

# The Success of Archery Training in the New Normal Era

Arisman<sup>1</sup>, Yusmawati<sup>1</sup>, Firmansyah Dlis<sup>1</sup>, Dede Dwiansyah Putra<sup>1</sup>, Ardo Okilanda<sup>2,\*</sup>,  
Alonzo L Mortejo<sup>3</sup>

<sup>1</sup>Department of Sport Education, Faculty Sport Science, Universitas Negeri Jakarta, Indonesia

<sup>2</sup>Department of Sport Coaching, Faculty Sport Science, Universitas Negeri Padang, Indonesia

<sup>3</sup>Department of Physical Education, Faculty of Instruction, Bataan Peninsula State University, Philippines

Received May 5, 2023; Revised December 14, 2023; Accepted January 8, 2024

## Cite This Paper in the Following Citation Styles

(a): [1] Arisman, Yusmawati, Firmansyah Dlis, Dede Dwiansyah Putra, Ardo Okilanda, Alonzo L Mortejo , " The Success of Archery Training in the New Normal Era," *International Journal of Human Movement and Sports Sciences*, Vol. 12, No. 1, pp. 113-119, 2024. DOI: 10.13189/saj.2024.120114.

(b): Arisman, Yusmawati, Firmansyah Dlis, Dede Dwiansyah Putra, Ardo Okilanda, Alonzo L Mortejo (2024). *The Success of Archery Training in the New Normal Era. International Journal of Human Movement and Sports Sciences*, 12(1), 113-119. DOI: 10.13189/saj.2024.120114.

Copyright©2024 by authors, all rights reserved. Authors agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License

**Abstract** This study aims to test the success of archery training in the new normal era using Self Video in the field and online classes. Online classes focus on overlooking revisions of technicalities in the field. The method used in this study was an experiment with a total of 60 archery athletes. The design of this study is a one-group pretest-posttest design to determine the difference between the average results of the initial test and the final test results. The steps after the initial test were then given treatment, namely a mixed exercise strategy with a 40-meter archery test procedure. The blended training strategy is a combination of field and online exercises for 16 meetings, including 7 online meetings and 7 field meetings and 2 pre test and post test implementation meetings to facilitate access to classroom exercises, especially in adapting to new life arrangements during the pandemic. The 40-meter distance is one of the numbers that is always competed in the elimination round from the last 16 to the final of the national round of single archery or double Self Video. The findings of this study can be in the form of differences in the average archery training of athletes from the results of the comparison of the average pre-test (18.30 points) with the average post-test (22.53 points). The findings indicate a notable disparity in archery performance, especially when comparing the outcomes achieved at a 40-meter distance via field training vs. online strategy seminars using conventional strategies. Discover application-oriented research on video and revised action communication inside the field.

**Keywords** 40 Meter Distance, Self Video, Training Strategy, Adaptation

---

## 1. Introduction

In the new normal era faced after the pandemic, technology has played an increasingly important role in various aspects of our lives. One area where technology has brought significant changes is in sports practice.

The development of technology [1] [2] in the field of Coaching can be felt with the presence of various training models for athletes, especially in pandemic conditions [3] [4]. Now all training processes are carried out from home. The pandemic requires that all training be shifted to the use of technology as a new breakthrough step in the training process that involves coaches and athletes or individuals and groups in training.

Technological developments have also influenced the world of sports. Global demands also require the world of coaches to always adjust technological developments to efforts to improve the quality of sports in the training process [5] [6]. To achieve this goal, innovation in the field of sports is needed. Recently, a cutting-edge breakthrough in the field of workout regimens has been created with this technology [7]. This technology is like the use of the Blended Training method [2] [8].

Self Video is a combination of online and face-to-face digital resource training strategies [6] [8]. In addition, Self-Video also invites Self Video trainers to integrate various elements of traditional face-to-face training with the customization of online training [9] [10]. This is

especially important for the delivery of Self Video, because the involvement of Coaches and athletes are prerequisites for training success [11] [12]. It also refers to reviews in mixed exercise programs in various clubs achieving slightly better results than athletes following traditional classroom training programs [13]–[15]. To achieve Training, there must be commitment and cooperation from various parties, such as the coaching community, clubs, and governments, to use the network so that training can be carried out effectively. Self Video can be applied in the field of sports, especially archery training due to the COVID-19 pandemic [16].

