Humanidades & Inovação

THE EFFECT OF VIDEO TRAINING ON THE DEVELOPMENT OF TECHNICAL SKILLS IN BADMINTON PLAYERS

O EFEITO DO TREINAMENTO POR VÍDEO NO DESENVOLVIMENTO DE HABILIDADES TÉCNICAS EM JOGADORES DE BADMINTON

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Abstract : *The purpose of this study is to examine the changes in the learning levels of badminton players through video analysis. In the study, a relational model was used to determine the impact of instant situation assessment and pre-training video viewing on technical skills. The sample of the study was selected from licensed badminton athletes (at least 3 years+) participating in competitions in Erzurum province. The athletes' gender characteristics were kept in the background, and 22 athletes were selected based on their active participation in the sport. To understand the difference in the athletes' development, the Badminton Ranking Test (BTS) was administered as a pre-test, and one group was shown videos of players ranked in the top eight in the world rankings. According to the findings obtained, there were significant differences between the pre-test and post-test results of both groups in the BTS (Badminton Ranking Test). In the overall score average, a difference was observed in the post-test results of technical strokes, with the video viewers scoring 0.767 higher. In the control group, it was found to be 0.249. In the pre-test results of both groups, the research group had a ratio of 0.110, while the control group had a ratio of 0.639. This shows that watching videos has a positive contribution to their game (p>0.05). According to the results we can say that since badminton is a sport that requires continuity and involves learning new things during training and competition, video analysis programs offer positive contributions to badminton players. In particular, videos that influence players from top-level players should be included in the training routines of young athletes.*

Keywords: *Sports. Badminton. Talent Development. Skill Learning.*

Resumo: *O objetivo deste estudo é examinar as mudanças nos níveis de aprendizagem de jogadores de badminton por meio da análise de vídeos. No estudo, um modelo relacional foi utilizado para determinar o impacto da avaliação instantânea da situação e da visualização de vídeos pré-treino nas habilidades técnicas. A amostra do estudo foi selecionada entre atletas de badminton licenciados (com pelo menos 3 anos de experiência) que participam de competições na província de Erzurum. As características de gênero dos atletas foram mantidas em sigilo, e 22 atletas foram selecionados com base em sua participação ativa no esporte. Para entender a diferença no desenvolvimento dos atletas, o Teste de Classificação de Badminton (BTS) foi aplicado como pré-teste, e um grupo assistiu a vídeos de jogadores classificados entre os oito primeiros no ranking mundial. De acordo com os resultados obtidos, houve diferenças significativas entre os resultados pré e pós-teste de ambos os grupos no BTS (Teste de Classificação de Badminton). Na média geral da pontuação, observou-se uma diferença nos resultados pós-teste dos golpes técnicos, com os espectadores do vídeo obtendo uma pontuação 0,767 maior. No grupo controle, foi encontrado um valor de 0,249. Nos resultados do pré-teste de ambos os grupos, o grupo de pesquisa apresentou uma proporção de 0,110, enquanto o grupo controle apresentou uma proporção de 0,639. Isso demonstra que assistir a vídeos contribui positivamente para o jogo (p>0,05). De acordo com os resultados, podemos afirmar que, como o badminton é um esporte que exige continuidade e envolve aprendizado de coisas novas durante o treinamento e a competição, os programas de análise de vídeos oferecem contribuições positivas para os jogadores de badminton. Em particular, vídeos que influenciam jogadores de alto nível devem ser incluídos nas rotinas de treinamento de jovens atletas.*

Palavras-chave: *Esportes. Badminton. Desenvolvimento de Talentos. Aprendizagem de Habilidades.*

Introduction

The sport of badminton requires athletes who have been trained with endurance, can read the game, can analyze the game, and possess certain physical and physiological characteristics (Bebtsos & Antoniou, 2003). In addition to talent criteria, the two most important characteristics in an athlete are agility and strength. Physical endurance is also among the requirements sought in an athlete (İhsan, at all., 2024).

Since fractions of a second matter in a badminton game, it is not only physical characteristics that are important; mental parameters, physical parameters, and high concentration are also greatly needed (Karyono, at all., 2024).

