

Research Paper

THE EFFECT OF VISION TRAINING ON SELECTED VISUAL, HAND-EYE CO-ORDINATION AND OVERALL SOCCER PLAYING ABILITY OF UNIVERSITY LEVEL AND INTER-COLLEGIATE LEVEL SOCCER PLAYERS.**Dr.K.Jayaraja**

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Abstract

The Purpose of the study was to find out the effect of vision training on selected visual skills, Hand-eye co-ordination and overall Soccer playing ability of University level and Inter-collegiate level Soccer players. Three matched groups each having 22 males of 18 to 28 years of age served as subjects. the subjects were divided into three equal groups of Twenty two each. University level Soccer players (Experimental Group I) and Inter-Collegiate level Soccer players (Experimental Group II) and Group III (Control Group) due to the influence of twelve week period vision training on visual skills and group over all playing ability.. The training was given for twelve weeks, six days per week of two hours duration each in the morning and evening session. The University level Soccer players (Experimental Group I) and Inter-Collegiate level Soccer players (Experimental Group II) due to the influence of twelve week period vision training on visual skills and over all playing ability. Group-III. Analysis of Covariance, a statistical technique was used to test the adjusted mean difference result was statistically significant the Scheff's post-hoc test was used to find out the paired mean differences of experimental group-I, experimental group –II and control group (Clarke and Clarke, 1972). The repeated measures of ANOVA was used to test the significant of mean difference over the progress of vision training on criterion measures. If the obtained F-ratio was significant, then Newman Keul's test was used to find the paired mean difference between the measures of pretest and post test (Clarke and Clarke, 1972).

Introduction

Soccer is a game which involves many fundamental skills such as shooting, kicking, volleying, heading, throw-in et cetera. Homenkora (1996) said that "Nurturing and improving basic physical qualities and their elements are the main aspects of preparing athletes for sports and games" Vision plays an important role in all sport. Vision under-performing at any chosen sport. Improving visual skills could very well make all the difference to enjoyment of all sport. Vision may

be the most variable and selective of all the senses. Attempting to observe fast movements that occur in sport places great demands on human vision. Soccer vision training improves decision making, self reliance, the speed of play, and confidence on the ball

Soccer Vision Training

The methods of glancing and seeing the field have become the foundation of the vision training system. Soccer vision training uses the following principles to enhance a player's game. The players become critical thinkers and make decisions quickly. The players become

proficient at receiving and maintaining possession (by keeping the ball out of the reach of a challenging player). Soccer vision training improves decision making, self reliance, and the speed of play, and confidence on the ball. Once the ball has been received, vision is a critical component in maintaining possession. As the attacking player “hides the ball” (shielding), the player assess by looking in front and behind the areas where there are teammates or where there is room to dribble. The information gathered from looking enables the attacker to make an informed decision and quickly execute the appropriate action. Much of the research to date on vision and sports performance has demonstrated close links between visual efficiency, perceptual skill and proficiency in sport. (Williams et al, 1994; Bard, Fleury and Goulet, 1994) Most athletic training programmers are designed with criteria like Physical prowess, Agility, Speed, Co-ordination and Strength in judging athletic ability. The body usually will respond to what one can see. Despite this fact, little attention has been paid to vision, which for all intents and purposes, is the key to superior athletic ability.

Vision Training

Based on the current literature (Ratner, 1986; Reichow, 1993; Roncagli, 1990 and Solomon, 1981) sports vision is conceived by the present author as a group of techniques directed to preserve and improve the visual function, with the goal of incrementing sports performance through a process that involves teaching the visual behavior required in the practice of different sporting activities.

Methodology

To achieve this purpose sixty six inter College and Inter University male Soccer players were randomly selected as subjects. Their age ranged from eighteen to twenty Eight years. By using the matching procedure on the basis of their initial Soccer playing ability

performance test scores, the subjects were divided into three equal groups of twenty two each.

Group I	University level Soccer players(Experimental group “1)
Group II	Inter-Collegiate level Soccer players (Experimental Group II)
Group III	Control Groups

There would be significant effect due to the influence of twelve week period of vision training on visual skills hand-eye co-ordination and Soccer playing ability. There would be significant effect due to the influence of twelve week period of vision training on Overall Soccer playing ability. There would be significant between the University level Soccer players (Experimental Group I) and Inter-Collegiate level Soccer players (Experimental Group II) due to the influence of twelve week period vision training on visual skills and over all playing ability. There would be significant improvement in the rate of learning during the different stages of vision training on the criterion variables, Leg-eye co-ordination and Soccer playing ability among high level Soccer players (University level Soccer players).

