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## Effects Of Repetitive Audio-Visual Display On Volleyball Skill Acquisition Among Non-Athletes Undergraduate Students Of A South-Western Nigerian University

**Lade Adeyanju** (Bio)  
*Institute of Education,  
 Obafemi Awolowo University Ile Ife Nigera*

### Abstract

Eighteen (18) Freshmen, 12 male and 06 female with age of between 18 and 24, mean 21 years, (SD=±4.5) who are non athletes but indicated interest in playing *volleyball/volley ball* game were exposed to a repetitive show of a locally recorded video tape for one hour on volleyball. Subjects of the study were *selected* through randomization procedure and sorted into groups A, B, and C comprising 02 female and 04 male in each of the groups. *Group A, Group B, and Group C viewed the video show once, twice and three times respectively within two weeks. Group A participated with Group C during the first day of viewing, while group B and C, were given further treatments subsequently.*

Data gathered on skill acquisition were *analyzed with descriptive statistics. Results indicate students to gain knowledge in volleyball skill acquisition in reference to overhead serve, reception, volleying and spiking of the ball. It was recommended that locally recorded videotapes be used repeatedly to motivate as well as reinforce skill learning in ball games. The repetition of the video clip seems to have effects on acquisition and*

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**Introduction**

Volleyball is a popular game worldwide and ranks third as a recreational team sport. It is one of the few popular games that originated from the United States. The object of the game is to keep the ball in flight, going back and forth over the net without it touching the floor. In Nigeria, the game is popular among the youths. Both men and women play the game with separate modified rules. Volleyball, apart from the interest and

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excitement it steers up among players and spectators, offers opportunity for exercising the whole body. It involves five basic skills that must be mastered before competitive games could be played meaningfully. These skills are, the serve, the reception or digging', the 'setup' or volley for a spike and the spiking. There is also the 'block'. These skills are not developed overnight but with training practice with the ball. The players also need proper co-ordination and concentration.

In Nigeria, the crime wave involving the youths is growing at an alarming rate. Youth are easily tricked into antisocial practices, hemp smoking, cult practices, drunkenness, robbing, disobedience and flouting of rules. This is worrisome. *These problems, it is thought, could be reduced if youths are encouraged to play games and get involved recreational sports.* The easiest sport of course would be volleyball. It is less expensive and fairly easy to set up. It is considered that youths will find joy in letting out their 'pent up' feeling through the volleyball game.

**In the Obafemi Awolowo University at Ile-Ife, apart from the 'stress' that students pass through in terms of their academic work, a number of anti-social activities have been reported. *Cheating in examinations, stealing and cultism are all anti-social activities* that recreational sports can take care of because sports encourage discipline and fair play.**

**Since almost anybody can play the game of volleyball, one of the challenges of the game is practice. Where time is created for repeated practice, *it is thought that the amateur can be tuned into a skilled or experienced performer.***

**Instruction in sports and coaching is still being taught using the traditional approach *where* the instructor demonstrates the skill and through observation and participation, the trainee attempts to copy the instructors' displayed skill. In most cases, it takes ample time to master the skill of volleyball. This is why a new approach is being tried. The innovation involves making learners watch the skills of volleyball on video clips. *The purpose of the study was to compare performances of selected non-athlete subjects after they view video clips using different repetitions.***

#### **Skill Acquisition in Sport**

**Research evidence on acquisition of skill in sport has**

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been reported in the developing and developed countries of the world. Gagne (1959) explains that irrespective of any theoretical understanding, there are three general approaches that may be identified in the study of skill learning: the traditional approach that emphasizes topical research areas with little theoretical foundation, the human performance approach that emphasizes the process of information and the role of feedback, and the perceptual approach which emphasizes the stimulus paradigm.

However, according to Amusa (1986), there is no generally accepted model of skill learning. But the question remains: How best to teach strategy and sports skill effectively? According to (Alderman 1974) theory, psychologists have used motor learning to find answers to problems concerning aggregate skill performance and in 1971, Adams propounded the "closed-loop" theory. Adams explained that feedback reduces the amount of error in response and becomes input for correcting the error on the next response.

However Gestalts approach to skill acquisition is more practicable, which posits learning to occur through insights that the learner perceives as a pattern or configuration. Specifically in Gestalts view, learning a skill involves learner reaction to a total situation and not isolated stimuli (Frost, 1971). Lawther (1968) divided skill acquisition into three stages of learning. There is the early stage, when the learner has no knowledge of the skill required and Lawther suggests demonstration for teaching the skill at this level. The second stage involves learning the vocabulary when the learner has the 'feel' of the game. Feedback can be sought through verbal instruction. The final stage is the (generalization) stage, when the learner performs the skill under varied conditions. Gentile's (1972) contribution to his skill learning is on goal setting, when the learner has to have a firm idea about the movement involved and the desired outcome before the skill being learned gets improved. This is observable through feedback received from the learner's response.