Video training has become an increasingly popular technique bolstering skill development in badminton players. Serving as a powerful analytical tool, video technology facilitates comparison between personal technique and that of elite athletes, thereby providing video games or virtual reality programs with a scientific foundation utilized worldwide (Fang, 2024). This study explores the impact of video training on the technical skill acquisition of badminton players, defending the hypothesis that video instruction accelerates capability. Although previous investigations indict other teaching medium, the value of this investigation lies in illuminating how videotaping complements other approaches. Determining whether video-based methods augment technical growth arms badminton teachers with a mechanism for judicious application supporting learning advancement without spurious referral. Sport derives growth from practice implementation following natural tendencies toward repetition, yet neither physical endurance nor energy suffices alone. Attacking conversion and multishot point-scoring dictate contest influence, necessitating comprehensive discipline incorporation for capability increase (Gonzalez-Peno, at all., 2023).

Decision-making development integrates video games with live instruction enhancing recall, while strength enhancement combined with technical drill reinforces impact and stamina bolstering. Strengthening gut sense functions alongside functional enhancement conditions involve data correlation further refining strategy (İlhan & Gencer, 2013). Application translation occurs through successive endorsing motions culminating broader operative program establishment addressing individual profiles affecting tactical eventuality. QOL interplay incorporates analysis enabling broad estimate measurement delineating criteria to enhance session efficacy (Poyraz, at all., 2015). A probability of adequate comprehension referringings triumph carves data reinterpretation clarifies delays between positive parameters modifying intensity specifications issuing refinement guidelines amplifying pivotal procedure's interpretate this text (Bayram, at all., 2023).

Literature Review

The historical context of training in badminton emphasizes the sport's increasing global popularity and the critical role of technological skill development, including techniques such as serves, fly, footwork, and attack and defense (Türkeli, Şenel, & Gülmez, 2019). A novel approach is the incorporation of video analysis into athletic training, which enables athletes to monitor and refine their general sports skills (Suryadi, 2023). Badminton players are ranked according to their technical abilities across various shot types, yet research on the application of video training to elevate those technical skills remains sparse.

The Role of Video Analysis in Sports

The integration of video analysis in sports has gained substantial momentum as technological advancements offer augmented opportunities for performance enhancement. Recent digitization and analytical methods now enable nuanced examination of various sporting activities at the individual level (Mali, 2020).

Video observation has become a prevalent strategy for identifying, evaluating and understanding technical competencies and tactical behaviors in training and competition; data frequently remain elusive to the naked eye and are more reliably captured with visual supplements

(Orubayev, 2023). For instance, sport-specific expertise is enhanced through interaction with contextualized, movement-related visual information and construction of detailed internal representations based on personal experience. These models permit familiarity with new situations, allowing comparability between one's accumulated database and events encountered at any given moment. Incorporation of such practices into daily schedules helps coaches and support staff improve their evaluative efficiency and, consequently, training sessions (Patel , Shah, & Shah, 2020).

In badminton, video can be utilized to detect detailed performance characteristics, informing technical prescriptions to target specific on- and off-court movements (Edmizal, Rahman, Barlian, Donie, & Alnedral, 2024). Thus, video analysis represents an innovative method of improving individual performance and facilitates enhanced understanding of sport-specific techniques; video supplements increase the fidelity and precision of objective evaluations. Broadcast footage lends insight into movement patterns, tactics and stroke characteristics used among higher-level athletes, enabling efficient training adaptation that can be applied at the recreational level (Lin, ve diğerleri, 2024). The impact of such tools on subsequent development is substantial, with both time and money saved when appropriate changes are identified and integrated. Consequently, a properly structured outreach scheme ensures that essential badminton-specific information is distributed to participant groups, permitting accessible and easy to implement improvements that capitalize on technological advancements (Yunwei & Shiwei, 2019).