Hand-Eye Co-ordination

It is the ability of the body (here the hands) to react to input information rapidly and accurately. Hand eye co-ordination requires precision and speed. Without it, the body will not respond to rapid and unpredictable changes during the game, its timing will falter and performance levels may be affected (Bell, 2002)

Test to measure Hand Eye Co-ordination:

To assess the hand eye coordination the standardized instrument namely Mirror Tracing Test was used

Table 1: Descriptive Analysis of initial, final and adjusted means of University level Soccer players and Inter-collegiate level Soccer players and control group on criterion measures.

Variables	Experimental Group I			Experimental Group II			Control Group		
	Pre-test Mean	Post-test Mean	Adjusted Mean	Pre-test Mean	Post-test Mean	Adjusted Mean	Pre-test Mean	Post-test Mean	Adjusted Mean
Hand-eye Co-ordination	33.37	29.50	29.76	34.07	31.92	31.69	33.81	32.50	32.45
Overall Soccer Playing ability	157.43	204.31	199.95	147.62	165.06	169.82	153.18	164.18	163.77

Table 2: Analysis of variance for the initial means among Experimental Group I, Experimental Group II and Control Group on criterion measures.

Variables	Sources of variation	d.f	Sum of Squares	Mean Sum of squares	F-value
Hand-eye Co-ordination	Between sets	2	3.96	1.98	0.42
	Within sets	45	210.93	4.68	
Overall Soccer Playing ability	Between sets	2	774.87	387.43	0.59
	Within sets	45	29492.13	655.38	

*Significant at 5% level.

Interpretation: The above table reveals that, the F-values for the pre-test means were, Hand eye co-ordination (0.42) and Overall playing ability (0.59). The 'F'-values on these variables were not significant since it fails to reach the significant level. Thus, it was concluded that there was no significant difference

among the various levels of University (experimental group I), Inter-collegiate (experimental group II) and control group on variables used in the study before the treatment of vision training. Thus this analysis indicates that the random assignment of subjects into three groups was successful.

Table 2: Analysis of variance for the final means among Experimental Group I, Experimental Group II and Control Group on criterion measures.

Variables	Sources of variation	d.f	Sum of Squares	Mean Sum of squares	F-value
Hand-eye Co-ordination	Between sets	2	210.66	105.33	34.53*
	Within sets	45	137.25	3.05	
Overall Soccer Playing ability	Between sets	2	16807.25	8403.62	12.34*
	Within sets	45	30628.75	680.63	

*Significant at 5% level.

Interpretation:

The above table reveals that, the F-values for the post-test means were, Hand eye co-ordination (34.53), and Overall playing ability (12.34). The 'F'-values on these variables were statistically significant. Thus, it was concluded that there were significant

difference among the various levels of University (experimental group I), Inter-collegiate (experimental group II) and control group on variables used in the study before the treatment of vision training.

Table 4: Analysis of variance for the adjusted means among Experimental Group I, experimental Group II and Control Group on criterion measures.

Variables	Sources of variation	d.f	Sum of Squares	Mean Sum of squares	F-value
Hand-eye Co-ordination	Between sets	2	61.12	30.56	35.42*
	Within sets	44	37.95	0.86	
Overall Soccer Playing ability	Between sets	2	11811.87	5905.93	56.24*
	Within sets	44	4620.00	105.00	

*Significant at 5% level.

Interpretation:

The above table reveals that, the F-values for the post-test means were, Hand eye co-ordination (35.42), and Overall playing ability (56.24). The ‘F’-values on these variables were statistically significant. Thus, it

was concluded that there were significant difference among the various levels of University (experimental group I), Inter-collegiate (experimental group II) and control group on variables used in the study before the treatment of vision training.

Table 5: Scheffe’s test on significance between paired final adjusted means

Variables	Adjusted Means			Mean differences	F-value
	Experimental Group I	Experimental Group II	Control Group		
Hand-eye Co-ordination	29.76	31.69		1.93	34.61*
	29.76		32.45	2.69	67.30*
		31.69	32.45	0.76	5.38
Overall Soccer Playing ability	199.95	169.82		30.12	69.15*
	199.95		163.77	36.17	99.71*
		169.82	163.77	6.05	2.78

*Significant at 5% level.

