Kinestetik : Jurnal Ilmiah Pendidikan Jasmani 7 (2) (2023)
Kinestetik : Jurnal Ilmiah Pendidikan Jasmani
https://ejournal.unib.ac.id/index.php/kinestetik/index
DOI : 10.33369/jk.v7i2.28458

The Influence of the Visual Auditory Kinesthetic Model (VAK) as an Alternative to Improve Basic Basketball Passing Techniques

Muhammad Noer Fadlan [1]* , Wariyati [2], Dina Hidayati [3]
[1] Department of Elementary School Teacher Education Study Program, Faculty of Teacher Training and Education, Universitas Muslim Nusantara Al-Washliyah, Medan, Indonesia
[2] English Education Department, Faculty of Teacher Training and Education, Universitas Muslim Nusantara Al-Washliyah, Medan, Indonesia
[3] Department of Guidance and Counseling Study Program, Faculty of Teacher Training and Education, Universitas Muslim Nusantara Al-Washliyah, Medan, Indonesia

Article Info

Article History :

Received : June 2023

Revised : June 2023

Accepted : June 2023

Keywords:

Basketball,
Model,
Passing,

Abstract

This study aims to determine the extent to which the Visual Auditory Kinesthetic (VAK) model influences the basic techniques of basketball passing. that the teacher has directed in carrying out the practice directly or in theory that has been taught. Then in this study the authors used a descriptive quantitative research method with a one-group pretest-posttest design model, where the researcher described the results in this study by revealing data in the form of numbers that had been analyzed using the SPSS application. Then the results of this study can be seen in some of the following data from the resulting research, it is known that the resulting significance value of 0.144 is greater than 0.06. So it can be concluded that the data tested is normally distributed. Then test the hypothesis through the paired sample t-test that the resulting average pre-test is 54.62 and 81.30 post-test. Therefore, the results of the post-test were better than the pre-test and the resulting standard deviation was for the pretest 13,240 and for the post-test 9,096. Then the results of the other paired sample t-test showed that the results were sig. (2-tailed) obtained by 0.000 (sig.2-tailed), namely 0.000 <0.06, meaning that there is an influence of the visual auditory kinesthetic model in the results of Improve the basic technique of passing basketball.

*Corresponding email: muhammadnoerfadlan@umnaw.ac.id
ISSN 2685-6514 (Online)
ISSN 2477-331X (Print)

INTRODUCTION

The game of basketball is the same as other big ball games, which is a game between two opposing teams and in a team, good cooperation and coordination is needed between one player and another (Mateus et al., 2019). The game of basketball has several basic techniques including, dribbling, passing and shooting, some of these basic techniques must really be mastered in playing basketball and these three techniques have their respective functional roles (Fransen et al., 2022). In basketball games the basic technique of passing or passing the ball is one of the basic techniques in basketball games which have an important role in a game, because in a basketball game you need understanding between players and good team play, and in team games This certainly involves one of the basic techniques in basketball, namely passing, especially chest passes, bounce passes, and overhead passes, namely with the correct technique so that you can create excellent team play (Vázquez et al., 2020).

The main problem of Jamani Education in Indonesia is the ineffectiveness of physical education in schools, this condition is caused by several factors including the limited ability of teachers, recent achievements have not been good, especially in the sport of basketball, as conveyed by the sports teacher this basketball sport needs to get attention, physically researchers review that there are still many shortcomings in achieving learning achievement, especially in basketball, because of that there is a lack of coaches or teachers who understand the game of basketball (Yuliandra & Fahrizqi, 2019). Preferably from a training point of view, it needs to be done using such a model so that children stay excited. The right training model for students in elementary schools is training by playing, because when children still like games so that children feel happy and at the same time learning (Altavilla et al., 2020). The role of the teacher is to take advantage of the nature of the child's enjoyment of a game manifested in basketball practice, this will be a teacher's endeavor to make variations in each exercise into the form of a game, the teacher must find an exercise that is appropriate and in accordance with the characteristics of the child he is facing (Stavropoulos et al., 2021). If the teacher does the exercises in a monotonous manner, the students will experience boredom in the exercises so that students are not enthusiastic about carrying out the exercises (Tuyls et al., 2021). Then the selection of the right training method also affects the results of the game of basketball, for example the methods that can be used to train basketball game skills, including: small children will not feel tired quickly when playing, and get more balls (Rosch et al., 2021.

