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## The Development of *backhand Drive Stroke* Technique Training in Audiovisual Based for Beginner Badminton Athletes

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### Abstract

This research aimed to afford the backhand drive stroke technique training in audiovisual based for beginner category badminton athletes. This development research was referred to the development model that has been done by Borg & Gall and has been modified by Sugiyono into two steps, there were pre-development step and development step. The large scale testing was consisted of ten beginner category badminton athletes of PMS Surakarta. The effectiveness testing was done to 25 beginner category badminton athletes of PMS Surakarta by using pre-experiment Intact-Group Comparison, the groups were divided into two in order to make one group would be given a treatment, other group would be a control group. The result of the research showed that the group which was given backhand drive stroke technique training based on audiovisual treatment had higher scores than the control group.

**Keywords:** raining model, backhand drive stroke technique, badminton, beginner category athlete

### Introduction

Badminton is one of popular sports in Indonesia. This sport is very favored by children, adults, to parents both men and women. Badminton is categorized as small ball sport game. The factor that make badminton so populist in Indonesia is the Indonesian badminton achievements in international level. From the championship in Malmo, Sweden in 1977 Indonesia had been able to show off in badminton international championship, till nowadays in 2019 Indonesia never miss from world badminton championship and got many achievements, such as being a champion in Indonesia Open 2019 in the men's double number. Being a champion in the world badminton championship need to be maintained and be improved because Indonesian international achievement also experienced the up and down. The up and down of Indonesian badminton achievement, one of the causative factors are the late regeneration process because it is too comfortable with the senior athletes' condition in 90's pelatnas era which the achievement was tend to be consistent in international event. Entering the millennial era at the beginning of 2000-2003 Indonesia was in minimal achievement. To nowadays the badminton achievement development is showing its potency, although there is not distributed evenly yet in every

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numbers because the dominant has international achievement in men's double number and in mixed double.

Indonesian badminton sport achievement in international level cannot be separated from the achievement training done in national level. Badminton's clubs in Indonesia also have a role in national badminton development, from clubs in regional level up to famous clubs and also produce world class athletes. PMS Solo badminton club is one of badminton clubs in Solo which often send its foster athletes to famous badminton club like Djarum Kudus, Axist Jakarta, and Jaya Raya Jakarta.

One challenge in the proses of badminton training nowadays is regeneration process because to get the world champion needs the process which is not an instant process. The process of long-term coaching is really needed to produce athletes who have international achievement. The long-term coaching has about 8-10 times duration until the athletes can show the achievement or skills in the international event. The factors of technical coaching, physical, mentality, and tactic are needed appropriate with the needs and age level and also the level from athletes so that the treatment are suitable and right for the targets. The material of the technical coaching is beginning coaching needed to give to the athletes from the beginning of learning badminton. Technical coaching will be improved and be continued with suitable physical training with the age level and athletes' need. Mental and tactic exercise will be given along with the athletes' ability development. One important fact to reach the best achievement in sport is have a good motion skill, including technical skills. According to Edwards (2010) to have good motion skill, someone need to learn that skill which means this skill is not born by itself. Therefore, to master the motion/technique skill in badminton sport, athletes need to train and have planned training program. Athletes must master the badminton techniques, such as: (1) stance, (2) holding racket technique, this technique is divided into three, that are: forehand handling, backhand handling, American handling, shake hand handling, frying pan grip, combination handling., (3) footwork, (4) strokes technique, (5) service, service is divided into four, that are long service, short service, startle service, horizontal service., (6) return service, (7) smash, (8) dropship, (9) drive, (10) netting, (11) round the head, (12) underhand.

Mastering the techniques in badminton needs the right and suitable coaching method, other than that it needs coaching process which is not an instant process. From many badminton techniques mentioned before, the stroke technique using backhand handling is difficult to do especially for beginner because it is hard to move the body position and to do the backhand stroke needs time and right footwork. There are many stroke techniques using backhand handling in badminton that is needed to be mastered by athletes, there are backhand drive, backhand lob, backhand smash, and backhand service. Drive stroke is a quick stroke technique that is used when double playing. Drive is a horizontal quick stroke above net. The aim of stroke drive is send the shuttlecock horizontally pass the net so that it can enter the opponent arena. Backhand drive stroke mastering needs intensive training. To maintain and to know the backhand drive stroke skill in beginner athletes, measurement test is needed. The results can be a reference for coach to maintain the backhand drive stroke technique for beginner athletes.

