

ISOLATED AND COMBINED EFFECT OF COGNITIVE SKILL TRAINING WITH YOGIC PRACTICES TO IMPROVE THE VISUAL PROCESSING OF CHESS PLAYERS

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ABSTRACT

In this paper the functions of visual processing would be compared in the context of chess skill to obtain information concerning the cognitive resources needed in this skill. The purpose of the study was to find out the isolated and combined effect of cognitive skill training and yogic practices to improve the visual processing of chess players. To achieve the purpose of the present study, sixty chess players from Alagappa university affiliated colleges chess players at Tamilnadu, India, was selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into four equal groups. Each group consists of fifteen chess players. Experimental Group I acted as Cognitive Skill Training, Experimental Group II acted as Yogic practice Group Experimental Group III Cognitive Skill Training with Yogic practice Group and group IV acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The study was formulated as a true random group design, consisting of a pre-test and post-test. Experimental groups underwent their respective experimental training on five days in a week for twelve weeks. After the experimental treatment, all the sixty subjects were tested on their visual processing was measured by questionnaires competitive sports anxiety inventory . This final test scores formed as post-test scores of the subjects. The pre-test and post-test scores were subjected to statistical analysis using analysis of covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant; Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The analysis showed that there was significant differences exist between the experimental groups, clearly indicating that cognitive skill training with yogic practice group was significantly better

than yoga practice group, cognitive skill training group and control group in improving visual processing of the Alagappa university affiliated colleges inter collegiate chess players.

Keywords: Chess players, Visual Processing, Self Confidence, Cognitive skill training, Yogic practice

Introduction

People are of the opinion that mere physical training is sufficient to win games and more practice is believed to be an assurance for victory. Psychology of the players are not given due consideration. The psychological profiles of the players are carefully analysed for all the games. of all Chess is a game predominantly employed with psychological traits. The training for games like Chess is inevitably psychological and predominantly performed better with desirable human qualities. Chess is the one of the most popular game throughout the world. Millions of people participate in this sport at all levels of competition. The performance of Chess players depends upon different psychological factors and, Chess grew and flourished because of its intellectual and sporting qualities rather than its prestige (Anderson,1994).

Chess is a recreational and competitive board game played between two players. The current form of the game emerged in Southern Europe during the second half of the 15th century after evolving from a similar, much older game of Indian origin. Today, Chess is one of the world's most popular games, played by millions of people worldwide at home, in clubs, online, by correspondence, and in tournaments. The tradition of organized competitive Chess started in the 16th century. Chess today is a recognized sport of the International Olympic Committee. Chess playing is a strategy game that requires higher order cognitive skills. The acquisition of higher order cognitive skills plays a major role in enabling students to better establish and attain goals, identify potential responses when making decisions, and achieve self-regulated learning (Holding,1992).

Chess is a vehicle to teach critical thinking skills. Chess stress on learning how to think is more important than learning the solution to a specific problem. Through Chess, pupils learn how to invent creative solutions to problems. They learn 'how to analyze a situation by focusing on the important factors. Chess is effective because it is self-motivating. The game is intrinsically fascinating, and the goals of attack and defense, climaxing in checkmate, motivate young people to delve deep into their mental resources.

Methodology:

The purpose of the study was to find out the isolated and combined effect of cognitive skill training and yogic practices to improve the visual processing of chess players. To achieve the purpose of the present study, sixty chess players from Alagappa university affiliated colleges chess players at Tamilnadu, India, was selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into four equal groups. Each group consists of fifteen chess players. Experimental Group I acted as Cognitive Skill Training, Experimental Group II acted as Yogic practice Group Experimental Group III Cognitive Skill Training with Yogic practice Group and group IV acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full cooperation of the effort required on their part and prior to the administration of the study. The study was formulated as a true random group design, consisting of a pre-test and post-test. Experimental groups underwent their respective experimental training on five days in a week for twelve weeks. After the experimental treatment, all the sixty subjects were tested on their visual processing was measured by questionnaires competitive sports anxiety inventory. This final test scores formed as post-test scores of the subjects. The pre-test and post-test scores were subjected to statistical analysis using analysis of covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant; Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