The author observes that physical education teachers at Nurul Hasanah Private Elementary School have been doing more dominant basketball passing in the old ways, namely by command or lecture methods. This is what causes the learning process when practicing basketball passing to become monotonous, because the teacher plays more roles in learning while students listen more and imitate the movements played by the teacher. Situations like this do not support students' abilities, especially in understanding basketball learning material. Learning patterns like this cause students to be unable to develop cognitive, creative and innovative skills. Then after the observation process that the author has done, it can be seen, it turns out that each teacher is more likely to use methods that are monotonous so that the lack of attractiveness of each student. So from the problems that exist to overcome this, the authors will conduct research to

measure success in implementing passing practices in basketball games, so that appropriate learning models are needed for basketball dribbling learning, one of which is by applying the Vijuangl learning model (VAK), Auditory, Kinesthetic. One of them is by applying the Visual, Auditory, Kinesthetic learning model (VAK). One of them is by applying the Visual, Auditory, Kinesthetic learning model (VAK).

According toBredt et al., (2022)visual style (learning by seeing) learning must use the senses of the eye through observing, drawing, demonstrating, reading, using media and props. According toJia et al., (2020)a student prefers to see pictures or diagrams, likes shows, demonstrations or watching videos. For students with a visual learning style, what plays an important role is the eyes or vision (visual). Auditory style (learning by listening). Learning must listen, pay attention, speak, present, express opinions, ideas, respond and argue. A student prefers to listen to audio tapes, lectures, discussions, debates and verbal instructions (commands).Ribeiro et al., 2020).

Kinesthetic style (learning by moving, working and touching). Learning through physical activity and hands-on involvement. A student prefers to handle, move, touch and feel/experience body movements (hands-on, physical activity). For kinesthetic students, learning must experience and do (Klatt et al., 2021). According toBiradaret al., (2020) the characteristics of students who are more dominant have a kinesthetic learning style, for example, they glance downward when speaking and speak more slowly. These children find it difficult to sit still for hours because their desire for activity and exploration is so strong. Students with this learning style learn through motion and touch. The Visual Auditory Kinesthetic learning model (VAK) assumes that learning will be effective by paying attention to the three learning styles, in other words take advantage of the potential of students who already have it by training and developing it (Polozov et al., 2019). In this case the teaching methods used by the teacher should be more focused on demonstrations or media, as well as inviting students to objects related to the lesson, or by showing the props directly to students or describing them on the blackboard. The intent and purpose of this study is to determine the extent to which the role of visual, auditory, kinesthetic learning models in physical education subjects in private elementary schools Nurul Hasanah.

METHODS

This study uses a quantitative approach method, which is based on the philosophy of positivism which emphasizes objective phenomena that are studied quantitatively or carried out using numbers, statistical processing, structures, and controlled experiments (Rastogi & Shama, 2022). The type of research used in this research is experimental research using a one-group pretest-posttest design, namely a research design that has a pretest before being given treatment and a posttest after being given treatment, while the flow of this research design can be seen below.

Thus it can be known more accurately, because it can be compared with those held before being given treatment, which aims to find out and measure whether the visual, auditory, kinesthetic models have a big influence on the process of learning physical education in private elementary schools Nurul Hasanah. As for the subject of this study is the population determined by the researcher, namely the fourth grade students totaling 34 students, the average age of 8 years. The sampling technique

used is total sampling, meaning that the entire population is used as a research sample. Then the sample in this study amounted to 34 students. The treatment given to 34 students was approximately 12 meetings. Assessment of basketball game passing skills is used to collect data from the sample. Then it can be seen that the assessment rubric and the distribution of skills treatment time are presented in tables 1 and 2.

Table 1 The Value of Passing Skills in Basketball Games

Technique	Indicator	Score
Chest Pass	1. The ball is held with both hands in front of the chest. 2. Position one foot forward when throwing. 3. The ball is pushed forward with both hands straight. 4. When the loose ball ends with a palm facing outward. 5. According to the target, the throw is received at chest height.	**5**
Bounce Pass	1. The ball is held with both hands in front of the chest. 2. The ball is pushed with both hands straight down and palms facing out. 3. Position one leg forward. 4. The ball bounces down. 5. In accordance with the target, the throw is received at chest height.	**5**
Overhead Pass	1. How to hold the ball is the same as throwing from the front of the chest, it's just that the initial position of the ball is above the head slightly in front of the forehead and the elbows are slightly bent. 2. The ball is thrown by straightening the hands and palms facing out. 3. Position one leg forward. 4. The resulting ball throw dips. 5. In accordance with the target throw received overhead.	**5**

