Development of exercise smash, lob and backhand models in Bulutangkis based on training variation for beginner

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ABSTRACT

The purpose of this research and development is to produce a model practice badminton smash and lob-based variation of tools for novice players and determine the effectiveness, efficiency and appeal of players to the model created. This study uses research methods development Research & Development (R & D) from Borg and Gall. The subjects in this research and development is a club of players consisting of 40 players.

The instruments are used in research and development are the instrument test the suitability and the results of the motion that is used to collect motion data smash and lob, while the stages in the research and development are, in stages: (1) analysis of needs, (2) the expert evaluation (evaluation the initial product); (3) the trial is limited (small group trial); and (4) the main test (field testing).

Based on the results of the development can be concluded that: (1) With the development of this type of training smash and lob badminton-based variation of tools for novice players can be developed and applied in the training process badminton (2) The model of this type of training smash and lob badminton-based variation of tools for players beginners who have developed, acquired evidence of this improvement is the show on the test results data from the pretest and post test any significant difference between before and after treatment models.

Key words: Development, Model, Training, Badminton, Tools

Background

Training materials designed in the training process, will greatly assist coaches in training process that will take place. Training materials, design or workout plan on the environment exercises a right course in accordance with the conditions of training required in the arrangement will facilitate also the source of exercise that will be used and expected to be developed in an effort to achieve the objectives of the exercise were achieved and appropriate.

Implementation activity badminton game has been done by many companies from several manufacturers, government agencies, community members, and even educational environment ranging from elementary, junior high school to the university. Various advantages obtained from badminton activity, the researcher interested in making this event as The observations. From experience and observation that exist in the field, especially in Pontianak, researchers looked at many clubs or coaches in preparing and adjusting programs and training activities in the field, there are still shortcomings and needs to be repaired. Badminton exercise carried out in the club, in addition to the practice of the close relationship between activity in the game of badminton is also a very regular community activities we do, but on the other hand there are still many players who just play for more pleasure without playing well this is shown by his many novice players, interest in this case in terms by the old age. Badminton game exercises conducted during the time felt less than the maximum, it can be seen from the interaction and training process that centered on the coach as the only source of information, while the athletes or players tend to be passive and just received the knowledge of the coach concerned.

Actually a lot can be gained by athletes and coaches in practice, though in fact one of the objectives is done in this activity for fun but is expected to have additional training and other values to be gained by athletes after the training process is complete badminton game. This situation prompted researchers to develop recreational sports training model application especially badminton game that could accommodate training purposes as well as to create conditions walking exercise to be fun, not centered on the coach,

Badminton training programs in technical and tactical coach formulated in accordance with experience and personal feelings of athletes, who do not have the scientific data to be referred for brevity, main factors limiting increased performance athlete competition are as follows: 1. Data collection badminton players training and competition is incomplete and inaccurate, difficult to integrate this data effectively; 2. Analysis of this data is not systematically and fail to benefit rules for practical use; 3. From the standpoint of optimization of training mode, a training program in view of the athlete's individual technical and tactical aspects of the training are less, and the lack of scientific data support. Based on observations at various clubs Pontianak city known to many novice players who visits of his old age still practice very many mistakes in a punch smash and lob a game of badminton. The fact is that in 5 people true novice players hit a smash or lob least 1-2 people who can achieve success in the motion of matter smash and lob badminton less than the maximum.

Based on the above reasoning, the authors are interested in the innovation of applying the model of exercise in an effort to improve results and Lob in Game Smash Badminton. Selection of this type of training is based on the analysis of research by a team of coaches in clubs badminton in the city of Pontianak, namely that the application of this type of training smash and lob-based variation of tools is the concept of exercise that can help facilitate a coach link between training material in accordance with the state of the world real beginner novice players or athletes, stimulating the novice player / athlete acting as a group and were able to socialize well, and encourage athletes / players to make the application of knowledge in their daily lives.

Based on the description in the above background, this study focused on Model Development Exercise Smash And Lob bebasis Variation Tool To Improve Ability and Lob Smash In Badminton Games in Pontianak Kalimantan Barat.

