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COMBINED EFFECT OF SPEED TRAINING PLYOMETRIC TRAINING WITH VIDEO MODELING AND VIDEO FEEDBACK OF FAST BOWLING VARIABLES AMONG PACE BOWLERS

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Abstract: The purpose of the study was to find out the combined effect of speed training plyometric training with video modelling and video feedback of fast bowling variables among pace bowlers. To achieve the purpose of this study, 24 male college cricket pace bowlers were selected as subjects from Regional College of Physical Education, North Tiripura, India. Their age ranged from 19 to 23 years. The selected participants were randomly divided into two groups such as group 'A' combination of speed training plyometric training with video modelling and video feedback training (n=12) and group 'B' acted as control group (n=12). Group 'A' underwent combination of speed training plyometric training with video modelling and video feedback training for three days per week and each session lasted for forty-five to one hour approximately for eight weeks. Control group was not exposed to any specific training but they were participated in regular activities. All training sessions were conducted between 7.30 am - 8.30 am. The selected variable on speed of the bowling was measured by innovative equipment which was radar gun measured in KPH. The pre and post-tests data were collected on selected criterion variable prior to and immediately after the training program. The pre and post-test scores were statistically examined by the paired sample-'t' test. The level of significant was fixed at 0.05 level. It was concluded that the combination of speed training plyometric training with video modelling and video feedback training group had shown significantly improved on speed of the bowling was determined due to the combined effect of speed training plyometric training with video modelling and video feedback training. However, the control group had not shown any significant improvement on speed of the bowling.

Kew words: Speed Training, Plyometric Training, Video Modelling, Video Feedback, Fast Bowling, Pace Bowlers.

Introduction

Sports coaches, performers and scientists are constantly in search of new means to enhance sports performance and gain a competitive edge. Sports vision is conceived as a group of techniques directed to preserve and improve the visual function with a goal of enhancing sports performance through a process, which involves teaching the visual behaviour required for different sporting activities [1].

The theorists and ideologists of modern education disagree with the previous definitions of teaching as conveying knowledge and see teaching as making complex and

difficult subjects understood by students. One of the techniques which are used to solve this complexity is the educational technology. Employing educational technology in one of the educational canters has been able to reduce teaching time of individuals up to 28%. In addition, using those techniques and procedures has been able to elevate education in quantity terms and more educational subjects could be taught in shorter time. Film and video is one of the educational equipment. Giving patterns and observation learning is one of the most important methods in achieving behavioural changes and acquiring new kinetic skills [2, 3, 4].

Video modelling and video feedback is a form of observational learning in which desired behaviours are learned by watching a video demonstration and then imitating of the behaviour of the model. In video self-modelling (VSM), individuals observe themselves performing behaviour successfully on video, and then imitate the targeted behaviour. Video modelling and video feedback has been used to teach many skills, including social skills, communication, athletic performance [5]. Modelling, or observational learning, has been defined as a process in which the performer attempts to imitate an observed action or skill performed by another individual [6].

In cricket, vision is the undisputed king among special senses. Such games are characterized by perceptual uncertainty and time constraints that require a performer to process visual information and react in fractions of seconds. Cricket is a game which revolves around the effective utilization of fundamental skills. The fundamental skills in cricket are quite different from those of most sports because the entire body can be used to play the ball. Cricket is a game that involves a lot of skills which are performed from head to toe of the body. High level performance in any game depends upon the mastery of the fundamental skills. Skills are indispensable for maximum use of the motor abilities. Perfection of these skills and execution of them successfully are having direct impact on the total performance in the game. The response shown by a cricket player after seeing computer assisted instruction will be much more than involving in the regular teaching process. All this help the educator in planning the instruction and providing the relevant materials. The use of the computer in physical education is primarily as a teaching device [7].

Purpose of the Study

The purpose of the study was to find the combined effect of speed training plyometric training with video modelling and video feedback of fast bowling variables among pace bowlers.

Methodology

To achieve the purpose of this study, 24 male college cricket pace bowlers were selected as subjects from Regional College of Physical Education, North Tripura, India. Their age ranged from 19 to 23 years. The selected participants were randomly divided into two groups such as group ‘A’ combination of speed training plyometric training with video modelling and video feedback training (n=12) and group ‘B’ acted as control group (n=12). Group ‘A’ underwent combination of speed training plyometric training with video modelling and video feedback training for three days per week and each session lasted for forty-five to one hour approximately for eight weeks. Control group was not exposed to any

specific training but they were participated in regular activities. All training sessions were conducted between 7.30 am - 8.30 am. The selected variable on speed of the bowling was measured by innovative equipment which was radar gun measured in KPH. The pre and post-tests data were collected on selected criterion variable prior to and immediately after the training program. The pre and post-test scores were statistically examined by the paired sample-'t' test. The level of significant was fixed at 0.05 level.

Determination of the Radar Gun Test

This test is intended to determine an object's maximum speed of the ball. To identify the speed of the ball to use the radar gun device. The radar can be set to record peak velocity, of either an object such as a ball, or the arm or bat, which is handy for sport cricket. The radar can be hand-held or one that can be placed on a tripod or on the ground. To get correct speed gun readings most radar guns will need to be placed directly in the line of travel of the object to be clocked, otherwise only a component of the true speed was measured. The resolution of radar may vary, ranging from +/-0.1 mph to +/- 1.0 mph. The accuracy is difficult to determine, as it would require you to find an object of known speed to calibrate against.

