Evaluations of Badminton Shots of Beginner Single Male Players in PB. Bimasakti Ternate

Yuli Astuti Limatahu
STKIP Kie Raha
Ternate, Indonesia

Syahril Adam
STKIP Kie Raha
Ternate, Indonesia
syahril_adam@stkipkieraha.ac.id

Tandiyo Rahayu
Universitas Negeri Semarang
Semarang, Indonesia
tandiyorahayu@mail.unnes.ac.id

Abstract. **This study aims to investigate the percentage of unforced error, error and point in each badminton shot of beginner single male players in PB. Bimasakti Ternate during the match. This study employed a quantitative approach by using descriptive methods. Moreover, the data analysis employed descriptive statistics analysis technique. The data sources were directly from the research subject using a case study of beginner single male players in PB. Bimasakti Ternate. The data collection was conducted in Badminton Stadium of Kalumpang Ternate on June 25th – 26th 2018. Based on the data analysis, it was revealed that total unforced error was 229. The most unforced error occurred in the long serve 13 times with the percentage of 5.68%. The least unforced error occurred during underhand forehand lob and underhand backhand lob 1 time with the percentage of 0.44%. The number of total error was 188. The greatest error was found in the forehand lob, underhand backhand lob, and forehand drop shot 1 time with the percentage of 0.53%. The number of total point was 416. The greatest point occurred in the forehand smash for 39 times with the percentage of 9.38%. The smallest point was backhand smash for 1 time with the percentage of 0.24%. The total shot was 833. It was found out that the percentage of unforced error, error and point was as follows: 1) The number of total unforced error was 229 with the percentage of 27.49%. 2) The number of total error was 188 with the percentage of 22.57%. 3) The number of total point was 416 with the percentage of 49.94%. Smash forehand with 39 points was achieved by Fikrullah, 24 points by Aldi, and 21 points by Sarif. Furthermore, Sahrul performed the highest point of forehand drop shot with 18 points. Therefore, it can be concluded from the analysis result that the four players have attacking style.**

Keywords: badminton, evaluation, shot, unforced error, error, point, attack

I. INTRODUCTION

Badminton is a game that mostly uses physical abilities with fast moves and powerful shots performed in several minutes between long rallies (Abian-Vicen et al., 2013). Badminton requires more physical abilities as in the game, there are fast moves in a quite long time. Therefore, a badminton player requires physical abilities and complex moves that can hit the shuttlecock or return it. Badminton players, at a glance, should perform moves such as run fast, sudden stop and immediate move, jump, reach the cock, turn their body quickly, and make wide stride without losing balance. The moves can be seen by using media, such as video, which is used in various studies, one of which is conducted by Usman Nasution, Suryadi Damanik, 2019).

The main role of every badminton player is returning the cock to the opponent 's court from any angle before it drops on his/her own court (Aksan, 2012). Considering that the area to control is beyond the arm's reach that holds a racket, a badminton player should jump or step forward to the best position to make shots to the difficult angel for the opponent. This attempt requires good physical abilities along with the related factors such as reaction speed, move speed, muscles' strength, flexibility, agility, endurance, coordination, accuracy, anticipation and joy during the game (Minna Blomqvist & To, 2000).

The ability to hit the shuttlecock (stroke) is one of the badminton techniques. According to (Grice, 2008), a player is supposed to master stroke techniques properly and correctly in a badminton game to stroke the cock fast, slow, high, flat, or low.

This is important because this game highly depends on the stroke quality. A person who wants to play badminton properly should be able to stroke to cock both from top and bottom using service, lop, dropshot, smash, netting, forehand, and back. All types of stroke should be proper and correct. If a player does not master good stroke techniques and used to performing wrong stroke techniques instead, it will be difficult for him/her to obtain achievement.

A player without quality stroke will have weak points or weaknesses. Correct stroke posture and technique will enable a player to return every shuttlecock from the opponent well, even in the difficult position. Therefore, it is required knowledge to understand stroke techniques, and exercises will be the only solution. In this case, the techniques of hitting cock determine whether a player will win or lose the match. Stroke is the

most important and dominant factor in a badminton game. To evaluate plyers' stroke mathematically, it uses unforced error, error, and point numbers that can create a percentage showing which stroke becomes the primary factor causing loss or win.

