

The Implementation of VIS based Performance Assessment Model in Volley Ball Learning

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Abstract: The aim of this research was to test Volleyball information system (VIS) based performance assessment model in assessing students' performances in volleyball learning. The research method used was quasi experiment with interrupted times-series design. The participants of this prior research were 12 students of Senior High School in Bandung, with the sampling technique used was cluster random. The research instrument used was observation form adapted and modified from Volleyball Information System (VIS) and FIVB year 2005 measuring 4 play skills (serve, receive, set and spike). One-way ANOVA on time-lapse measurement was used as the analysis technique. The result indicated the application of performance assessment using modified VIS method at the beginning phase gave significant influence. It was indicated by the existence of improvement of volley ball learning result at every meeting, and it was emphasized by the result of statistical test $F = 9.82$ and $p_value = 0.00$ ($0.00 < 0.005$). The conclusion of this prior research was the application of VIS mode based performance assessment could be used during teaching and learning process and it gave contribution on the improvement of volleyball learning result.

1 INTRODUCTION

Basic assumption of this research emerged by the factual condition on the field. The assessment frequently used to measure the skill play of volley ball is still based on actual objective assessment or only to measure the hit accuracy on target area based on some test items and it is not given during the game. Whereas seeing from the actual condition on the field, volleyball learning process has been modified to the actual game. Hence, the used measurement should be based on performance assessment during match.

It has become the research gap that requires solution with the result that the practical measurement of volley ball learning result will be more precise and accurate as well as efficient by the time it is used in learning process

Likewise, on practical level, the results of the research related to the development of assessment instrument of volleyball game are rarely implemented. The latest research conducted by Palao et al. (2015) discussing instrument model and validity to measure the techniques and tactics of beach volleyball. However, the instrument is used to measure the skills of athletes in the games and

matches not in learning environment. While the instrument likely be used in learning environment is the instrument developed by Oslin and Griffin (1998) named GPAI (*Game Performance Assessment Instrument*) which then redeveloped by Memmert and Harvey (2008). Moreover, the instrument frequently used for measuring the skill of volley ball is AAHPER *Volleyball Skill Test* (1965). The instrument that belongs to test battery has aim to measure students' skills in mastering basic techniques of volleyball i.e. Passing, Serving, Setting, Volleying (Lacy, 2012). While the usual instrument used for measuring and assessing the athletes' performances during their game is VIS (volleyball information system) developed by FIVB (Staff Guidelines FIVB, 2005). This instrument is a program to complete a match covering each player's and team's statistic (Staff Guidelines FIVB, 2005). Yudiana, et al. (2016) then developed performance assessment instrument model with the aim of assessing students' skills in volleyball learning, the model is modified from VIS FIVB.

Based on some assumptions above, application or dissemination is necessary to be performed in order to finalize the instrument model. The aim of this process is to perform the instrument model's

utility test, with the result that it can be used and applied in schools' volleyball learning process. Owing the fact that on practical level, volleyball learning tends to have actual play condition. As a result, evaluation model based on performance assessment is necessarily required to be implemented in schools.

2 LITERATURE REVIEW

2.1 Performance Assessment

Basically, assessment is one of the most important components in carrying out education. It is performed to improve the quality of learning process and to become a feedback for students and teachers. Suwandi (2011) stated that "assessment is one of necessary activities performed by teachers and students from a set of teaching and learning activities." It is emphasized by Kusaeri and Suprananto (2012) that stated that assessment is a systematic procedure covering activities to collect, to analyze, as well as to interpret information used for concluding someone's or something's characteristics. Regarding to that viewpoint, assessment toward students' learning result is critical in the learning process. It is based on the teachers' needs in gaining learning result data achieved by the students. Suwandi (2011) stated that there are 7 assessment techniques frequently performed, i.e. (1) Performance Assessment, (2) Attitude Assessment, (3) Paper and Pencil Test, (4) Project Assessment, (5) Product Assessment, (6) Portfolio Assessment, (7) Self-Assessment.

Performance assessment is an assessment performed by observing students in demonstrating something (Suwandi, 2011), this assessment technique used for assessing students' skill in accordance with the goals and competencies to be achieved, such as in sport practice, pray practice and other materials with the context of mastering skill. Suwandi (2011) suggested that "this method is considered more authentic than written test." It is assumed owing the fact that basically, the result of performance assessment demonstrates the actual skills of students. Therefore, performance assessment is a data collection process by systematic observation for making decision regarding one individual.

Similar to the discussion above, Zainul (2005) suggested that performance assessment is frequently equated with alternative and authentic assessments. Basic explanation regarding to performance

assessment is "assessment that requires students to demonstrate their performances, rather than answering or selecting answer from a set of available possible answers." (Zainul, 2005). Therefore, there are two most important criteria i.e. task and scoring rubric. It is emphasized by the viewpoint of Committee for the Workshop on Alternatives for Assessing Adult Education and Literacy Programs (2002) that stated two most important components of performance assessment are task and score rubric. Meanwhile, Jo Anne Wangsatorntanakhun (1997) cited by Zainul (2005) stated that "clearly defined task and a list of explicit for assessing student performance or product," two important points of performance assessment are task and rubric, in this case task displayed for measuring students' skills or motion tasks that are developed based or arranged indicator, then score criteria is developed to assess students' answers or motion tasks performed by the students. Based on some suggestions above, the similarity concepts of performance assessment exist, therefore it can be concluded that performance assessment is an assessment of work test result in demonstrating skills in accordance with individual's motion skills through motion task that will be assessed through assessment format by using scoring rubric.

2.2 Basic techniques of Volleyball

Basic techniques of volleyball frequently used in volleyball learning are (1) serving, (2) passing, (3) spiking, (4) blocking or defending.