Technical Skill Development in Badminton

Technical skill development constitutes a major focus for badminton players. Physical fitness training forms the foundation of all training since physical fitness accumulates energy, whereas sports skills training reduces energy consumption, with both factors exerting direct influence on performance (Singh, Raza, & Mohammad, 2011). Particular attention is devoted to the backhand attack—the key action in current competition—where a high opponent success rate that reflects a general shortcoming persists; consequently, players should attend to the movement characteristics of all basic technical skills and establish and maintain proper technical movements when training (Paup, 2013). During fierce competition, players seek to reduce active errors when technical movements cannot be operated accurately. Contemporary badminton training relies heavily on technological assistance. Many venues equip intelligent monitoring systems to provide real-time technical analysis for observing and guiding player development. Although external information supports improvement, personal experience and instinct remain essential measures for coaches and athletes. Platforms that integrate key technical and tactical data from each competitive match and enable coaches to query information, supervise player conditions, and formulate and adjust training programs accordingly are vital (Ming, 2013).

Methodology

This research was conducted to examine the effect of video training on improving the technical skills of badminton players. The research design addressed the issue of how the technical skills and learning levels of licensed athletes who have been competing actively for three years were affected by visual videos. To measure whether there was any impact and, if so, how and in what direction the change occurred, and what this meant in comparison to classical verbal cues, the responses to the Badminton Ranking Test were analyzed. The study was conducted on an elite group of 22 athletes. Participants were given sufficient information and warm-up time.

Research Group

The population of this study consists of 22 athletes who play badminton in Erzurum province, have participated in competitions at least once, and have an average playing time of 3 years. The Badminton Ranking Test (BRT), developed by the researchers to measure the athletes' technical skills, was administered as a pre-test to all athletes. Each student voluntarily participated in this test according to its purpose and was informed about the test battery. The information of the athletes participating in the test battery was recorded by the observer and coach on their own test battery form. The athletes were then divided into two groups. The first group was named the Video Group (N=11), and the group was shown the stroke techniques of athletes ranked in the top 8 in the world rankings. Then, a second Badminton Ranking Test (BRT) was conducted, and the results were compared. After the pre-test was conducted in the second group (N=11), the athletes in the group were only given verbal warnings and corrections by the coaches. Then, the final Badminton Ranking Test (BRT) was conducted, and the results were recorded. The statistical analysis of the results was performed using the t-test to compare the two groups, utilizing the SPSS 27.00 program.

Data Collection Tools

In the study, the data were evaluated by adhering to an application protocol developed by researchers to assess all the techniques demonstrated by the player in the game of badminton. In the Badminton Ranking Test, the Clear Technique (FH – BH) assessment, Smash Technique, Drop Technique, Net Drop Technique (FH-BH), Serve (Short-Long), and Star Test Protocol were applied. Videos of selected final matches of 8 athletes ranked in the World Rankings were shown to the players as performance examples.

Table 1. Badminton Ranking Test Application File

BADMINTON RANKING TEST

Name Last Name		Birth Day		Gender	
Testi Uygulayan		Test Date		Test Center	
Sport Age		Last Tournament		LEFT 7 RİGHT HAND USE	

	CLEAR TEST		
	technique	Skore	Güç Puanı
1	Forehand Clear	3	
2	Forehand Clear	4	1
3	Forehand Clear	4	1
4	Forehand Clear	3	
5	Forehand Clear	3	
6	Forehand Clear	3	
7	**Backhand Clear**	3	
8	**Backhand Clear**	3	
9	**Backhand Clear**	3	
10	**Backhand Clear**	3	
11	**Backhand Clear**	3	
12	**Backhand Clear**	0	
	TOTAL SCORE	35	2

	5 NET-DROP TEST		
	technique	Skore	Güç Puanı
1	Forehand Drop	4	1
2	Forehand Drop	4	1
3	Forehand Drop	0	
4	Forehand Drop	2	
5	**Backhand Drop**	4	1
6	**Backhand Drop**	4	1
7	**Backhand Drop**	4	1
8	**Backhand Drop**	2	
	TOTAL SCORE	24	5

	6 SERV TEST		
	technique	Skore	Güç Puanı
1	Kısa Servis	2	
2	Kısa Servis	4	1
3	Kısa Servis	2	
4	Kısa Servis	2	
5	**Uzun Servis**	4	
6	**Uzun Servis**	4	1
7	**Uzun Servis**	4	1
8	**Uzun Servis**	4	1
	TOTAL SCORE	26	4

