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DEVELOPING STRATEGIC DECISION-MAKING SKILLS THROUGH POSITIONAL ANALYSIS IN CHESS EDUCATION

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Abstract: This article examines the pedagogical opportunities for developing strategic decision-making skills through positional analysis in chess education. Chess requires learners to assess complex positions, identify relevant factors, compare alternative moves, predict possible consequences, and make reasoned decisions under conditions of uncertainty and limited time. From a pedagogical perspective, positional analysis can therefore serve not only as a means of improving chess performance but also as a structured method for developing analytical thinking, prediction, concentration, reflection, and independent decision-making. The article discusses the stages of positional analysis, the role of problem-based chess situations, candidate-move generation, comparative evaluation of variations, and reflective analysis of completed decisions. Particular attention is paid to the gradual transition from teacher-guided analysis to independent strategic decision-making. A pedagogical sequence of "position perception – identification of key factors – generation of candidate moves – calculation – evaluation – decision – reflection" is proposed as an effective framework for chess instruction. The study concludes that systematically organized positional analysis can improve both chess-specific competence and broader cognitive skills required for effective problem solving.

Keywords: chess education, positional analysis, strategic thinking, decision-making, candidate moves, problem solving, prediction, reflection, chess pedagogy.

Introduction: Chess is an intellectual activity that combines logical reasoning, strategic planning, tactical calculation, memory, concentration, and decision-making. Unlike activities in which a learner follows a predetermined sequence of actions, chess constantly presents changing situations in which several possible decisions may appear reasonable. A player must therefore evaluate the position, determine priorities, anticipate the opponent's intentions, calculate possible continuations, and select an appropriate move. For this reason, chess education should not be limited to teaching the rules of the game, openings, tactical motifs, or standard endgame techniques. One of its important pedagogical objectives is to develop the learner's ability to make independent and well-founded strategic decisions.

Decision-making in chess is closely related to positional analysis. A player who is unable to correctly evaluate a position may calculate individual variations accurately but still choose an inappropriate strategic plan. Consequently, the ability to identify positional strengths and weaknesses forms an essential basis for effective chess thinking. The pedagogical organization of positional analysis is particularly important for learners. Beginners often focus only on immediate threats, captures, and checks, while more experienced players pay attention to a broader system of factors, including king safety, piece activity, pawn structure, space, weak squares, open lines, and long-term positional advantages. Therefore, chess instruction should gradually teach students how to move from fragmented perception toward systematic analysis.

The purpose of this article is to identify pedagogical opportunities for developing strategic decision-making skills through structured positional analysis in chess education.

Main Part The pedagogical importance of positional analysis

Positional analysis can be defined as the systematic examination of the significant characteristics of a chess position in order to determine its strengths, weaknesses, strategic possibilities, and appropriate plans.

From an educational perspective, positional analysis performs several interconnected functions. First, it teaches students to observe a position purposefully rather than randomly. Second, it helps learners distinguish essential information from secondary information. Third, it requires them to compare different possibilities before making a decision. Finally, it encourages them to justify their choices.

Thus, positional analysis transforms chess from a process of intuitive move selection into a conscious analytical activity.

A student should gradually learn to answer questions such as:

- Is the king safe?
- Which pieces are active and which are poorly placed?
- Are there weak squares or weak pawns?
- Who controls more space?
- Which files, diagonals, or ranks can be used?
- What is the opponent's main threat?
- Which piece should be improved?
- What changes are likely after an exchange?
- What is the most important strategic objective of the position?

The systematic use of such questions develops structured thinking.

Position perception and identification of key factors

The first stage of strategic decision-making is the correct perception of the position.

Students often make mistakes because they start calculating moves immediately without first understanding the general characteristics of the position. Therefore, the teacher should train learners to pause and identify the most relevant positional factors before calculating concrete variations.

These factors may include:

material balance – the number and value of pieces and pawns;
king safety – the degree of protection around each king;
piece activity – mobility, coordination, and effectiveness of pieces;
pawn structure – isolated, doubled, backward, passed, or weak pawns;
space – control of important areas of the board;
weak squares – squares that cannot easily be defended by pawns;
open lines – files and diagonals that can be used by rooks, bishops, and queens;
initiative – the ability to create threats and force the opponent to respond.