From the observation and need analysis result which was done by the researcher in PMS Solo badminton club, researcher found that from nine stroke technique in badminton sport like service, service taking, lob, smash, drop shot, drive, netting, underhand, and round the head clear, beginner athlete had the same difficulty and

weakness, that was in mastering the backhand stroke technique. One stroke that is difficult to master for beginner athlete is backhand drive stroke. This is based on the statement or interview result with the coach of PMS Solo badminton club. According to the background mentioned above, the researcher wants to develop the backhand drive stroke technique for beginner badminton athletes.

## Methods

This research used research and development method which is a research to produce a product based on the needs in field. This development research was implemented to produce a *backhand drive* stroke technique training model in audiovisual based for beginner badminton athletes.

This research was implemented for beginner badminton athletes in PMS Solo club. The research implementation started from August to December. The research procedure used two steps, that were: pre-development step, there were (1) introduction study; (2) research planning. The development steps were (1) early product drafting; (2) expert validity. The types of the research data were qualitative and quantitative. The qualitative data were obtained from interview result and observation in the introduction study, while for the quantitative data were obtained from expert judgement trough the product design and product testing result in small scale and in large scale.

The data source are subjects where the data are obtained. The data source of this research were grouped into two groups, that were early data source and data source in product validity test of product eligibility model for backhand drive stroke technique in audiovisual based for badminton beginner athletes.

The data collection technique is the important early step in research because the main goal is to get the data (Sugiyono, 2015). The data collection technique in this research was implemented by observation, interview, the use of questionnaire or value scale questionnaire. The qualitative data in this research were obtained by using collective data observation as data collection technique in the introduction study and by using questionnaire which was given to the expert as assessment sheet trough the training model product which was developed before being tested to the groups/sample, meanwhile for the quantitative data collection in this research were obtained by data collection technique from the expert rating result trough the developed product design.

The data collection instrument is the measuring instrument which is used to get the data from a research (Ali, 2010). The instrument used in this research were interview and value scale questionnaire. According to Nazir (2013) the data collecting by interviewing is a process of getting information from the source by using instrument called *interview guidelines*. The interview done by the researcher was the first data collection technique to get the coach data or information in field. The interview technique used in this research was structured interview technique, that was a technique which was done freely where the researcher was not using the structured interview guidelines systematically and completely to get the data, but it was only in the form of problem outlines that will be questioned (Sugiyono, 2012).

The value scale questionnaire used to get the data was in the form of advices and scores by the expert through the developed backhand drive stroke technique training which then would be a revision material through the research product and was used to determine the appropriateness in the small scale testing and large scale testing as a data collection in

field. The experts who were chosen to validate the draft of developed learning model was the expert in the field of swimming sport materials and media expert.

The use of value scale questionnaire in this research was Likert scoring scale, as for the Likert scale was used to measure the attitude, opinion, and perception of people or groups about some phenomena (Sugiyono, 2015). The value scale used were value scale questionnaire of 1-4, with the details as: (a) 1 score for very inappropriate score, (b) 2 scores for inappropriate score, (c) 3 scores for appropriate score, (d) 4 scores for very appropriate score. The training model that would be developed was audiovisual based training model.

The data analysis technique in this research was using descriptive data analysis technique. The descriptive analysis was used for data analyzing by describing or illustrating the collected data without making the conclusion for public or generalization (Sugiyono, 2012). In this research there were two types of descriptive analysis data implemented, there were descriptive qualitative analysis data and descriptive quantitative analysis data. Descriptive qualitative analysis data was implemented to analyzed the observation result done in the introduction study by the researcher before entering the field, and also the result of expert's questionnaire filling through the model draft organized by the researcher then being analyzed by the expert before field testing implementation until that model draft was decided worth it to be a development product. Descriptive quantitative analysis data was implemented to the expert scoring result data through the developed model.