ANALYSIS OF DATA

TABLE-1
MEANS AND DEPENDENT 'T' TEST FOR THE PRE AND POST TESTS ON SPEED OF THE BOWLING OF EXPERIMENTAL AND CONTROL GROUPS

Criterion variables	Test	Experimental Group Mean	Control Group Mean
Speed of the Bowlling (in KPH)	Pre test	116.27	115.34
	Post test	124.95	117.07
	't'-test	**12.73***	**1.41**

***Significant at .05 level. (Table value required for significance at .05 level for 't'-test with df 11 is 2.20)

The table-1 shows that the pre-test mean value of experimental and control groups on speed of bowling are 116.27 and 115.34 and the post-test means are 124.95 and 117.07 respectively. The obtained dependent t-ratio values between the pre and post-test means of experimental and control groups are 12.73 and 1.41 respectively. The table value required for significant difference with df 11 at .05 level is 2.20. From the above table the paired sample-'t'-test value of speed of bowling between pre and post-tests means of experimental group was greater than the table value 2.20 with df 11 at .05 level of confidence, it was concluded that the experimental group had significant improvement in the speed of bowling when compared to control group. The below figure-1 shows the pre and post-tests mean values of experimental and control groups on speed of bowling.

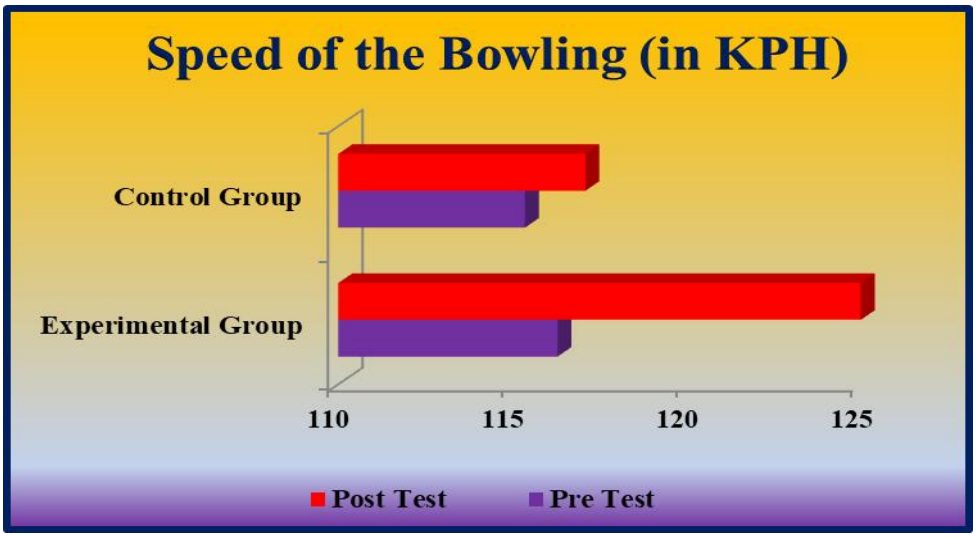

Figure-1: Pre and post-tests mean values of experimental and control groups on speed of bowling

Discussion on Findings

The present studies were found statistically significant improvement on dribbling, which showed that positive combined effect of speed training plyometric training with video modelling and video feedback. The findings of the study were also agreed with the findings of Duffield, Carney & Karppinen, (2009) conducted the study on the physiological responses and bowling performance during repeated spells of medium-fast bowling [12]. Worthington, King & Ranson, (2013) evaluated the relationships between fast bowling technique and ball release speed in cricket [13]. Salter, Sinclair & Portus, (2007) conducted the analysed of associations between fast bowling technique and ball release speed: A pilot study of the within-bowler and between-bowler approaches [14]. Pyne, Duthie, Saunders, Petersen & Portus, (2006) determined the study on the anthropometric and strength correlates of fast bowling speed in junior and senior cricketers [15]. Bartlett, Stockill, Elliott & Burnett, (1996) evaluated the analysed of biomechanics of fast bowling in men's cricket [16]. Wickington & Linthorne, (2017) conducted the study on the effect of ball weight on speed, accuracy, and mechanics in cricket fast bowling [17]. Petersen, Wilson & Hopkins, (2004) evaluated the effects of modified-implement training on fast bowling in cricket [18]. McGrath, (2022) analysed the quantifying cricket fast bowling volume, speed and perceived intensity zone using an Apple Watch and machine learning [19]. Arumugam, Vigneswaran, Kumar, & Suriya, conducted a study on effect of quick footwork drills on footwork and quickness among soccer players.

Conclusions

These results imply that training programmes for young pace bowlers should concentrate on the improvement of their abilities and technique, with video modelling and video feedback being utilised to carry out more targeted strength and conditioning exercises. This research carried out to find the combined effect of speed and plyometric training with video modelling and video feedback for cricket pace bowlers. According to the study's findings, cricket pace bowlers who combined speed training, plyometric training with video

modelling and video feedback showed a considerable improvement in their speed of the bowling ability. However, none of the identified factors had significantly improved for the control group. In addition, these findings bring attention to a number of other facts. For instance, it has been determined and accepted that, in addition to on-the-ground training, such training utilizing cutting-edge technology and digital setup would greatly assist in correcting errors and bringing about positive changes in overall performance. The only thing to keep in mind is that the overall conditions must be controlled and the study's limitations must be minimized. The current study calls for additional research to comprehend the effects of technological tools like virtual reality and three-dimensional analysis at a different level of performance in sports.

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