Making Chess Attractive to Educators in the Classroom

A NEW APPROACH TO CURRICULUM

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Overview

PERSONAL INTRODUCTION

1. A BIG PROBLEM FACING U.S. PUBLIC EDUCATION
2. A BIG PROBLEM GETTING CHESS INTO SCHOOLS
3. A SIMPLE SOLUTION TO BOTH PROBLEMS
4. A LEARNING ACTIVITY
5. A NEW CURRICULUM MODEL
6. AN IMPORTANT CAVEAT
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Personal Introduction: I live in Moab, Utah

- Population 8,000
- Elevation 4,000’
- Outdoor adventure capital of the world.

Delicate Arch. Moab is at the base of the mountains.
Personal Introduction:
I live in Moab, Utah

Small but enthusiastic chess club!

Harold and me. I enjoy the personal connections of the regional chess community.
15 years teaching and coaching G/T students:

- Mathematics
- Science
- Psychology
- College & Career Planning
- Space Settlement Design
- Academic Decathlon
- Independent Study
- CHESS!!

15 years teaching and coaching G/T students:

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- Academic Decathlon
- Independent Study
- CHESS!!

My Academic Decathlon team earned a major upset victory at the Colorado competition. Photo in Honolulu.
30 years playing chess tournaments:

- Colorado High School Team Champions (Boulder HS, 1981)
- Utah State Champion (current)
- USCF Expert player
- Utah Bughouse Champion (3x)
- Utah Chess960 Champion (3x)

Defeating a brilliant teenager to win the Utah state title.
20 years promoting and teaching chess to children:

- USCF Senior TD
- Directed 200+ chess tournaments in CA, UT, CO, NM and AZ
- US G/60 Champs (2x)
- Southern Rockies FIDE Open TD
- Chess Camps
- State champion teams in UT and CO

The youngest winner at the 2002 United States Game in 60-minutes Championship Tournament in Moab, Utah.
Currently I teach in Gateway, Colorado

- Population 200
- Home to the new Discovery Channel conference center
- 15 students grades 6-12
- 10 subjects per day
- Small but enthusiastic chess club! 😊
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A Big Problem Facing U.S. Public Education:

Many schools and districts nationwide are in trouble.

- Teachers are overwhelmed
- At-risk student populations
- Continuous upgrades in technology
- New programs and mandates
- Budget shortfalls and program and staff cutbacks
- Educational priorities change with political winds
  etc, etc., etc...
Standards are specific learning goals mandated by states. They include:

- **Content standards** for each subject and grade level
- **Process standards** for thinking skills
A Big Problem Facing U.S. Public Education:

The “process standards” required by most state departments of education are based on Bloom’s Taxonomy of Higher Order Thinking Skills (1956).
A Big Problem Facing U.S. Public Education:

Here is the big problem that chess can help solve...

- **Content standards** in every subject area keep growing and expanding, every day and every year, as students progress.

- Educators feel rushed to teach the content standards in one year, and responsible for breadth of exposure to content.

- **Process standards** frequently get left behind or addressed only superficially in the classroom.
A Big Problem Facing U.S. Public Education:

What schools desperately need:

- a simple and direct way to teach process standards (“thinking skills”)
- in a fun and motivating arena
- where the content doesn’t keep expanding every day
- where the rules are simple, and
- where the main challenge for kids is to explore and develop the way that we think.

Can you think of anything that fits all these criteria?
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A Big Problem
Getting Chess into the Schools:

Chess playing enthusiasts face many obstacles when promoting chess in the schools.

1. Image of chess and chess players as nerds and geeks
2. Teacher’s fears of complexity
3. Perception of chess as “just a game” with no inherent value
4. Student interest in video games
5. Budget and time competition with other enrichment programs
6. Limited research linking chess with improved academic performance
7. etc., etc., etc...
A Big Problem
Getting Chess into the Schools:

Enthusiastic chess promoters often face one additional problem:

Similar goals, but different words, and different emphasis on outcomes.

A communication problem:

- The stated or unstated goal of the chess program is often to create competent and enthusiastic chess players.