Table-I
COMPUTATION OF ANALYSIS OF COVARIANCE OF MEANS OF COGNITIVE SKILL TRAINING, YOGA PRACTICE GROUP, COGNITIVE SKILL WITH YOGIC PRACTICE GROUP AND CONTROL GROUPS ON VISUAL PROCESSIONING
(in numbers)

Test	Cognitive Skill Training Group (CSTG)	Yogic Practice Group (YPG)	Cognitive skill training group with Yogic Practice (CSTWY PG)	Control Group (CG)	Source of Variance	Sum of Squares	Df	Means Squares	F-ratio

Means of the Pre-Test	28.67	29.00	28.80	28.93	BG	0.983	3	0.328	0.04
					WG	454.667	56	8.119	
Means of the Post-Test	25.87	26.60	23.20	29.27	BG	280.067	3	93.356	11.40*
					WG	458.667	56	8.19	
Means of the Adjusted Post-Test	25.87	26.60	23.20	29.27	BG	279.784	3	93.261	11.18*
					WG	458.628	55	6.40	

*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 3 & 56 and 3 & 55 are 2.76 and 2.77 respectively).

Results of Visual Processing:

Table I shows Pre-test means of the pretest of cognitive skill training group (CSTG), yogic practice (YPG), cognitive skill training with yogic practice group (CSTWYPG) and Control Groups (CG) were 28.67, 29.00, 28.80 and 28.93 respectively. The obtained F-ratio for the pre-test was 0.04 and the table F-ratio was 2.76. Hence the pre-test means of visual processing F-ratio was in significant at 0.05 level of confidence for the degrees of freedom 3 and 56.

The means of the post-test of cognitive skill training group (CSTG), yogic practice (YPG), cognitive skill training with yogic practice group (CSTWYPG) and control groups (CG) were 25.87, 26.60, 23.20 and 29.27 respectively. The obtained F-ratio for the post-test was 11.40

and the table F-ratio was 2.76. Hence, the means of the post-test of visual processing F-ratio was significant at 0.05 level of confidence for the degrees of freedom 3 and 56.

The means of the adjusted post-test of cognitive skill training group (CSTG), yogic practice (YPG), cognitive skill training with yogic practice group (CSTWYPG) and control groups (CG) were 25.87, 26.60, 23.20 and 29.27 respectively. The obtained F-ratio for the adjusted post-test was 11.18 and the table F-ratio was 2.77. Hence the means of the adjusted post-test of visual processing of F-ratio was significant at 0.05 level of confidence for the degrees of freedom 3 and 55.

Table-II
THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN
THE PAIRED MEANS OF THE ADJUSTED POST –TEST
ON VISUAL PROCESSING

The means of the Adjusted Post-test				Mean Difference	Confidence Interval
Cognitive Skill Training Group (CSTG)	Yogic Practice Group (YPG)	Cognitive skill training group with Yogic Practice (CSTWYPG)	Control Group (CG)		
25.87	26.60	---	---	0.73	2.66
25.87	---	23.20	----	2.67*	
25.87	---	---	29.27	3.40*	
-----	26.60	23.20	----	3.40*	
-----	26.60	-	29.27	2.67*	
---	---	23.20	29.27	6.07*	

* *Significant at 0.05 level of confidence*

Table – II shows that the mean difference between cognitive skill training and combined group; cognitive skill training and control Group; yogic practice group and combined group; yogic practice group and control group and between Combined Group and Control Group are 2.67, 3.40, 3.40, 2.67 and 6.07 respectively.

When the control group and experimental groups were compared with each others, the mean differences are 2.67, 3.40, 3.40, 2.67 and 6.07 which are significant at 0.05 level of confidence. Hence, there is significant difference between control and experimental groups on visual processing of chess players.

The mean difference between cognitive skill training and yogic practice group is 0.73.