In this research used the 1-5 score scale. After the raw scores were changed into percentage score, then those were converted by using assessment norms referred to the *Penilaian Acuan Patokan* (PAP) with the percentage range as follows:

**Table 1.** Conversion of Benchmark Reference Scoring.

No	Score	Information
1	80% - 100%	Very Good
2	70% - 79%	Good
3	60% - 69%	Quite Good
4	45% - 59%	Not Good
5	< 44%	Not Very Good

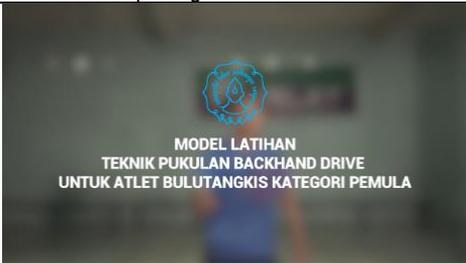
(Sudjiono, 2013)

## Result

Based on the introduction study, the researcher found that from the nine badminton strokes basic technique, there are service taking, lob, smash, drop shot, drive, netting, underhand, round the head clear, and backhand, the backhand stroke technique was the hardest stroke to be mastered by the athletes. This was based on observation result which the researcher done in some badminton clubs. Other than that, based on the result test which has been done by the researcher in PMS Surakarta badminton club, it was found that the athletes' backhand stroke technique skill got average scores below standard. Backhand stroke technique that is difficult to be mastered by beginner athletes is backhand drive. That statement is based on the measurement test using wall volley test instrument. The developed instrument by Sapta Kunta had been recognized as measuring instrument basic technique skill in Indonesian badminton sport so that the score validity and reliability

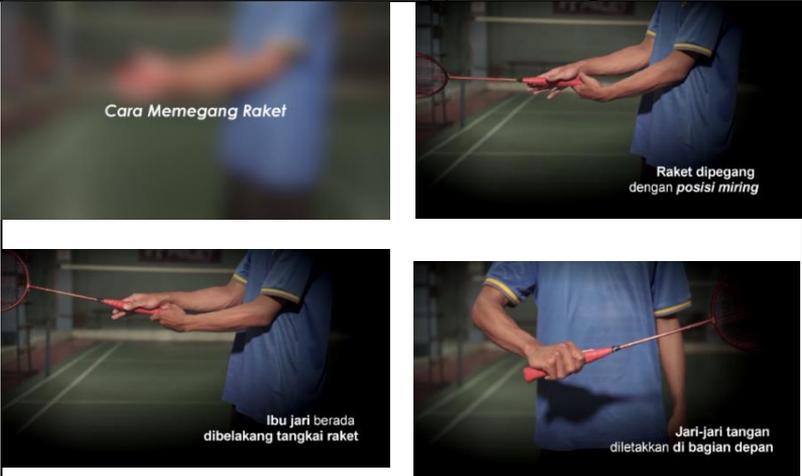
could be responsible. Based on the wall valley result test implemented, from 11 beginner athletes showed the higher score that was 207 with the lowest score that was 134. As for the score distribution showed the average (mean) was 173,36; standard deviation was 27,230; median was 184, and the many appear scores was 197, so that from the result test, beginner athletes of PMS Solo were claimed as not yet skilled at mastering the backhand stroke technique. Therefore, according to the need analysis done by the researcher, club, coach, and athlete need a training model which can improve the backhand drive stroke technique for beginner badminton athletes. Based on the introduction study and need analysis mentioned above, the researcher developed the backhand drive stroke technique training model in audiovisual based for beginner badminton athletes. The following were the products that the researcher developed and declared feasible by the expert:

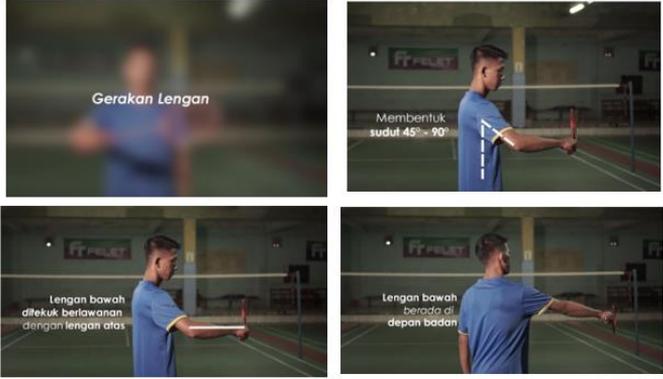
Table 2. Opening View

<p><b>Visual</b></p>	
<p><b>Verbal</b></p>	<p>THE MODEL OF <i>BACKHAND DRIVE</i> STROKE TECHNIQUE TRAINING IN AUDIOVISUAL BASED FOR BEGINNER BADMINTON ATHLETES</p>
<p><b>Audio &amp; Narrative</b></p>	<p>Audio: Bensound-creativeminds.mp3</p>
<p><b>Visual</b></p>	
<p><b>Verbal</b></p>	<p>Rezza Adiluhung (Researcher)</p>
<p><b>Audio &amp; Narrative</b></p>	<p>Audio : Bensound-creativeminds.mp3          Hallo, sport mania.          Let me introduce myself, I am Rezza Adiluhung. In this video I will show you how to do the <i>backhand</i> drive stroke technique for beginner athletes:</p>
<p><b>Visual</b></p>	

	
<b>Verbal</b>	3 Steps Training: 1. Preparation Step 2. Implementation Step 3. Final Step
<b>Audio &amp; Narrative</b>	Audio: Bensound-creativeminds.mp3 There are 3 steps to do the backhand drive stroke technique, the first is preparation step, the second is implementation step, the third is final step.

**Table 3.** Implementation Step

<b>Visual</b>	<u>Tahap Persiapan</u>
<b>Verbal</b>	Implementation Step
<b>Audio &amp; Narrative</b>	Audio: Bensound-creativeminds.mp3 Narrative: In the implementation step there are some things which are need to get attention, that are: how to hold racket, body position, and right motion.
<b>Visual</b>	
<b>Verbal</b>	How to Hold Racket Hold the racket with tilted position Thumb is on the back racket stalk Fingers are in the front side
<b>Audio &amp; Narrative</b>	Audio: Bensound-creativeminds.mp3 Narrative:

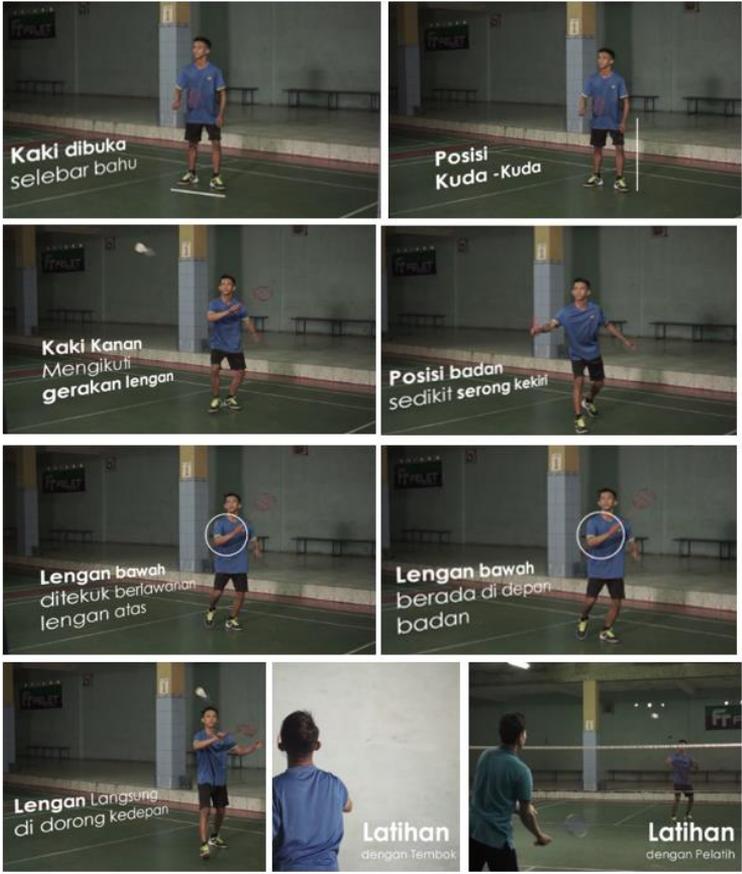
	<p>How to hold racket when doing the <i>backhand</i> drive technique, the first is hold the racket with tilted position, the second is when holding the racket, the thumb is on the back of the racket stalk, the third is the fingers must be on the front side.</p>
<p><b>Visual</b></p>	
<p><b>Verbal</b></p>	<p>Feet and Body Position          Spread out the feet position into shoulder-width          Step forward the right foot</p>
<p><b>Audio &amp; Narrative</b></p>	<p>Audio: Bensound-creativeminds.mp3          Narasi:          When doing the backhand drive stroke, the feet position is wide open to shoulder-width with easel position and the right foot is in the front.</p>
<p><b>Visual</b></p>	
<p><b>Verbal</b></p>	<p>Arm Position          Form in shape of 40°-90°          Under arm is bent opposite with the upper arm          Under arm is on the front of the body</p>
<p><b>Audio &amp; Narrative</b></p>	<p>Audio: Bensound-creativeminds.mp3          Narrative:</p>