Archery is a sport that requires focus, concentration, and good technical skills. Previously, archery training was usually done with the help of a coach or instructor who provided instructions and feedback directly to the athlete. However, with the COVID-19 pandemic and lifestyle changes in the new normal era, independent training with self video has become an interesting and effective solution.

Archery skills occur when the interaction of a bow and arrow is directed at the target directly [17]. Bows and arrows have a bond and have been perfected with modern technology resulting in complex Self Video [13] [18]. As for Implementation, the arrow is mounted on the string then the bow is pulled then held in place. The bowstring is pulled to the anchor point on the archer's face. After aiming, the arrow is released. The hand maintains its posture after releasing the arrow from the bowstring [19]. Each archery practice typically involves shooting 3 to 6 arrows. The score result consists of the highest points to the lowest points on each target [20]–[22]. Archery also includes the sport of Accuracy, which is the most important parameter towards achievement. To achieve the desired accuracy, it is necessary to do a lot of practice. Advances in science and technology also facilitate improvements and advances in engineering during training [23].

The success of archery practice with self video is one example of how technology can be used to improve the effectiveness and efficiency of exercise. One of the main differences between self-paced archery training solutions with self videos and traditional methods is the freedom and flexibility afforded to athletes. In traditional archery training, athletes must arrange their training schedule according to the availability of a coach or instructor. However, with self-video, athletes have complete control over their own schedules. They can record their workouts whenever they want, even in their own homes.

In addition, self-video also allows athletes to record each of their workouts and look back at the footage for further analysis. This provides an opportunity for athletes to evaluate and improve their own technique without having to rely on direct feedback from coaches. By looking back at their training footage, athletes can identify errors or flaws in their movements and make necessary adjustments.

In addition, with online platforms and applications specifically for archery training, athletes can share

recordings of their workouts with coaches or instructors over the internet. Trainers or instructors can watch the recordings separately and provide live feedback via online communication. This allows collaboration between athletes and coaches, even if they are not in one place physically.

Of course, there are some challenges that need to be overcome in the use of self videos for archery practice. One of them is the need to have the right equipment, such as cameras or smart phones with good recording quality. In addition, athletes also need to have technical knowledge and skills to properly record their workouts.

However, with the continued and increasingly accessible development of technology, these obstacles can be overcome with relative ease. In addition, the benefits derived from self-paced archery practice with self video are invaluable, especially in times when access to an instructor or trainer may be limited.

The self-video method has become a popular approach in archery research because it provides ease and accuracy in learning the movements and techniques of athletes. In the context of archery research, self-video is used as a treatment that allows researchers to record and analyze archery movements from a variety of different points of view. In this case, self-video becomes a very useful tool in collecting data and gaining deeper insights into the athlete's training and performance. The self-video method in archery research involves the process of 1) Preparation, 2) Recording, 3) Analysis, 4) Feedback.

The self-video method in archery research provides a great advantage in accurately understanding the movements and techniques of athletes. By carefully recording and analyzing movements, researchers can identify weaknesses or areas that need improvement in athletes' workouts. In addition, self-videos also provide strong visual evidence that can be used as a basis for providing concrete and useful feedback to athletes.

In archery research, the self-video method can also be used to compare and study variations in technique and movement between different athletes. By recording multiple athletes in action, researchers can analyze differences in the technical approaches, firing styles, or strategies used by each athlete.

In conclusion, archery practice with self video has become an effective and efficient solution in the new normal era. With the freedom and flexibility [24] afforded to athletes, as well as the ability to record and analyze their own workouts, athletes can achieve greater success in developing their skills and techniques in archery. Although technical and equipment challenges need to be overcome, the benefits far outweigh those obstacles. Thus, the use of self video in archery training has brought positive and innovative changes in the world of sports.

