Analysis of Outer-Hook Takedown Techniques at The Central Java Provincial Youth Wrestling Championships 2024

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Abstract

The background of this study is that adolescent wrestlers are in the transition period from early category wrestling to the push match style. The research objective was to analyze the success rate of the outside hook takedown technique at the 2024 Central Java Youth Wrestling Provincial Championship. The research method uses a mixed method research design. Data collection uses video recording analysis taken at the match event. The results showed that: 1. The appearance of the takedown technique in the match event amounted to 67 appearances, 2. The successful takedown technique appeared 44 times with a percentage of 66% and for the failed takedown technique appeared 23 times with a percentage of 34%, the average value of the successful takedown technique was 39.90 and the average value of the failed takedown technique was 30.82 then the difference was 9.08, 3. The average value of the successful takedown technique stages: Facing: 9.65, Stepping foot: 10.31, Hand catch: 10.06, and Finishing: 9.86 and failed takedown techniques: Facing: 8.82 Legs: 9.13 Hand catch: 7.47 and Finishing: 5.39 then the difference: Facing: 0.83 Footsteps: 1.18 Hand catch: 2.58 and Finishing: 4,47. The percentage of successful takedown techniques is higher than failed takedown techniques. The research contributes to making it easier for Central Java wrestling coaches to create training programs for youth category wrestlers.

Keywords: freestyle; outer-hook takedown techniques; wrestling

1. Introduction

It is impossible to separate sports from everyday life (Prabowo et al., 2022) citing (Efendi et al., 2024). Sports are organized activities that can produce achievements and aim to improve, develop, and stimulate a person's social, mental, and physical qualities (Nugroho & Subio, 2020) citing (Setiadi et al., 2024). Sports are physical activities that take place continuously and involve body movements aimed at increasing body temperature and a person's level of physical fitness (Andriawan & Irsyada, 2022). According to Hartono (2017:194), the implementation of sports is assessed based on its objectives for achievement, education, physical fitness, and recreation (Wardana et al., 2024). The progressive training and development of athletes to achieve the highest goals is known as competitive sports (Di et al., 2025). Competitive sports are sports activities to elevate the dignity and prestige of the country on a regional, national, and global scale, carried out by talented athletes (M. Akbar Husein Allsabah et al., 2024) citing (Sains et al., 2024). Currently, sports in Indonesia are developing rapidly, and one of the sports that is developing is wrestling, which is also included in competitive sports.

Wrestling is one of the oldest sports, according to statements made in "The 1964 Olympic Guide" and "Der Freia Ringkamf Handbuchfur Trainer Und Ubungsliter" by Arasih (2015), who states that wrestling is undoubtedly an ancient sport, with evidence that it existed and was common in Egypt in 2050 BC (Meningkatkan et al., 2022) & (Bintoro & Nugraheningsih, 2021). As mentioned

earlier, paintings and reliefs can be found on the walls of ancient kings' tombs in Babylon, Rome, Athens, and Sparta (Greece) (Murdiansyah, 2022). According to Rubianto (2017), wrestling was introduced as a discipline in Chinese sports schools around 2000 BC. According to (Nilsson et al., 2002), because wrestling is considered one of the oldest sports in human history, it was included in the first Olympic Games with Greek-Roman style wrestling (Ransone et al., 2019) & (Rubianto, 2017). Indonesian society has long been familiar with the sport of wrestling. After World War II, the Dutch army, which was colonizing Indonesia at the time, introduced the sport of wrestling (Yunis Bangun et al., 2023).