	In the arm position, there are 3 motions that need to get attention, the first is spread out the under arm and open it in shape 45° - 90°, the second is the under arm position is bent opposite with the upper arm and the under arm is in the front of body. The third is the wrist is following upper arm motion.
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**Table 4.** Implementation Step

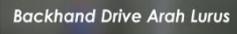
<b>Visual</b>	<u>Tahap Pelaksanaan</u>
<b>Verbal</b>	Implementation Step
<b>Audio &amp; Narrative</b>	Audio : Bensound-creativeminds.mp3
<b>Visual</b>	
<b>Verbal</b>	3 Backhand Drive Stroke Types
<b>Audio &amp; Narrative</b>	<p>Audio: Bensound-creativeminds.mp3</p> <p>Narrative: There are three types of <i>backhand drive</i> stroke in badminton. The first is the left side <i>backhand drive shuttlecock</i>, the second is the straight <i>backhand drive shuttlecock</i>, the third is the right side <i>backhand drive shuttlecock</i>.</p>
<b>Visual</b>	
<b>Verbal</b>	<p>Backhand drive Stroke Training</p> <p>Training using wall</p> <p>Training with coach</p>
<b>Audio &amp; Narrative</b>	<p>Audio: Bensound-creativeminds.mp3</p> <p>Narrative: The backhand drive stroke training can be done with 2 ways: The first is training using wall or wall pass, the second is training with friends or coach.</p>

**Table 5.** The Left Side *Backhand Drive* Stroke

<p><b>Visual</b></p>	<p style="text-align: center;"><i>Backhand Drive Arah Kiri</i></p>
<p><b>Verbal</b></p>	<p>The Left Side <i>Backhand Drive</i> Stroke</p>
<p><b>Audio &amp; Narrative</b></p>	<p>Audio: Bensound-creativeminds.mp3          Narrative: Some things need to pay attention when doing left side <i>backhand drive</i> shuttlecock.</p>
<p><b>Visual</b></p>	
<p><b>Verbal</b></p>	<p>Feet are opened to shoulder-width          Easel position          Right foot is following the arm motion          Body position is on the left side          Under arm is bent opposite to the upper arm          Under arm is in the front of the body          Arms are pushing to the front          Training using wall          Training with coach</p>
<p><b>Audio &amp; Narrative</b></p>	<p>Audio: Bensound-creativeminds.mp3</p>