Purpose

In general, the results of research and development is to produce a new product which will be used in training activities to facilitate trainers in delivering training material and make it easier to achieve the basic skills coach smash, lob and backhand. Research practice model development smash, lob and backhand in the game of badminton in particular have the multiple purpose of which is.
1. The results of this study are expected to add to the literature to the professionalism of coaches, teachers or lecturers to plan and execute the exercise programmatically.
2. For novice players, athletes and students practice model development is expected to increase mastery and badminton skills are varied in accordance with the concepts and theoretical.
3. For teachers, it can be used as a guideline for the implementation of the learning program or learning to improve the quality of professional teachers.

4. For higher education institutions, can be used as input in improving the training and learning process in an effort to advance the quality of education in the future.
5. For agencies or clubs, can be used as a guide in order to add new knowledge to develop training programs and learning.
6. The results of this study will result in a product in the form of a model exercise in the form of modules and CD recording at the time of execution of this type of training is done and is expected to contribute on thinking scientifically for scientists and other researchers to develop models of practice more specifically, exciting and innovative course.

Method.

This is research and development (R & D) Method, the next step is to do the stages in the development of the model. Research and development of this model using the steps of developing a model developed by Borg and Gall Theory. Or it can be described in terms of stages of development schemes as shown below:
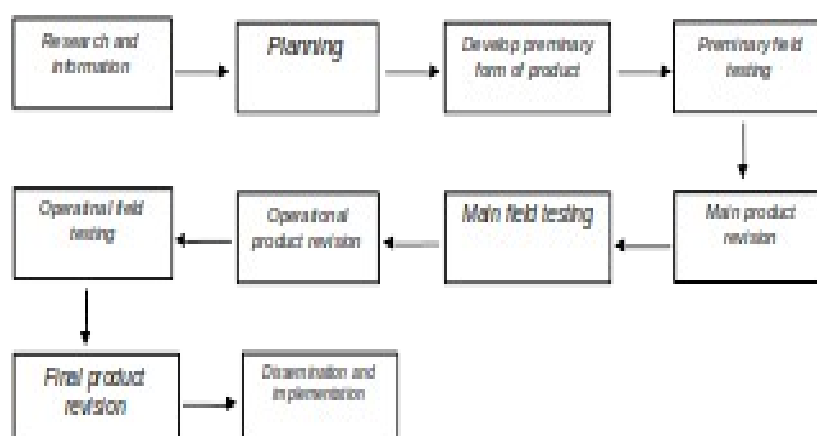
Figure Instructional Design R and D

Source: Walter R. Borg and Meredith D. Gall, Educational Research: An Introduction, 4th Edition. (New York: Longman Inc., 1983)

In this model of development research is a process used to develop and validate learning products. Research by Nana Syaodih Sukmadinata development is a process or steps to develop a new product or improve existing products, which already can be accounted. Research and development in this study using a model of development Research & Development (R & D) with a flow chart that consists of seven steps, among others:
1. First time specified is an ideas that will be developed, to gather information as a rationale for making the concept.
2. Making the learning model (product design), the shape of the design is a model form of exercise.
3. A product revision, the revision carried out by the expert concerned.
4. Production of prototype, being done with badminton practice models.
5. The test prototype, testing of the subject field in both the trial phase I and phase II trials.
6. The second product revisions, revisions were made by experts, in order to obtain a perfect expert.
7. Reproduction, improvement of product to get the final product is expected.

Research development of this model consists of three phases, with steps description design explanation has been modified and aligned with the purpose and conditions of the actual research, as illustrated clearly in the following table:

Tables and Steps Stage Development Research

Stage	Step	Activity
pre-Development	1	**a.** Initial data collection **b.** Preparation of research proposals **c.** analysis of needs
	2	a. learning plan
Development	3	**a.** learning
	4	Formative evaluation: **a.** Early trials (1) Expert evaluation of Phase I (Expert juggement) with badminton experts and learning experts of physical education. Initial repair (1)
	5	**a.** Early trials (2) Expert evaluation stage II (Expert juggement) with badminton experts and learning experts of physical education. **b.** Initial repair (2)
Application	6	**a.** Field trials Evaluation by the limited scale of 30 respondents
	7	Revised Product
		Implementation / dissemination
production		Porduksi Model

Effectiveness test with SPSS

Results of Paired samples statistics (pre-test) and after being given treatment (post-test)

Paired Samples Statistics

		mean	N	Std. deviation	Std. error Mean
pair 1	Pre_test	75.12	40	4,816	.761
	Post_test	76.35	40	3,984	.630

In the table, the average value is 75.12 and the athletes before the value after is 76.35, which means that there are differences in the amount of scores that result from pre-test and post-test so that the skills of athletes increases.