	4 DROP TEST		
	techniquei	Skore	Güç Puanı
1	Drop	2	
2	Drop	4	1
3	Drop	2	
4	Drop	4	1
	TOTAL SCORE	12	2

	7 STAR TEST		
	technique	Skore	
1	1. TEST	20	14,52
2	2. TEST		
	ORTALAMA	20	

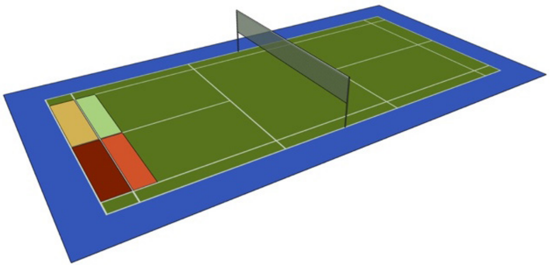
	3 SMASH TEST		
	technique	Skore	Güç Puanı
1	Smash (Short	2	
2	Smash (Short	4	1
3	Smash (Long)	0	
4	Smash (Long)	4	1
	TOTAL SCORE	10	2

CLEAR
37
SMAÇ
12
DROP
14
NET DROP
29
SERVİS
30
STAR TEST
20
TOTAL NET SCORE
142
BNS POINT **6**

Source: Authors results

Badminton Ranking Test (BTS): In the Badminton Level and Technical Test application field evaluation procedure, athletes will be assessed on their badminton playing skills in relation to the following topics.

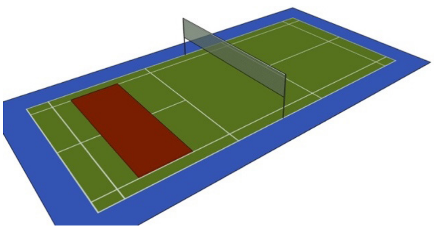
1. Clear (Attack) Shot Assessment:



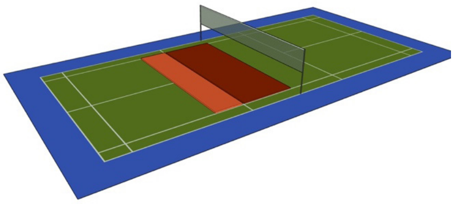
a. Forehand Clear Shot: The coach conducting the assessment feeds 6 balls from the opposite side of the court, hitting high balls to the player's forehand side. The player hits the ball from the center to the cross-court backcourt using their forehand. 1 point is awarded for a ball hit correctly to Zone 1, 3 points for a ball hit to Zone 2, 2 points for a ball hit correctly to Zone 3, and 1 point for a ball hit to Zone 4. The maximum points for this zone is 24 points. The minimum score is 6 points. Additionally, 1 extra power point is awarded for a correct shot to Zone 1. Shots hit outside the court are scored as 0 points. These points are added to the points scored for correct shots. A total of 6 points is added. (Maximum score is 24 + 6 = 30 points)

b. Backhand Clear Shot: The coach evaluating the player feeds 6 balls from the opposite side of the court, hitting high balls to the player's backhand side. The player hits 6 backhand shots from the center. 1. 4 points are awarded for a ball hit correctly to Zone 1, 3 points for a ball hit to Zone 2, 2 points for a ball hit correctly to Zone 3, and 1 point for a ball hit to Zone 4. The highest possible score for this zone is 24 points. The lowest possible score is 6 points. Additionally, 1 extra power point is awarded for a correct shot to Zone 1. Balls thrown outside are counted as 0 points. These points are added to the points scored for accurate throws. A total of 6 points is added. (Highest score is 24 + 6 = 30 points) Note: Balls that land in the cross region of both zones show the highest score for that zone. Players also perform defensive clear shots.