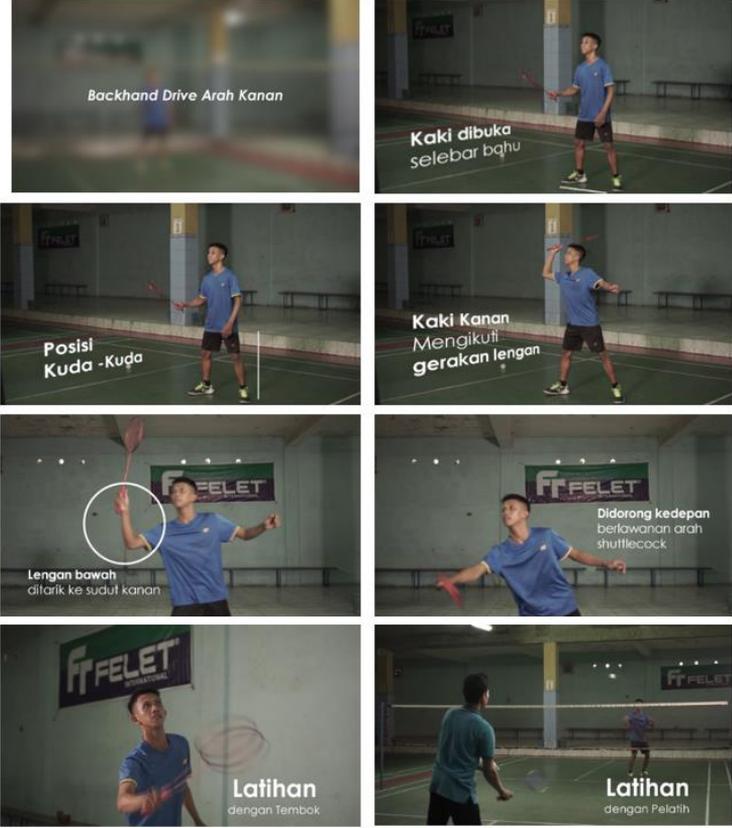
	Narrative: Feet position opens to shoulder-width with easel position and the right foot is following the arm motion, body position is on left side, under arm is bent opposite to the upper arm, under arm is in the front of the body, when <i>shuttlecock</i> is on left, push the arm to the front opposite to the arrival direction of the <i>shuttlecock</i> .
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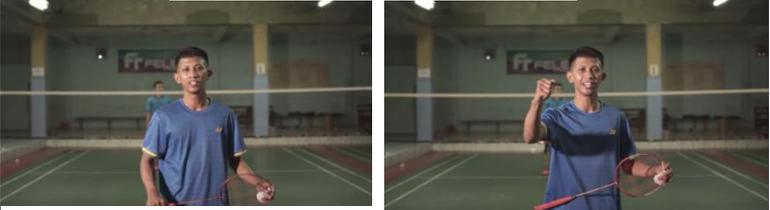
Table 6. The Straight Backhand Drive

<b>Visual</b>	
<b>Verbal</b>	The Straight <i>Backhand Drive</i>
<b>Audio &amp; Narrative</b>	Audio : Bensound-creativeminds.mp3 Narrative: Things need to pay attention when doing the straight <i>backhand drive shuttlecock</i> .
<b>Visual</b>	      
<b>Verbal</b>	Feet are open to shoulder-width Easel position Right foot follows arm motion Under arm pulls up forming i alphabet Push to the front opposite to shuttlecock direction Training using wall Training with coach
<b>Audio &amp; Narrative</b>	Audio: Bensound-creativeminds.mp3 Narrative: Posisi kaki dibuka selebar bahu dengan posisi kuda-kuda dan posisi kaki kanan mengikuti gerakan lengan. Ketika <i>shuttlecock</i> ke arah depan, lengan

	<p>bawah ditarik ke atas membentuk huruf i lalu didorong ke depan berlawanan dengan arah <i>shuttlecock</i>.                  Feet position opens to shoulder-width</p>
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Table. The Right Side *Backhand Drive*

<p><b>Visual</b></p>	
<p><b>Verbal</b></p>	<p>Feet are open to shoulder-width                  Easel position                  Right foot follows arm motion                  Under arm pulls to the right side                  Push to the front opposite to shuttlecock direction                  Training using wall                  Training with coach</p>
<p><b>Audio &amp; Narrative</b></p>	<p>Audio : Bensound-creativeminds.mp3                  Narrative: Things need to pay attention when doing the right side <i>backhand drive shuttlecock</i>. Feet are open to shoulder-width with easel position and the right foot follows arm motion. When the under arm pulls to the right side, push to the front opposite to shuttlecock direction.</p>

<b>Visual</b>	<p style="text-align: center;"><u>Tahap Akhir</u></p> 
<b>Verbal</b>	Final Step
<b>Audio &amp; Narrative</b>	Audio : Bensound-creativeminds.mp3 Narrative: That was the video of <i>backhand drive</i> stroke training for beginner athletes. Thankyou.