Table 2 Auditory Visual Kinesthetic Treatment

No	Activity	Destination	Time
1	Introduction: a. Pray. b. Absent students c. Perform static and dynamic warm-up. d. Directing test program procedures	Preparing Students	15 minutes
2	Core activities: a. Chest passes b. bound pass c. Overhead pass	The procedure for implementing the pass technique uses visual auditory kinesthetic	70 Minutes
3	Closing a. To do b. Cooling c. Evaluation d. Pray	Evaluate and reflect on visual auditory kinesthetic treatment	10 minutes

Participants

Total sampling, meaning that the entire population is used as the research sample. Then the sample in this study amounted to 34 students. The treatment given to 34 students was approximately 12 meetings.

Sampling Procedures

The intent and purpose of this research is to determine the extent of the role of visual, auditory, kinesthetic learning models in physical education subjects in private elementary schools Nurul Hasanah. The treatment given to 34 students was approximately 12 meetings. Assessment of basketball game passing skills is used to collect data from the sample.

Materials and Apparatus

In this study, researchers used an experimental approach, in which researchers distributed questionnaires followed by using pre-test and post-test, then researchers analyzed using SPSS technology media

Procedures

I, as a researcher, go to partners and work with stakeholders to be able to conduct research, which at least can provide good solutions in the future.

Design or Data Analysis

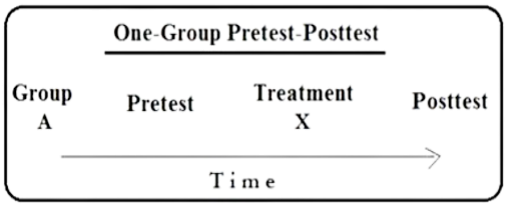

Fig 1. One-group pretest-posttest design

The data analysis technique used in this study was the data normality test and the paired sample t-test. The normality test is using the Kolmogorov-Smirnov Test, provided that the data can be said to be normally distributed if the significance is greater than 6% or 0.06. This hypothesis test uses a paired sample t-test with the condition

that, if Sig. (2-tailed) < 0.06 then H1 is accepted and H0 is rejected. That is, there is a difference in the results between the pre-test and post-test or there is an impact on the independent variables used. Then to analyze the data the researcher was assisted by using SPSS software version 21.

RESULT

Based on research data, all students Improve e their basic basketball passing skills. As can be seen from the scores before and after the test, all students experienced an increase in scores after receiving the visual-auditory-kinesthetic model treatment.

Table 3. Test Sample

		Unstandardized Predicated Value
N		34
Normal Parameters	Means	81.2952277
	std. Deviation	7.991133295
Most Extreme Differences	absolute	.300
	Positive	.300
	Negative	-.117
Kolmogrov-Smimove Z		1,174
Asymp. Sig. (2-tailed		.144

Based on the one-sample Kolmogorov-Smirnov test, it is known that a significance value of 0.144 is greater than 0.06. So it can be concluded that the data tested is normally distributed.

Tabel 4. Test Sample

		Paired Differences						
		Means	std. Deviation	std. error	96% Confidence Interval of the Difference	Q	Df	Sig. (2-tailed)
					Lower Upper			
Pair 1	Posttest-Pretest	26,676	6,830	1,171	24,294	29,070	34	.000

Table 4 shows that the average pretest score obtained was 54.62 and the post-test result was 81.30. Therefore, the post-test results are better than the pre-test. Then the results of the other paired samples t-test showed sig. (2 tails) get 0.000. So sign up. (2-tailed) is 0.000 <0.06, this indicates that the visual auditory-kinesthetic model influences the results of increasing the learning effect of basic basketball passing skills.In the learning outcomes of basketball material using basic passing techniques which are processed with a kinesthetic visual-auditory model, students obtain results on pre-test and post-test data. Of the 34 students' pre-test scores for basic basketball passing skills, 30 students had low scores and did not meet the required standards with an average pretest score of 54.62. This can happen because the 30 students have not been able to understand and master the basic techniques of passing basketball. Because there are still many techniques for how the fingers hold the ball, the position of the hands when throwing the ball and of course the position of the final attitude of the hands and feet after throwing is still not right and correct. By applying the visual auditory kinesthetic model, which is a multisensory learning style that involves the three elements of learning styles, namely sight, hearing, and movement.