- The stated goal of the school is to create competent and enthusiastic thinkers and citizens.

- For educational decision-makers, these outcomes don’t clearly overlap.
A Big Problem
Getting Chess into the Schools:

A barrier in communication.

What do educators hear when chess players speak?
The approach that scholarly chess community has taken toward solving this problem has been educational research.

- A growing body of evidence links chess to improved academics.
- Educators are becoming more receptive to chess because of it.
A Big Problem
Getting Chess into the Schools:

The leading US work presenting research about chess in a persuasive format for educators.
A Big Problem
Getting Chess into the Schools:

The leading work presenting educational research about chess in a systematic format for educators.
A Big Problem
Getting Chess into the Schools

We still face one major problem –

A problem that chess enthusiasts often don’t recognize.

- Almost every existing lesson plan for teaching chess in the schools stops in unfamiliar territory for career educators.

- Yes, the kids are playing chess, having a great time, deeply engaged and thinking,

  **but**...

- That is *not* the educational outcome teachers are paid – and legally obligated – to provide!
A Big Problem
Getting Chess into the Schools

We still face one big problem –

Chess enthusiasts are pushing something that educators don’t understand or fully trust.
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A Simple Solution to both Problems

“Chess is great for after-school programs. It develops critical thinking, sportsmanship and problem solving skills. But the classroom agenda is full, and under heavy scrutiny. There is limited time to teach everything, and teachers’ plates are already full.”

~Pat Chapin, Principal Gateway School
A Simple Solution to both Problems

“...teachers plates are already full.”

How do chess enthusiasts usually attempt to promote chess to educators?
A Simple Solution to both Problems

“...teachers plates are already full.”

How do chess enthusiasts usually attempt to promote chess to educators?

Maybe there is a little bit of room over here?
A Simple Solution to both Problems

“...teachers plates are already full.”

How chess enthusiasts usually attempt to promote chess to educators:

After-school clubs and tournaments with prizes!
A Simple Solution to both Problems

“...teachers plates are already full.”

How chess enthusiasts usually attempt to promote chess to educators:

Healthy competition that kids love!
A Simple Solution to both Problems

“...teachers plates are already full.”

A new way of promoting chess to educators:
A Simple Solution to both Problems

“...teachers plates are already full.”

A new way of promoting chess to educators:

You have a lot to accomplish. Will this help you?
A Simple Solution to both Problems

Where does chess fit in the school day?
A Simple Solution to both Problems

Where does chess fit in the school day?

It is a competitive activity that teaches good sportsmanship
A Simple Solution to both Problems

Where does chess fit in the school day?

It is an art form that enriches human experience.
A Simple Solution to both Problems

Where does chess fit in the school day?

It involves calculation. So it often ends up here, as a reward for getting ahead.
A Simple Solution to both Problems

Where does chess fit in the school day?

A chess player’s favorite solution.

Already happening in Idaho, New Jersey, Turkey and Venezuela!
A Simple Solution to both Problems

Where does chess fit in the school day?

I believe the best answer is the boldest move.
A Simple Solution to both Problems

Where does chess fit in the school day?

In the heart of the school day! Chess can vitalize what schools are required to teach!
A Simple Solution to both Problems

Chess can solve some major problems faced by public education in America!

How does it work?

- **Phase 1:** Teach kids to play chess
  - Many great curricula exist
  - One to two months of chess for fun
  - Start an after-school chess club

- **Phase 2:** Teach kids to think.
  - Daily lessons for a whole school year
  - All start with a chess set or diagram
  - This is the curriculum I am developing
A Simple Solution to both Problems

Chess can *solve* some major problems faced by schools, but only if:

1. The stated objectives must focus on specific state process standards, *not* chess skills.
2. The main curriculum and activities must center around thinking skills, *not* chess skills.
3. The assessments and evaluations must be based on thinking skills, *not* chess skills.
4. The real results must create strong thinkers, *not* (necessarily) strong chess players!
A Simple Solution to both Problems

Chess can solve some major problems faced by schools, but only if:

5. Chess serves as:
   - the daily launch activity,
   - the primary visual metaphor,
   - a focusing tool, and
   - a significant motivator (for some)

for learning each thinking skill.