<b>Visual</b>	<p style="text-align: center;"><b>Biodata Peneliti</b></p>  <table style="margin-left: auto; margin-right: auto;"> <tr> <td>Nama</td> <td>Rezza Adiluhung Prasetya Mahendra</td> </tr> <tr> <td>Tempat, Tgl lahir</td> <td>Surakarta, 28 Maret 1993</td> </tr> <tr> <td>Jenis Kelamin</td> <td>Laki-Laki</td> </tr> <tr> <td>Agama</td> <td>Islam</td> </tr> <tr> <td>Alamat</td> <td>Banyuwangung Rt 03/Rw 02 Kadipiro, Banjarsari, Surakarta</td> </tr> <tr> <td>Pendidikan</td> <td>Mahasiswa Pascasarjana Ilmu Keolahragaan Universitas Sebelas Maret</td> </tr> </table>	Nama	Rezza Adiluhung Prasetya Mahendra	Tempat, Tgl lahir	Surakarta, 28 Maret 1993	Jenis Kelamin	Laki-Laki	Agama	Islam	Alamat	Banyuwangung Rt 03/Rw 02 Kadipiro, Banjarsari, Surakarta	Pendidikan	Mahasiswa Pascasarjana Ilmu Keolahragaan Universitas Sebelas Maret
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Pendidikan	Mahasiswa Pascasarjana Ilmu Keolahragaan Universitas Sebelas Maret												
<b>Verbal</b>	Researcher Data Name : Rezza Adiluhung Prasetya Mahendra Date and Place of Birth : Surakarta, 28 Maret 1993 Sex : Laki-laki Religion : Islam Domisile : Banyuwangung RT 03/ RW 02 Kadipiro, Banjarsari, Surakarta. Education : Mahasiswa PAscasarjana Ilmu Keolahragaan Universitas Sebelas Maret												
<b>Audio &amp; Narrative</b>	Audio: Bensound-creativeminds.mp3												

## Discussion

The training product developed in this research was backhand drive stroke technique training model for beginner athletes. This developed learning model was based on introduction study in field after getting the early data in field, continue with need analyzing in the form of backhand drive stroke technique. The motion analysis had goal to make the right and suitable backhand drive stroke technique result in the making of learning model. Besides, the training model was adjusted by the training characteristic of the beginner

badminton athletes who were reviewed from age aspect, training implementation and also from the training process.

The developed training model by the researcher contains three backhand drive strokes technique training model for beginner athletes. Those three developed backhand drive techniques were left backhand drive, straight front backhand drive, right backhand drive. Seen from the backhand drive stroke technique implementation, it was not done by all motion, but was done by the training process which was divided into two steps. The goal was to help coach and athlete in completing the motion and evaluating it. The developed product of the training model was validated by the expert. Based on the expert validity, that were material expert validity, media expert, and badminton expert, this training model was declared as valid. The material expert scored this learning model with the total score was 66 or 77,64% which was categorized as good. Media expert gave score 78 or 75,78% which was categorized as very good. Badminton expert gave score 54 or 83,7% which was categorized as very good. According to the small scale testing, obtained the average score 46-58 or 77-96% which was categorized as very good and the large scale testing obtained the average score 44-58 or 73-96% which was categorized as very good. Besides, the backhand drive stroke training model in audiovisual based for badminton beginner athletes was rated as effective for improving the backhand drive stroke technique skill. Based on the effectiveness testing result done with the new method, it had a better result than the group which used the previous method. The result amount obtained from the two groups, that were treatment group 1866, meanwhile control group was 1443. Based on the result, it could be concluded that the training model had positive effect to improve the backhand drive stroke technique skill for badminton beginner athletes.

## **Conclusion**

The developed backhand drive stroke technique training model in audiovisual based for beginner athletes was declared as a worthy to use in the process of training, so that it could be implemented by coach and athletes in order to deliver and to learn the backhand drive stroke technique training material.

## **Acknowledgement**

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## **References**

- Borg W.R., & Gall M.D. 2007. Educational Research: Instructor's Manual and Test Bank (8th Ed.). New York: Pearson
- Edwards, Rahantoknam B. 1988. Belajar Motorik: Teori dan Aplikasinya dalam Pendidikan Jasmani dan Olahraga. Jakarta: Depdikbud Dirjen Dikti P2LPTK.

- Mahmudi, Muh Ali. 2015. *Pembuatan Video Profile Sekolah Dasar Negeri Tlogo CV Bootsector*. Journal Speed: Sentra Penelitian Engineering dan Edukasi, Volume 7 No 3.
- Maksum, Ali. 2009. *Metodologi Penelitian Dalam Olahraga*. Fakultas Ilmu Keolahragaan, Unesa.
- Sudjiono, Anas. 2013. *Pengantar Evaluasi Pendidikan*. Jakarta: Rajawali Press
- Sugiyono. 2012. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: CV. Alfabeta.
- Sugiyono. 2016. *Metode Penelitian dan Pengembangan: Research and Development*. Bandung: CV. Alfabeta.