USE OF COMPUTER-BASED SOFTWARE DETECTOR QUALITY CONTROL TRAINING FOR RESULTS SKILLS TECHNIQUE BADMINTON

by Iis Marwan

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ABSTRACT

The purpose of this study is to reveal empirically and factually to the effects of the use of detector-based computer software to control the quality of the training skills badminton techniques. The method of research using experimental methods, research design pretest and post-treatment test design. University student population PJKR FKIP Siliwangi and techniques of determining the sample by means of purposive sampling as many as 20 people. The results with the Tukey test (t) t-count the results obtained for 6.25 where the t-table at α= 0.05 for 2.10 means t-count hypothesis is beyond the reception area, which means there is a significant use of the detector computer based on the quality of engineering skills of badminton. Based on these data, then the conclusion of this research is "a computer-based detector can control the software quality engineering skills badminton" To follow up the conclusion and implications of the research study can be summarized as the following suggestions: (1) With tested hypothesis that the application of computer-based detector software can control quality engineering skills of badminton, then any recommended badminton skills training technique using computer-based detector facility, (2) The application of computer-based detectors are appropriately used in any technical skills training activities.

Keywords: Technical Skills, Detector Software, Training

INTRODUCTION

The quality of the exercises can be obtained from the performance of the athletes featured in the performance of the match or race. The main purpose of the training process is to conduct a series of athletes into champions. However, it is necessary to reach a variety of factors, one of which is a quality training process. Exercise quality is supported by the application of technology. Sophistication of technology tools in addition to data accuracy and efficiency also can streamline the data though. So that data can be processed and acted upon. Likewise in badminton training process that is loaded with the data results of the exercise.

Badminton achievement of achievement is supported by some of the requirements one of which is technical ability. Technical ability is closely related to the rate of the shuttlecock, because victory in principle play a shuttlecock into are as that are difficult to reach by the opponent.

Indonesia's national shuttle's spotty performance, this is one of them due to the accuracy of the data results of the exerciseis not processed properlyor the application of technology devices still use then old tools.

The sophistication of exercises equipment badminton with the computer supported devices very helpfull or the smoot hand quality of exercise such as the use of "Speed gun" that can measure the speed of the shuttlecock during the smash.

Training data placement accuracy shuttlecock, especially when done the basic training techniques such as: (1) Short Service, (2) Long Service, (3) Lob, (4) Smash hand, (5) Short Drop is necessary to use computer technology devices. Engineering of computer equipment to support the training process makes competitive badminton is very tight. Without the sophistication of tools achievement of national victory over Indonesia will continue to lag.

Measurement capabilities badminton techniques by using the old way and the manual can take considerable time and accuracy of the data is not valid. However, by using computer-based software detector test form can be done while practicing techniques that are very effective and efficient, as well as the fulfilment of such evaluation elements: validity, reliability and objectivity because the data accurately using computers.

These findings are consistent with the field of professional writers as a lecturer on a course of physical education, health and recreation FKIP Siliwangi University lectures where each end of badminton has always held the mastery of skills tests the basic technique of badminton with the old way and the manual so that the process takes a long time. With the help of expert researchers in electrical engineering as a member of these symptoms can be minimized using a computer-based software detector device.

The existence of collaboration between disciplines can incorporate a similar requirement that the creation of sophisticated equipment with modifications

badminton assay as developed by experts earlier than the old way and manually switch to a new, more sophisticated and accurate.

Moving on from the background of the above problems, the researchers identified the variables of this study to be several research variables. Independent variables using a detector device and a computer-based software engineering skills of badminton defendant variable.

From these variables the researchers formulate research questions are as follow: 1) what degree of accuracy of computer-based software tool detector that the authors designed and developed for the measurement of technical skills of badminton? 2) is the use of computer-based detector can improve the technical skills of badminton? This study aims are to measure the reliability of the device detector tool of computer-based software engineering skills of badminton.

Understanding this exercise can contain several meanings in English that is practice model, exercise, and training. In Indonesian term these word have the same meaning is applied in practice and after the field is seen as its activity is physical activity. Sukadiyanto (2009) explained the training that comes from the word:

Practice: activities to improve skills (proficiency) using a variety of exercise equipment in accordance with the objectives and the needs of branches of sport.

Exercises: The main device is in the process of daily exercise to improve the quality of the human body's organ system function, making it easier for athletes in improving their motion.