At the beginning of instruction, the teacher may provide students with a structured checklist. As their analytical competence develops, this external support should gradually be reduced.

Candidate-move generation

A frequent problem among inexperienced chess players is that they calculate only the first move that attracts their attention. Such behavior limits strategic thinking and leads to premature decisions.

Therefore, one of the most important pedagogical tasks is to teach students to generate several **candidate moves** before beginning detailed calculation.

Candidate moves may include:

1. forcing moves;
2. moves that respond to the opponent's threats;
3. moves that improve the position of a poorly placed piece;
4. moves that create a new strategic threat;
5. moves that change the pawn structure;
6. moves that prepare a long-term positional plan.

The learner should be encouraged to compare at least two or three realistic alternatives.

For example, the teacher may ask:

"Which three moves deserve serious consideration in this position?"

The student must then explain why each move is important.

This procedure develops intellectual flexibility because the learner is required to consider alternatives rather than remain attached to the first idea.

Calculation and prediction

After identifying candidate moves, students should calculate possible continuations.

The educational purpose of calculation is not simply to predict as many moves as possible. The student must learn to understand the logical connection between moves.

A useful analytical sequence is:

my move → opponent's strongest response → my continuation → resulting position.

At each stage, learners should be encouraged to ask what has changed in the position.

For example:

- Has king safety improved or deteriorated?
- Has a weak square appeared?
- Has a piece become more active?
- Has the pawn structure changed?
- Has the initiative passed to the opponent?

This form of calculation combines tactical foresight with strategic evaluation.

Comparative evaluation of alternatives

Decision-making becomes pedagogically meaningful when students are required to compare alternatives.

A learner may calculate three different candidate moves, but the final decision should be based on meaningful criteria.

For this purpose, a comparative table can be used:

Candidate move	Main advantage	Possible risk	Expected result
Move A	Improves piece activity	Allows counterplay	Slight advantage
Move B	Strengthens king safety	Passive development	Balanced position
Move C	Creates direct pressure	Tactical risk	Dynamic advantage

Such an exercise prevents purely intuitive move selection and encourages evidence-based reasoning. It also helps students understand that in chess there may be several playable moves, but their strategic value may differ.

Problem-based chess situations

Problem-based learning is particularly effective in chess instruction because every position may be transformed into an intellectual problem.

Instead of asking students simply to find the best move, the teacher can formulate broader problems:

- How can White improve the worst-placed piece?
- Which weakness should Black attack?
- Should the position be opened or kept closed?
- Which exchange would benefit the player?
- How can the opponent's initiative be neutralized?
- Which side benefits from simplification?

Such tasks encourage students to think in terms of plans rather than isolated moves. They also help learners understand the relationship between positional features and strategic decisions.

The role of visual representation

Chess is highly dependent on visual-spatial perception. Therefore, the visualization of positional relationships can support strategic learning.

Teachers can use:

- arrows to indicate possible piece routes;
- highlighted weak squares;
- marked open files and diagonals;
- color-coded attacking and defensive zones;
- before-and-after position comparisons;
- digital boards and interactive chess platforms.

However, visualization should support thinking rather than replace it.

Students should gradually learn to identify positional relationships without external visual prompts. Therefore, visual assistance should be reduced as learners become more independent.

Reflective analysis

One of the most important stages of chess education is analysis after a decision has been made.

Reflection allows students to understand not only whether their move was correct, but also why they made the decision.

After solving a position or completing a game, learners may be asked:

- What did I notice first?
- Which positional factor influenced my decision?
- Which candidate moves did I consider?
- Which move did I reject and why?
- Did I identify the opponent's strongest response?
- Where did my analysis become inaccurate?
- What would I do differently in a similar position?

Such questions develop metacognitive awareness.

The learner begins to analyze his or her own thinking process rather than merely memorizing correct moves.

A pedagogical model for strategic decision-making

Based on the above considerations, the process of teaching strategic decision-making can be represented through the following sequence:

Positional orientation → Strategic diagnosis → Alternative generation → Variation testing → Comparative evaluation → Reasoned decision → Reflective transfer.