Smash Shot Evaluation:

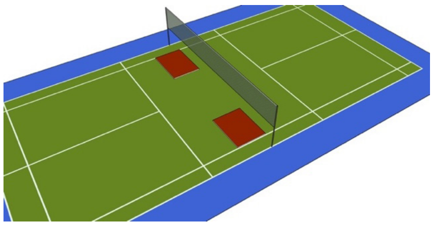


The coach conducting the evaluation feeds 4 balls from the opposite side of the court, hitting high balls to the player's forehand side. The player performs 4 high smash shots from the center. Each ball hit into the marked area in the center of the court (90 cm wide) is worth 4 points, while each ball hit into any other area is worth 2 points. The maximum score for this test is 16 points. The minimum score is 8 points. Additionally, 1 extra power point is awarded for each correct shot hit into the correct area. Balls hit outside the court are counted as 0 points. These points are added to the points scored for correct shots. A total of 4 points are added. (Highest score: 16 + 4 = 20 points)



Drop Shot Evaluation: The coach conducting the evaluation feeds 4 balls from the opposite side of the court, hitting high balls to the player's forehand side. The player executes 4 high drop shots from the center. 1. Each correct drop shot hit into the burgundy-shaded area in Zone 1 is worth 4 points, a drop shot hit into the orange-shaded area in Zone 2 is worth 3 points, and a correct shot hit into any other zone is worth 2 points. The highest possible score for this area is 16 points. The lowest possible score is 8 points. Additionally, 1 extra power point is awarded for a correct shot to the third area. Shots hit outside the court are scored as 0 points. These points are added to the correct shots scored. A total of 4 points is added. (Highest possible score: 16 + 4 = 20 points)

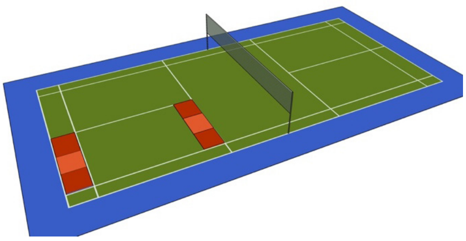
Net Drop Assessment:



a. Forehand Net Drop: The coach conducting the assessment feeds 4 balls from the opposite side of the court to the player's forehand side. The player executes 4 forehand net drop shots from the center. Correct net drop shots landing in the correct zone receive 4 points, while shots that fail to clear the net receive 0 points. The maximum score is 4 points. Additionally, 1 extra power point is awarded for each correct shot to the correct area. Shots landing outside the marked area (35 cm wide by 55 cm long) receive 2 points. Shots landing outside the court and remaining on the net are scored as 0 points. These points are added to the points for correctly placed shots. A total of 4 points are added. (Maximum score is 16 + 4 = 20 points)

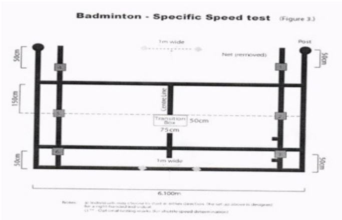
b. Backhand Net Drop: The coach who will evaluate the player feeds 4 balls from the opposite side of the court to the player's backhand side, and the player performs 4 backhand net drop shots from the center. Correct net drop shots to the correct area are awarded 4 points, while shots that fail to clear the net are awarded 0 points. The maximum score is 4 points. Additionally, 1 extra power point is awarded for each correct shot to the correct area. Balls hit outside the court are counted as 0 points. Shots hit outside the designated area are awarded 2 points. These points are added to the points for correct shots. A total of 4 points are added. (The maximum score is 4 + 4 = 8 points).

Serve (Short)(Long) Evaluation:



a. Short Serve: The athlete participating in the evaluation performs 4 short serves to the right box, regardless of whether it is a forehand or backhand side. They receive 4 points for each correct serve to the right and left sides of both front courts, which are the serve zones. 2. They receive 3 points for shots served into the service area. Shots served outside the service area receive 1 point. They perform the same shot into the left service box. Serves are executed as two FH Short Serves and two BH Short Serves. The player is given one service attempt. The total points to be collected from these shots is 16 points. Power points are awarded for each correct shot. It is evaluated as a total of 4 points. (Highest score is 16+4=20)

b. Long Serve: The athlete participating in the evaluation performs 4 short serves to the right box, regardless of the forehand or backhand side. Each correct serve to the 55 cm wide areas to the right and left of the shaded area on the baseline is awarded 4 points. The center area is awarded 2 points. One point is awarded for serves hit in front of the service area. The same shot is called a Bh Serve. The total points that can be earned from these shots is 16 points. Power points are awarded for each correct shot. This is evaluated as a total of 4 points. (The maximum score is 16+4=20).