According to (Ningsih & Jatmiko, 2021), in individual martial arts such as wrestling, the goal is to knock down the opponent in order to earn points and win (Haris Silaban et al., 2023). According to Rubianto (2017), although wrestling began as a strength-based sport, it is also a competitive sport involving combat where competitors punch, kick, choke, and even lock each other in an effort to defeat their opponents. However, based on UWW (United World Wrestling) regulations, striking, kicking, and choking are generally prohibited actions that wrestlers are not allowed to perform (Wrestling, 2020). According to Fauzul Marini (2022), in the martial art of wrestling, two wrestlers face each other and use various parts of their bodies to pull, push, slam, and trip their opponent with the aim of pinning both of their shoulders to the mat (Yunis Bangun et al., 2023). According to (Yusuf & Jahrir, 2021), wrestling is a sport in which training positioning is very important. Wrestlers in an aggressive position use techniques to strengthen and maintain their hip position (Sinuraya et al., 2023). Wrestling is an ancient sport that has developed worldwide with rules for winning or scoring points by using techniques such as pushing, thrusting, pulling, throwing, and locking opponents so that they fall onto the mat.

According to (Yan Indra & M. Fauzan, 2017), there are two well-known styles that are competed in both Indonesia and internationally, namely the Greco-Roman style and the Free Style (Ayuningtias & Nurrochmah, 2022). According to (Erawan, 2011), a wrestler who practices Free Style wrestling is able to attack any part of their opponent's body, whereas a wrestler who follows the Greek-Roman style is only allowed to strike the upper part of their opponent's body, from the head to the waist (Kurniawati et al., 2022). In freestyle wrestling, every part of the body may be used during a match to attack or defend against an opponent's attack, except for sensitive parts such as the eyes and genitals. This differs from Greco-Roman wrestling, where wrestlers are not allowed to use their legs to attack or defend. Greco-Roman wrestlers are not allowed to use their lower body to perform throwing attacks such as blocking or grabbing their opponent's legs. If a wrestler performs one of the prohibited actions, the referee will give a penalty (Januareva, 2023). According to Walker (2010:1), using the entire body to attack and defend a position is known as freestyle wrestling. The technique uses takedowns to wrestle and allows locks from head to toe (Topan & Subagio, 2021). The events contested in wrestling consist of two styles, namely freestyle and Greco-Roman. In freestyle, wrestlers attack their opponents using all parts of their body, and the techniques commonly used in freestyle wrestling are takedowns.

In sports, technique is a fundamental component that influences performance and helps athletes achieve success. This type of technical training aims to improve and develop mastery of movement techniques in a particular sport in order to create techniques for achieving success (Arham, 2021). According to Rubianto (2017), basic techniques are an absolute requirement in a sport; without mastering basic techniques, an athlete will find it difficult to achieve excellence. Leg grabs, single leg grabs, double leg grabs, arm pulls, shoulder throws, neck throws, arm throws, front kayang

throws, side kayang throws, and back kayang throws (zubless) are some of the best attack techniques used in freestyle wrestling (Gustiawan, 2021). In freestyle wrestling, takedowns and leg sweeps are predominantly used. This statement is proven by the analysis of Harold Tunnemann (2009:49) at the 2005-2009 world championships. The leg takedown or sneak attack technique is the most frequently used technique by freestyle wrestlers to earn technical points (Gulat, 2019). According to Rubianto (2017), the Takedown technique (outer leg hook) is a technique intended for freestyle as follows: Movement sequence 1. The right foot steps forward and then kneels, 2. The left foot steps forward to the opponent's right foot while hooking the opponent's leg, and 3. Both hands hold the opponent's thighs while pushing the opponent forward until they are lying on their back.

In the development of advanced wrestling, research on motion performance analysis is essential (Mayda, 2017). Currently, video notation analysis is the best method for determining target models through procedures involving recordings of techniques, movements, and situations during matches so that quantitative (number) and qualitative aspects (tactics and strategies) can be identified. Furthermore, increased analysis of techniques from this data serves as a guide for coaches in determining training program models and evaluation materials (Supriadi & Nancy, 2023). According to (López-González, 2015), through logical analysis of athlete performance, more and more world-class coaches are discovering the importance of coaching methods (Supriadi & Nancy, 2023).