Paired Samples Correlation Table Results (Pre-Test) and (Post-Test)

Paired Samples Correlations

		N	correlation	Sig.
pair 1	Pre_test & Post_test	40	.929	.000

Based on the above table that the correlation coefficient obtained before and after given to the control group is .929 p-value 0.00 <0.05 so the conclusion is that there is a significant relationship.

Results Paired Samples Statistics (Pre-Test) and (Post-Test)

Paired Samples Test

	paired Differences					t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
	mean	Std. deviation	Std. error Mean	Lower	Upper			
pair 1 Pre_test - Post_test	-1225	1,847	.292	-1816	-.634	-4196	39	.000

In the significant difference test with SPSS 22 obtained mean = 1.225 indicates the difference from the pre-test and post-test results, results of t-test = 4. 196 df = 39 and p-value = 0.000 <0.05 which means there are significant differences between before and after exercise. Based on these results it can be concluded that the exercise carried out by the control group backhand lob to improve skills and has been developed and has a significant effectiveness. As an illustration of how the difference between before and after treatment in development that has been conducted by researchers can be seen as the following diagram:

Chart Title
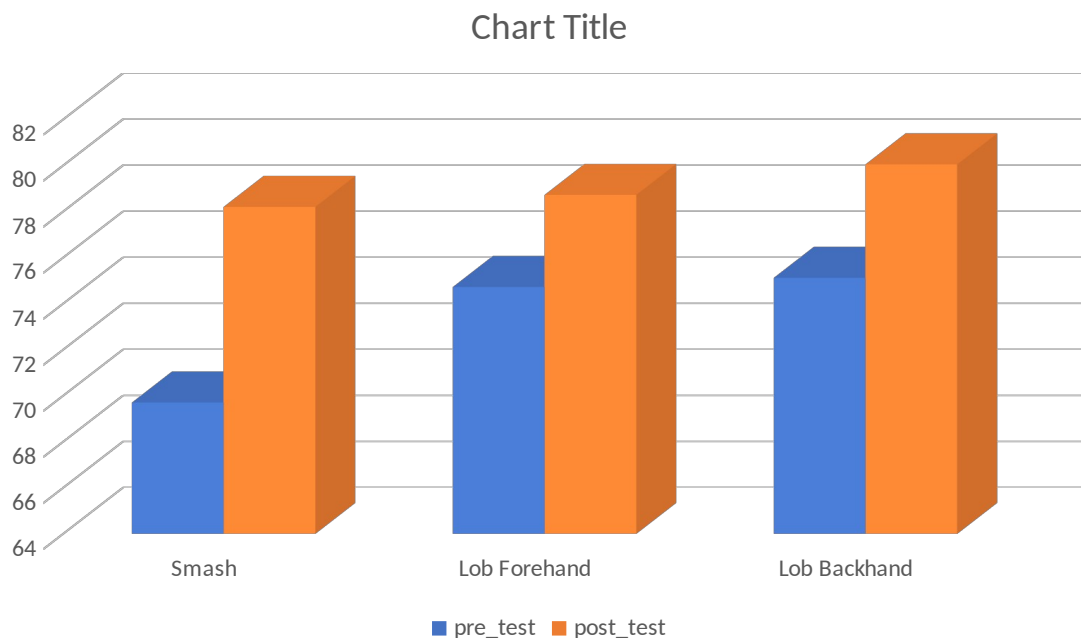
Analysis Data

In this development research data analysis technique used is descriptive quantitative analysis techniques with percentages. This technique is used to analyze the quantitative data obtained from the results of the evaluation questionnaire of experts / trainers badminton and experts to learn about the results of the products developed. The formula for processing the feedback or evaluation of an expert / trainer badminton and experts studying the motion.

a. The formula for process data per subject test.

$$P = \frac{X}{Xi} \times 100\,\%$$

P	=	The percentage of subjects evaluation test results.
X	=	Total answers scores by test subjects.
Xi	=	Maximum number of answers in the aspect of the assessment by the test subjects try.
100%	=	Constants.

b. The formula for the overall data processing test subjects.

$$P = \frac{\Sigma X}{\Sigma Xi} \times 100\%$$

Information:

P	=	The percentage of the overall results of the evaluation of the test subjects.
Σ X	=	The total number of test subjects answer in the overall aspects of evaluation.
Σ Xi	=	The total number of the maximum score in the test subjects all aspects of the assessment.
100%	=	Constants.