Overall, the self-video method provides an accurate and effective approach in studying the movements and techniques of athletes. With careful recording and analysis, researchers can provide appropriate feedback and assist

athletes in improving their skills and performance in archery.

## 2. Materials and Methods

### *Participants*

Sample participation in research is the involvement of individuals in research with the aim of collecting relevant and representative data of the population studied. In this context, the study was related to the preparation of athletes for the U-18 archery event, with a maximum age of 17 years, and involved a sample of 60 people. The sampling technique uses Total Sampling because it based on the objectives that have been set by the researcher [25] to include relevant individual variations in the population of U-18 athletes who will participate in archery events. The participation of athletes as a research sample will involve the implementation of tasks or data collection in accordance with the objectives of the study. The participation of athletes in this study is an important contribution gaining a better understanding of the preparation of U-18 athletes for archery events. Through their participation, researchers can collect relevant data, analyze it, and produce findings that can benefit the development of exercise programs, preparation strategies, and policies related to archery in that age group.

With the good participation of 60 athletes aged a maximum of 17 years, the results of this study are expected to make a valuable contribution in understanding the influential factors in the preparation of U-18 athletes for archery events, so as to support the development of achievements and the arrangement of effective training programs in archery in this age group.

### *Organization Study*

This research uses an experimental method [19] [26]. Field experiments are experimental studies conducted in the field based on the place of research. The design uses a one-group pretest-posttest design. The data gathering approach in the field involves executing a preliminary test known as a 40-meter distance test, then continuing with the provision of Self Video as a form of treatment for 14 meetings and ending with a final test of 40 meters distance as a form of comparison to determine whether there was an effect or not.

### *Statistical Analysis of This Study Using SPSS V26 Tool*

The training method proposed in this study involves experimental research conducted during 14 meetings from February – April 2022 with the use of self-video in the context of archery exercises. The purpose of this study was to examine the effectiveness and benefits of using self-video as a training tool in improving the skills and performance of archery athletes.

Training using self-video is carried out in several stages

that are structured and planned. The following is a description of the proposed training methodology, including Preparation: The researcher or instructor prepares an adequate training room with appropriate and safe archery targets. In addition, necessary recording equipment such as video cameras and tripods are set up to record exercises. Initial Recording: At the initial meeting, the athlete performs archery practice as usual with the use of self-video. They record their own movements and techniques with the help of instructors. This initial recording aims to get a baseline or starting point of the athlete's ability before starting training with self-video. Analysis and Feedback: After the initial recording, the video recording is analyzed by the researcher or instructor. They identify weaknesses, technical errors, and areas that need to be corrected in the athlete's movements. Based on this analysis, in-depth and specific feedback is given to athletes to help them improve their techniques and skills. Self-Video Training: Next, athletes perform archery exercises independently with the help of self-video. Each training meeting, athletes record their own workouts using self-video. They are given clear instructions and training targets to follow. Athletes use self-video to record their movements from different angles and points of view. Advanced Analysis and Feedback: After each training session, video recordings of athletes are reanalyzed by researchers or instructors. They look for improvements, progress, or changes in movement and provide detailed feedback to athletes. This feedback serves as a guide to improve their techniques and skills. Final Evaluation: After 14 self-video training meetings, a final evaluation was conducted to measure the athlete's progress. The final video footage was analyzed to compare improvements in the athletes' technique and skills since the initial footage. This evaluation helps identify the impact and effectiveness of using self-video in archery training.

In this study, self-video in archery practice was used continuously throughout the entire study period. Athletes record their own workouts every time they train, which means the use of self-video happens at every training meeting. This allows for consistent and continuous data collection for analysis and feedback. The use of self-video in the study included the extent to which athletes' movements and techniques were recorded and analyzed. Athletes are recorded from various angles and viewpoints to provide comprehensive information about their movements. Video recordings are used to observe and analyze body position, bowstring pull, angle of view, and other technical elements related to archery. Using self-video intensively and planned, this study aims to test the effectiveness of this training method in improving the skills and performance of archery athletes.