Cratty (1973) reports that acquisition of motor skills involves a number of interrelated processes, some of which are measurable while others are not. Motor skill acquisition involves selecting and smoothing movements and sub-movements into understandable sequences. In addition Cratty puts it that improvement in motor skills



seems specific to each task with relatively little transfer occurring from task to task. Further Cratty observes that the ability to learn a motor skill is highly specific to the individual skills and that no general motor educability has been identified in the few previous studies on acquiring motor skills. However, familiarity with particular skill learning can be a factor that influences performance in learning sports.

Glanzer, David and Bartlett (2003) Williams (1999) stressed that dynamic theory is a viable framework for modeling athletic performance. The authors are of the perspective that dynamic theory emphasizes the process of coordination and control in human movement. Turvey (1990) perspective on reduced complexity of the motor system indicates that the systems dynamics are usually highly ordered and stable before consistent movement pattern for specific tasks are developed. To buttress this perspective, Handford, (1997) on stability variability paradox in skill acquisition explains that skilled athletes are capable of persistence and change in motor output during sport performance. Bartlett (1977) comments on performance oriented sports that researchers in the field seldom make reference to motor control theory. Glazier (2002) observes that dynamical systems theory could provide a relevant theoretical framework for performance-oriented sport as it offers an interdisciplinary approach to the processes of co-ordination and control in human motor system. Volleyball game requires a consistent co-ordination and it is a demanding activity that needs a dynamical system theory application.

Relevant research on skill acquisition and retention in sport has been carried out through verbal, application of video feedback and with various conclusions reached. Ota and Vickers (1999), Erickson, Krampe and Tesch-Romer (1993) and Morey Sorrentino and Vicker (in press), researched multi-media in the context of enhanced instruction and Rothstein and Arnold (1976) applied video feedback on bowling, Weeks and Kordus (1998) examined the knowledge of performance and motor skill learning, Wulf, McConnel, Gartner and Schwarz (2002) examined the enhancement and learning of sports through external focus feedback.

Further research includes Zetou, Vernadakis and Kioumourtzoglou's (2002) study that investigated two



**types of modeling (set and serve) skills of volleyball among 63 boys and 53 girls in elementary school. The participants with mean age of 11.7yrs (SD=5) were randomized into two groups. One group observed videotape of expert model performing skills and the second group observed a video replay of their own performance. Verbal cues were provided simultaneously. Result showed that the first group improved set and serve skills more on acquisition and on retention test than the second group. It was concluded that modeling plus instructional cues served to improve children's learning of two volleyball (set and serve) skills.**

**Several authors have carried out research on repetition effect of skill acquisition in learning (Di-Vesta and Gray (1972); Gagne and Briggs (1979); Rogowski (1981); Bromage and Mayer 1986; Jatto (1993). In the various studies, repetition seems to lead to an improved performance in skills acquisition. Bromage and Mayers (1986) study on effects of repetition on learning of prose suggested that the number of times a lecture is presented is positively related to the overall amount of information a learner will recall. They further stated that quantitatively repetition allows the reader to adjust as well as focus on different aspects of lectures during each successive presentation.**

**In education, repetition without instructional material can lead to boredom. Skills are therefore not easily learned when learners are not involved, and motivation is also essential if learned skill is to be exhibited at subsequent times. Repetition in education is one of the principles used during the teaching and learning process. Whether instructional materials repetition will have positive effect or otherwise on learners is a subject of debate. The view that information presented to learners in form of visual, verbal, audio or audio/visual is required before skills are acquired is inconclusive. However, repetitions are made to correct an error or used as reinforcement of what has been learned.**

**Jattos' (1993) study of a 400-level students that were treated in separate groups to a one, two and three times repetitions of an 8-minutes, 900-words taped lecture on 'flying coffin' showed that recall increased with additional presentations for all levels of information, when compared with a group that was allowed to take note. Gagne and Briggs (1979) support repetition of materials because it serves as a stimulus that allow for retention through practice.**



### **Purpose of the Study**

**The need to motivate improved skill acquisition in volleyball game among the freshmen of the Obafemi Awolowo University, Ile-Ife forms the basis for the study. In order to motivate subjects of the study, the audiovisual approach of video clips repetition was used. Essentially, the study investigated the repetition effect to find out if it will lead to increased gain in skill acquisition of the non-athletes.**

### **Methods**

**A total of eighteen (18) Freshmen participants, 12 males and six females between age 18 and 24, mean 21 S.D ? 4.5 who were non-athletes but indicated interest in learning to play volleyball were randomly selected to serve as subjects of this study. They were assigned into two experimental groups and one control group. Each of the groups comprising 02 selected female and 04 male learners were organized to play each other in turn. They were observed five times while playing the game and each of the skills of serving, reception, setting, spiking and the block was scored (secretly) five times for each member of the group. All the subjects were on the volleyball court playing when data concerning their performance on volleyball were scored during a game of three sets.**