If auditory, of course, provide auditory reasoning through the instructions given in the video and the presentations they make so that it helps students to better understand and remember the material provided. The latter is kinesthetic, namely through movement activities that are carried out or try directly from the theory they have received before. So it can provide direct movement experience of the basic techniques of passing a basketball so as to make participants better understand the movement patterns they saw before from the videos shown and the instructions they heard. Visual auditory kinesthetic is an interesting way of delivering learning and makes students able to reason and become more active students in the learning process. Then students are much better able to understand the theoretical material of basic passing techniques so that they are able to carry out basic basketball passing techniques correctly and seriously so that they are better than before. This is evident from the results of the post-test

data which found that the average student score in the basic technique of passing basketball increased to 82.30. Of course, the data has been tested and proven from the results of the normality test and hypothesis testing.

The resulting research results show that the resulting significance value of 0.144 is greater than 0.06. So it can be concluded that the data tested is normally distributed. Then test the hypothesis through the paired sample t-test that the resulting average pre-test is 54.62 and 81.30 post-test. Therefore, the results of the post-test were better than the pre-test and the resulting standard deviation was for the pretest 13,240 and for the post-test 9,096. Then the results of the other paired sample t-test showed that the results were sig. (2-tailed) obtained by 0.000 (sig.2-tailed), namely 0.000 <0.06, meaning that there is an influence of the visual auditory kinesthetic model in the results of Improve the basic technique of passing basketball.

DISCUSSION

Basketball has now developed a lot so that it has become a popular sport in schools or universities in Indonesia, many basketball clubs have been established, both professionals and beginners (Dong et al, 2022). Various basketball competitions include basketball championships between students from high schools, for example the Regional Student Sports Week, the Developmental Basketball League to universities, for example the Campus League and competitions that are handled professionally, namely basketball competitions between clubs throughout Indonesia NBL (National Basketball League), WNBL (Women's National Basketball League) (Russell et al., 2021). These various competitions naturally raised potential talents in the field of national basketball. According to Chandra (2018) in the game of basketball, one must master both physical and technical aspects, the link between physical and technical abilities cannot be separated. According to Yuan (2021) states that physical condition is a prerequisite that is indispensable in efforts to increase the performance of an athlete, it can even be said to be a basic need that cannot be delayed or bargained for. One of the most important techniques to master is shooting. If you have mastered shooting, you can control the rhythm of the game and generate lots of points for the team. Likewise the results of research from (Jiang et al., 2022) there are two ways to see if there is an effect, the first is to compare tcount with ttable with the condition that if tcount is positive (tcount > ttable) then there is an effect. Vice versa, if tcount is negative (tcount < ttable) then there is no effect. From the calculation results it is known that tcount is 11.100 which means tcount > ttable at or 11.100 > 1.714 at a significant level of 5%, it can be concluded that there is a significant VAK learning style model for shooting basketball in Al Irsyad Surabaya students.

The use of audio-visual media in the form of learning CDs in physical education learning activities is more effective and fun for students, not boring, because the appearance of the audio-visual in the form of learning CDs is audio-visual in nature, animated images, there is a narrator explaining, accompanied by music that makes relax studentsDewi & Budiana, 2018). This learning situation makes the material easier to understand and will stick in their minds longer so that it has a positive impact on student learning outcomes. According to (Simarmata, et al., 2020)the VAK learning model is a learning model that optimizes the three learning modalities, namely seeing, hearing, and

moving. Learning with this model emphasizes direct and fun learning experiences for students. Direct learning experience by seeing (Visualization), hearing (Auditory), and motion (Kinesthetic), student learning activeness can be seen based on indicators of student activity, namely participating in carrying out their learning assignments, being involved in solving problems, asking other students or to the teacher, trying to find various information needed for problem solving, carrying out group discussions, practicing themselves in solving problems, and the opportunity to apply what has been obtained in completing assignments or problems (Sukti, 2021). The liveliness of learning does not solely arise because of students but the teacher must also try to create an active learning atmosphere so that students can be motivated to be active in learning (Polite, 2022).