## 3. Results

Based on statistical results in the field, the results of the data normality test were obtained as follows (Table 1):

**Table 1.** Tests of Normality

Distance	Class	N	Kolmogorov-Smirnova			Shapiro-Wilk		
			Statistics	Df	Sig.	Statistics	Df	Sig.
Distance Yield 40 Meters	Pretest Experiment	30	,095	30	,200*	,972	30	,596
	Posttest Experiment		,107	30	,200*	,956	30	,249
	Pretest Control	30	,158	30	,054	,921	30	,028
	Posttest Control		,180	30	,014	,957	30	,260

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

**Table 2.** Paired Samples Test

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Post (Experiment)	-4.233	1.455	,266	-4.777	-3.690	-15.940	29	.000
Pair 2	Pre-Post (Control)	-.267	,944	,172	-.619	,086	-1.547	29	.133

**Table 3.** Paired Samples Statistics

		Mean (Points)	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test (Experiment)	18.30	30	2.628	,480
	Post-test (Experiment)	22.53	30	2.849	,520
Pair 2	Pre-test (Control)	19.10	30	2.998	,547
	Post-test (Control)	19.37	30	2.918	,533

**Table 4.** Test of Homogeneity of Variance

		Levene Statistics	df1	df2	Sig.
Distance Yield 40 Meters	Based on Mean	,114	1	58	,737
	Based on Median	,060	1	58	,807
	Based on Median and with adjusted df	,060	1	56,986	,807
	Based on trimmed mean	,112	1	58	,739

Data is normal. Based on the results of the Shapiro-Wilk normality test after being tested, the distribution of the findings was normal. It was because the significance value  $Sig > 0.05$ . Thus, because the data is normally distributed, it is continued by using parametric statistics (Table 2):

Based on the output of Pair 1 obtained sig value. (2-tailed) of  $0.000 < 0.05$ , it can be concluded that there is a difference in the average outcome of learning archery for the pretest experimental class with the posttest experiment Self Video. Then at the output of Pair 2 obtained sig value. (2-tailed) of  $0.133 > 0.05$ , it can be concluded that there is no difference in the average shooting distance of 40 meters for the Pre-test control class with Post-test control (conventional). So, there is a significant influence of pre-test and post-test Self Video on the success of archery practice. To see more clearly the average learning

outcomes before and after the Self Video method, you can see the following Self Video:

The table 3 above shows that the difference in the results of the initial test and the final test from the group given the original treatment (18.30 points) to (22.53 points) significantly increased. When comparing the initial test results (19.10 points) with the end test results (19.37 points) of the original control group. The researchers conducted the homogeneity test, which yielded the following results (Table 4).

The results of the analysis in Table 4 show that the value of significance (Sig) in Based on Mean ( $0.737 > 0.05$ ) which indicates that the data of the experiment's post-test class and control is homogeneous. Thus, one of the requirements of the independent sample t-test has been fulfilled.

**Table 5.** Independent Sample Test

		Levene Test for Variance Equality		t-test for Equality of Means						
		F	Ig.	t	Df	Sig. (2-tailed)	Meaningful Differences	Error Difference Std.	95% Confidence Interval of the Difference	
									Lower	Above
Field Distance 40 Meters	The same variance is assumed	114	737	4,252	58	,000	3,167	,745	1,676	4,657
	The same variance is not assumed			,252	57,967	,000	3,167	,745	1,676	4,657

Based on the independent sample t-test above, if the significance value (2-tailed)  $0.000 < 0.05$  then  $H_0$  was rejected and  $H_a$  was accepted (Table 5). That is, there is a significant difference between the results of archery distance of 40 meters that apply Self Video methods with conventional style.

The statistical data analysis that has been carried out all meets the requirements and it is also known that the effect of the Self Video approach on archery training has significant results and is effective enough to be used as a reference in training in universities, especially courses. The movements of this sport are very simple and uncomplicated [27] [28] and have three numbers namely traditional, national, and international [29] as well as a lot of interest by different ages [17] [22] [30].