(By the way... chess does this better than any activity humans have yet invented.)
A Simple Solution to both Problems

The “thinking skills” required by most state departments of education are based on Bloom’s Taxonomy of Higher Order Thinking Skills (1956).

Let us look closely at the specific thinking skills that educators are expected to teach their students.
A Simple Solution to both Problems

Bloom’s taxonomy has been revised and diagrammed many times in many ways.

Teachers all over the country are trained to use it.

A few use it well, but most not at all.

A flower-shaped model, with the highest thinking skills at the top. How do chess players use these skills?
A Simple Solution to both Problems

Bloom’s taxonomy has been revised and diagrammed many times in many ways.

Teachers all over the country are trained to use it.

A few teach it well, but most teach it superficially, if at all.

Another flower of Bloom, with subskills, from Wikipedia.
A Simple Solution to both Problems

Bloom’s taxonomy has been revised and diagrammed many times in many ways.

Teachers all over the country are trained to use it.

It translates well into the modern age of information technology.
A Simple Solution to both Problems

Bloom’s taxonomy has been revised and diagrammed many times in many ways.

This attractive pop-up model has an easy-to-use interface for teachers.
A Simple Solution to both Problems

Each level of thinking has many examples of specific skills associated with it.

The curriculum I have been developing since 1996 directly teaches one of these skills per day, through chess.

<table>
<thead>
<tr>
<th>Know</th>
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<td>Evaluate</td>
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Solve a chess puzzle (easier one on the left)

White to move and win in both diagrams (Source: Al-Adli, 9th Century)
Define today’s topic: Sequencing

Rxg6+ must happen first, then Re6 is checkmate in both diagrams.
In small groups: Apply to core subjects

Where is **sequencing** important in math? Science? Language? Social Studies?
Which HOTS group does it belong to?

Sequencing could arguably fit into many different categories. How?
Sequencing is similar and different from many related words. How?
Apply it to life, careers and future plans

How is sequencing important for detectives? Geneticists? Fire fighters? Etc.
Notice it today, and write events in your journal.

Where do you sequence things in your life? Is it conscious or unconscious?
A Hands-on Learning Activity

A sample journal entry.

First pants, THEN your shoes
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A Hands-on Learning Activity

The basic structure of the daily session where students learn a new thinking skill.

1. Pick a word in one of Bloom’s subcategories
2. Explore it over a chess board
3. Define it with words and images
4. Apply it to math, science, language, and electives
5. Identify skill category it belongs to
6. Distinguish it from related skills
7. Apply it to personal life, future plans, careers
8. **Homework:** Notice and record examples in your journal.
**A Hands-on Learning Activity**

- Educators expect a certain format for lesson plans.
- Lesson plans identify the intended purpose and outcomes.
- A popular current model is called “Understanding by Design.”
- Begin with what you expect students to know, then works backwards toward the learning plan.

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**Understanding by Design: A Template for Lesson Planning**

<table>
<thead>
<tr>
<th>Designer Name(s):</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Area:</td>
<td>Grade Level(s):</td>
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<tr>
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<tr>
<td>Estimated Amount of Instructional Time:</td>
<td>~XX days</td>
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</tbody>
</table>

**Stage 1 – Desired Results**

- State Content and Skill Standards:
- Enduring Understandings:
  - Students will understand that...
- Essential Questions:
- Big Idea(s):
  - Example: Freedom and Responsibility...

<table>
<thead>
<tr>
<th>What Students will know:</th>
<th>What Students will be able to do:</th>
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</thead>
</table>

**Stage 2 – Assessment Evidence**

- Performance Tasks:
- Other Evidence:

**Stage 3 – Learning Plan**

- Learning Activities:
A Hands-on Learning Activity

- Begin with what you expect students to know, then works backwards toward the learning activities.

- The key to using this lesson design successfully in schools is to know when and how to mention chess, appropriately.

Understanding by Design: A Template for Lesson Planning

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Stage 1 - Desired Results

State Content and Skill Standards:

No mention of chess yet...