#### **Treatment**

**Before treatment, an oral interview was conducted to confirm that none of the eighteen players had knowledge of the volleyball skills. This was also confirmed during a warm up exercise. Thereafter a one-hour locally recorded videotape on volleyball was prepared and the three groups viewed it. Subjects in Group A viewed the videotape once and Group B viewed it twice while the group C viewed it three times. The viewing exercise was carried out at an interval of five days before the testing started. In order to collect data on learners' skill performance, as stated earlier, five trials of observation were made during game situation and each player was scored secretly five times. Frequencies and mean scores were used to analyze the data.**

**The two hypotheses to be tested included:**

- 1. There was to be no significant difference in volleyball skill of freshmen exposed to varied repetition of**



**2. There was to be no significant difference in volleyball skill acquisition based on gender**

**Results**

**Table 1: Distribution of Participants into Experimental and Control Groups  
N = 18**

	Repetition Time	Group	N	Total
Control	1x	A	06	06
Experimental	2x	B	06	06
Experimental	3x	C	06	06
		<b>Total</b>	<b>18</b>	<b>18</b>

The table 1 presents the repetition times, by group and number of participants in each group, which consisted of six subjects. Group A served as the control while Groups B and C formed the experimental groups.

**Table 2: Acceptable Performance During Game Situation on a Five (05) Trials Observation  
N = 18**

Group	Repeated Video Show	Application of skill				Frequency %		
		Serve	Reception	Volley	Spike	Good	Poor	Total
A	1X	05	01	03	01	10 (33.3)	20 (67.10)	
B	2X	15	04	05	04	28 (93.00)	02 (10.00)	
C	3X	10	06	07	02	25 (83.00)	05 (17.00)	

Table 2 show the analyses of the number of repetition of viewing the video show and performance of subject of study on a five (05) trial attempts made by individual athletes. Results obtained indicated that the two-time repetitions, enrichment of the video viewing group was better than the performance of Groups A and C. Group A viewed the show once, while Group C viewed it three times. The results obtained rejected hypothesis number one.

**Table 3: Five Trials Attempt Skill Acquisition in**



**volleyball by gender**

**N = 18**

	N	Serve	Reception	Volley	Spike	Good	Bad	%
Male	12	(1) 35 60	(8) 40 60	(3) 35 60	(6) 30 60	(28) 140	(53.3%)	100
Female	06	(4) 20 30	(3) 15 30	(5) 25 30	(2) 10 30	(14) 70	(58.3%)	100

**Table 3 presents data analysis on skill acquisition based on gender on a five attempt trials. As Table 3 indicates, there is no difference in performance between male and female participants on the volleyball game. Although the male subjects that participated in the study doubled the number of female, the number did not lead to any significant difference in gender in skill acquisition.**

**Discussion**

**The analyses of the data on the frequency of viewing the video support positive effects on skill acquisition. From the five observations made on the application of the different skills, in some cases, the more the number of repeated viewing the better the performance of the athletes. Group A with one time viewing of video showed that it had 33.3 percent display of good skill and 67% had poorly exhibition. Group C was exposed to video clip three times and had 83% and 17% good and poorly displayed skills respectively. Group B viewed the video twice and the group came up with best skills of volleyball. Ninety-three percent of the skill acquired by group B was good and the rest was poor. Therefore the frequency display of acceptable/good skill performance differs. The hypothesis that states that there will not be any significant difference in volleyball skill acquisition was rejected because variation in repetitions had effect. The second hypothesis that states that there is no significant difference in skill acquisition of volleyball based on gender was found tenable. The six (06) females and twelve (12) males selected into three groups performed differently in skill application, however, when female and male performance was compared, there was no difference. As pointed out by Cratty (1973) only measurable variables was used as a basis for evaluation of performance of subjects of the study. Gagne and**

**Briggs (1979) theory on repetition in learning skill is upheld in this study because repetition offered the opportunity for practice and retention of the volleyball skill. While subjects were exposed to a repetition of video clip on volleyball at different number of times, the outcome of subjects' performances indicated that repetition of audiovisuals and practice of skill observed from the video show may partly be responsible for the improved skill exhibited in some of the cases considering the short period of practice exercise. This study finding corroborates Bromage and Mayers's (1986) study that showed that repetition of an act increases memory during the process of learning. Subjects of study as were observed, exhibited relative improvement in skill acquisition during the game. Some of them also tended to have reflected on the techniques seen on the video as the training sessions progressed.**

### **Conclusion**

**The result of this study indicate that the more repetitions a skill is practiced, the better the chances of skill acquisition. As usual in learning, several other variables maybe accountable for the output of learners such as learner disposition to strategy, learner interests, teacher motivation, the strength, emotion and perception of the learners affect how well the learner can acquire volleyball game skills. In a game situation, fear and aggression play a significant role in goal attainment and sports skill performances. In this study, repetition of video show may have contributed to the observed increase in the learning of volleyball skills among non-athletes in this study. This finding supports Zetou et-al's study as they concluded that modeling plus instructional cues improve the learning of two volleyball (set and serve) skills. The present study also showed that non-athletes improved significantly in skill acquisition. However, the group that received three times treatment of repetition of video clip show, performed lower than Group B that had two times video clip show. Arising from the results obtained, there is a need to use more relevant audiovisuals materials for instructing learners on sports.**

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