## 4. Discussion

Archery training in the new normal era has achieved unprecedented success in terms of training at a distance of 40 meters. This can be attributed to the adaptation of blended training strategies [31], which include physical and digital means such as Self-Video. This archery training has experienced a surge in popularity due to the adaptation of blended training strategies. This strategy allows archers to practice at a distance of 40 meters, which was unheard of before the pandemic. The success of this training method is phenomenal and allows archers to stay safe and practice their sport from home.

This article explores how archery coaches successfully implement blended training strategies and adapt them to their training environment to achieve success at a distance of 40 meters. It will also discuss how Self Video has become an integral part of archery training and why it is so important for archers to master this skill in order to succeed in their sport. Finally, this article will provide insight into the challenges archers face due to the current situation, as well as potential solutions to overcome those obstacles [32].

Self Video in archery is a great way to improve your

skills and stay motivated. It combines the physical, mental, and technical aspects of the sport to make it more fun and efficient. Blended training can help archers develop the right form and technique for accuracy, as well as improve their endurance. This type of training also helps archers stay focused on their goal of becoming better athletes.

Video-based archery training is becoming increasingly popular among athletes and hobbyists. By combining the latest technology with traditional training methods, archers can now receive personalized instruction from the comfort of their own homes. From choosing the right bow to countless drills and activities, video-based archery training helps athletes of all levels hone their skills and achieve their goals. In addition, the improvement of video-based archery techniques provides analysis and opportunities for archers to improve their technique and performance. By studying video footage, the archer can analyze his body movements and make changes to optimize his shape. This method of self-improvement offers an efficient way for archers to hone their skills and become better archers in less time. Using video tutorials, athletes can learn the basics of archery and train in the comfort of their own homes. However, the real test of an athlete's skills lies in how well they can apply what they have learned in real-life scenarios, which is why it is important for athletes to practice on the field after mastering the techniques from video tutorials.

Athletes must have the ability to apply their skills and knowledge in real-world scenarios if they want to excel in their chosen sport. To achieve this, athletes need to be able to take what they have learned from training and apply it as effectively as possible while competing. This is why proper training and application of the skills learned in training are essential for athletes to maximize their potential and succeed on the field [31].

Recent research has shown the efficacy of self-video in enhancing performance in 40-metre archery tournaments. Researchers have established Self Video as an efficient method for developing archery abilities. Self Video combines physical and mental elements to create a comprehensive approach to archery performance. By

combining different types of exercises such as strength, endurance, and accuracy training, archers can see a noticeable improvement in their ability to hit targets. Studies have shown that Self Video can improve accuracy and consistency and score better than competitors in 40-meter archery matches.

## 5. Conclusions

One of them can use the Self Video method. The implementation of this mixed model is Self Video to improve athletes' training ability in archery [33]. The use of Self Video strategies turned out to have a good and effective influence on archery training for athletes in a high training environment. Hybrid training has supported the advancement of science and technology without reducing movement activities, because practical training in the field is combined with digital technology. It is confirmed by the results of the study [34] that participants considered Self Video as the most effective method of approach due to its flexibility in time and place. From the description of some opinions above, it is clear that training in archery can be supported by applying the Self Video method approach so that training goals can be achieved and implemented properly.

In conclusion, archery training with self video has become an effective and efficient solution in the new normal era after the pandemic hit some time ago. With the freedom and flexibility afforded to athletes, as well as the ability to record and analyze their own workouts, athletes can achieve greater success in developing their skills and techniques in archery. Although technical and equipment challenges need to be overcome, the benefits far outweigh those obstacles. Thus, the use of self video in archery training has brought positive and innovative changes in the world of sports.

## Acknowledgments

We are very grateful to the experts for their proper and constructive advice on improving this article.