Training: a process improvement exercise capability comprising the theory and practice materials, methods, and implementation rules in accordance with the scientific approach, using the principle of a planned education and regular exercise so that the goals and objectives can be achieved on time.

Exercise is a process conducted regularly practiced, planned repetitive and progressively increasing the load, and starts from the simple to the more complex (systematic and methodical).

Exercise is everything for coaches and athletes. (Tudor O. Bompa, 1994). Exercises are done using exercise program or practices to improve the quality demanded by an event. (Peter JL Thomson,1993), whereas Harsono (1993) states

that the exercise could also be regarded as a systematic practice something processes are carried out repeatedly and that the more days of training and increasing. Concept, in line with the D. Harre (1982) which states exercise was widely interpreted as an instruction that is organized with the aim of improving physical abilities, psychological as well as the skills of both intellectual and motor skills exercise.

Badminton as one of the sport is quite popular in various countries. Achievement victory over Indonesia is very well respected and a calculation of his opponent. Therefore, various kinds of exercise equipment to be carefully and always use the latest tools (up to date). This includes computer equipment.

Skills victory is determined by the mastery of basic techniques which include technical skills (1) short service, (2) long service, (3) drop shot, (4) smash, (5) lob and (6) drop shot. Besides skills technique though there are also skills feet (foot work). (Irwansyah, 2009).

Advancement of computer media provides several advantages for the production of audio-visual activities. In recent years computer received great attention because of its ability to be used in the field of learning activities. Coupled with network technology and the internet, the computer seemed to be excellent in learning activities. Form of interaction that can be applied: Practice and training (drill & practice) Tutorial, Games (games), simulation (simulation), discovery (discovery), Trouble shooting (Problem Solving) quoted from (Heinich, et.al 2006).

Computer-based Technology; are ways to produce and deliver materials using a device that originates on the microprocessor. In essence, technology computer-based displays of information to learners through the impressions on the screen. Various computer applications are usually called "computer-based instruction (CBI)", "computer assisted instruction (CAI)", or "computer-managed instruction (CMI)".

Computer Assisted Instruction (CAI) is the use of a computer directly with students to deliver content, provide training and test student' progress. CAI can be a substitute teacher as a tutor in the classroom. CAI also many different forms depending designer and developer of learning skills, able to shape the game

(games), teaching abstract concepts are then be formed in the form of audio visual and animated.

Computer-Managed Instruction (CMI); used as teaching aides perform administrative functions are increasing, such as the recapitulation of student achievement data, data base of books/e-library, school administrative activities such as payment records, receipts, etc.

Understanding Computer software is a set of electronic data is stored and regulated by the computer, electronic data stored by the computer it can be either programs or instructions that will execute a command. Through software or software is a computer can execute a command. Software or computer software based on its distribution can be divided into several types, namely paid software, free software or free (freeware, free software, shareware, adware).

Salling software is software that is distributed for commercial purposes, any users who wish to use or obtain the software by buying or paying to distribute party. Users who use paid software is generally not permitted to distribute the software freely without permission any publisher. Examples of this example is a paid software system Microsoft windows, Microsoft office, adobe photo shop, and others.

The speed gun work with K-band transmitter where the signal can be reflected by the target object. Will produce a shift of the reflected signal is proportional dopier effect on the speed of the object. Doppler frequency shift will be detected by the receiver, amplified signal, the filter frequency, and then converted into digital signals by ADC (Analog to Digital Converter) and experienced Digital Signal Processing (DSP) in a chip. By using software furrier complex transformation algorithms, DSP chip filters will dismiss the error signal and a low level to identify and display the desired speed of the target. Speed in the statistical variation, the average is then displayed on the LCD display. The success of an exercise program can not be separated with the implementation of the evaluation process. Evaluation results can be obtained from the results of tests and measurements. According Arikunto (2004) evaluation is an activity to gather information about the workings of something, which further information is used to

determine an appropriate alternative in making decisions. The test is a tool to gather information and measurement is the process of gathering information. (Rush Lutan, 2008). According to Worthen and Sanders (2008) evaluation is to find something of value (worth). Something that can be valuable information about a program, as well as the production of certain alternative procedures. Therefore the evaluation is not a new thing in human life because it always accompanies the person's life. A man who has done a thing, is bound to judge whether what has been done in accordance with the original intention.