Moreover, the change in scores (Federation, 2011), which uses the 21 score system 21 or Rally Point, has also changed the style of badminton, from old style to modern game. Therefore, in badminton game, it is very important to have a prime physical condition which in turn will affect other factors including the technique of seeing the duration of the competition (João Guilherme Cren Chiminazzo, Júlia Barreira, Leandro S. M. Luz, 2018).

Badminton has been familiar and very popular among people, both children and adults. This sport, besides improving physical fitness, also aims to gain achievements. Meanwhile, in North Maluku, sports facilities are still minimal so that it affects the coaching of athletes. Despite the lack of sports facilities, badminton is rapidly developing.

The development of badminton in North Maluku can be seen from several badminton tournaments. For example, Local Student Sports Week (POPDA), Regional Student Sports Week (POPWIL), and National Student Sports Week (POPNAS). In addition, there are also Provincial Championships (KEJURPROV), National Championships (KEJURNAS) and many other tournaments. The athletes who joined the team were under the coach of a well-known club in Ternate.

PB.Bimasakti Ternate is one of the clubs that actively conducts coaching and participates in national and international competitions. The club was established on March 12th, 2000, having Adam Marsaoly and Tjahyana Juliyanto as a formidable and unyielding coach. Although the club is only 18 years old, many achievements have been gained both at national and international levels. The writer is one of the athletes under the coach of PB.Bimasakti Ternate.

Evaluations of badminton strokes based on the study by (Rohman & Wibowo, 2019) are important to accomplish to measure the ability of athletes; therefore, the evaluation step is crucial to investigate the weaknesses and strengths of badminton stroke techniques. Hence, the researchers would like to analyze the techniques of badminton players' stroke during a match. After analyzing the stroke techniques used by the athletes, the obtained results will be used to evaluate the strengths and weaknesses of each person, which in turn functions as a reference for the coach in preparing training programs for each player. This research aims to design, fix, and test the implementation of a program. This work, hopefully, can be useful especially for PB. Bimasakti Ternate.

This leads the researcher to prove whether stroke techniques are the cause of win or loss of a player and whether they are the most important factor in the badminton match, hence, the researcher is interested in conducting "Evaluations of Badminton Strokes of Beginner Single Male Players in PB. Bimasakti Ternate ".

II. METHODS

The design employed in this study was descriptive quantitative without experiments (Maksum, 2012). Researchers did not have the opportunity to provide treatment or manipulate the variables that play a role in the emergence of phenomena, because the phenomena had occurred (ex-post-facto) (Creswell, 2012).

Research Procedure

To obtain data of this study, the research procedure followed the steps by (Winarno, 2004) as follows:

1. PB. Bimasakti was the research object involving 4 people in the beginner group as the sample
2. There was a half-competition match with 4 people as the sample, there were 6 matches in total.
3. The match was conducted in two days.
4. The athletes did a match with the research for several times with the help of a friend to monitor the game and fill out the form of stroke techniques.
5. To obtain real evidence, the researcher employed camera or handycam
6. After the two-day match, the researcher evaluated the stroke techniques of badminton.

Techniques of Data Collection

The techniques of data collection were obtained by filling out the data form, taken directly during the match through observation or research to watch the game and writing the observation data in the form. This type of data collection was used in the study by (Butterworth et al., 2017) to identify the important components in the process of badminton training.

The instruments used were as follows:
1. Camera or handycam.
2. Stationary
3. Data form

Because this study discusses stroke techniques, the researcher needs to create limitations to keep the focus on the goal to obtain the desired results. The respondents were analyzed per individual in each match.

Due to the limitations, the researcher requires people who are familiar with badminton and can play badminton. Therefore, it is needed to provide directions to the people who help the researcher to analyze the data as follows:

1. Long Serve (X1)
   Long serve is when the shuttlecock flies in a high arch to the back area diagonally. This stroke aims to open the game.
2. Forehand Short Serve (X2)
   Forehand short serve is when the shuttlecock is like in a long serve, but does not fly in a high arch,

targetting the front area of the opponent 's court.

