Analysis of Fundamental Table Tennis Skills Among Physical Education Students: A Descriptive Study of the 2020 Cohort at Universitas Sviah Kuala

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Abstract

Background Table tennis requires a combination of technical, physical, and cognitive skills, which are essential for students in Physical Education, Health, and Recreation (Penjaskesrek) programs. Preliminary observations during table tennis lectures for the 2020 cohort at Universitas Syiah Kuala (USK) indicated limited mastery of fundamental playing skills among students.

Objectives This study aimed to assess the level of fundamental table tennis skills among Penjaskesrek students of the 2020 cohort and to identify specific areas requiring improvement.

Methods A descriptive quantitative approach was employed, using a basic table tennis skills test comprising six components: ball bouncing, forehand stroke, backhand stroke, service, smash, and defensive play. The population consisted of 122 students, and a purposive sample of 20 students was tested. Data were analyzed using mean scores and percentage distributions.

Results The ball-bouncing test showed the highest performance, with 60% of students achieving an "excellent" category. In contrast, forehand (35%), backhand (70%), defense (55%), and smash (65%) tests recorded high percentages in the "very poor" category. The service test showed moderate success, with 20% rated as "excellent." The overall average score for the six tests was 1.75, with 24% of participants classified as "excellent."

Conclusion While certain fundamental skills such as ball bouncing and service are relatively well developed, most students demonstrated deficiencies in forehand, backhand, defensive, and smash techniques. The findings suggest the need for structured training programs, increased practice frequency, and enhanced motivation to improve the overall table tennis performance of Penjaskesrek students.

Keywords: Fundamental Skills, Table Tennis, Performance Assessment, University Students, Descriptive Analysis

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INTRODUCTION

Table tennis, as a dynamic and skill-intensive sport, requires players to master a range of technical abilities, including forehand and backhand strokes, service, smash, and defensive maneuvers (Wang et al., 2020; Hughes & Bartlett, 2002). Mastery of these fundamental skills is essential not only for competitive

performance but also for developing coordination, agility, and overall physical fitness among students (Zhang & Wang, 2019). Observations during the Physical Education and Recreation (Penjaskesrek) courses at Universitas Syiah Kuala revealed that students from the 2020 cohort exhibited limited proficiency in these fundamental table tennis skills, indicating a gap in practical competence.

Given the importance of skill acquisition in table tennis for both academic and physical development, it is crucial to assess the current level of students' abilities to identify strengths and areas needing improvement. This study aims to analyze the fundamental table tennis skills of Penjaskesrek students from the 2020 cohort at Universitas Syiah Kuala. Using a descriptive analytical approach, six skill tests were administered, including ball bouncing with the racket, forehand stroke, backhand stroke, service, smash, and defense. The study population consisted of 122 students (97 male and 25 female), with a sample of 20 students selected for skill assessment. Data analysis involved calculating mean scores and percentages to evaluate students' performance.

The results indicated that the overall skill level of the sampled students fell into a high-performance category, with an average score of 1.75 across the six skill tests, corresponding to a 24% performance percentage. These findings suggest that the majority of Penjaskesrek students in the 2020 cohort demonstrate very good proficiency in fundamental table tennis skills, highlighting the effectiveness of current instructional approaches while also providing a benchmark for future skill development programs.

METHOD

Participant

The participants of this study consisted of students from the Physical Education and Recreation (Penjaskesrek) program, Universitas Syiah Kuala, cohort 2020. The total population comprised 122 students, including 97 males and 25 females. For this study, a sample of 20 students was selected to assess their table tennis skills.

Research Design

This study employed a quantitative descriptive research design aimed at evaluating the fundamental table tennis skills of the participants. Descriptive research is appropriate for systematically and objectively describing the characteristics of a phenomenon or population (Iskandar et al., 2023). The study involved six skill tests: ball bouncing with the racket, forehand stroke, backhand stroke, service, defensive stroke, and smash. These tests were designed to measure students' accuracy, speed, control, and overall skill proficiency in table tennis.

Data Analysis

Data collected from the six skill tests were analyzed using descriptive statistical techniques, including the calculation of mean scores and percentages. The analysis aimed to provide an overall assessment of students' skill levels and identify patterns of performance across the different table tennis techniques.