According the Stufflebeam in Worthen and Sanders (2008) evaluation are: process of delineating, obtaining and Judging Providing useful information for decision alternatives. Understanding the evaluation also definition by Guba and Lincoln (2005) which states the evaluation as a processor describing an evaluand and Judging its merit and worth.

In the evaluation of some elements contained in the evaluation are: the existence of a process (process) the acquisition (obtaining), drawing (delineating), provision (Providing) useful information (useful information) and alternate decision (decision alternatives).

Therefore, the success of the two concepts expressed in the effectiveness and efficiency. Effectiveness is the ratio between output and input while efficiency is the level of utilization of inputs to produce outputs through a process (Sudharsono, 2004). Any activity carried out has a specific purpose. As well as evaluation. According Arikunto (2004) there are two purposes of evaluation of general purpose and special purpose. The general objective is directed to the overall program, while more focused on specific objectives of each component.

According to John L. Herman in Tayibnapis (2001) program is everything you do in hopes of bringing the results or benefits. From this sense we could conclude that all human actions that it expected to obtain the results and benefits can be called a program.

According to Isaac and Michael (2004) a program must end with evaluation. This is because we will see if the program successfully perform the function as a preset. According to them, there are three stages of a series of program evaluation

are: (1) states the question and specifies the information to be obtained, (2) search for data relevant to the research and (3) provides the information needed to continue the party decision makers, repair or stop the program them.

Speed gun as one tool that can detect accuracy smash victory. World record speed smash in badminton is held by one of Fu Haifeng of China doubles player Cai Yun pair up with, the record is done at the Sudirman Cup June 3, 2005, with a speed of 332 km/h (206 mph). That is the highest speed ever recorded from the sport that use a racquet. Speed of 206 m is faster than the speed Eurostar train that its maximum speed of 186.4 mph. Meanwhile, smash the record for the men's singles players are printed with the speed of 305 km/h (189 mph)by Taufik Hidayat of Indonesia players as well as celebrities. Even according to the backhand smash speed records Taufik reached 260 km/h at times competed against Chen Hong. (from Http://beritaunik.net/olahraga/ alat-pengukur-kecepatan-smash-bulutangkis. html dated 24 April 2011).

METHODS

The method used in this study is an experimental method. Surakhmad (2007), Zainal Aqib and M. Maftuh (2009). This study uses Pretest-treatment and post-test design.

Step of this research work is:

1. Preparation of test equipments skill badminton techniques by using a detector-based multimedia software, involving experts from the electrical and computer engineering.
2. Adopting a standard form of the test that are then performed using a computer device.

The process of implementation of early stage research conducted initial laboratory techniques to the Faculty of Engineering, University Siliwangi made software supplies computer-based detector.

Having made further trials conducted validity and reliability with the subject of victory in club Agave Tasikmalaya City, as well as comparative accuracy of results conducted on college students Siliwangi University Badminton enthusiasts Student Activity Unit.

With the validity and reliability of equipment in accordance subsequently applied to the process of exercise performed on agave club victory over city Tasikmalaya. When the study was conducted for 3 months effective or during the 16 sessions of exercise, plus two times the test (initial test and final test). The process of training carried out for 3 days a week, every day: Monday, Wednesday and Friday. Practice starts at 15.30 pm until 21.00 0m.

In addition, subjects also involve expertise in badminton which Mrs. Lydia Djaelawidjaya a former national shuttle's as well as the head coach at the club Agave Tasikmalaya City.

Research subjects victory by 20 people. Research instrument engineering skills of badminton using the test as developed by Miller (1995) on the test wall volley, and Hognes Collins (1978) regarding the test short service and long service and French (1941) concerning the test lob (clear test), the authors test the form of adoption of Nurhasan (2004). Respect to the data collected is quantitative data and to answer the research hypotheses proposed data analysis technique using formulas from the "Methods of Statistics" compiled by Sudjana in 2006.

RESEARCH FINDINGS

By using the data processing procedures as appropriate, the results of data processing can be the authors describe in the following sections: The results of calculation of average value, standard deviation and variance can be seen in Table 1 below.

