



# **The Benefits of Incorporating Chess in the School Curriculum**

Why you want chess in your school

# Why Chess?

- Visual Stimuli tend to improve memory more than any other stimuli ...Chess is definitely an excellent memory exerciser, the effects of which are transferable to other subjects where memory is necessary.

John Artise – Chess and Education

- Pupils who learn chess enjoy a significant increase in their reading skills.

Dr. Margulies – The Effect of Chess on Reading Scores - NY

# Why Chess?

- There is a significant correlation between the ability to play chess well, and spacial, numerical, administrative-directional, and paper work abilities.
- Learning Chess has a positive influence on the development of both numerical and verbal aptitudes.

Dr. Albert Frank – Chess and Aptitudes – Zaire 1974

# Why Chess?

- In a Texas study, regular (non-honours) elementary students who participated in a school chess club showed twice the improvement of non-chessplayers in Reading and Mathematics between third and fifth grades on the Texas Assessment of Academic Skills.

# Why Chess?

- A New Brunswick 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.

# Why Chess?

## Why does chess have this impact?

Why did chessplayers score higher on the *Torrance Tests of Creative Thinking* as well as the *Watson-Glaser Critical Thinking Appraisal*? Briefly, there appear to be at least seven significant factors:

1. Chess accommodates all modality strengths.
2. Chess provides a far greater quantity of problems for practice.
3. Chess offers immediate punishments and rewards for problem solving.
4. Chess creates a pattern or thinking system that, when used faithfully, breeds success. The chessplaying students had become accustomed to looking for more and different alternatives, which resulted in higher scores in fluency and originality.
5. Competition. Competition fosters interest, promotes mental alertness, challenges all students, and elicits the highest levels of achievement (Stephan, 1988).
6. A learning environment organized around games has a positive affect on students' attitudes toward learning. This affective dimension acts as a facilitator of cognitive achievement (Allen & Main, 1976). Instructional gaming is one of the most motivational tools in the good teacher's repertoire. 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.
7. Chess supplies a variety and *quality* of problems. As Langen (1992) states: "The problems that arise in the 70-90 positions of the average chess game are, moreover, new. Contexts are familiar, themes repeat, but game positions never do. This makes chess good grist for the problem-solving mill."

# Academic Benefits

- Focus - Children are taught the benefits of observing carefully and concentrating. If they don't watch what is happening, they can't respond to it, no matter how smart they are.

# Academic Benefits

- Visualize - Children are prompted to imagine a sequence of actions before it happens. We actually strengthen the ability to visualize by training them to shift the pieces in their mind, first one, then several moves ahead.

# Academic Benefits

- Think Ahead - Children are taught to think first, then act. We teach them to ask themselves "If I do this, what might happen then, and how can I respond?" Over time, chess helps develop patience and thoughtfulness.

# Academic Benefits

- Weigh Options - Children are taught that they don't have to do the first thing that pops into their mind. They learn to identify alternatives and consider the pros and cons of various actions.

# Academic Benefits

- Analyze Concretely - Children learn to evaluate the results of specific actions and sequences. Does this sequence help me or hurt me? Decisions are better when guided by logic, rather than impulse.

# Academic Benefits

- Think Abstractly - Children are taught to step back periodically from details and consider the bigger picture. They also learn to take patterns used in one context and apply them to different, but related situations.

# Academic Benefits

- Plan - Children are taught to develop longer range goals and take steps toward bringing them about. They are also taught of the need to reevaluate their plans as new developments change the situation.

# Academic Benefits

- Juggle Multiple Considerations Simultaneously -Children are encouraged not to become overly absorbed in any one consideration, but to try to weigh various factors all at once.

# Social Benefits

- In the schools, chess often serves as a bridge, bringing together children of different ages, races and genders in an activity they can all enjoy. Chess helps build individual friendships and also school spirit when children compete together as teams against other schools. Chess also teaches children about sportsmanship - how to win graciously and not give up when encountering defeat. For children with adjustment issues, there are many examples where chess has led to increased motivation, improved behavior, better self-image, and even improved attendance. Chess provides a positive social outlet, a wholesome recreational activity that can be easily learned and enjoyed at any age.

# Chess in School?

- "Chess success is an intellectual achievement appropriate for schools. It belongs in schools because: it is a fascinating game; it can provide a lifetime hobby; it has international appeal; it requires a minimum of resources; and, it demands that participants exercise their best powers of planning, memory, decision-making, judgment, creativity, and concentration. For these reasons alone, all schools should be providing opportunities for the learning and practicing of chess."

Oregon junior high principal Ralph L. Hall - 1983

# Chess in School?

- "The effects have been remarkable," Brown says. "Not only have the reading and math skills of these children soared, their ability to socialize has increased substantially, too. Our studies have shown that incidents of suspension and outside altercations have decreased by at least 60% since these children became interested in chess."

Joyce Brown, an assistant principal and supervisor -

Roberto Clemente school's Special Education department - NY

# Chess in School?

- "This is wonderful! This is marvelous! This is stupendous! It's the finest thing that ever happened to this school. I am most sincere. It has been an absolute plus for the students who were directly involved as well as for the rest of the school."

Connie Wingate, Principal, P.S. 123 in New York

# Chess in School?

- "I like the aspect of socialization. You get into friendly, competitive activity where no one gets hurt. Instead of two bodies slamming into each other like in football, you've got the meeting of two minds.- It's strategic, and you use logic to plan an attack scheme. Aside from being good for the cognitive development of these youngsters, chess develops their social skills, too. It makes them feel they belong. Whenever we get a child transferred from another school who may have maladaptive behavior, our principal (Dr. Wilton Anderson) suggests chess as a way of helping him find his niche.

Jerome Fishman, Guidance Counselor, C.J.H.S 231, Queens, NY

# Chess in School?

- The mathematics curriculum in New Brunswick is using a text series called "Challenging Mathematics" which uses chess to teach logic from grades 2 to 7. Using this curriculum, the average problem-solving score of pupils in the province increased from 62% to 81%.

# Chess in School?

- Chess is found as required curricula in nearly 30 countries.
- At last count, 25 Universities and Colleges in the US offer chess scholarships.
- Looking specifically at Quebec, 10 years ago their math scores were the lowest in the country, Chess became a school subject and now the children in Quebec have the highest average math scores in Canada.

# Chess in School?

- The Legislature finds and declares that:
- a) chess increases strategic thinking skills, stimulates intellectual creativity, and improves problem-solving ability, while raising self-esteem;
- b) when youngsters play chess they must call upon higher-order thinking skills, analyze actions and consequences, and visualize future possibilities;
- c) in countries where chess is offered widely in schools, students exhibit excellence in the ability to recognize complex patterns and consequently excel in math and science; and
- d) instruction in chess during the second grade will enable pupils to learn skills which will serve them throughout their lives.

An act concerning instruction in chess and supplementing Chapter 35 of Title 18A of the New Jersey Statutes.