To determine the conclusions that have been reached then set the criteria as in the following table:

Table of Percentage Analysis Evaluation By Subject Test.

percentage	Information	Mean
80% - 100%	valid	be used
60% - 79%	enough Valid	be used
50% - 59%	Less Valid	be replaced
<50%	Invalid	be replaced

Results

Products made in the book the author has a specification such as: model developed due respect to the needs of novice players in the field. In addition there is a detailed explanation and details about the different variations of exercises smash and lob. In the explanation of the items the model, the authors outline a complete and clear from the title of the item models, purpose, method, tool or medium used is simple, easy to get and are very economical, implementation of the game as well as explanations pour through the illustrations are unique and attractive, thus providing ease of understanding, and applying for a workout.

Skills smash and lob is one component of the techniques that must be mastered by badminton players, especially in this book discuss how to improve through practice models variation. Hopefully, with the development of the ability of this technique will greatly help the player to achieve reach point during the game, like a troublesome opponent and is able to kill the opponent with the proper smash attack. And will certainly help to win the game.

Then, use variations of tools as an exercise for the media player is one strategy that is applied through the model item with variations hope this will attract the attention of students and member challenges, so the process will run drills active and able to enhance its capabilities. As for the other perspective that made use of simple tools will be very close to the players because it almost can be found easily. Use your own variations of these tools is essential as part of the modifications that can be made by all the players if they want to practice.

Draft of Developed Products.

Development of exercise smash, lob and backhand models in Bulutangkis based on training variation for beginner To Enhance Capabilities Smash, Lob and Backhand In Badminton Games in Pontianak Kalimantan Barat. Intended to produce models more varied exercise, fun, challenging and able to stimulate the activity of athletes so as to effectively improve the skills Smash, Lob and Backhand. Development of practice models

smash and lob bulutangkis game variations based tools can be used by coaches as references to broaden as well as other perspective that is able to provide color and other variations in exercise smash and lob. In addition, the use of tools will have a positive effect both the use of second-hand goods and the simple will reduce operational trainers in their duties.

Given so interesting variation of tools to exercise the player, of course, the coach must consider several factors that fit the needs of players and item models in this book can be used but must be revisited and adapted to the needs of the players, for trying.
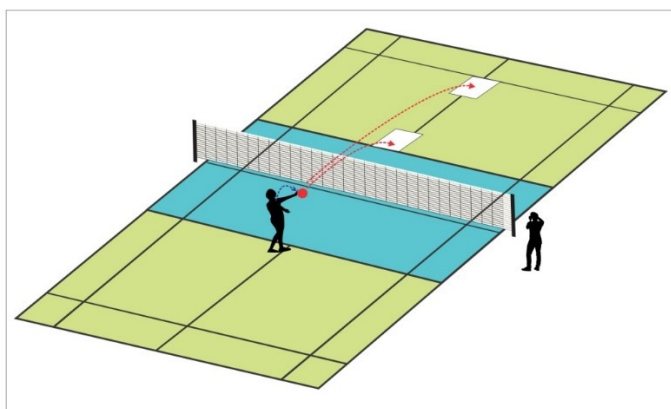
Model exercises developed as follows:
A. Item Model Punch Smash
1. Item Model Blows Exercise Smash (AR.1)
   Aim :
   ➢ Coaching grip on the whip hand
   ➢ To familiarize the athletes obtain proper timming hit
   ➢ Increase the sense of motion to the handle of the racquet during play

Information :
implementation:
   ➢ Athletes stand with the ready / ready position by holding the plastic ball
   ➢ Athletes stand up straight position and preparing to swing hand movement by directing a plastic ball on pre-determined targets.
   ➢ Pull Swing the arms up the front of the rear and throwing plastic balls at predetermined target
   ➢ Back to the original attitude.

   Point **Exercise:**

	Semi Smash	*full Smash*	*Jump Smash*
Smash	*Smash* made by cutting punch half	*Smash* be done in the full force	Doing Smash by leaps and blow full
Coaching process	Int. 30-70% Rest.1 m	Int. 50-80% Rest.1m	Int. 70-100 Rest.1m
Coaching Point	Power arms, legs power, coordination accomplice, smash technique		
Variation	Smash cut, full smash, smash jump.		