3. Backhand Short Serve (X3)
   A stroke is categorized as a backhand short serve when the player hits the shuttlecock using backhand in front of the player's body, it does not reach the high arch, targetting the front area of the opponent's court.

4. Forehand Defensive Lob (X4)
   Forehand defensive lob is when the shuttlecock is overhead on the right side or left side for left-handed players, flying in a high arch, the target is the back area of the opponent's court in a straight or diagonal way.

5. Backhand Defensive Lob (X5)
   Backhand defensive lob is when the cock is overhead on the left side or right side for left-handed players, the target is the back area of the opponent's court in a straight or diagonal way.

6. Forehand Offensive Lob (X6)
   A stroke is categorized as forehand offensive lob when a player hits the shuttlecock overhead on the right side or left side for left-handed players, quite flat and fast with the target the back area of the opponent's court in a straight or diagonal way.

7. Backhand Offensive Lob (X7)
   Backhand offensive lob is when a player hits the shuttlecock overhead on the left side or right side for left-handed players, quite flat and fast with the target the back area of the opponent 's court in a straight or diagonal way.

8. Forehand Underhand Lob (X8)
   Forehand underhand lob is when a player hits the shuttlecock from the bottom on the right side or left side for left-handed players, and the shuttlecock flies in a high arch to the back area of the opponent's court in a straight or diagonal way.

9. Backhand Underhand Lob (X9)
   Backhand underhand lob is when a player hits the shuttlecock from the bottom on the left side or right side for left-handed players, and the shuttlecock flies in a high arch to the back area of the opponent's court in a straight or diagonal way.

10. Forehand Dropshot (X10)
    Forehand dropshot is when a player hits the shuttlecock overhead on the right side or left side for left-handed players as in the overhead lob, however, the shuttlecock does not fly in a high arch. It moves slightly and shortly above the net in a straight or diagonal way.

11. Backhand Dropshot (X11)
    Backhand dropshot is when a player hits the shuttlecock overhead in the left side or right side for left-handed players as in the overhead lob, however, the shuttlecock does not fly in a high arch. It moves slightly and shortly above the net in a straight or diagonal way.

12. Forehand Drive (X12)
    Forehand drive is when a player quickly hits the shuttlecock flat to the opponent 's court when the cock is on the right side or left side for left-handed players in a straight or diagonal way.

13. Backhand Drive (X13)
    Backhand drive is when a player quickly hits the shuttlecock flat to the opponent 's court when the cock is on the left side or right side for left-handed players in a straight or diagonal way.

14. Forehand Smash (X14)
    Smash is when a player hits the shuttlecock overhead on the right side or left side for left-handed players as in overhead lob. However, the travel is sharply straight or diagonally down in a high speed.

15. Backhand Smash (X15)
    Backhand smash is when a player hits the shuttlecock overhead on the left side or right side for left-handed players as in overhead lob. However, the travel is sharply straight or diagonally down in a high speed.

16. Forehand Net (X16)
    Forehand nat stroke is when a player hits the shuttlecock near the net on the right side or left side for left-handed players, the shuttlecock is close to the net near the net of opponent's court in a straight or diagonal way.

17. Backhand Net (X17)
    Forehand nat stroke is when a player hits the shuttlecock near the net in the left side or right side for left-handed players, the shuttlecock is close to the net near the net of opponent's court in a straight or diagonal way.

III. RESULTS

From the results of the PB Bimasakti Ternate internal match using half-competition system participated by 4 sample athletes in 6 matches, the matches data can be analyzed and concluded.

Total Unforced Errors, Errors, and Points per individual.