This sequence should initially be implemented with teacher guidance.

At the next stage, students perform individual components independently.

Finally, learners should be able to use the entire analytical cycle without external support.

Thus, the educational process progresses from:

teacher-guided analysis → partially independent analysis → independent strategic decision-making.

Differentiated organization of chess instruction

Students differ in their chess experience, speed of calculation, visual perception, memory, and analytical ability. Therefore, positional analysis should be differentiated.

For beginners, the teacher may:

- reduce the number of positional factors;
- use simplified positions;
- provide guiding questions;
- limit candidate moves;
- visually highlight important squares.

For intermediate learners, the teacher may:

- increase positional complexity;
- require independent candidate generation;
- introduce competing strategic plans;
- use positions with several reasonable solutions.

For advanced students, tasks should involve:

- complex positional transformations;
- strategic sacrifices;
- long-term advantages;
- transition between strategic and tactical phases;
- independent written or verbal justification of decisions.

Differentiation makes chess education more responsive to the learner's actual level of development.

Educational outcomes Systematic positional analysis can contribute to the development of several important competencies.

First, students develop analytical thinking, because they must identify and classify important information.

Second, they improve predictive thinking, because each decision requires consideration of future consequences.

Third, they develop decision-making skills, since several alternatives must be compared before one is selected.

Fourth, chess develops concentration and attention, especially when learners analyze complex positions.

Fifth, reflective analysis supports self-regulation, because students learn to identify weaknesses in their own thinking.

Thus, strategically organized chess education has potential value beyond technical chess improvement.

Conclusion: Developing strategic decision-making is one of the important objectives of modern chess education. Effective chess instruction should therefore move beyond the memorization of moves and standard patterns toward the systematic development of analytical and reflective thinking. Positional analysis provides significant pedagogical opportunities for this purpose. By teaching learners to identify key positional factors, generate candidate moves,

calculate possible continuations, compare alternatives, make reasoned decisions, and reflect on the quality of their analysis, chess instruction can develop a more conscious and independent approach to the game.

The proposed pedagogical sequence — position perception, identification of key factors, candidate-move generation, calculation, comparative evaluation, decision-making, and reflection — can be used as a methodological framework for organizing chess lessons.

The gradual reduction of teacher support is particularly important. The final educational objective should be the learner's ability to independently analyze a position, justify a strategic plan, anticipate possible consequences, and critically evaluate the decision taken.

Consequently, positional analysis should be regarded not only as a chess technique but also as an effective pedagogical instrument for developing strategic thinking, prediction, problem solving, intellectual independence, and reasoned decision-making.

References

1. Chase, W. G., & Simon, H. A. (1973). Perception in chess. Cognitive Psychology, 4(1), 55–81.
2. De Groot, A. D. (1978). Thought and Choice in Chess. The Hague: Mouton Publishers.
3. Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. Psychological Review, 100(3), 363–406.
4. Gobet, F. (1998). Expert memory: A comparison of four theories. Cognition, 66(2), 115–152.
5. Gobet, F., & Charness, N. (2006). Expertise in chess. In K. A. Ericsson, N. Charness, P. J. Feltovich, & R. R. Hoffman (Eds.), The Cambridge Handbook of Expertise and Expert Performance. Cambridge: Cambridge University Press.
6. Gobet, F., de Voogt, A. J., & Retschitzki, J. (2004). Moves in Mind: The Psychology of Board Games. Hove: Psychology Press.
7. Holding, D. H. (1985). The Psychology of Chess Skill. Hillsdale, NJ: Lawrence Erlbaum Associates.
8. Newell, A., & Simon, H. A. (1972). Human Problem Solving. Englewood Cliffs, NJ: Prentice-Hall.
9. Sala, G., & Gobet, F. (2016). Do the benefits of chess instruction transfer to academic and cognitive skills? A meta-analysis. Educational Research Review, 18, 46–57.
10. Sala, G., Foley, J. P., & Gobet, F. (2017). The effects of chess instruction on pupils' cognitive and academic skills: State of the art and theoretical challenges. Frontiers in Psychology, 8, 238.