

THE USE OF CHESS IN HUMAN RESOURCES MANAGEMENT

PROF. DR. GYÖRGY KENDE
Zrínyi Miklós National Defence University
Budapest, Hungary
kende.gyorgy@zmne.hu

PETER HARDICSAY
Semmelweis University
hardicsay.peter@chello.hu

DR. HABIL. ERZSEBET NOSZKAY
Szent István University, Gödöllő, Hungary
nomenb@t-online.hu

DR. GYÖRGY SERES
Zrínyi Miklós National Defence University
Budapest, Hungary
drseres@drseres.com

ABSTRACT

The connections between chess and knowledge management, chess and military strategy, chess and skills development, chess and decision-making ability, chess and personality development are concepts that have been researched for a long time.

The actuality of our presentation and recommendations is supported by the explosive development of infocommunication technologies of our times. Thanks to the outstanding information-technological background of chess, the efficiency of chess education has significantly improved. As a result, skills, personality, and the methods of developing the decision-making ability can be elaborated relatively easily, as well as they can be applied effectively.

In our presentation we would like to share some possibilities and results of research connected to the application of chess in education, in skills development, in personality development and in the development of decision-making ability, all of which can also be successfully applied in the field of human resources.

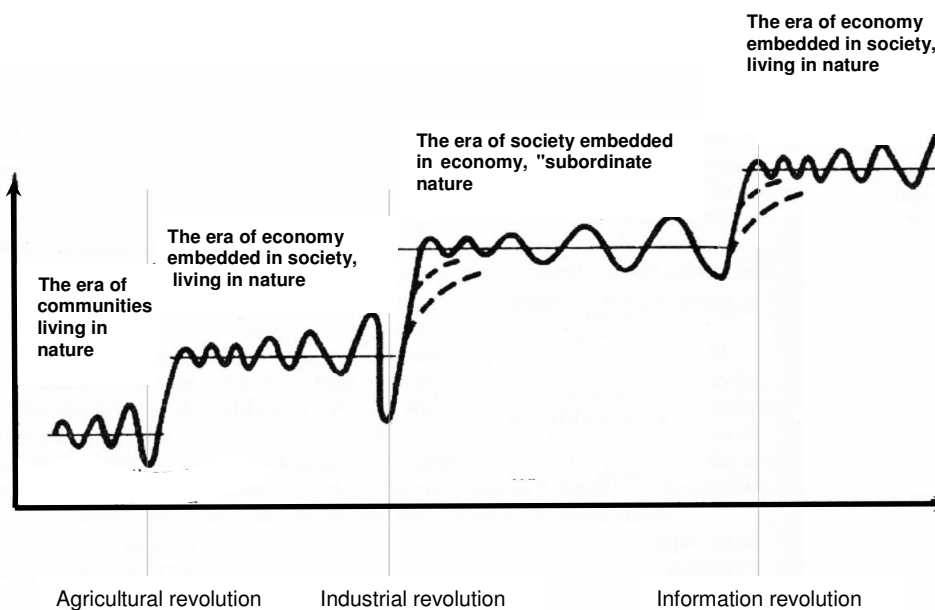
1. Introduction

The 21st century is often called the century of knowledge, while others named it simply the new era. Whatever its name may be, it is a fact that the new era differs in every possible way from the previous ones. Since while the previous eras – in one way or the other – were always related to material technologies, then the information technologies of knowledge society are not about supporting human muscle power or about the different ways of applying scarce goods, but they are about the technologies that can complement to the performance of the human mind. This is, indeed, such a revolutionary change, which – in spite of all its pitfalls – surely overwrites and turns upside down every view, every paradigm, every research method and every model and method.

Klára Hajnal (Hajnal [2008]) demonstrates this phenomenon in an excellent way, who depicts the big eras of the world while presenting their most important characteristics.

In spite of the significant differences – the diagram below clearly presents them – that many of the important factors were typical of all the eras so far (like for example locality, stability, the mainly physical entities and the communal ways of being), then the new era is characterized by globality, mobility, virtual phenomena and entities (for example networks, etc.) as well as individualization.

