Improved Shooting in Basketball: "A No-Backboard Approach"

Chukwunweike Peter Iwuno
Department of Human Kinetics and Health Education, Nwafor Orizu College of Education, Nsugbe, Anambra State, Nigeria
Corresponding Author's Email: Peteriwuno1@gmail.com

Abstract
An augmented visual cue of basketball ring model (as designed by the researcher) was used to investigate the problem of shooting accuracy in basketball. Fourty (40) College female students at the department of Health and Physical Education, College of Education Nsugbe, were selected and used for this study. The study utilized the pre-test, post-test control group design. Training for the two groups were arranged at alternate days for three times a week lasting six weeks. Criteria measures were the jump shot from the foul line and from an angle of 45 degree. Only the experimental group was exposed to the basketball ring model throughout the training. The data were analysed using the student t-test at 0.05 level of significance. The results showed that these were significant differences in the performances of those who received augmented visual cue from those who did not in the two criteria measures, ft was therefore concluded that the augmented visual cue positively improved the shooting accuracy of those that trained with it.

Keywords*:* Shooting, Basketball, Approach.

Introduction

The sporting environment especially as exemplified by team games has manifested itself as a dynamic one in which only participants who use dynamic and pragmatic methods will succeed. That as the contention of Omotayo (2020) as he further argued that only resourceful and articulated management planning will stand the high degree of changes presently going on in sports management. There have been certain devices that are supposed to provide more training to an individual in order to develop a greater level of skill proficiency. Examples include the Golflite developed by Mathews and Daniels (2024) and reported by Signer (2024), regulation rim in Basketball etc. (Singer, 2022). Since winning in Basketball, as typified by successful shots, is now a highly cherished value, studying the effects of a ring model on shooting (as designed by researcher) in basketball would help Basketball coaches to re-appraise their training methods (normal rim or the modelled augmented rim) and opt for the best. This study probably would help establish the supremacy of one training method over another.

Umedum (2019) maintained that motor skill is resistant to loss. Thus, the ring model as used in this study will lead to internalization of the shooting skill thereby improving performance. In a bid to accomplish this task, two hypotheses of no significant difference between subjects who received augmented visual cue and those who did not guided the study.

Method

Research Design:

This investigation utilized the pre-test, post-test randomized control group design.

Subjects

Only bonafide female students of the Anambra State College of Education, Nsugbe belonging to the Health and Physical Education Department participated in the study. The study-sample consisted of all the female students in the Department (n = 40).

The subjects were randomly assigned to control and experimental groups using their scores in the pre-test. This ensured equal weighting in performance prior to experimental treatment.

Description of Test Equipment Used

Basketball Ring

A standard basketball ring was used. Two suspended metal projections which rose slightly above the ring circumference with brightly yellow coloured small sized plastic balls at their tips were fixed at the sides of the ring.

Further, a C = shaped flexible metal spring was attached from the ring to the metal projections. This spring helped to return the suspended metal back to position after the ball had passed through it. These metal projections at the centre of the ring each of which measures about 10cm from the ring to the suspended plastic ball was painted bright yellow to provide extra visual cue to the subjects. This mechanism as designed by the investigator serve as an augmented visual cue to the experimental group

System of Scoring

Subjects were given trials and scoring was based on absolute error. Only successful shots were recorded against a subject's name. Each successful shot carried two points. Subjects were allowed four trials and the total points made in the trials were recorded against a subject's name

Training Progrmme

The training programme consisted of dynamic activities including general warm up, ball bouncing and correct body mechanics while shooting. Only the experimental group were exposed to the use of the new model and their task was to aim at the suspended plastic ball, while avoiding the back board. The control group trained as much as their experimental counterparts though without the ring model and on alternate days. The training lasted for six-.weeks. Thereafter a post-test was administered. The training and the test, however, centred on the jump shot from the foul line, and from an angle of 45 degrees.

Results

Data Analysis

Descriptive statistical technique was utilized in the treatment of the data. The mean scores were; computed for the pretest and post-test of the control and experimental groups the student t-test was applied to test the significance of the differences between the means of the two groups, at 0.05 level of significance.

Results Table 1

t - values of the Experimental (A) and Control (B) groups for jump shot from 45 ^{e}angle at a distance of 6m

		N	X	SD	df.	Cal. t-value	Tale t-value	Prob.
Pre-test Scores	A B	20 20	1.65 1.4	45 .50	38	1.6	2.02	0.05
Post test Scores	A B	20 20	2.1 1.6	0.64 .49	38	2.8	2.02	0.05

The hypothesis of no significant difference was rejected since the calculated t-value of 2.8 in the post test was greater than the table value of 2.02. The group with augmented visual cue significantly performed better than the group without.

		N	X	SD	df.	Cal. t-value	Tale t-value	Prob.
Pre-test Scores	A	20	1.6	.47	38	0.31	2.02	0.05
	B	20	1.55	.49				
Post test Scores	A	20	2.35	.59	38	3.7	2.02	0.05
	B	20	1.8	.41				

From table 2 also, the hypothesis of no significant difference was rejected since the calculated t-value of 3.7 in the post test was greater than the table value of 2.02. The group with the augmented visual cue significantly performed better than the group without.

Discussion

Victories as well as win-loss ratio of basketball teams largely depend on the ability of the team to make accurate shots at the ring. Since however, most of these successful shots are delivered with the help of the backboard, this study is of great significance since the subjects were made to shoot from a 45^{C} angle where the backboard becomes of little importance.

The analysis showed that in the jump shot from an angle of 45', the experimental group recorded a post test mean score of 2.1 and a standard deviation of 0.64. Also as further shown on the table, the control group had a post-test mean score of 1.6 and a standard deviation of 0.49. A test of significance of the differences between the means gave a t-value of 2.8 which was significant at 0.05 level of significance. Table 2 also showed a pretest mean score of 1.6 and a post-test mean score of 2.35. A test of significance of the differences between the means gave a t-value of 3.7 which was found significant at 0.05 alpha level. The above findings show that even though the control group improved in their shooting abilities, the improvements were not high enough, This apparent improvement of the control group could be as a result of maturation and other extraneous variables. However, the finding of this study was in agreement, with the report of Smode (2024) '"which was presented by Wingfield (2023) who asserted that when a group of students were asked to operate a control knob which kept a randomly fluctuating needle centred on a dial, the group of students who were provided with augmented feedback were much better throughout the training.

Conclusion

In conclusion, it has been established that the augmented visual cue (as used in this study) positively improved the shooting accuracy of those that trained with it^-However, Moore' and Beitel (2022) maintained that human movement consistency during perceptual motor task performance repeatedly identifies three of the following major influencing factors:

a. types of task/environmental demand;
b. amount of practice; and
c. skill level of individuals.

Though every effort was made to control the extraneous variables, however, the possibility of arty one of the above factors influencing the result of this study is not completely ruled out.
It is, however, recommended that the model as used in this study be given wide application in the teaching of basketball snooting.

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