2.2.1 Serving

Serving is the first weapon that can generate starting point of a game. Serving is performed from the area of in-serving zone to the opposing zone over the net. At the beginning, serving was only to put the first ball to begin the game. In the development of modern volleyball, serving is the first offence to generate an immediate point (Subroto and Yudiana, 2010). Serving is performed to begin a volleyball game.

2.2.2 Passing

Passing in volleyball game consists of two; forearm underhand passing and overhand passing. Forearm underarm passing is performed by controlling the incoming ball lower than shoulders by using two hands with the wrists are sealed together (Subroto and Yudiana, 2010). This passing is commonly used for controlling incoming ball from the opponent or

from the team-mate, it has difficult characteristic, for instance a low, fast, hard or sudden incoming ball but can still be reached by hands.

2.2.3 Spiking

Kristianto (2003) stated that spike is a critical hard slam of ball that is difficult to receive or to pass. By forming aggressive slam of ball over the net into the opposing court. For better performance, these factors are important to note: standby, tossing, slamming, and landing with high velocity. When the ball is far over the net, therefore it can be sharply slammed below.

2.2.4 Blocking

Blocking is performed to defend incoming ball from the opponent up close to the net. This skill is critical to be owned by the players owing the fact that in modern volleyball, the velocity and direction of ball hit by the spiker have been difficult to predict by the defenders. Without blocking from the defenders, it is difficult to control the ball hit by spiker perfectly.

2.3 Volleyball Information System (VIS)

VIS (Volleyball Information System) is a program to complete a match covering each player's and team's statistic (Staff Guidelines FIVB, 2005). VIS based instrument has six assessment criteria, i.e. evaluation of the attack, evaluation of the block, evaluation of the serve, evaluation of the dig, evaluation of the set, and evaluation of the service reception. The six assessment criteria are based on the criteria of an actual volleyball game and VIS software. Furthermore, scoring technique used in VIS instrument is checklist technique with three categories of ball hit result, success, fault, and attempt (Staff Guidelines FIVB, 2005). Success category will be given when the athlete is successful in performing hitting techniques, fault will be given when the athlete is unsuccessful in performing hitting technique, while attempt will be given when the athlete is successful in performing hitting technique and making score for his/her team (Staff Guidelines FIVB, 2005). The main goal of VIS is to inform national and international media the statistical result of match and individual player.

3 METHODS

The research method used was quasi experiment with interrupted times-series design (Johnson and Christensen, 2012). The subject of the research is students of a senior high school in Bandung with cluster random sampling technique used regarding to two sampling selection techniques, random selection and random assignment (Johnson and Christensen, 2012), it is based on the need of school's facility and infrastructure for the research to take place especially used for volleyball learning. The instrument used was observation format adapted from Volleyball Information System (VIS) from FIVB year 2005 that measured four skill plays; (1) serving, (2) receive, (3) set and (4) spike (Yudiana, Hidayat, Hambali and Slamet, 2016). With the quantity of content validity coefficient was in between 0.60 to 1.00 by using Content Validity Ration (CVR) technique. The instrument used is demonstrated by table 1.

Table 1: The instrument of VIS based performance assessment in volleyball learning.

Variable	Skill Indicator	Assessment	
		Success	Unsuccess
Volleyball game skills	Serving		
	Receive		
	Set		
	Attack		

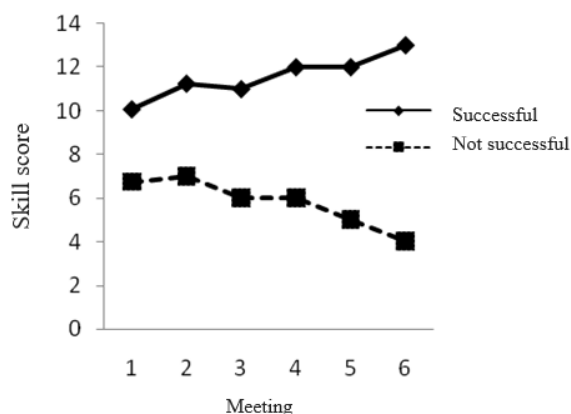
The main analysis used in this prior research was repeated one-way ANOVA.

4 RESULTS AND DISCUSSION

The result indicated the application of performance assessment using modified VIS method at the beginning phase gave significant influence. It is indicated by the existence of improvement of volley ball learning result at every meeting, and emphasized by the result of statistical test $F = 9.82$ and $p_value = 0.00$ ($0.00 < 0.005$) demonstrated by table 2 and figure 1.

Table 2: Anova Analysis Research Result.

		Sum of Squares	df	Mean Square	F	Sig.
Success	Between Groups	30.569	5	6.11	9.82	0.00
	Within Groups	41.083	66	0.62		
	Total	71.653	71			



Graphic 1: Measurement Result at Every Meeting.

The application and implementation of evaluation system by using VIS based performance assessment model is very useful both for monitoring as well as giving feedback related to the effectiveness of learning program and also for talent guidance purpose (Markovic et al., 2004), moreover for the students with the most number of population in the spectrum of volleyball learning process. Furthermore, the benefit of this research can help to improve the quality of achievement guidance in volleyball, especially early age guidance that is believed to give the best basic strategy to guide and develop. It is assumed by owing the fact that basically by performing test and measurement as well as continuous evaluation supported also by reliable test instrument can be a good feedback for teachers and students, as well as knowing students' skills subsequent to learning process. The result of this prior research supports some previous research conducted by (Yudiana, 2016; Palao et al., 2015).

5 CONCLUSIONS

Based on the analysis on the previous discussion, this prior research concludes that the application of VIS based performance assessment can be used for the learning process and gives contribution toward the improvement of volleyball learning result.

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