Based on the background of this research, it is a technical analysis of Takedown, data that will be collected in a 2024 Central Java youth wrestling provincial championship competition. The reason for this research on youth wrestlers is because youth wrestlers are in a transitional period from early childhood, where early childhood wrestling competitions in Indonesia only involve pushing each other to knock down opponents. The age categories in wrestling are: mini wrestling for ages 6-12, children's wrestling for ages 13-16, junior wrestling for ages 17-20, and senior wrestling for ages above 20 (Munasifah, 2009). The rules have been developed and updated for the age categories in wrestling, consisting of 6 categories, namely: 1. U15 (13-15 years old), 2. Cadet (16-17 years old), 3. Junior (18-20 years old), 4. Senior U23 (19-23 years old), 5. Senior (20 years old and above), and 6. Veteran (over 35 years old) (Wrestling, 2020).

This study provides new knowledge regarding the analysis of takedown techniques in a wrestling championship. The purpose of this study is to analyze takedown techniques and measure the success rate of takedown techniques in the 2024 Central Java Youth Wrestling Provincial Championship held in Semarang City. The takedown techniques were analyzed using video analysis with data collected during the competition. The benefits of this study provide information and data on the success rate of Central Java youth wrestlers in performing takedown techniques. The researchers hope that this study will benefit wrestling coaches and athletes, especially in Central Java.

2. Method

This study uses a mixed method research approach. Research that combines or connects qualitative and quantitative forms is known as mixed method research (Hadju & Aulia, 2022). According to (Kou et al., 2011), determining the sample is the initial stage and an important component of the complete analysis process (Firmansyah & Dede, 2022). Sample determination in a study is carried

out when the researcher begins fieldwork and during the study (emergent sampling design) (Sugiyono, 2020). One component of the population is the sample (Moh. Nazir, 2009). Sampling was carried out using purposive sampling techniques. The sample of this study consisted of teenage wrestlers who participated in the 2024 provincial teenage wrestling championship.

According to (Moh. Nazir, 2009), in the scientific method, data collection is an important step because data is usually collected to test hypotheses, except in exploratory research. In this study, data was obtained from the results of the competition. Performance indicators were calculated based on the Gaitan Luar Takedown Technique Observation Instrument. Observations during the match were the method used to collect data for analyzing the match results (Ransone et al., 2019). The steps for data collection in this study were: (1) Recording the match using a video recording device, (2) Performing analysis using Kinovea software, and (3) Describing the results of data analysis (Supriadi & Nancy, 2023).

The raw results that had been converted into T-Scores from the four tests were summed and then divided by the total number of tests. The result of this division served as the basis for determining the fundamental motor skills of the fifth-grade students at SD Gugus Nusa Indah, Mranggen Subdistrict, Demak Regency. The students' fundamental motor skills were categorized into five (5) categories, namely: very good, good, fair, poor, and very poor. The data collection technique for scoring was obtained from analysis using the "Takedown Technique Indicator Instrument" when researchers analyzed the takedown technique movement indicators in the videos that had been obtained. In the takedown technique indicator instrument, there are four stages, namely: 1. Facing, 2. Footwork, 3. Hand grip, and 4. Finishing. Each stage has 4 indicators, namely: 1. Gaze, 2. Hand position, 3. Body position, and 4. Foot position. The scoring scale uses a Likert scale. Each takedown technique receives a score of 48 if it is performed perfectly.

3. Result and Discussion

The data was obtained from recordings taken at the Central Java youth wrestling championship event. Participants in the youth wrestling championship consisted of 20 districts and cities. There were 166 matches consisting of 2 categories, namely: 6 matches in the men's category and 5 matches in the women's category. The data obtained was analyzed using Kinovea software to analyze the takedown technique indicator scores. The results of the analysis collected the following data: 1. Overall takedown technique data, 2. Data on successful takedown techniques and failed takedown techniques, and 3. Data on the difference in takedown technique stages between successful and failed takedown techniques. The focus of this study was to analyze takedown techniques at the "2024 Provincial Youth Wrestling Championship Event," obtaining the following data:
1. Overall data on takedown techniques