1. The big eras; - on the basis of their main characteristics



Source: Klára Hajnal [2008]

2. Men and the challenges of the new era – the new directions of human resources development

One of the main characteristics of this new era that changes speed up like never before, and therefore the speed of the forfeiture of knowledge and ideas accelerates, too. So while in our century novelty creating knowledge (acquirable in a more difficult way, with more hidden components) is more and more valuable, it has a growing significance in the rise of the added value and in the creation of the competitive advantages, then at the same time it should also be kept in mind that the nature, the acquisition, what is more, the types of risks of these competitive knowledges are totally different. Therefore it is not by chance that today the participants of the economy are not motivated by the same reasons as those in the era of the industrial mass production. The success of today's decision-maker is to be searched for primarily not only among the finances, but also among the new creations, while the endeavour to gain more power has appeared among motivations. According to the verdict of Ridderstråle- Nordström ([2001] 37.p.) „The average activities and characters are 'out'...”. Also, in this world – burdened with constant changes – the possession of knowledge is not power anymore, but the ability to use the shared knowledge. (see: Velencei [2007]).

Not everyone will be able to cope with the new requirements, while the so called personal knowledge will become more and more significant. This has further difficulties, though, thanks to the IT technologies, it is not difficult anymore to obtain business knowledge (as well as knowledge in general), but it is getting more difficult to put this knowledge in context or apply it in a creative way. So in the future, the difficulty will not be whether the necessary element of knowledge is provided or not, but how and what we combine it with; which are the relevant pieces of information in solving a new problem and whether the circumstances – in which this can occur at all – are provided¹.

This palpably goes with such a change of paradigm – if we take into consideration only the characteristics mentioned above – as a result of which the phenomena and problems of the new era cannot be approached by traditional concepts, past understandings, traditional cognitive patterns (appropriate in every era so far) or by solutions applied for the support of business decisions.

What are needed now are a u-turn, brand new concepts and approaches, new models and problem solving, and what is more important, the main characters of the new era – i.e. human

¹ E.g. among other things one of the important environmental elements is:...”to be there” in the electronic network”. (Velencei [2007] 24.p.)

resources – need to be prepared for those in every segment of life, so in business, as well. This is quite a challenge for the individuals, for the participants, institutions and companies of the world of business as well as for experts of human resources management.

3. Preparation and possible answers for new challenges

It is obvious that in this field teaching and learning – as important factors – are going to have more emphasis, but certainly not according to classic formulas and training models. First of all – with the appreciation of lifelong learning – learning, instead of teaching (within which the broadening of adult learning, the solutions that prefer the individual acquisition models and aim the harmonious development of the personality) will have a stronger emphasis.

It is getting even more obvious that knowledge workers and especially business decision-makers and people participating in creating the new value and are interested in solving the problems of the new era to acquire the necessary new knowledge they can count less and less on their so called certain (certified) knowledge. Quite simply, in this fast-paced world there will not be always the time to wait for the „ordained priests of the temple of knowledge”: researchers, scientists, university professors, etc to validate the theoretical background of the new solutions, the scientific laws, etc, but in the interest of the new solution, the new value, one needs to „jump”! It is possible that you jump into complete insecurity, but you should also take your chances. To do that you will need to give up not only security – in its traditional sense – but if you intend to keep the pace of changes and stay in the first row, you will have to study and prepare while in the meantime make an effort to strengthen and improve our so called validating ability (Velencei [2007]). To do so, though, one needs to think in a different way, needs to make the decisions in another way and needs to act differently, too. Yet, only such people are capable of doing so, who see the whole in its entirety as a system, and therefore sees in it the place of the new knowledge, as well. The value of intuition resulted from experience increases in this process. As a result, the individual of the modern era (especially the decision-makers and the creative ones) can become excellent and successful if he/she learns to think „differently” in order for im/her to broaden knowledge on the highest possible level, improve the ability to validate as well as through what combinations, in what ways can he/she apply the obtained knowledge when making a problem solving decision

(Velencei [2007]), and by that how is it possible to develop their own leadership consciousness². (Noszkay [1988], [2008].

