



GAMETHINK

THINK STRATEGY, THINK FOCUS, THINK SUCCESS

RESEARCH

“Portland Public Schools, Portland Chess Program Final Evaluation Report”

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The Portland Chess Club Project was an after-school activity that was valuable to many students. **The goal of the program was to teach young children aged six to ten to learn to play chess and to see what outcomes chess might have on their academic performance, self-esteem, and classroom behavior. There were four aspects of the evaluation results worth noting.**

- First, in the area of academic achievement, **Chess Club students in grade four had higher mathematics test scores** on the Portland Achievement Levels Test (PALT) scores than their grade level counterparts in the project schools. **This pattern of academic gains continued among Chess Club participants in fifth grade; these students had higher reading and mathematics test scores** on the PALT test than other fifth graders in the program schools.
- Second, **students also showed gains in nonverbal intelligence/cognition as measured by the Matrix Analogies Test (MAT). Chess club students gained at least one year in age equivalency scores over a five-month pre-post testing period on the MAT test.** These academic improvements were interesting and suggestive findings. Indeed, during the spring 1996 MAT testing, a **Chess Club Coordinator mentioned improvements in concentration that supported the conclusion that chess appears to have a positive affect on nonverbal intelligence.**

- Third, parents and school coordinators were extremely supportive of the Chess Club program. The support of these key groups made a strong statement about the positive value of the Chess Club program.
- Finally, based on the available attendance figures, participation appeared to be good on both a quantitative and qualitative level. In addition, the chess club was an activity that was **attractive to both male and female students**. While the level of students' academic benefit due to Chess Club participation has been difficult to quantify, **the qualitative measures provide overwhelming support for the positive affect of chess as a tool for learning.**

It should be noted that the Project will be continued and expanded under the auspices of the Chess for Success Program. The continuity of the Chess Club Program will provide an opportunity for further study of chess and its influence on behavior, thinking skills, academic performance, and self-esteem. The continuation of the Project also means that students and parents who have enjoyed and appreciated having Chess Clubs in their schools will continue to have this valuable learning opportunity.

Other Chess Research

There have been a number of formal studies on the psychological and cognitive effects of chess on school children.

- During his governor's teacher grant from the New Jersey State Department of Education, William Levy found that chess consistently (1980-1987) promoted self-esteem after a year of exposure. **Many students' self-images improved dramatically.**
- **The Venezuela "Learning to Think Project," which trained 100,000 teachers to teach thinking skills and involved 4,266 second grade students, reached a general conclusion that chess, methodologically taught, is an incentive system sufficient to accelerate the increase of IQ in elementary age children of both sexes at all socio-economic levels.**
- During the 1987-88 "Development of Reasoning and Memory through Chess," all students in a rural Pennsylvania **sixth grade self-contained classroom were required to participate in chess lessons and play games. None of the pupils had previously played chess. The pupils significantly improved in both memory and verbal reasoning.**
- A 1989-92 New Brunswick, Canada study, **using 437 fifth graders split into three groups, experimenting with the addition of chess to the math curriculum, found increased gains in math problem-solving**

and comprehension proportionate to the amount of chess in the curriculum.

- In a 1994-97 Texas study, regular **(non-honors) elementary students who participated in a school chess club showed twice the improvement of non-chess players in reading and mathematics between third and fifth grades on the Texas Assessment of Academic Skills.**
- Researchers and educators have questioned what causes this growth. The Venezuelan Study claimed: **“Chess develops a new form of thinking, and this exercise is what contributes to increase the intelligent quotient.”** Why does chess have this impact? **Chess provides a large quantity of problems for practice. Chess offers immediate penalties and rewards for problem solving. Chess creates a pattern of thinking. The chess playing students had become accustomed to looking for more and different alternatives, which resulted in higher scores in fluency and originality.** Children love games. **Chess motivates them to become willing problem solvers and spend hours quietly immersed in logical thinking. These same young people often cannot sit still for fifteen minutes in the traditional classroom.**

Bibliography

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