When the experimental groups were compared with each others, the mean difference is 0.73 which is significant at 0.05 level of confidence. Hence, there is insignificant difference between experimental groups on visual processing of chess players.

Moreover the mean difference between combined group and control group shows better improvement on visual processing compared to other groups.

It may be concluded from the results that there is a significant difference between means of the adjusted post-test among the experimental groups and control group. The results of the study show that there is a significant difference between cognitive skill training Group and combined group; cognitive skill training and control Group; yogic practice group and combined group; yogic practice group and control group and between Combined Group and Control Group on visual processing.

Discussion on findings:

In testing the cognitive skill training group, yogic practice group and cognitive skill training with yogic practice group the results reveal that the variables used in the study evidencing that cognitive skill training, yogic practice group and cognitive skill training with yogic practice group and has produced significant improvement positively on visual processing (2.61, $P < 0.05$), (2.22, $P < 0.05$) and (5.83, $P < 0.05$). The results conformity with other studies research conducted the effect of yoga program on mental health: visual processing in semarang badminton athletes. The results showed that the experimental group had a significant change compared to the control group, so treatment with yoga for badminton exercises managed to reduce anxiety and improve badminton athlete's performance (**Donny Wira Yudha Kusuma and Wang Bin, 2017**). The author conducted the Yoga may serve as an effective substitute or accompaniment to biological treatments in anxiety. Further use of various yogic postures and exercises in specific populations with specific anxiety disorders needs to be researched (**Anjali Joshi, Avinash De Sousa 2012**). The study the effect of yoga practices on the level of visual

processing among college students. The duration of yoga practice in months decreases the level of visual processing (Narendra Singh & Sanjay Singh (2016)).

Conclusion:

There was a significant improvement on visual processing on isolated and combined effect of cognitive skill training yogic practices on college chess players.

Conflict of interest:

There is no conflicting of interest.

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Reference:

1. Abernethy, B. et al., "Visual Perceptual and Cognitive Differences between Expert, Intermediate, and Novice Snooker Players", *Applied Cognitive Psychology*.8:3, (1994).
2. Bachmann, T. and Oit.M., "Stroop-Like Interference in Chess Players Imagery -An Unexplored Possibility to be Revealed by the Adapted Moving-Spot Task", *Psychological Research-Psychologische Forschung*.54:1, (1992).
3. Brockmole, J.R., et al., "The role of meaning in contextual cueing: evidence from chess expertise", *Q J Exp Psychol (Colchester)*.61:12, (2008).Burns, B.D., "The effects of speed on skilled chess performance", *Psychol Sci*.15:7, (Jul,2004).
4. Campitelli, G., et al., "Structure and stimulus familiarity: a study of memory in chess-players with functional magnetic resonance imaging", *Span J Psychol*.8:2, (Nov,2005).Chabris, C.F. and Hamilton, S.E., "Hemispheric-Specialization for Skilled Perceptual Organization By Chessmasters", *Neuropsychological*.30:1, (1992).
5. Charness, N., "The Impact of Chess Research on Cognitive Science", *Psychological Research-Psychologische Forschung*.54:1, (1992).Charness, N., "Visual short-term memory and aging in chess players", *J Gerontol*.36: 5, (Sep,1981).
6. Frydman, M. and Lynn, R., "The General Intelligence and Spatial Abilities of Gifted Young Belgian Chess Players", *British Journal of Psychology*.83:2, (1992).
7. Gobet, F.R., "Learned Helplessness in Chess Players -The Importance of Task Similarity and the Role of Skill", *Psychological Research-Psychologische Forschung*. 54:1, (1992).

8. Holding, D.H., "Theories of Chess Skill", Psychological Research-Psychologische Forschung. 54: 1, (1992).
9. Jastrzemski, T.S. et al., "Expertise and age effects on knowledge activation in chess", Psychol Aging.21:2, (Jun, 2006).
10. Reingold, E.M., et al., "Perceptual automaticity in expert chess players: parallel encoding of chess relations", Psychon Bull Rev.8:3, (Sep,2001).