Table 1. Results of overall data analysis

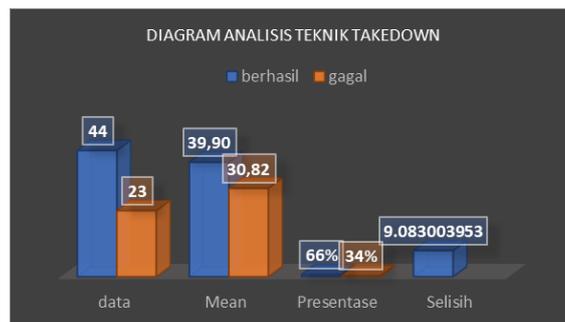| Takedown	Data
Takedown appearance	67
Overall score	2.465
Average	36.79

According to the table above, there were 67 takedown techniques, with a total score of 2,465 points for the takedown technique indicator assessment, with an average score of 36.79. For a single takedown technique, if the technique is perfect, it will receive 48 points from 4 stages, with each stage having 4 indicators and 1 indicator with the highest score of 3. Based on the table above, it can be concluded that the average score of 36.79 indicates that the average score is close to the points obtained for a perfect takedown technique. Therefore, it can be concluded that the 67 takedown techniques resulted in a higher success rate than failure rate.

2. Successful and unsuccessful takedown technical data

Table 2. Successful and unsuccessful takedown technical data

Takedown	Data	Mean	Percentage	Difference
Successful	44	39.90	66%	9,08
Unsuccessful	23	30.82	34%	

The image above shows the data on successful and unsuccessful takedown techniques. There were a total of 67 takedown techniques in the Provincial Youth Wrestling Championship. The total number of successful and unsuccessful techniques was obtained from observing recorded videos. From the table above, the success rate was 44 times with a percentage of 66%, while the failure rate was 23 times with a percentage of 34%. The mean value of successful takedown techniques was 39.90, which was greater than the mean value of failures, which was 30.82. Therefore, it can be concluded that this takedown technique observation instrument can be used as an observation instrument, because the difference between the success rate and the failure rate is very significant at 9.08. The following is a graphical diagram to help readers see the success and failure data.

Figure 1. Graph showing the success and failure rates of takedown techniques

3. Data analysis of successful and unsuccessful takedown techniques

Table 4. Data analysis of successful and failed takedown techniques

Takedown	Face-to-Face	Footwork	Hand-capturing	Finishing
Successful	9.65	10.31	10.06	9.86
Unsuccessful	8.82	9.13	7.47	5.39
Gap	0.83	1.18	2.58	4.47

The first indicator is facing. The facing position is a starting position for performing a takedown technique. When facing, there are three types of foot positions performed by wrestlers, namely: 1. Parallel foot position, 2. One foot in front, and 3. Crossed feet. The data obtained on the facing indicator shows that successful takedown techniques received an average score of 9.65, while unsuccessful takedown techniques received an average score of 8.82. The difference between the average scores for successful and unsuccessful techniques is 0.83. The events that occurred in the field when taking videos for successful takedown techniques when facing an opponent were: 1. Looking straight ahead at the opponent, 2. Both hands in front of the chest with a slight bend or one hand controlling the distance from the opponent, able to grab the opponent's shoulder or neck, 3. Body straight towards the opponent. And 4. One foot is in front, with the position of one foot in front indicating an intention to attack. Meanwhile, the failed takedown technique during confrontation is as follows: 1. Looking downward, 2. Hands not ready in front of the chest and not controlling the distance from the opponent, 3. Body not aligned with the opponent, and 4. Feet not slightly bent, and when moving, the feet cross.

The footwork for successful takedown techniques scored an average of 10.31, while unsuccessful takedown techniques scored an average of 9.13. There was also a difference of 1.18 between successful and unsuccessful techniques in the footwork indicator. Events that occurred in successful takedown techniques at the footstep stage: 1. One foot stepped forward and the knee of the stepping foot was placed in the middle between the opponent's feet, 2. The gaze and body were upright, ready to collide with the opponent. Meanwhile, the factors influencing failed takedown techniques in the footwork indicator are: 1. The foot does not step forward and the knee is not placed in the middle between the opponent's feet, resulting in a long reach from the opponent, 2. The gaze is downward and the body is too bent or too upright, causing the center of gravity to lean backward.