Reacting to these new phenomena, as logical results, reaction experiments are conducted by various researchers and philosophers of philosophical, theoretical, modelling or problem solving methods aiming to examine the new era; as well as definitions created by the need for new cognitive patterns show up, too. (see e.g. Mérő [1994], Csíkos [2008], Sántáné – T.E. – Biró M. – Kő A.- Lovrics L. (2008) and many other researchers.).

Therefore it is not surprising, but it is connected instead that recently many people – including Hungarian experts, as well – are interested in, among other things, chess and in the way of thinking of the chess player (e.g. Hardicsay [2004], Mérő [2007], etc.),

- on one hand, the application of chess training in education and in trainings is good for processing information, problem solving and making decisions – it can be applied at a very early age – thus they are interested in the possible field and measure of preparing the individuals for being efficient experts³ (Csíkos [2007]). In one of his works, Péter Hardicsay (Hardicsay [2004] 18.p.) lists the skills below acquirable through playing chess but well applicable in other fields of life, too:

- will (tolerance of failure, recovery, drawing consequences, preparation for new tasks);
- lasting and focused attention and dividing attention;
- memory development;
- thinking, judgements, ability to jump to a conclusion;
- reproductive and productive creative imagination, design, creativity, ability to think;
- ability to make decisions, judgement, definiteness, courage;
- systematic way of thinking;
- prudence;
- judgement of situation.

² We have been dealing with leadership consciousness for quite some time. It is referred to in the book written by Erzsébet Noszkay based on her dissertation (see: „Healthy or sick – The diagnostic model of the company (Noszkay [1986], 28. p.), as well as the constantly improved O&TUMEN method developed for fifteen years (Noszkay [2006], .

³ From this aspect, Péter Szilágyi aptly summarizes the statement of Toffler American scientist, according to which in the so called modern world, knowledge is getting more and more caducous. As a result secondary school and university students have to be able to throw out-of-date ideas away and how and when these ideas have to be replaced by other ideas, since „The uneducated person of tomorrow will not be the one who cannot count, but the one that has not learnt to study.” (Szilágyi [2007] 28 p.)

- on the other hand, the application of chess as analogical model in various fields of science (Kende [2006], Kende – Seres [2006], Noszkay [2008], etc.);

- and at last but not least, organizing such – human specific chess – trainings (see e.g. Hardicsay [2008]) which with causing the so called flow state (in more detail see Csíkszentmihályi [1990]) can help treat managers' burnout (mental health aspect), since successes obtainable with chess (either small successes, but instantly enjoyable ones) enhance the resource-reserves of the personality. (In addition, learning chess is good recreation activity, it is a good outlet for one's aggression and it helps fight with manager stress.)

Such a pathfinding motivated us in researching the possibilities of chess together (those instructors and researchers who deal with military science and management)⁴. Obviously, research from the military approach, from the point of view of acquiring the best competences of an officer is absolutely different from aspects of preparation of the managers, leaders and knowledge workers in the world of business. There is something absolutely in common, though, that militancy of the new era supported by information technology also requires new approaches, cognitive approaches, patterns with the same intensity as the world of decision-makers⁵ and the reactions to the new military situations require the decision-makers' agility just like in the case of business decision-makers of the new era. This is the intersection of the research. A question arises, though, that why chess; how are new mental patterns and solutions to improve individual consciousness are expected from chess?!

To understand that, it is not superfluous to see – deriving from the history of chess, examining from a certain distance – the endeavours and results (obtained so far) of the research of present times.

⁴ Its premise is that – primarily by following the footsteps of Swedish and Australian researchers – such results were born that made the researchers on military science of ZMNE (Miklós Zrínyi National Defence University) to start similar research. As we mutually agreed that there are excellent possibilities in adapting the relevant research to management, too, as well as in analogical adaptation we decided to start co-operate on the research program created together with the workshop of Szent István University. The present work is the first result of this co-operation.

