

Impact of Chess Intervention on Cognitive Functioning of Children

Authors : Ebenezer Joseph

Abstract : Chess is a useful tool to enhance general and specific cognitive functioning in children. The present study aims to assess the impact of chess on cognitive in children and to measure the differential impact of socio-demographic factors like age and gender of the child on the effectiveness of the chess intervention. This research study used an experimental design to study the impact of the Training in Chess on the intelligence of children. The Pre-test Post-test Control Group Design was utilized. The research design involved two groups of children: an experimental group and a control group. The experimental group consisted of children who participated in the one-year Chess Training Intervention, while the control group participated in extra-curricular activities in school. The main independent variable was training in chess. Other independent variables were gender and age of the child. The dependent variable was the cognitive functioning of the child (as measured by IQ, working memory index, processing speed index, perceptual reasoning index, verbal comprehension index, numerical reasoning, verbal reasoning, non-verbal reasoning, social intelligence, language, conceptual thinking, memory, visual motor and creativity). The sample consisted of 200 children studying in Government and Private schools. Random sampling was utilized. The sample included both boys and girls falling in the age range 6 to 16 years. The experimental group consisted of 100 children (50 from Government schools and 50 from Private schools) with an equal representation of boys and girls. The control group similarly consisted of 100 children. The dependent variables were assessed using Binet-Kamat Test of Intelligence, Wechsler Intelligence Scale for Children - IV (India) and Wallach Kogan Creativity Test. The training methodology comprised Winning Moves Chess Learning Program - Episodes 1-22, lectures with the demonstration board, on-the-board playing and training, chess exercise through workbooks (Chess school 1A, Chess school 2, and tactics) and working with chess software. Further students games were mapped using chess software and the brain patterns of the child were understood. They were taught the ideas behind chess openings and exposure to classical games were also given. The children participated in mock as well as regular tournaments. Preliminary analysis carried out using independent t tests with 50 children indicates that chess training has led to significant increases in the intelligent quotient. Children in the experimental group have shown significant increases in composite scores like working memory and perceptual reasoning. Chess training has significantly enhanced the total creativity scores, line drawing and pattern meaning subscale scores. Systematically learning chess as part of school activities appears to have a broad spectrum of positive outcomes.

Keywords : chess, intelligence, creativity, children

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