By using the table, the author can describe the results of statistical analysis of the three types of stroke Unforced Error, Error, and Point as follows:

NAMA	UNFORCED ERROR	ERROR	POINT
Aldi	57	39	122
Sarif	67	52	93
Fikrullah	43	34	126
Sahrul	62	63	75
Jumlah	229	188	416

The percentage of unforced errors, errors, and points can be seen in the following histogram:
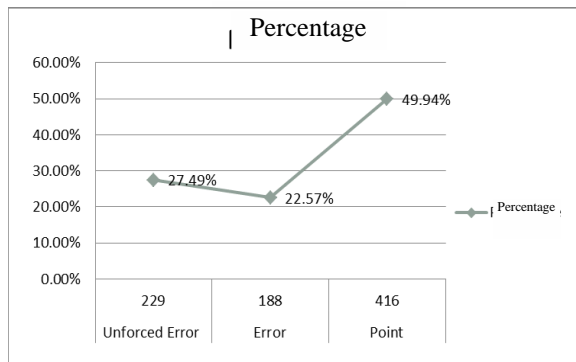
1. The total unforced error was 229

The highest unforced error occurred in the long serve 13 times (5.68%), followed by forehand underhand lob for 12 times (5.24%). The least unforced error occurred in the forehand underhand lob and backhand underhand lob 1 time with the percentage of 0.44%. Moreover, Sarif is the player who mostly performed unforced error (67) and the least was Fikrullah (43 times).

2. The total error was 188

The highest error occurred in the backhand net stroke 20 times (10.64%). The smallest error occurred in the forehand offensive lob, backhand underhand lob, and forehand dropshot 1 time (0.53%). The player who performed the highest error was Sahrul 63 times with the percentage of 33.51%, and the player with the smallest error was Fikrullah for 34 times with the percentage of 18.09%.

3. The total point was 416

The highest point was forehand smash 39 times (9.38%). The smallest point occurred in the backhand smash 1 time (0.24%). The player who obtained the highest point was Fikrullah, with the percentage of 30.29% (126 points), while the player with the lowest point was Sahrul with 75 points (18.03%).

IV. DISCUSSION

a. Aldi

From the result of the half-competition match, Aldi won 2 times and lost 1 time. The number of strokes was 218 times, 122 times created points, 39 errors, and 57 unforced errors. Forehand smash was the stroke which obtained the most point (24 points), followed by forehand dropshot 19 times. Slight netting also enriched the point for 14 points in the forehand net and 9 points in the backhand net.

From the table, it can be concluded that among the 39 Aldi's errors, backhand drive was mostly

performed 11 times due to the opponent's pressure. Afterward, there was forehand underhand lob 6 times. Meanwhile, the highest unforced error happened in the long serve 13 times. Forehand offensive lob occurred 8 times, and forehand smash occurred 7 times.

From the percentage of unforced error by all players, Aldi was in the second position (24.89%), the second position of error (20.74%), and the second position of point as well (29.33%).

b. Sarif

The highest unforced error performed by Sarif was forehand smash 11 times, while forehand dropshot and forehand net occurred 8 times. In backhand offensive lob, the smallest unforced error was 1 time. Sarif was in the fourth position (last) because he was the one who made mistakes the most, with the percentage of 29.26%, and the total unforced error was 67 times.

Sarif obtained pressure and performed many errors when returning backhand underhand lob 10 times out of 52 stroke errors. In addition, in backhand net or forehand net, he performed error 4 and 5 times. Sarif's total error percentage was in the third position (27.66%).

Furthermore, Sarif's greatest point was forehand smash with 21 points and 93 points. Forehand dropshot was performed 17 times. In general, Sarif was in the third position based on the point he gained (22.39%). Sarif won 1 time and lost for 2 times.

c. Fikrullah

Based on the match, Fikrullah never lost, with 203 strokes in total. 126 of them created points, 34 errors, and 43 unforced errors. Forehand smash mostly contributed to his point (39 points), sending shuttlecock to the back are of the opponent's court in the form of forehand underhand lob (18 times out of 126 points). With these total achievements, Fikrullah had the highest point with the percentage of 30.29% and became in the first position.

Based on the table, Fikrullah was the least performing error. In general, he was in the first position (18.09%) with 34 total errors. When getting pressure from the opponent, forehand net mostly created error 6 times.

The most unforced error occurred in the forehand smash 9 times, followed by backhand net 7 times, and forehand net 6 times, backhand drive 5 times. In terms of unforced error, Fikrullah was in the first position (18.78%) with the total stroke 43 times.

d. Sahrul

From the match, Sahrul should face his loss. One of the causes was too many errors (63 times), unforced error (62 times), and the low point (75). The highest error occurred in the backhand net 20 times, forehand underhand lob 16 times, and backhand underhand lob 12 times due to the opponent's pressure.