Learning using audio-visual media can support the process of delivering material and can also create new motivation, and can make it easier for students to receive material which is of course in accordance with their growth and development. Learning using audio-visual media in the form of videos can be used as an alternative in delivering material, because it can Improve e student learning outcomes (Widyastuti et al., 2021). The use of audio-visual media also makes students more enthusiastic and always focused on watching learning videos, this is of course very good for students because it will make students understand much more about the material presented. Other research states that learning using video media results in student learning outcomes increasing by 16.6%, and students are more serious and enthusiastic in participating in the learning process (Yusantika et al., 2018). Other findings were also obtained from the results of interviews with students, that with the learning method using audio-visual media like this students learn more about the material, because it can not only be learned during class hours, but can also be learned outside of class hours (Akbar, 2022). The videos being studied are deliberately given to students so that students are able to study them wherever they want to see the videos. The more students see the video, the more they understand and understand the movement process or the material provided (Maranatha & Putri, 2021). Besides that, students look very attentive and give comments to other students who do not understand or are wrong in analyzing their movements, this is of course good for students' affective and cognitive development. Indeed, this learning process activity should be able to equip students in various ways, starting from learning that is cognitive, affective and also psychomotor (Syarwah et a., 2019).

CONCLUSION

The results showed that the visual auditory kinesthetic model plays a strategic role and has a positive contribution in Improve basic passing technique skills and is very suitable for students with educational levels in the elementary school environment, because it is a provision for students at the next level. This study has limitations, namely that it cannot describe large-scale samples, samples at the middle/high school level, the application of the visual auditory-kinesthetic model also applies to students who have a high level of intelligence and does not necessarily apply to students with low intelligence. The recommendation for further research is to test the effectiveness of the visual auditory kinesthetic model in a large sample size and even low levels of intelligence.

ACKNOWLEDGEMENT

I would like to thank all those who have supported me in carrying out this research, to partner schools. I also hope this can be a solution for the implementation of the learning process that takes place in the future. I also thank my colleagues from the Universitas Muslim Nusantara Al-Washliyah Medan, who helped a lot in providing advice and motivation until the completion of this research. I also apologize if there are many shortcomings in this manuscript.

REFERENCES

Akbar, M., Nizaar, M., Fujiaturrahman, S., Haifaturrahmah, H., & Sari, N. (2022, July). The Effectiveness of Ethnoscience-Based Audio Visual Media Against Learning Interests of Elementary School Students. In Paedagoria National Seminar (Vol. 2, pp. 17-23).

Altavilla, G., D'isanto, T., & D'elia, F. (2020). The Educational Value Of Rules In Basketball. Http://Hdl.Handle.Net/10045/110816

Bredt, SDGT, Camargo, DDS, Torres, JDO, Praça, GM, de Andrade, AGP, Paolucci, LA, ... & Chagas, MH (2022). Multidimensional analysis of players' responses in basketball small-sided games: The impact of changing game rules.International Journal of Sports Science & Coaching, 17479541221112076. https://doi.org/10.1177/17479541221112076

Biradar, V., Thorat, P., & Vaidya, M. (2020). Assess the Visual, Auditory, Kinesthetic (VAK) learning styles among first year basic B. Sc. Nursing Students.Asian Journal of Nursing Education and Research,10 (4), 422-426. 10.5958/2349-2996.2020.00090.7

Chandra, O. (2018). Contribution of Leg Muscle Explosive Power and Flexibility on Lay-Up Shoot in Basketball. in2nd Yogyakarta International Seminar on Health, Physical Education, and Sport Science (YISHPESS 2018) and 1st Conference on Interdisciplinary Approach in Sports (CoIS 2018)(pp. 479-482). AtlantisPress.

Dewi, PK, & Budiana, N. (2018).Language learning media: application of learning theory and learning optimization strategies. Brawijaya Press University.

Dong, E., Fu, B., Li, Y., Jin, J., Hu, H., Ma, Y., ... & Cheng, Z. (2022). Hainan sport tourism development—a SWOT analysis.Sustainability,14(19), 12653. https://doi.org/10.3390/su14191263

Fransen, J., Tribolet, R., Sheehan, WB, McBride, I., Novak, AR, & Watsford, ML (2022). Cooperative passing network features are associated with successful match outcomes in the Australian Football League.International Journal of Sports Science & Coaching,17(5), 1101-1108. https://journals.sagepub.com/doi/10.1177/17479541211052760

Jia, H., Hu, Y., Chen, Y., Ren, C., Lv, T., Fan, C., & Zhang, C. (2020). Fever basketball: A complex, flexible, and asynchronous sports game environment for multi-agent reinforcement learning.arXiv preprint arXiv:2012.03204. https://arxiv.org/abs/2012.03204