Hand catches on the successful takedown technique indicator obtained an average score of 10.06, while the unsuccessful takedown technique obtained an average score of 7.47. On the hand catch indicator, there was a difference between the successful takedown technique and the unsuccessful takedown technique of 2.58. From the results of the above data analysis on hand catches, a phenomenon was found in the field. Phenomena for successful takedown techniques: 1. When the hand grabs the opponent's leg, the hand is positioned on the inside of the opponent's leg, 2. The rear leg follows forward beside the opponent's body, and 3. The gaze is straight ahead. Meanwhile, the phenomenon observed in the failed takedown technique foot grab indicator is: 1. The hand only lightly touches the opponent's foot, 2. The rear foot is not beside the opponent's body, and 3. The gaze is looking down, making it impossible to see the opponent's movements.

The last indicator is finishing. Finishing is the final stage, which determines whether the technique is successful or not. However, the initial stages also contribute to the outcome of a technique. The finishing stage has the largest difference among the other indicators. The finishing indicator for successful takedown techniques obtained an average score of 9.86, while the finishing indicator for unsuccessful takedown techniques obtained an average score of 5.39. The difference between the finishing indicators for successful and unsuccessful takedown techniques was 4.47. The phenomenon of successful takedown techniques in the finishing indicator: 1. Straight gaze, 2. Upright body pushing the opponent forward, 3. Hands still holding the opponent's legs firmly on the inner thighs, 4. Kneeling leg rises to help when pushing, and the leg next to the opponent's body hooks the opponent's leg in order to hold the opponent's leg so that they do not try to move

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backward. Meanwhile, the phenomena of a failed takedown technique are: 1. Looking down, 2. The body is not upright when sticking to the opponent, 3. The hand grip is on the opponent's outer thigh, and 4. The kneeling leg does not rise when pushing the opponent and the leg next to the opponent's body does not hook the opponent's leg.

Takedown techniques are categorized as offensive techniques, a statement that is consistent with the opinion that, according to (Soyguden & Imamoglu, 2017), two-handed tackles and two-footed attacks are often used as offensive strategies, while retreating and pulling the legs back are considered defensive strategies, citing (Supriadi & Nancy, 2023). The relatively high frequency of takedown techniques (67 times) at the 2024 Provincial Youth Wrestling Championship indicates the intensity of their use as part of the offensive strategy of young wrestlers. The results of this discussion are in line with (Soyguden & Imamoglu, 2017) that takedown techniques are often dominant in competitions. The average score of 36.79 out of a maximum total of 48 shows that the majority of Central Java teenage wrestlers are able to perform takedown techniques quite well. These results show that, in general, the participants' technical abilities are at a good competitive level. The 66% success rate shows that takedown techniques are very effective to develop (train) in teenage wrestlers, especially Central Java teenage wrestlers. However, it should be noted that there is still a 34% failure rate, which indicates that there is still room for improvement. From the results of the phenomenon in the field, the aspect that needs to be improved is the initial technique (facing and footwork), but this initial aspect is often overlooked even though it has an effective influence. When distinguishing between successful and unsuccessful takedown technique scores, there is a very significant difference of 9.08 points. From the analysis data presented, each stage of the indicator has a different score difference, so the contribution of each stage to the takedown technique is also different. The following is the order of contribution from largest to smallest: 1. Finishing with a score of 4.47, 2. Foot grab with a score of 2.58, 3. Footwork with a score of 1.18, and 4. Confrontation with a score of 0.83. Therefore, it can be concluded that in the takedown technique, the indicator that contributes the most is the finishing stage.

Analyzing each stage of the takedown technique, from facing, footwork, hand grabs, and finishing, shows that each stage has a different contribution. The differences in the contributions of each stage show that the finishing stage has a significant impact. Even if a wrestler performs well in the early stages but is weak in the final stage, it greatly determines the success or failure of a technique. Therefore, wrestling coaches must train wrestlers to be decisive and strong in the finishing stage. A phenomenon identified in the field in each stage also reinforces this conclusion. Ineffective wrestlers, for example, often have a downward gaze, unstable posture, and poor foot and hand techniques. This emphasizes the importance of body alignment and posture for the effectiveness of takedown tactics. However, in addition to technical aspects, non-technical factors that affect an athlete's performance, such as mental readiness, physical condition, and the coach's strategy in reading the opponent, should not be overlooked. In the phenomenon observed in the field of competition, a wrestler's failure to execute a takedown technique is not entirely due to the inaccuracy of a movement but also because the athlete experiences psychological pressure, fatigue, or an unexpected response from the opponent. All of this comes back to the athlete's readiness in preparing for a match.