RESULTS AND DISCUSSION

Results

The assessment of fundamental table tennis skills among Physical Education and Recreation (Penjaskesrek) students from the 2020 cohort showed varying levels of proficiency across six skill tests. The results are summarized in **Table 1** below:

Table 1. Distribution of Table Tennis Skill Levels among Students (n = 20)

Skill Test	Category	Percentage (%)
Ball Bouncing (30 sec)	Very Good	60
	Good	40
Forehand (1 min)	Good	10
	Average	5
	Poor	50
	Very Poor	35
Backhand (1 min)	Average	10
	Poor	20
	Very Poor	70
Service (25 balls)	Very Good	20

	Good	15
	Average	30
	Poor	30
	Very Poor	5
Defense (20 balls)	Average	5
	Poor	40
	Very Poor	55
Smash (25 balls)	Average	30
	Poor	5
	Very Poor	65

As illustrated in **Table 1**, the highest proficiency was observed in the ball bouncing test, where 60% of students achieved a "very good" rating. Conversely, the lowest performance was in the backhand, defense, and smash tests, with 70%, 55%, and 65% of students categorized as "very poor," respectively. The forehand and service tests showed moderate proficiency, with a considerable proportion of students in the "poor" and "average" categories.

These findings indicate that while students demonstrate strong basic ball control, there is a need for targeted training to improve advanced skills, particularly in backhand strokes, defensive techniques, and smashing.

Discussion

From a practical standpoint, coaches at SMAS Fatih Bilingual School should consider implementing a structured preseason conditioning program, complemented by in-season maintenance sessions, to elevate the team's overall aerobic capacity. Emphasis should also be placed on player education regarding nutrition, hydration, and recovery strategies, as these factors can have cumulative effects on endurance and performance.

The present study aimed to assess the fundamental table tennis skills of Physical Education and Recreation (Penjaskesrek) students from the 2020 cohort at FKIP Universitas Syiah Kuala. The assessment was conducted through six skill tests: ball bouncing for 30 seconds, forehand stroke for 1 minute, backhand stroke for 1 minute, service (25 attempts), defensive strokes (20 attempts), and smash (25 attempts), involving a sample of 20 students.

The results indicate that students achieved the highest proficiency in the ball bouncing test (60% "very good") and service test (20% "very good"), while performance in other skill areas was considerably lower. Specifically, four skill tests—forehand (35% "very poor"), backhand (70% "very poor"), defense (55% "very poor"), and smash (65% "very poor")—were classified as "very poor," highlighting weaknesses in more advanced technical skills. This pattern suggests that students are capable of basic ball control but struggle with complex stroke execution, coordination, and tactical responses.

Several factors may contribute to these outcomes. First, the lack of consistent practice outside formal coursework limits students' opportunities to consolidate motor skills and develop game-specific techniques (Ericsson et al., 1993). Second, low motivation and limited interest in table tennis may negatively affect skill acquisition and learning outcomes (Deci & Ryan, 2000). Third, insufficient guidance on technical execution and inadequate exposure to structured drills could hinder the development of proper forehand, backhand, defensive, and smashing skills.

These findings underscore the importance of supplementing formal coursework with regular practice sessions, targeted skill drills, and motivational interventions. Providing additional training programs, encouraging participation in campus tournaments, and promoting effective communication with instructors may help students enhance both technical proficiency and strategic understanding. Furthermore, systematic analysis of students' strengths and weaknesses in each skill test can guide the design of personalized training programs to improve overall table tennis performance.

In conclusion, while the fundamental skills of ball control and basic service are adequate among Penjaskesrek students, advanced skills such as forehand, backhand, defense, and smash require significant improvement. Implementing structured practice routines, motivational strategies, and skill-specific training is essential for achieving higher levels of competency in table tennis.

CONCLUSION

Based on the analysis of six fundamental table tennis skill tests—ball bouncing (30 seconds), forehand stroke (1 minute), backhand stroke (1 minute), service (25 attempts), defense (20 attempts), and smash (25

attempts)—conducted on October 25, 2024, at the Physical Education and Recreation (Penjaskesrek) program, FKIP Universitas Syiah Kuala, the results indicate that the 20 sampled students from the 2020 cohort achieved an average total score of 1.75. When expressed as a percentage, this corresponds to 24% of the maximum possible score.

These findings demonstrate that the table tennis skills of Penjaskesrek students from the 2020 cohort fall into the "very good" category, indicating satisfactory mastery of fundamental techniques. While students performed well in basic ball control and service, some variability in specific skill areas suggests the need for continued practice and targeted training to strengthen advanced skills such as forehand, backhand, defense, and smash. Overall, the study highlights that regular training, motivation, and structured practice programs are essential to further enhance students' table tennis competencies and ensure consistent performance across all fundamental skills.

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AUTHOR CONTRIBUTION STATEMENT

Muhammad Iqbal contributed to the conceptualization of the study, development of the methodology, data collection, and preparation of the original draft. Miskalena was responsible for data analysis, interpretation of results, and reviewing and editing the manuscript. Jul Fajrial provided supervision, validated the methodology, and critically reviewed the manuscript. Sukardi Putra assisted with data collection and provided technical support, while Amanda Syukriadi managed the literature review, references, and manuscript formatting. All authors have read and approved the final version of the manuscript and take responsibility for all aspects of the work, ensuring its accuracy and integrity.

CONFLICT OF INTEREST AND FUNDING

There is no conflict of interest

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