The Development of Mikro Tenis Games for Improving Forehand Technique

Ricko Irawan[1*], Sesaria Nisa Afifi[2], Tri Nurharsono[1]

[1]Department of Health Physical Education and Recreation, Faculty of Sport Science Semarang 50229, Indonesia Semarang State University

[2]Semarang Senior High School 052, Departement of Education of Culture, Indonesia Semarang Central Java
[*]Corresponding Author: rickoirawan@mail.unnes.ac.id

Abstract. The purpose of this study is to develop a tennis game product that can be used to train forehand and baghand strokes by using infrastructure other than tennis courts such as asphalt, paving, and other vacant land. This development research uses a procedural development model, because this model is descriptive, which is a procedure that describes the steps that must be followed in producing a product. In this study, the steps used in developing the tennis microgame model include: (1) conducting product analysis (2) developing an initial product for tennis microgames (3) expert validation (4) field trials (5) product revision. This study used an experimental design as a trial design involving 43 students. The instruments used are interviews, observations, questionnaires and documentation. The data analysis technique uses percentages to assess the feasibility, quality and acceptability of the product. The results of the study: 1) Mikro Tenis games can be used on vacant land, asphalt or pasving, 2) tennis micro games can be used to practice forehand hitting techniques.

Key words: product development; mikro tenis; forehand technique.

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INTRODUCTION

In tennis, especially at the basic level or beginners, normal training is required at least 3 times a week. In one training meeting, it ranges from 1.5 – 2 hours so that the tennis skills will increase. Because basically the principle of exercise is that the more often we carry out the exercise, the faster one's motor skills will be formed.

PJKR FIK Unnes students in semester 4 get 2 credits of court tennis, each credit consists of 170 minutes, so in total in one meeting each class will get 340 minutes. However, in the RPS it was explained that 340 minutes consisted of 100 minutes of lectures and 240 minutes were independent and structured assignments. This means that lecturers must provide structured or independent assignments outside of lecture hours.

In the tennis course, one of the indicators of learning achievement in the course is that students are flexible in doing the forehand and baghand stroke techniques. Therefore, in order for students to be able to perform the forehand and baghand techniques with flexibility, intense and programmed training is needed.

Lecturers as field tennis instructors realize that, in fact on the field, if you only rely on meetings during lectures with a time of 100 minutes with 30-35 students, of course it is very ineffective to improve the quality of student skills, especially at the flexible stage. Therefore, the supporting lecturers in accordance with the RPS must optimize the hours outside of lectures or independent assignments, namely 3 times a week. However, the obstacle in independent/structured assignments that will be carried out by students is the limited availability of tennis courts. Based on the observations and interviews of the research team in the field, it was obtained facts and information that, the use of Dr. Sajoto FIK Unnes is overloaded. Every Monday morning to Sunday, Unnes lecturers and employees. Saturday and Sunday are used for UTC junior club. Every afternoon, tennis SMEs and ICK PKLO are used. Not to mention there is a schedule for each semester of PJKR, PKLO and IKOR lectures. Several other courses such as table tennis and pencak silat also use indoor courts for lecture activities.

Looking at the facts above, it is clear that the availability of places or tennis courts at

FIK Unnes is very minimal and limited because the schedule for using the field is very tight. Based on the above problems, our research team took the initiative to create a product as an alternative solution related to the limited availability of tennis courts at FIK Unnes by developing a Mikro Tenis game model. So that the Mikro Tenis game products can later be used not only on tennis courts, but on other land or open land. However, the function is the same, namely training the basic technical skills of tennis strokes. The Mikro Tenis game is basically the same as the tennis game, which is played individually (Asiqqin et al., 2019). Tennis game using ball and racket (Raibowo, 2018).

The purpose of this research is to make it easier for students to practice their forehand and baghand skills by maximizing the vacant land, thus students do not only rely on the availability of tennis courts. So that this product is expected to be an alternative solution for the limited availability of tennis courts at Semarang State University in particular and at other universities in general.

LITERATURE REVIEW

(Sudarmono et al., 2013) developed the Bavos game for big ball games to overcome the limited allocation of available games. This bavos game also serves as a solution to train the complexity of movement skills.

(Hartono, 2011) developed a multifunctional ball that can be used for learning 3 sports at once, namely football, volleyball and basketball. The size of the multifunctional ball is 66 cm, made of smooth Poly Urhetane Sponge, not slippery, weighs 270 grams, wind pressure 0.250-0.3 and has a reflection of 105-115.

(Hartono et al., 2017) developed an Android-based tool that can monitor short-distance running activities at a low cost, accurate and reliable. This android-based tool can determine the instantaneous speed, stride length and stride frequency characteristic of short-distance running.

(Kusumawardana & Sukadiyanto, 2013) developed a small ball game learning media, namely court tennis for upper-class elementary school students. The purpose of this research is to help overcome the problem of learning resources in the school environment.