Figure 1: Bar diagram showing the Pre-test, Post-test and Adjusted Means of Experimental Group-I(University Level Soccer Players), Experimental Group-II(Inter-Collegiate Level Soccer players) and Control Group on Hand-Eye Co-ordination

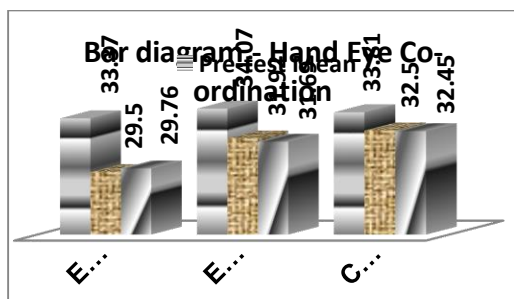


Figure 2: Bar diagram showing the Pre-test, Post-test and Adjusted Means of Experimental Group-II(University Level Soccer Players), Experimental Group-II(Inter-Collegiate Level Soccer players) and Control Group on Hand-Eye Co-ordination

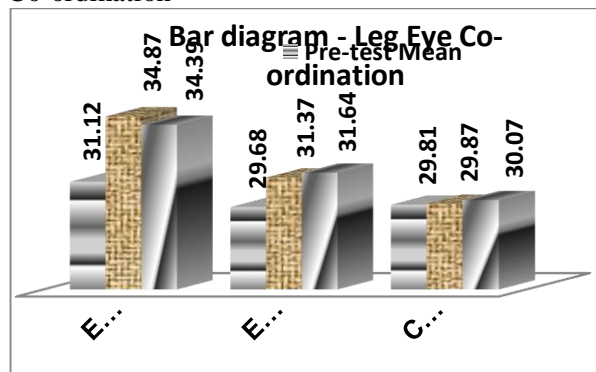


Figure 3: Bar diagram showing the Pre-test, Post-test and Adjusted Means of Experimental Group-II (University Level Soccer Players), Experimental Group-II (Inter-Collegiate Level Soccer players) and Control Group on Visual Reaction Time

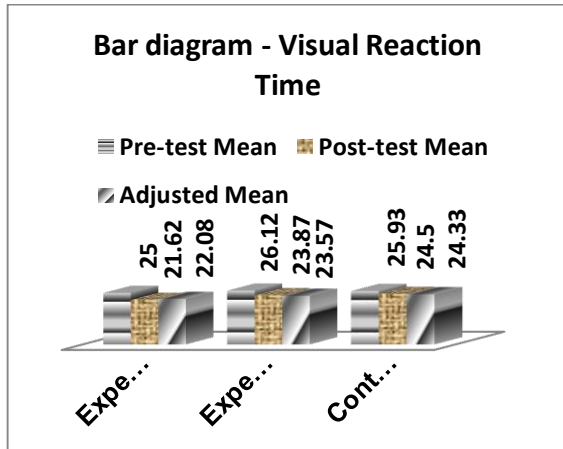
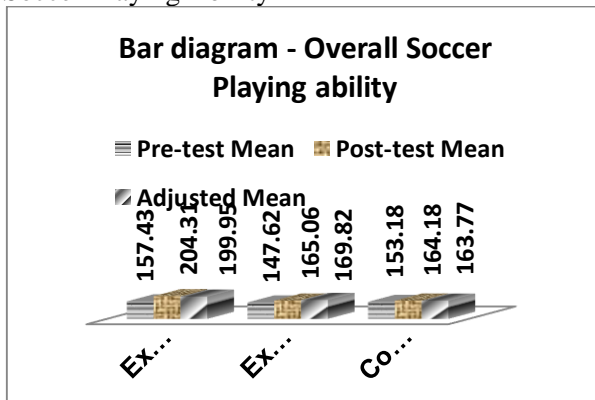


Figure 4: Bar diagram showing the Pre-test, Post-test and Adjusted Means of Experimental Group-II (University Level Soccer Players), Experimental Group-II (Inter-Collegiate Level Soccer players) and Control Group on Overall Soccer Playing Ability



Conclusion:

In the light of the study undertaken with certain limitations imposed by the experimental conditions the following conclusion were drawn: The practice of scientifically structured twelve week soccer vision training may improve the efficiency of high level soccer players in visual skills and soccer playing ability. The practice scientifically structured twelve week soccer vision training may not improve the efficiency of low level soccer players in visual skills and soccer playing ability. Eight weeks of scientifically structured soccer vision training may be sufficient to improve the efficiency of high level soccer players in visual skills and overall soccer playing ability.

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