Forehand underhand lob also created many unforced errors (12 times). Forehand offensive lob

was 10 times, forehand dropshot was 9 times out of 62 strokes. The percentage of unforced error of Sahrul, in general, was in the third position (27.07%), and his error was in the fourth position (33.51%).

Moreover, the highest point was from forehand dropshot 18 times, forehand smash 10 times, and sending the shuttlecock to the back area or forehand underhand lob and backhand underhand lob created 9 points. The total point he obtained was 75, and the percentage of his game was in the fourth position (18.03%).

V. CONCLUSION

The total stroke creates 229 unforced error (27.49%), 188 error (22.57%), and 416 point (49.94%). It means that the players' win during the match or the point they obtain is not only because of their attack, but also because of the opponents' mistakes.

Several types of attacking stroke, such as forehand offensive lob and forehand dropshot lob that can be used to gain points, in fact become the players' weakness.

The highest point is obtained by Fikrullah from forehand smash (39 points), Aldi (24 points), Sarif (21 points) form forehand smash as well, and Sahrul obtains the highest point from forehand dropshot (18 points). It can be concluded that the four athletes relatively have attacking style.

REFERENCES

[1] Abian-Vicen, J., Castanedo, A., Abian, P., & Sampedro, J. (2013). Temporal and notational comparison of badminton matches between men's singles and women's singles. *International Journal of Performance Analysis in Sport*, *13*(2), 310–320. https://doi.org/10.1080/24748668.2013.11868650

[2] Aksan, H. (2012). *Mahir Bulu Tangkis*. Nuansa Cendekia.

[3] Butterworth, D. A., Turner, J. D., & Johnstone, A. J. (2017). *Coaches' Perceptions of the Potential Use of Performance Analysis in Badminton*. *8668*(August). https://doi.org/10.1080/24748668.2012.11868610

[4] Creswell, J. W. (2012). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research* (4th ed.). Pearson Education.

[5] Federation, B. W. (2011). *Badminton World Federation: Laws of Badminton & Regulation* (2nd ed.). Badminton World Federation.

[6] Grice, T. (2008). *Badminton: Steps to Success* (2nd ed.). Human Kinetics.

[7] João Guilherme Cren Chiminazzo, Júlia Barreira, Leandro S. M. Luz, W. C. S. & J. T. C. (2018). Technical and Timing Characteristics of Dadminton Men's Single: Comparison Between Groups and Play-offs Stages in 2016 Rio Olympic Games. *International Journal of Performance Analysis in Sport*, *18*(2), 245–254. https://doi.org/10.1080/24748668.2018.1463785

[8] Maksum, A. (2012). *Metodologi Penelitian Dalam Olahraga*. Unesa University Press.

[9] Minna Blomqvist, P. L. & L. L., & To. (2000). Expert-Novice Differences in Game Performance and Game Understanding of Youth Badminton Players. *European Journal of Physical Education*, *5*(2), 208–219. https://doi.org/10.1080/1740898000050207

[10] Rohman, U., & Wibowo, S. (2019). Upaya Memperbaiki Hasil Belajar Servis Forhand Tinggi Dalam Pembelajaran Bulutangkis Dengan Penerapan Gaya Mengajar Imklusi Pada Siswa Kelas IX SMP NEGERI 22 Surabaya Tahun Pelajaran 2018-2019. *Multilateral Jurnal Pendidikan Jasmani Dan Olahraga*, *17*(2). https://doi.org/10.20527/multilateral.v17i2.5717

[11] Usman Nasution, Suryadi Damanik, A. S. (2019). The Development of Badminton Smash Learning Model for Medan State University Students. *Proceedings of The 5th Annual International Seminar on Trends in Science and Science Education*. https://doi.org/10.4108/eai.18-10-2018.2287447 Copyright © 2018–2020 EAI

[12] Winarno. (2004). Evaluasi Dalam Pendidikan Jasmani dan Olahraga. In *Evaluasi Dalam Pendidikan Jasmani dan Olahraga*. Center For Human Capacity Development JAKARTA.