B. **Item Model Punch Exercises Forehand Lob**
   1. Item Model Punch Exercises Forehand Lob (AR.21)
      Aim :
      ➢ Train lash grip on the racket
      ➢ To familiarize the athletes obtain proper timming hit
      ➢ Increase the sense of motion to the handle of the racket during play
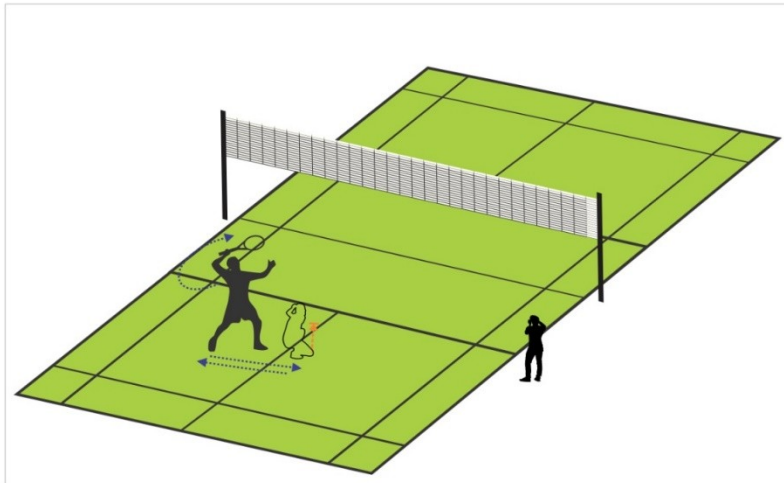
Information :

implementation:
- ➢ Athletes stand with the ready / ready position by holding a tennis racket
- ➢ Athletes stand up straight left side of the field position, squadjump place in mid field line and preparing to make a move lob forhand
- ➢ Pull Swing arm over the front of the head with a tennis racket
- ➢ Back to the original attitude.

Point **Exercise:**

|	*Semi Lob forehand*	*Full lob forehand*	*Attack Lob forehand*
Lob Forehand	*forehand lob* carried out with a punch half field	*forehand* lob was done on the full force	Doing forehand lob by leaps and blow full
Coaching process	Int. 30-70% Rest.1 m	Int. 50-80% Rest.1 m	Int. 70-100% Rest.1 m
Coaching Point	*Power* arms, legs kekutan, Coordination accomplice, engineering forehand lob		
Variation	Half forehand, forehand lob full, forhand lob with a leap.		

C. **Item Model Training backhand lob Punch**
   1. **Item Model Exercise Backhand Blow Lob (AR. 36)**
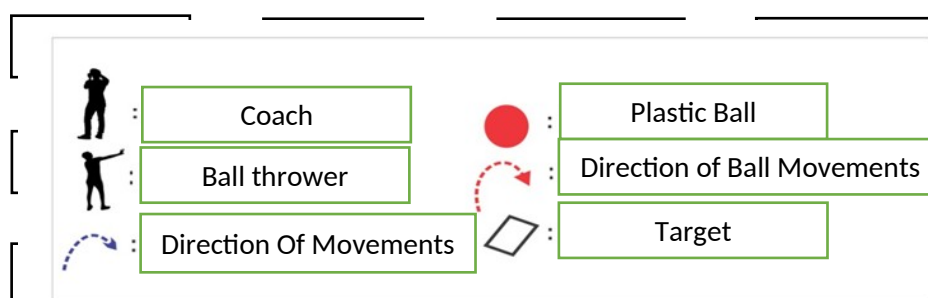   **Aim :**
      - ➢ Train lash grip on the racket
      - ➢ To familiarize the athletes obtain proper timming hit
      - ➢ Improving a sense of motion to the handle of the racket during play
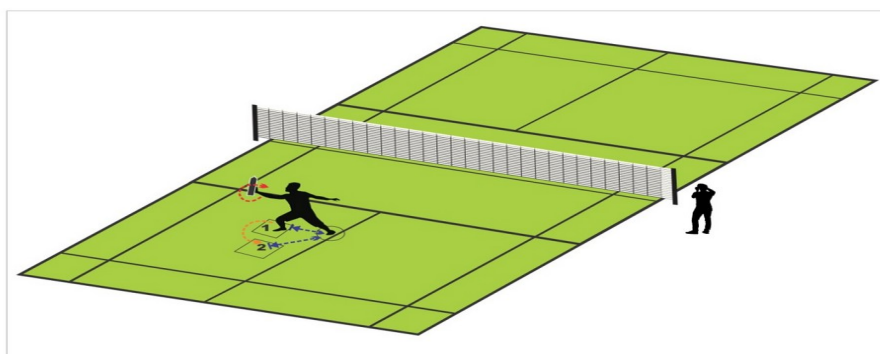
Information :