Jiang, J., Wu, S., & Zhang, S. (2022). Design and Research of VR Basketball Teaching System Based on Embedded Intelligent Sensor.Journal of Environmental and Public Health,2022. https://doi.org/10.1155/2022/3688596

Klatt, S., Noël, B., Nicklas, A., Schul, K., Seifriz, F., Schwarting, A., & Fasold, F. (2021). Gaze behavior and positioning of referee teams during three-point shots in basketball.Applied Sciences,11(14), 6648. https://doi.org/10.3390/app11146648

Mateus, N., Goncalves, B., Weldon, A., & Sampaio, J. (2019). Effects of using four baskets during simulated youth

basketball games.PlS one,14(8), e0221773. https://doi.org/10.1371/journal.pone.0221773

Polite Adrianto, SE (2022).Why is Learning Media Important?. PT Elex Media Komputindo.

Polozov, A., & Akhmetzyanov, A. (2019). The Technology of Obtaining the Highest Possible Result in the Upcoming Match of Top-Level Basketball Teams.American Journal of Sports Science,7(1), 11-19.

Rosch, D., Schultz, F., & Höner, O. (2021). Decision-making skills in youth basketball players: diagnostic and external validation of a video-based assessment.International journal of environmental research and public health,18(5), 2331. https://doi.org/10.3390/ijerph18052331

Ribeiro, J., Lopes, R., Silva, P., Araújo, D., Barreira, D., Davids, K., ... & Garganta, J. (2020). A multilevel hypernetworks approach to capture meso-level synchronization processes in football.Journal of sports sciences,38(5), 494-502. https://doi.org/10.1080/02640414.2019.1707399

Rastogi, RA, & Sharma, T. (2022). Quantitative analysis of drainage basin characteristics.

Russell, JL, McLean, BD, Impellizzeri, FM, Strack, DS, & Coutts, AJ (2021). Measuring physical demands in basketball: an explorative systematic review of practices.Sports Medicine,51(1), 81-112.https://link.springer.com/article/10.1007/s40279-020-01375-9

Simarmata, J., Hanum, RA, Situmorang, D., Sitorus, M., Lubis, RA, Fazila, N., ... & Irma, I. (2020).Multimedia Elements For Learning. Our Writing Foundation.

Subakti, H., Watulingas, KH, Haruna, NH, Ritonga, MW, Simarmata, J., Fauzi, A., ... & Saputro, ANC (2021).Learning Innovation. Our Writing Foundation.

Syarwah, RA, Fauziddin, M., & Hidayat, A. (2019). Increasing student learning motivation using audio-visual media in learning Indonesian.Tambusai educational journal,3(3), 936-945.

Stavropoulos, N., Papadopoulou, A., & Kolias, P. (2021). Evaluating the Efficiency of Off-Ball Screens in Elite Basketball Teams via Second-Order Markov Modeling.Mathematics,9(16), 1991. https://doi.org/10.3390/math9161991

Tuyls, K., Omidshafiei, S., Muller, P., Wang, Z., Connor, J., Hennes, D., ... & Hassabis, D. (2021). Game Plan: What AI can do for Football, and What Football can do for AI.Journal of Artificial Intelligence Research,71, 41-88. https://doi.org/10.1613/jair.1.12505

Vázquez-Guerrero, J., Casals, M., Corral-López, J., & Sampaio, J. (2020). Higher training workloads do not correspond to the best performances by elite basketball players.Research in Sports Medicine,28(4), 540-552. https://doi.org/10.1080/15438627.2020.1795662

Widyastuti, A., Sudarmanto, E., Silitonga, BN, Ili, L., Purba, SRF, Khalik, MF, ... & Situmorang, K. (2021).Learning Planning. Our Writing Foundation.

Yuliandra, R., & Fahrizqi, EB (2019). Development of a Basketball Jump Shoot Training Model.Journal of SPORT (Sport, Physical Education, Organization, Recreation, and Training),3(1), 51-55.

Yuan, B., Kamruzzaman, MM, & Shan, S. (2021). Application of motion sensors based on neural networks in basketball technology and physical fitness evaluation systems.Wireless Communications and Mobile Computing,2021. https://doi.org/10.1155/2021/5562954

Yusantika, FD, Suyitno, I., & Furaidah, F. (2018). The influence of audio and audio visual media on the listening ability of grade IV students.Journal of Education: Theory, Research, and Development,3(2), 251-258. https://doi.org/10.23887/jet.v4i4.27108