positive high in students school base (Alcaraz-muñoz et al., 2020) . Learning based the game also provides influence to improvement motivation intrinsic student in follow Physical Education activities . Students seen more active and have desire Alone For participate in game without existence pressure from teacher . Activities physically packaged through approach pleasant can increase positive affective variables so that participant educate more motivated For involved active in learning (Chen et al., 2021) . Positive emotions own connection direct to improvement participation student in activity physical . The more pleasant activity learning that is carried out , then the more high involvement student in follow process learning .

Conditions the in accordance with results study this , where students show involvement active during follow learning Net Games pickleball . Improvement aspect affective students are also influenced by characteristics game Simple and easy pickleball played . Use field small , light plastic balls , as well as no game rules too complex make student more fast understand games and more believe self when follow activity learning . Situation This help student get experience success in play so that a feeling of satisfaction and comfort arises during learning ongoing . Experience activity pleasant physical in education physical can increase joy of running and motivation student in follow activity sports at school (Stöckel & Grimm, 2021) . Atmosphere fun learning own influence to improvement enjoyment and motivation participant educate in activity physique . In context study this game pickleball give experience learning that is not monoton so that student feel more comfortable and enjoy process Physical Education learning . Net Games pickleball learning also provides chance to student For interact actively social with peers . Activities game require student work together, communicate , and help each other support during game ongoing . Interaction social the become Wrong One supporting factors development aspect affective student Because student feel become part from group during learning ongoing . Affective states in activity sports and education physical own connection close with motivation , engagement , and habits activity physique participant educate (Jekauc et al., 2021) . Experience emotional positive in activity physique can form habit positive student to learning sports . This is support results study that student own desire For repeat return activity learning pickleball at the meeting next .

From the corner view learning based games , Net Games pickleball activities are also capable increase curiosity and challenge student during learning ongoing . The existence of elements competition Healthy make student more focused and interested follow Game -

based games learning can increase activity area brain related with emotions and rewards so that participant educate become more interested in follow process learning (Greipl et al., 2021). Learning based game No only impact on increasing ability cognitive , but also affects involvement emotional students significantly . In the study this , involvement emotional student seen from height expression happy and enthusiastic during follow activity pickleball . In addition to creating atmosphere fun learning , model learning Net Games pickleball also helps reduce saturation student in follow PJOK learning . Learning that is too emphasize exercise repetitive techniques often time make student get bored quickly and less motivated . On the other hand , the activity game give variation movement and experience learn more dynamic so that student more focus during learning ongoing . Activities exergaming and learning based game own benefit social and educational Because capable increase involvement physical and psychological participant educate simultaneously (Rüth & Kaspar, 2021). Activities based game capable create experience learn more interesting and supportive development social student during process learning ongoing . Conditions This in accordance with results study that student showing a sense of satisfaction and comfort during follow learning pickleball .

Learning based game capable create experience fun learning , improving motivation intrinsic , strengthening interaction social , as well as foster a sense of satisfaction and interest Study students . Activities The game is simple , interactive , and appropriate with characteristics development child school base become factor main supporting success learning said . With Thus , the Net Games pickleball model can made into Wrong One alternative innovation PJOK learning for increase quality process learning at a time support development affective participant educate optimally.

CONCLUSION AND SUGGESTION

Conclusion

Based on results research and discussion that has been done , can concluded that implementation model learning Net Games pickleball in learning Physical Education , Sports, and Health (PJOK) provides impact positive to aspect affective student school basic . This is seen from results data analysis that shows that indicator expression happy , satisfied learning , participation voluntary , satisfaction , and desire repeat activity learning is in the category effective until very effective . Findings the show that learning based game capable create atmosphere learn more fun , active , and interactive so that student feel comfortable during follow process learning .

Net Games pickleball learning model give experience different learning compared to conventional physical education learning . Activities games involving movement active , cooperation , communication , and competition Healthy make student more enthusiastic in follow learning . Students No only become recipient material passively , but also involved direct in every activity the game being played . Conditions This impact on increasing motivation learning , confidence self , as well as involvement emotional student during process learning ongoing .

In addition , the characteristics game Simple , easy pickleball studied , as well as use relatively safe and lightweight equipment to be factor supporters success learning . Students more easy understand the rules of the game and be able to participate active without feel Afraid do error . Situation the help student get experience positive and enjoyable learning so that give rise to a sense of satisfaction as well as interest For follow return learning at the meeting next .

Research result this also shows that approach learning based game own great potential for increase quality physical education learning in schools basic . Fun learning capable build connection good social between students , improving cooperation , as well as help student develop attitude sporty and responsible answer during play . With Thus , the Net Games pickleball model No only contribute to development skills movement students, but also supports development aspect affective and social participant educate comprehensively .

Suggestion

Based on results research that has been done , there is a number of suggestions that can be given to various parties so that the implementation model learning Net Games pickleball in PJOK learning can walk more optimal and provide more benefits wide to development participant Educate . Physical Education teachers are advised For start develop more learning innovative with utilise activity game as part main in process learning . Packaged learning through game proven capable increase involvement emotional students , so that Teacher need more creative in create atmosphere fun and not boring learning monotonous . Teachers are also expected capable adapt form game with characteristics development student school basis for students feel comfortable and confident self during follow learning .

In addition , teachers need give equal opportunity to all over student For involved active in game pickleball without differentiate ability students . An inclusive approach will

help student feel appreciated and motivated For participate in learning . Teachers are also advised For give motivation , praise , and appreciation simple to student during learning takes place so that students the more enthusiastic follow Physical Education activities . Use of simple and easy game rules it is also necessary to understand attention so that students No experience confusion moment play . In its implementation , teacher should more prioritize process involvement student compared to results end game so that learning truly become experience fun learning for participant educate .

For researchers next , research This expected can become reference in develop further study deep about use pickleball net games model in Physical Education learning . Research next can done with amount larger sample , levels different education , as well as variables further research wide like motivation learning , skills social , fitness physical and abilities motor students . In addition , research next also can develop variation model game more pickleball interesting and appropriate with need participant educated at school base .

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