Enduring Understandings: Students will understand that...

Not here either... Not a peep about chess!

Big Idea(s)

Definitely don’t mention chess here!

What Students will know: What Students will be able to do:

Not here either! Wait for it...

Stage 2 - Assessment Evidence

Performance Tasks: Other Evidence:

Possibly here... This is the best place! 😊

Stage 3 - Learning Plan

Learning Activities:

This part starts with chess!
**A Hands-on Learning Activity**

- Here is the lesson plan for the activity you just experienced.
- Notice how it felt like chess, at the beginning, but then flowed into a specific thinking skill?
- This the way that chess can have is a very important place in education.
- Chess used to create strong thinkers, *not* to create strong chess players!

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### Big Idea(s)

**Sequencing as an essential thinking skill**

**What Students will know:**
- Sequencing is an important thinking skill that references related skills in Bloom’s categories called Synthesis and Knowledge.
- Correct sequencing is necessary for successful problem solving.

**What Students will be able to do:**
- Describe examples of sequencing in each core subject area.
- Identify times when they use the skill of sequencing.
- Apply the principle of sequencing to future planning.

### Stage 1 - Desired Results

- Fill this section with appropriate process standards from the state -- ones that apply to the concept of sequencing (or the category of synthesis).
- Engaging Understandings:
  - Students will understand that:
    - Arranging events in the correct order is an essential thinking skill.
    - Sequencing appears in every discipline and when our planning involves multiple parts.

### Stage 2 - Assessment Evidence

- Performance Tasks:
  - Students will articulate at least one example of sequencing in each of their core subject areas.
  - Students will identify an example of sequencing on a thinking skills assessment.

- Other Evidence:
  - Students will write in their journal at least one example of how they use the skill of sequencing in their lives.
  - Students will identify the importance of sequencing in a chess position.

### Stage 3 - Learning Plan

1. Students analyze one or more of three chess positions where the correct move order is essential (differentiated for ability levels, but sharing the same theme).
2. Teacher identifies the words sequence and sequencing and asks students to define them.
3. Students reason about where sequencing belongs in Bloom’s categories, and why.
4. Students compare and contrast sequencing with related skills like “planning,” “prioritize” or “compile.”
5. In small groups, students will find applications of sequencing in math, science, language, social studies and electives.
6. For reflection, students will discuss how sequencing applies to personal life, future plans, careers.
7. For homework, students will notice and write in their journal at least one example of how they use sequencing.
A Hands-on Learning Activity

This curriculum model can be used daily in many different learning environments:

Where this model works:
- a homeroom period
- an advisory period
- a gifted and talented class
- a resource room
- a thinking skills class
- an after-school club
- a counseling program
- a church program
- a home-school program
- an online class
- etc.
A Hands-on Learning Activity

This model also works well for social and emotional skills!

Moreno’s book applies a similar model to school counseling programs.
A Hands-on Learning Activity

This model also works well for social and emotional skills!

Kurzdorfer applies a similar model to life situations.
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One Important Caveat

Chess has a serious drawback:

- Attaining the highest levels of chess requires an enormous commitment of study time and memorization of opening lines and variations.

- This commitment of time and the extensive chess jargon base of chess competes directly with the time and memorization required to become a doctor, lawyer, engineer, airline pilot, professor, business leader, etc.
One Important Caveat:

Becoming a chess master or grandmaster requires a huge commitment to **Lower Order Thinking Skills**.

Most of the Grandmaster’s time and energy must be devoted to remembering and understanding openings.
One Important Caveat:

To stay useful, and important to schools, classical chess must evolve!

- Solution: After one year, stop teaching and playing traditional chess.
- Move forward with chess variants that focus on HOTS instead of LOTS.
  - Bughouse?!
  - Chess960! (Fischer Random)
  - Fischer Random Bughouse?!!
- By eliminating the problem of memorization, chess can remain a powerful learning tool for many years for each individual student.
One Important Caveat:
To stay useful, and important to schools, classical chess must evolve!

Live long and prosper, my chess friends!
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