implementation:
- ➢ Standing at the ready / ready position by holding a Aqua bottle.
- ➢ Athletes stand up straight left position in the line of attack the middle of the field
- ➢ Position quiet place, then do the movement stepped into positions 1 and 2
- ➢ Hit with the former media aqua bottle filled with sand / water towards the top front of the field.

Point **Exercise:**

	Semi backhand lob	*Full Lob backhand*	*Attack backhan*
backhand	*backhand Lob* carried out with a punch half field	*Bachand lob* be done in the full force	Doing backhand attack with plain good
Coaching process	Int. 30-70% Rest.1 m	Int. 50-80% Rest.1 m	Int. 70-100% Rest.1 m
Coaching Point	*Power* arms, legs kekutan, Coordination accomplice, backhand technique		
Variation	*backhand lob* half, full backhand lob, backhand with a plain or a good punch.		

Discussion / Conclusions.

Based on the data that researchers gain from the results of field testing and discussion of the results of this study concluded that study product is a model exercise smash, lob and backhand badminton game based variation of tools for athletes in Pontianak in West Kalimantan which consists of 50 items models which consists of 20 models item smash, forehand lob models 15 items, and 15 items backhand lob models can be applied to athletes. The use of this type of training smash, lob and backhand badminton game variations based tools for athletes in Pontianak in West Kalimantan effectively improve the skills of athletes. Then able to create an atmosphere of fun and prevent boring time.

Research by Joanna Harasimowicz and friend in the Journal of Education, Health and Sport.Physical has results about efficiency is one of the most important health parameters, and its high level in the early years Obtained guarantees correct adaptation in later periods of life. In children and adolescents, the right amount of

traffic plays a huge role. Other research by Wawryków, A., Stecko has Showed The human motoriness is the whole of behaviors, possibilities and needs movement manifested differently at every stage of life.

In this section the researcher suggests some advice in connection with the products developed. Meanwhile, the suggestions put forward include advice utilization, dissemination and further development advice. Suggestions utilization of product development is a model exercise smash, lob and backhand badminton game variations based tools for athletes in Pontianak in West Kalimantan which can be used as references or references by the coach. Utilization of this model should be able to consider the needs, circumstances, conditions that occur, and infrastructure owned. Dissemination and development of these products to a wider target, for the researchers will provide advice, among others, prior to the dissemination of the products should smash practice models,

In a further development of research that is useful to expand persefektif and rejuvenation science. Then, in further developing this study, researchers have some suggestions, for research subjects should be used more broadly, the resulting model should be more varied and more so that the goal can be achieved with the maximum exercise. This generated model of practice should be disseminated broader level to facilitate coaches get references a variety of exercises smash, lob and backhand. Similarly to the researcher to use, Dissemination, to product models practice models smash, lob and backhand badminton game variations based tools developed for athletes.

REFERENCES

Borg. W. R & Gall, M. D, Educational Research: An Introduction. New York: Longman, 1983.

Cheryl A. Coker, Moter Learning and Control Practitioners Mexico: McGraw Hill, 2004.

Education, H., Authors, T., Open, L., & Systems, J. (2019). Motor fitness of young children undergoing general development exercises. 9 (6), 452-455.

Fitt and Richard A. Posner in Magill, Motor Learning and Control: Concepts and Aplications. New York: McGraw-Hill, 2011.

Kulikowski, B., Zdziarski, K., & Antczak, K. (2019). Impact of physical activity on the quality of life of residents of a social welfare home Introduction: 9 (5), 241-250.

Sapta Kunta, Coaching Badminton, Surakarta: Yama Library 2010

Wawryków, A., Stecko, M., Korabiusz, K., Danielewska, AF, Harasimowicz, J., Maciejewska, M., & Fuks, IJ (2019). Motor skills of Preschooler Zdolności motoryczne dzieci w wieku przedszkolnym. 9 (6), 251-255.