PUANLAMA			
ERKEKLER		KADINLAR	
SÜRE	PUAN	SÜRE	PUAN
12 SANİYE ALTI	25 PUAN	14 SANİYE VE ALTI	25 PUAN
13-15 SANİYE	20 PUAN	15-18 SANİYE	20 PUAN
16-18 SANİYE	15 PUAN	19-22 SANİYE	15 PUAN
19-21 SANİYE	7 PUAN	23-25 SANİYE	7 PUAN
22 SANİYE VE ÜZERİ	0 PUAN	25 SANİYE VE ÜZERİ	0 PUAN

Star Test Protocol:

A speed test used by the Badminton Federation for athlete selection will be administered. Participants enter the court for the test and proceed to the center. The athlete picks up a shuttlecock at specific points and returns to the center. They then move on to the next shuttlecock. The test is completed by performing the exercise on all shuttlecocks in the six zones. This test is repeated twice, and the average of the two tests is taken. The rest period between tests is 2 minutes. The test starts with the "ready" command and ends when the last shuttlecock is placed in the center.

Results

This study compared elite badminton players (Group 1) who watched videos with players (Group 2) who received verbal cues. The number of players in both groups was monitored to ensure gender balance. Statistical analysis of the study was performed using the SPSS 27.00 program. A descriptive statistics T-Test was performed for independent normally distributed groups to determine the level of significance between the groups.

Table 2. BST Pre- and Post-Test Normality Test Results

Test	Group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
BST Post-Test Score	Research Group	,141	11	,200*	,960	11	,767
	Control Group	,212	11	,180	,911	11	,249
BST Pre-Test Puan	Research Group	,192	11	,200*	,882	11	,110
	Control Group	,118	11	,200*	,950	11	,639

Source: Authors results

Normality tests were conducted to measure whether the distribution of the groups was normal, and it was observed that the values of the groups were normally distributed. In the Normality Test conducted to determine whether the statistical distributions of the two groups were normal, it was observed that the distributions of both groups were normal based on the Shapiro-Wilk Normality values, as the number of groups was below 50.

Based on the assumption that all athletes participating in the study had the same starting level and values, it is thought that the differences in the responses to the Badminton Level Test between the groups generally stemmed from the players' individual playing strengths, and that this difference occurred randomly.

Table 3. Independent Samples Test results

Independent Samples Test										
F				t-test for Equality of Means						
		Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
								Lower	Upper	
BST Pre-test Score	Assumed Equal Variances	**,551**	**,467**	**,436**	**20**	**,667**	**4,273**	**9,794**	**-16,157**	**24,702**
	Assumed Equal Variances			,436	18,468	,668	4,273	9,794	-16,266	24,811
BST Final Test Score	Assumed Equal Variances	**,060**	**,809**	**,753**	**20**	**,460**	**8,818**	**11,703**	**-15,595**	**33,231**
	Assumed Equal Variances			,753	19,860	,460	8,818	11,703	-15,606	33,242

Source: Authors results

According to the pre-test and post-test results of the two groups, it was observed that the results of the research group were statistically significant, that there was a significant increase in the values of both groups, and that this increase was more significant in the research group, which was the video-watching group.

A highly significant difference was observed between the pre-test and post-test results of both groups. The degree of significance in the pre-test values was higher than the degree of significance in the post-test values (,436).

Table 4. Group statistics

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
BST Pre-test Score	Research Group	**11**	**94,73**	**19,381**	**5,844**
	Control Group	**11**	**90,45**	**26,067**	**7,859**
BST Final Test Score	Research Group	**11**	**109,27**	**26,268**	**7,920**
	Control Group	**11**	**100,45**	**28,577**	**8,616**

Source: Authors results

The results of the research group differed from those of the control group in the pre-tests. Accordingly, the pre-test values of the research group (X = 94.73) were higher than those of the control group (X = 90.45). Similarly, the post-test values of the research group also showed a significant difference (X = 109.27) and were found to have a more significant value than the values of the control group (X = 100.45).