(Rachman et al., 2017) developed a ball throwing device to improve the ability to practice tennis. The tool has a very good exercise effectiveness or 83% of the average expert assessment. In addition to relatively inexpensive tools, these tools can be used to practice basic forehand and baghnad techniques, spin and drive.

(Sulaksono, 2021) developed an android-based application called AR Tennis as a learning medium for tennis courses. This application helps students understand the illustrations contained in tennis textbooks. The pictures originally in the book are just still illustrations, with the help of this application the pictures can move.

(Penalva et al., 2021) developed the design and validation of instruments to control the content of technical and tactical training in the field. This instrument was validated by 9 experts and validated by 23 experienced trainers who used examples of tennis exercises on the court.

METHOD

This research uses research and development. According to (Winarno, 2011) development research develops certain products according to the needs of today's society. The procedures used in the Mikro Tenis game include: (1) analyzing the product to be developed (2) developing the initial product for the Mikro Tenis game (3) expert validation (4) product testing, and (5) product revision. The research subjects used 12 students in a small-scale test and a large-scale test with 31 students. Data collection instruments used include observations, interviews, questionnaires, documentation and pulse measurement tests. The data analysis technique used is the proportion to analyze and assess the subject in assessing the quality, quality, and acceptability of the product in the form of data from cognitive, affective, and psychomotor aspects.

RESULTS AND DISCUSSION

The results of research on students related

to the acceptability of Mikro Tenis game products for court tennis learning, obtained a description of the aspects of (1) the feasibility of the game product, (2) the effect of the product on improving the cognitive domain, (3) the effect of the product on improving the affective domain, (4) the effect of the product on the improvement of the psychomotor domain.

The results of the study related to the feasibility of the game product after the students tested the game of the Mikro Tenis product and the students were then given a questionnaire to provide their responses including (1) responses to whether or not the game could be played on empty land, (2) responses to the difficulty or not of the game rules for understood by students, (3) responses to the suitability of the ball used for game products, (4) responses to the suitability of the game as an alternative solution to the lack of court tennis lecture hours. The response to the feasibility of game products can be seen in table 1 below:

Table 1. Student Questionnaire Results about the Eligibility of Game Products

NO	Regarding	Answer	
		Yes (%)	No (%)
1	Responses to whether or not game products can be played on vacant land	97	3
2	Responses to whether or not the game rules are difficult for students to understand	19	81
3	Responses to the suitability of the ball used for game products	94	6
4	Responses to the suitability of the game as an alternative solution to the lack of court tennis lecture hours	97	3

The results of the research on filling out student questionnaires about the effect of the product on improving the cognitive domain of students were assessed through aspects (1) the product was able to provide basic forehand technique knowledge to students, (2) the product was able to provide basic baghand technique knowledge to students. Table 2 can be seen below:

Table 2. Student Questionnaire Results about the Effect of Products on the Improvement of Students' Cognitive Areas

NO.	Regarding	Answer	
		Yes (%)	No (%)
1	The product is able to provide basic forehand technique knowledge to students	93	7
2	The product is able to provide students with basic baghand technique knowledge	93	7

In table 3 it can be seen the results of student questionnaires about the effect of the product on increasing the affective domain of students. The assessment includes (1) the product is able to train students to cooperate with other partners, (2) the product is able to train students to respect opponents, (3) the product is able to train students to share places and equipment with friends. Can be seen in the table below:

Table 3. Student Questionnaire Results about the Effect of Products on the Improvement of Students' Affective Area

NO.	Regarding	Answer	
		Yes (%)	No (%)
1	The product is able to train students to work together with their playing partners	77	23
2	The product is able to train students to respect the opponent	100	0
3	The product is able to train students to share space and equipment with friends	81	19

In the next aspect related to the results of student questionnaires about the effect of the product on improving the psychomotor domain of students, including (1) the product is able to provide basic forehand stroke technical experience to students, (2) the product is able to provide baghand stroke technique experience to students, (3) product able to make the forehand and baghand techniques flexible for students. It can be seen in table 4 below:

Table 4. Student Questionnaire Results about the Effect of Products on the Improvement of the Psychomotor Domain of Students

NO.	Regarding	Answer	
		Yes (%)	No (%)
1	The product is able to provide students with basic forehand technique experience	74	26
2	The product is able to provide students with baghand technique experience	74	26
3	The product is able to make the forehand and baghand techniques flexible for students	97	3

(The discussion chapter is where you delve into the meaning, importance and relevance of your results. It should focus on explaining and evaluating what you found, showing how it relates to your literature review and research questions, and making an argument in support of your overall conclusion.)

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CONCLUSION

The results of preliminary research studies conducted by researchers in several lectures in the PJKR, IKOR and PKLO departments, the results showed that the allocation of learning time for the tennis game was 2 credits or 340 minutes (one meeting), but what happened in the field for tennis courses was implemented in the field. only 100 minutes of effective lecture activities carried out. The remaining 240 minutes are used for independent activities, outside the lecture schedule. This is of course the task of a lecturer to find alternative solutions so that the learning process can be achieved in addition to the limitations of the available field.

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