⁵ It was not by chance that in 2007 the researchers of ZMNE (see Kende [2006], as well as Kende – Seres [2006], etc.) managed to organize a chess workshop on its own, the presenters of which were mainly pedagogues (primarily from higher education), psychologists, mathematicians, etc. And only some presenters were chess masters and Grandmasters. (The presentations can be found in the special edition of the Military Engineer online magazine at <http://www.zmne.hu/hadmernok/kulonszamok.php>)

As we all know, chess used to be a martial game, its old Sanskrit name, chaturanga (chatur = four, anga = part) refers to the four divisions of the Indian military (infantry, cavalry, chariots and elephants) from the period when Alexander the Great defeated Porus, the king of India at Hydaspes.⁶

But does this old connection of military leadership (and leadership in general) and playing chess have a message for the present? Is it worth conducting research in this field – on the basis of the present development of the theory of chess -, do such stable scientific results exist already on the basis of which the application of chess training in education and in skills development, in general, is worth to be considered?

It looks like, there are!

- On one hand, the application of chess training in education and training as the area and measure to processing information, solving problems and to the preparation for becoming a decision-making, efficient expert is getting more and more justified.⁷ What is more, there is a significant amount of experience of many years, the use of which - beside the validation of new aspects – is again topical. According to one of Péter Szilágyi's studies (Szilágyi [2007]) e.g. on the colloquy of the FIDE (World Chess Federation) in Turin it was stated that in promoting chess the emphasis is gradually shifted from raising a new generation to pedagogical aspects⁸ - in addition to that, said Szilágyi – if someone does not have the time to spend on chess and become a Grandmaster, his or her chess studies will have the results of the invested energy in the everyday life, too. Since chess teaches things that are useful in an everyday life, as well, for example it teaches that without learning there is no true development, that one can get out of difficult or even critical situations as one can several solutions to every problematic situation⁹.

⁶For more information see Finzkeller, R. et al.: Chess. The 2000 years of the game. Kulturtrade Publishing House, 1993

⁷ From this aspect, Péter Szilágyi aptly summarizes the statement of Toffler American scientist, according to which in the so called modern world, knowledge is getting more and more caducous. As a result secondary school and university students have to be able to throw out-of-date ideas away and how and when these ideas have to be replaced by other ideas, since „The uneducated person of tomorrow will not be the one who cannot count, but the one that has not learnt to study.” (Szilágyi [2007] 28 p.)

⁸ Many Hungarian experts deal intensely with the possibilities hidden in chess training in kindergartens and in elementary schools (in the pre-war era many experts were promoting it, among others e. g. Kunó Klebelsberg). Here we simply must list a few names: Zsuzsa Duró, Péter Hardicsay, József Fekete, János Fodor, Gábor Kállai, Imre Kovács, András Mészáros, Zsuzsa Polgár, Sándor Orgován, Péter Szilágyi, etc.

⁹ Hardicsay has been examining this issue deeply for quite some time (see e.g. Hardicsay [2004], [2008], etc.)

- On the other hand, the application of chess as an analogical model in various fields of science occurs more often. In his work, - building on the works of several other researchers – Péter Szilágyi (Szilágyi [2007]) proves that such application and approach of chess interests researchers from various scientific fields for relatively a long time. (Citing just a few names from Péter Szilágyi's work e.g. Seymour Papert, George A. Miller, H. Simon, K. Anders Ericsson and N. Charness, László Mérő and many others). But it is not by chance that these day chess analogies and simulations interest so many scientists. It is so not just because it „connects numerous scientific discoveries of the past fifty years that clear up certain secrets of their exceptional problem identifying and problem solving mechanisms with the help of chess” (Péter Szilágyi [2007] 19.p.), but also because chess strategies and their analogical models (accepting the opinion of the Swedish Kuylenstierna and colleagues who by studying the laws of playing chess have gained great successes in revealing the circumstances of military successes) as well as their experiments done with chess can be valid in other fields, as well¹⁰. („... provided that a theory connects them with the target situation and we throw away the belief that the conclusions drawn under isolated laboratorial circumstances are less valid in the outside world than the observations gained by on-the-set experiments.” (Péter Szilágyi [2007] 41. p.).