Table 1 Calculated Value Average, Standard Deviation, and Variance

Variable	Value Average	Standard Deviation	Variance
Initial Mastery Skills Badminton Mastery of Skills	48,220	2,66	7,08
Mastery of Skills Final Badminton Technique	55,289	74,74	558,606

Graph 1 Development of Technical Skills Training Badminton Results
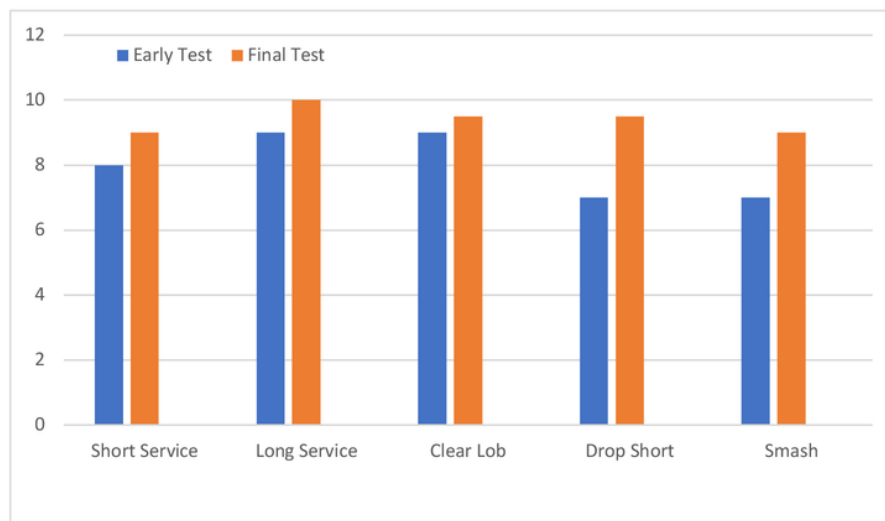
Testing normality test using the chi-squaretestmatch. Test results will determine which approach will be used in data analysis, whether the approach to parametric or non-parametric. The approach used parametric tests when the test results turned out normal. While non-parametric approach is used when the test results the test were not normal. Having obtained the results as calculated in Table 2 below.

Table 2 Normality Test Results Data

Variable	Chi-square Value Calculated	Rejection Limit Hypothesis	Conclusion
Initial Mastery Skills Badminton	0,611	5,99	Normal
Mastery of Skills Final Badminton Techniques	1,847	5,99	Normal

*) α= 0,05

To determine whether or not a homogeneous sample studied, it is necessary to count the sample homogeneity. Testing homogeneity is also one of the conditions used test the results of the homogeneity of the samples obtained calculating the value off-f-tables 7,89 and 2,05 data are not homogeneous conclusion.

The test aims to prove whether the hypothesis is true or not specified. To prove the authors use two test average similarity: testing the one hand by using the test. The results of hypothesis testing is as in Table 3 below.

Table 3 Hypothesis Testing Results

Variable	t-count	t-table α=0,05	Conclusion
Initial Mastery Skills Badminton Mastery of Skills	2,95	2,10	Significant
Mastery of Skills Final Badminton Techniques			

Test criteria, accept the hypothesis (Ho) if-t $(1-\alpha) < t < (1-\alpha)$, t $(1-\alpha)$ in the can from the t distribution with degrees of α where t $(1-\alpha)$ freedom (df)= $(n_1+n_2).\alpha2$ and opportunities $(1-\alpha)=0.05$ or 95% confidence level the hypothesis is rejected for other prices. Real this means that the null hypothesis (Ho) is accepted if it count in the reception area $-2,10 < t < 2,10$ and reject Ho if t is calculated to have another price.

Can be seen from Table 3 t-calculated value of 2,95 beyond the reception area of the t-table value of 2.10 means that the basic technique of badminton training results using the detector computer-based software engineering can improve the skills of badminton.

The study stated that training in the use of computer-based software tool detector can improve the skills of badminton basic technique. The training process is the communication process and takes place in a system, then the media training occupies an important position as one component of the training system. Without the media, communication will not occur and the process of training as a process of communication will not be able to take place optimally. Media training is an integral component of the training system. Variety of tasks.

CONCLUSION

Based on the results of data processing as the authors describe can draw conclusions on the outcome of this study as follows: "the use of computer-based

software tool detector can improve the skills of the basic techniques of badminton." It further states that the conclusion of this study to improve the skills of badminton techniques used exercise model with technological devices Computer or Computer Base Training.

To follow up the conclusions research recommendations can be summarized birth to the suggestions of research as follows: 1. To train badminton skills using computer-based software tool detector. 2. Need further socialization detector use tools for computer-based training activities of other sports.

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