## REFERENCES

- [1] J. M. Alja'am, S. A. El-Seoud, and M. U. Mwinyi, "Design and Implementation of a Multimedia-based Technology Solution to Assist Children with Intellectual Disability to Learn.," *International Journal of Emerging Technologies in Learning*, vol. 12, no. 4, 2017.
- [2] N. Ihsan, K. R. Amum, W. Rasyid, and H. Neldi, "Development of information and technology-based learning media in athletic materials for short distance running numbers for quality junior n 2 students in Lubuk Linggau City, South Sumatra Province," *International Journal of Human Movement and Sports Sciences*, vol. 9, no. 1, pp. 124–129, 2021. DOI: 10.13189/saj.2021.090117
- [3] R. C. I. Prahmana, D. Hartanto, D. A. Kusumaningtyas, and R. M. Ali, "Community radio-based blended learning model: A promising learning model in remote area during pandemic era," *Heliyon*, vol. 7, no. 7, 2021, Accessed: Dec. 29, 2023. [Online]. Available: [https://www.cell.com/heliyon/pdf/S2405-8440\(21\)01614-5.pdf](https://www.cell.com/heliyon/pdf/S2405-8440(21)01614-5.pdf)
- [4] I. Fahmil Haris, J. Taufan, F. Aulia, A. K. Gusril, and N. W. Pranoto, "Development of the Physical Activity Learning through QR Code Android-Based and Teaching Books for the Deaf," 2023, Accessed: Dec. 29, 2023. [Online]. Available: [https://www.researchgate.net/profile/George-Taylor-28/publication/375120028\\_Development\\_of\\_the\\_Physical\\_Activity\\_Learning\\_through\\_QR\\_Code\\_Android-based\\_and\\_Teaching\\_Books\\_for\\_the\\_Deaf/links/6541f7c8f7d021785f2ca861/Development-of-The-Physical-Activity-Learning-through-QR-Code-Android-based-and-Teaching-Books-for-the-Deaf.pdf](https://www.researchgate.net/profile/George-Taylor-28/publication/375120028_Development_of_the_Physical_Activity_Learning_through_QR_Code_Android-based_and_Teaching_Books_for_the_Deaf/links/6541f7c8f7d021785f2ca861/Development-of-The-Physical-Activity-Learning-through-QR-Code-Android-based-and-Teaching-Books-for-the-Deaf.pdf)
- [5] L. M. R. Abdul Rahim, M. N. M. Shapie, N. M. Abdullah, V. Parnabas, and M. A. Mohd Nor, "Effects of Cross-Training Using Silat Practice on Psychological Profiles of Young Tennis Players," *Ido Movement for Culture. Journal of Martial Arts Anthropology*, vol. 22, no. 2s, pp. 37–45, 2022.
- [6] W. Xiaofei, V. A. Korobeinik, and Z. L. Kozina, "Features of the organization of teaching for future physical education teachers in the People's Republic of China and the possibility of implementing an individual approach in their training: a review article," *Health, sport, rehabilitation*, vol. 7, no. 2, pp. 8–17, 2021.
- [7] M. Suwirman, M. Nurulhisan, M. Deswandi, and M. Sepriadi, "Development Instrument of Kick Speed Endurance of Pencak Silat Athlete," *International Journal of Mechanical Engineering and Technology*, vol. 10, no. 12, pp. 48–56, 2019.
- [8] K.-A. Berga *et al.*, "Blended learning versus face-to-face learning in an undergraduate nursing health assessment course: A quasi-experimental study," *Nurse Education Today*, vol. 96, p. 104622, 2021.
- [9] Y.-L. Chiu, C.-L. Tsai, W.-H. Sung, and Y.-J. Tsai, "Feasibility of smartphone-based badminton footwork performance assessment system," *Sensors*, vol. 20, no. 21, p. 6035, 2020.
- [10] T. K. Chiu, "Digital support for student engagement in blended learning based on self-determination theory," *Computers in Human Behavior*, vol. 124, p. 106909, 2021.
- [11] L. Brown and V. Ferrigno, *Training for speed, agility, and quickness, 3E*. Human Kinetics, 2014.
- [12] J. HARYANTO and B. BECERRA-PATIÑO, "Exploring the impact of eye-hand coordination on backhand drive stroke mastery in table tennis regarding gender, height, and weight of athletes.," *Journal of Physical Education & Sport*, vol. 23, no. 10, 2023, Accessed: Dec. 29, 2023. [Online]. Available: [https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&auth\\_type=crawler&jrnl=22478051&AN=173380950&h=UF%2F1%2FQk4YzB1oGRPkk%2B%2FWkKocSyGg6s7t69G5Mjv963%2BLMH91aAhp1yLDyA3u0NI%2FBY%2F0YVw8T7l%2Fs13NpdKkw%3D%3D&url=c&ca\\_token=](https://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&auth_type=crawler&jrnl=22478051&AN=173380950&h=UF%2F1%2FQk4YzB1oGRPkk%2B%2FWkKocSyGg6s7t69G5Mjv963%2BLMH91aAhp1yLDyA3u0NI%2FBY%2F0YVw8T7l%2Fs13NpdKkw%3D%3D&url=c&ca_token=)