- And at last but not least, its application as a new manager training to one of the biggest challenges of the new era – supporting the preparation for changes quick as a lightning – can be useful, too. (In these days, such training experiments and research are conducted, as well, with the application of certain already existing results that indicate this way.) Not just because

¹⁰ The Swedish researcher, Jan Kuylenstierna's starting basis is that the game of chess resembles war, as the important elements of battle can be found in chess, too: strike, movement and defense. According to Kuylenstierna and his colleagues, the so called „dynamic decision-making situation” – known from leaders of battles – can be found in chess, as well, since either in military science or on the chessboard one has to make a series of decisions before making only one actual step. While the situation on the board (and on the battlefield) alters as a result of both players' (or opposing armies) decisions, time is an important factor, too. Kuylenstierna and his colleagues were conducting experiments with the players so that each and every one of them were playing on separate boards, separated from each other by a panel they could not see through. The steps were then taken by a referee, but not always at once, but with e.g. two steps of delay. „On the basis of these games the researchers came to the following conclusion: superiority of force and more pieces of battlefield information are of less importance if the opposing parties have only little pieces of information, while the significance of the quick rhythm of taking steps does not decrease. „Insecurity strongly influences superiority of information, while it has little influence on the rhythm of acting.” – said Kuylenstierna.” (Kende [2006.] <http://www.chessville.com/misc/ChessAsMartialGame.htm>).

The results of another military research are also exciting: „The Australian group of researchers found that quick rhythm can be of significant importance, especially along with the so called „deep planning”, as well. The term „deep planning” means that the playing parties evaluate the steps taken so far prior to making a new step, and they define the strategy to be followed on the basis of this evaluation.” (Kende [2006.] <http://www.chessville.com/misc/ChessAsMartialGame.htm>)

there is hardly a training method that would cause „déjà vu” to an accomplished manager, but also because chess proves to be useful for training purposes over and over again¹¹.

Why and how?! (Let us review this issue in the following section – as this conference is about new challenges and possibilities of up-to-date development of human resources.)

Chess, as a new possibility in the repertoire of leadership trainings offers good chances thanks to its three characteristics, approached seemingly from different points of view:

ad.1. chess as a game (as Lotman said, too (Lotman [1973]), is a unique model of reality, in which practical and conditional behaviour are realized at the same time. In addition. Chess is not just an ordinary game, but one during which in reality – that is on the chess board – one has to manage various resources simultaneously, such as time, material, space, information, the so called potential resources coming from position and knowledge, too. As analogies of decision-making situations (typical for this new era) they can help their better understanding (that can be exposed with the help of model and/or metaphors) often played only in virtual reality, combining information with information;

ad.2. chess as way of thinking that can indirectly contribute to the understanding of the evolution of new cognitive patterns on a meta level (in addition with the use of its models and metaphors) as well as it can contribute to the development of the mechanism of leadership consciousness, as well. How would that be?! In 1972, H. Simon (in more detail see: Simon [1972]) was conducting extensive research examining chess and chess players’ way of thinking and use of information. As a result he established four units of memory research:

- the smallest unit of thinking – a chunk – which are simple (often image-like), but certainly „atomized” units (not systematically managed mental units);
- creating separate (subjective) mental units from various different units (chunking);
- examples and solution patterns (pattern)¹²;

¹¹ „Ad hoc games of chess are excellent mental, focusing and creative trainings. Besides, it is an active way of leisure, too. It improves concentration, logical thinking, imagination, memory, patience, will and self-criticism. It develops emotions and feelings, and by prevailing over them, it provides the opportunity for learning.” (Munzert, R. [1998] 322 p.)