This study opens up new possibilities for video analysis-based training. By utilizing quantitative and qualitative data from video recordings, coaches can conduct in-depth analysis of athletes' performance objectively. This also has important implications for training program planning,

namely by focusing training sessions not only on mastering finishing techniques but also on consistency in each stage and physical and mental endurance when transitioning between stages. Coaches then create training programs based on existing research data. This is in line with the increasingly sophisticated developments of the modern era and the trend of data-driven coaching in competitive sports. In the context of long-term development, the results of this study can be used as evaluation material in the preparation of youth wrestling technique training programs in Central Java, emphasizing the importance of technical stages and overall body coordination, especially during transitions from stage to stage. It also has important implications for training program planning.

All tasks are divided to determine the positions that match the expertise and abilities of the staff, thereby minimizing risks. Each staff member and employee has a specific role that is assigned according to their field. The results of the interviews are confirmed by observations that there is indeed an organizational structure in the management, that there are rules and guidelines for each task performed by each staff member, so that each staff member has their own guidelines in carrying out their duties. Decision-making in the event of misunderstandings or violations involves three actions: SP 1 notification of error, SP 2 warning of error/violation, and SP 3 action determined by leaders in a disciplinary hearing. The results of the interviews have been confirmed directly by the General Manager and are also supported by the researcher's observations.

5.   Conclusion and Recommendation

The outer-hook takedown technique consists of four stages: 1. facing, 2. footwork, 3. hand grab, and 4. finishing. The phenomenon captured on video for a successful takedown technique consisting of four stages is as follows: facing forward, looking straight at the opponent, body straight and parallel to the opponent, one foot in front, stepping forward and placing the knee in the middle between the opponent's feet, looking straight ahead, body upright and ready to tackle the opponent, hands ready to grab the opponent's leg with a grip on the inner thigh, and when finishing, the kneeling leg pushes the opponent forward and the other leg hooks the opponent's leg. From the results of this analysis, it is known that the total number of takedown techniques in the "2024 Provincial Youth Wrestling Championship" was 67, consisting of 44 successful takedown techniques and 23 failed takedown techniques. The percentage of takedown techniques used was 66% for successful techniques and 34% for failed takedown techniques. Therefore, the success rate of takedown techniques was higher than the failure rate. The determining indicators for the success and failure of takedown techniques are the finishing indicator with an average value difference of 4.47, followed by the hand grab indicator with an average value difference of 2.58, then the footwork indicator with an average value difference of 1.18, and finally the facing indicator with an average value difference of 0.83. This study is useful in providing education about the success rate of takedown techniques in Central Java wrestling. This study can also be used as a basis for developing a more systematic, data-based wrestling training program that emphasizes the importance of mastering each stage of the technique, especially the finishing stage, which is the key to the success of the technique. Coaches can gain an understanding of the shortcomings when their athletes perform takedown techniques and identify the factors that make takedown techniques successful or unsuccessful. The benefits of this research are particularly for coaches, athletes, researchers, and readers of this study. Based on the research conducted, the limitation of this study is the lack of references in the discussion section.

The limitation of this study lies in the lack of references in the discussion section, so that the discussion is still predominantly based on the results of analysis and phenomena observed in the field. Therefore, it is recommended that future research make greater use of the latest scientific literature as comparative material, thereby broadening the analysis and strengthening the argument. Furthermore, this study has not covered the physical condition, psychology, and match strategy of wrestlers, which have an influence on their performance. Therefore, future research should combine an interdisciplinary approach involving biomechanics, sports psychology, and match strategy.

Acknowledgement

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