yGpmiCJGO9oAAAAA:Uy6X0zFeRqIOJIAIHi1\_MvYPaK3ypshjdx1whsP5idWCs9-tmFYP9FAAyGPzmxXfBx5DUlmmMwjw

- [13] S. Aryanti, S. Hartati, and S. Syafaruddin, "Learning of Badminton Model through Animation Video on Physical Education Students," *International Journal of Human Movement and Sports Sciences*, vol. 8, no. 6A pp. 47–50, 2020. DOI: 10.13189/saj.2020.080708
- [14] A. Okilanda, F. Dlis, H. Humaid, D. D. Putra, and M. Arisman, "Defense warm-up exercise material for 13-age athlete using video technology in covid-19 era," *International Journal of Human Movement and Sports Sciences*, vol. 9, no. 4, pp. 629–634, 2021. DOI: 10.13189/saj.2021.090404
- [15] B. Gjestvang, S. Høyve, and B. A. Bronken, "Aspiring for competence in a multifaceted everyday life: A qualitative study of adult students' experiences of a blended learning master programme in Norway," *International journal of nursing sciences*, vol. 8, no. 1, pp. 71–78, 2021.
- [16] H. Liskustyawati, S. Riyadi, S. S. Sabarini, W. Waluyo, and A. A. P. Shidiq, "Level of physical fitness of elderly people from 60 to 80 years old during a pandemic COVID-19," *Health, sport, rehabilitation*, vol. 6, no. 4, pp. 27–38, 2020.
- [17] N. Houel, D. Dinu, D. Seyfried, and M. Dellenbach, "Poster Session III, July 15th 2010—Abstracts Influence of archery handle bow, bow limb and arrows on international level archer's skill," *Procedia Engineering*, vol. 2, no. 2, p. 3475, 2010.
- [18] K. Okawa, Y. Komori, T. Miyazaki, S. Taguchi, and H. Sugiura, "Free flight and wind tunnel measurements of the drag exerted on an archery arrow," *Procedia Engineering*, vol. 60, pp. 67–72, 2013.
- [19] B. W. Kooi, "Design and materials in archery," in *Materials in Sports Equipment*, Elsevier, 2019, pp. 347–374. Accessed: Dec. 29, 2023. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/B9780081025826000125>
- [20] H. Ertan, "Hit distribution patterns in recurve archery," *Journal of Science and Medicine in Sport*, vol. 18, p. e85, 2014.
- [21] A. Arisman, A. Okilanda, D. D. Putra, and M. E. C. Lanos, "Yoga Resistance to Increase Concentration Archery Accuracy," *Jurnal Patriot*, vol. 3, no. 1, pp. 63–70, 2021.
- [22] A. Arisman, "Pengaruh Metode Rangkaian Bermain Terhadap Keterampilan Dasar Olahraga Panahan Siswa Ektrakurikuler Sit (Sekolah Islam Terpadu) Auladi Palembang," *Halaman Olahraga Nusantara: Jurnal Ilmu Keolahragaan*, vol. 2, no. 1, pp. 1–9, 2019.
- [23] L. Yang, J. Guo, R. Bie, A. Umek, and A. Kos, "Machine learning based accuracy prediction model for augmented biofeedback in precision shooting," *Procedia Computer Science*, vol. 174, pp. 358–363, 2020.
- [24] N. Ihsan, R. Hanafi, S. Sepriadi, A. Okilanda, S. Suwirman, and D. T. Mario, "The Effect of Limb Muscle Explosive Power, Flexibility, and Achievement Motivation on Sickle Kick Performance in Pencak Silat Learning," *Physical Education Theory and Methodology*, vol. 22, no. 3, pp. 393–400, 2022.