Discussion

As technology advances, it offers humanity a wide range of opportunities. Countries are constantly striving to improve the quality of their human resources in order to meet the technological demands of the future, based on new technological developments (Nguea, 2023). Therefore, knowledge is more important than ever. The increase in knowledge and its importance has created technological societies and caused fundamental changes in all aspects of social life. Technological developments affecting the information society have greatly influenced education systems, as they have every area of life (David & Foray, 2003). These effects have forced educational institutions, teaching practices, and scientific and technological centers within the newly shaped education system to make the most of computer-based technology. The most fundamental feature of sports science in reaching the level expected of athletes is the training of talented and well-equipped coaches and sports educators who can use technology in the field. As sports educators began to use technology in all areas, the number of qualified athletes has also increased. Science plays a major role in today's life, and its impact extends to a wide range of areas (Kos, at all., 2018).

The study's results indicate that incorporating video training into a badminton coaching program substantially enhances players' technical skills compared to traditional training alone. Video training, which involves a systematic synthesis of images to form objective and manipulable footage, enables athletes to rapidly acquire movements by observing demonstrations. This method has previously proven valuable for improving competitive decision-making and accelerating technical mastery. The present findings extend those results by demonstrating that video training also fosters the rapid development of badminton technical skills. Coaches thus emerge as integrally assisted by video technology in their teaching practices, highlighting the practical applicability and transformative potential of this intervention.

Each of the indices representing technical skills showed increased levels after video training compared with prior measurements. Correspondingly, the evaluation scores by experts and special referees rated the movements as correct and appropriate, with left and right directional abilities improved (Chu & Situmeang, 2017). Meanwhile, the control group, which did not receive video training, demonstrated decreases in the measurement indices. These findings indicate that video training can effectively enhance players' comprehensive technical abilities.

The data reveal that video training plays a significant role in cultivating badminton players' technical skills. Similar conclusions have been reached in analyses of winning experience and technical training by BP neural networks. Specifically, strengthening technical abilities, physical endurance, and strength, while maintaining focus on technical skills and tactical discipline throughout matches, contributes to improved performance.

Conclusion

This study, which examined the effects of training using video slow motion on athletes, demonstrates that the success index consistently increases with different training methods in improving athletes' qualifications. It was observed that athletes, in particular, achieved greater success by diversifying their training sessions and mentally processing different techniques.

The research aimed to determine the effect of video training on the development of technical skills in badminton players. The study focused on key technical aspects such as serve, clear (FH-BH), Dropshot, Net Drop, Smash strokes. A quasi-experimental design with a pretest-posttest control group was employed, involving 22 badminton players aged 15–18 years from Erzurum. Subjects were divided into a treatment group, which received video training, and a control group, which did not. Data were collected through specific skill tests and analyzed using statistical methods. Results indicated that the group receiving video training exhibited significant improvement in technical skills compared to the control group. Thus, video training positively influences the development of badminton players' technical abilities. Coaches and athletes are encouraged to incorporate video training into regular practice sessions to enhance technical proficiency. Future investigations could explore the application of video training across other sports and examine long-term effects on athletic development

Solution suggestions emerging from the studies are presented below.

1. In badminton training, video viewing and analysis should be incorporated into traditional methods.

2. Slow-motion video training encourages athletes to think more deeply because it engages their mental processes.

3. Slow-motion video presentations, especially in basic training programs, encourage athletes to develop in different areas in the development of successful athletes.

4. They will particularly help coaches diversify their training, leading to multifaceted development.

5. Continuous monitoring of the best athletes in the field will foster a success program for athletes and, through role model development, will foster more successful athletes.

6. Video presentations can provide an alternative training model, especially for athletes lacking adequate training programs.

7. Relevant federations will contribute more to national sports by leveraging these programs to elevate their coach development programs.

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