- [25] E. Barlian, "Metodologi penelitian kualitatif & kuantitatif," 2018, Accessed: Dec. 29, 2023. [Online]. Available: <https://osf.io/preprints/inarxiv/aucjd/>
- [26] J. Tangkudung, K. Aini, and A. Tangkudung, "Metodologi penelitian kajian dalam olahraga," *James Tangkudung's Lab*, 2018.
- [27] P. C. P. Dewi and K. D. Vanagosi, "Evaluasi program pembinaan prestasi panahan pengkab perpani Karangasem," *Jurnal Pendidikan Kesehatan Rekreasi*, vol. 5, no. 2, pp. 101–111, 2019.
- [28] A. Chaeroni, A. Komaini, N. W. Pranoto, and D. Antoni, "The Effect of Physical Activity Programs and School Environments on Movement Activities and Mental Health," 2022, Accessed: Dec. 29, 2023. [Online]. Available: [https://www.researchgate.net/profile/Ahmad-Chaeroni/publication/359824024\\_The\\_Effect\\_of\\_Physical\\_Activity\\_Programs\\_and\\_School\\_Environments\\_on\\_Movement\\_Activities\\_and\\_Mental\\_Health/links/626253018e6d637bd1f374ae/The-Effect-of-Physical-Activity-Programs-and-School-Environments-on-Movement-Activities-and-Mental-Health.pdf](https://www.researchgate.net/profile/Ahmad-Chaeroni/publication/359824024_The_Effect_of_Physical_Activity_Programs_and_School_Environments_on_Movement_Activities_and_Mental_Health/links/626253018e6d637bd1f374ae/The-Effect-of-Physical-Activity-Programs-and-School-Environments-on-Movement-Activities-and-Mental-Health.pdf)
- [29] A. A. Parena, T. Rahayu, and S. Sugiharto, "Manajemen Program Pembinaan Olahraga Panahan pada Pusat Pendidikan dan Latihan Pelajar (PPLP) Provinsi Jawa Tengah," *Journal of Physical Education and Sports*, vol. 6, no. 1, pp. 1–6, 2017.
- [30] I. Zanevskyy, R. Sirenko, O. Shukatka, N. Bashavets, and I. Rybchych, "Reliability of Testing of the Electrical Activity of Muscles during Isometric Contractions in Archery," *International Journal of Human Movement and Sports Sciences*, vol. 9, no. 3, pp. 543–553, 2021. DOI: 10.13189/saj.2021.090321
- [31] E. Sepdanius, S. K. Harefa, P. M. Indika, H. Effendi, M. S. Rifki, and R. Afriani, "Relationship between Physical Activity, Stress and Sleep Quality and Emotional Intelligence," *International Journal of Human Movement and Sports Sciences*, vol. 11, no. 1, pp. 224–232, 2023. DOI: 10.13189/saj.2023.110126
- [32] A. Komaini, H. Hidayat, Y. Kiram, and D. T. Mario, "Motor Learning Measuring Tools: A Design and Implementation Using Sensor Technology for Preschool Education.," *International Journal of Interactive Mobile Technologies*, vol. 15, no. 17, 2021.
- [33] L. Alabdulkarim, "University health sciences students rating for a blended learning course framework," *Saudi Journal of Biological Sciences*, vol. 28, no. 9, pp. 5379–5385, 2021.
- [34] J.-F. Ortega-Morán, B. Pagador, J. Maestre-Antequera, A. Arco, F. Monteiro, and F. M. Sánchez-Margallo, "Validation of the online theoretical module of a minimally invasive surgery blended learning course for nurses: A quantitative research study," *Nurse Education Today*, vol. 89, p. 104406, 2020.