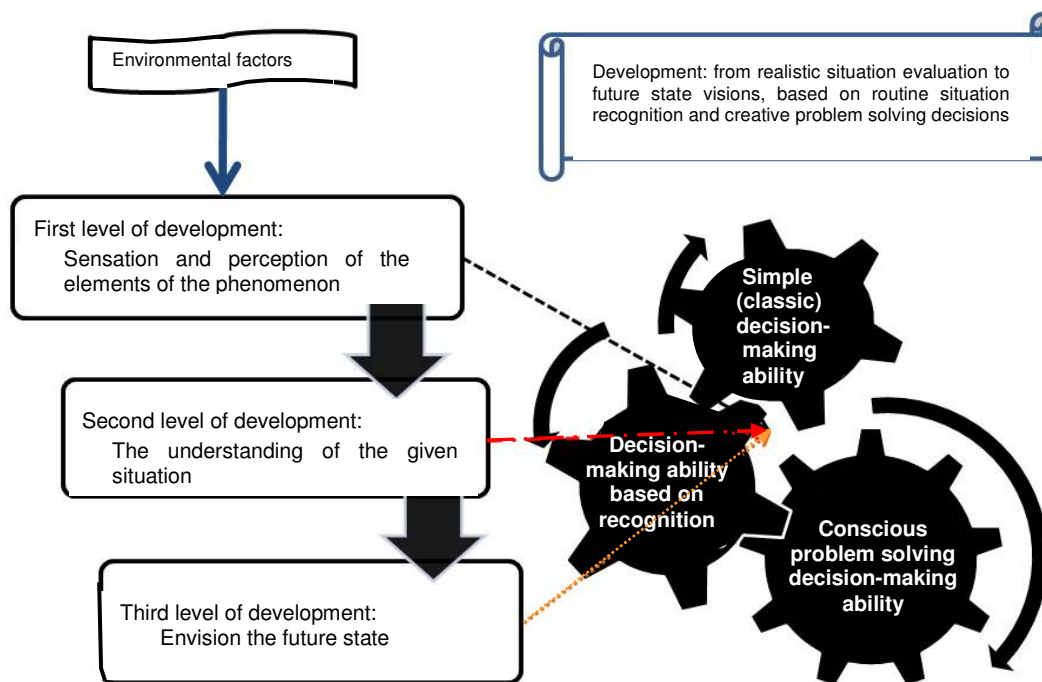
¹² To support the evolution of a similar routine, in the diagnostic and crisis management practice of the company (see Noszkay [1988]) the diagnostic units consisting of objects that aggregate from the information hierarchy of the corporal monitoring, with the help of the S graph (graphs can be „operated” as searching graphs), they are modelled on the basis of a similar principle. These support (beside the operation of other complicated selection mechanisms, like problem solving algorithms) through e.g. the so called somatic markers (secondary emotions) the selection of the actually relevant alternatives.

- recollection of examples – creating new combinations (according to the need of solving the problem (pattern recognition) it has to be mentioned that this level is entirely different on the level of thinking of the so called beginners than on the level of, let us say, the Grandmasters).

ad.3. chess as possibility: from pieces of information (that is from the cyclopaedic-based knowledge) to the improvement of intuition

From the beginner’s level, all the way through the intermediate and proficiency levels right until the level of Grandmasters one has to experience various stages of the development of consciousness – and this is true independently from the profession, whether the person in question is a chess player or a leader –. The figure below intends to present the model for this phenomenon:

2. The model of the evolution of leaders’ consciousness



Source: Csaba Csikos [2007]

As a result, it cannot be considered mere fortune that Krogus (Grandmaster and psychiatrist) stated in his well-known chess-psychological book that information is the father of intuition (Krogus [1983]). What is intuition, anyway?! Intellectual vision in the case of which „its is easy to accept that intuition can be born only by experience.” (Velencei [2007] 42 p.), but is seems more difficult to accept – especially for beginner leaders – that intuition is not

equivalent with accidentally „found” correct solution. Since the mechanisms –reflecting a great deal of intuition on the problem solving level of Grandmasters – and their development could not possibly be without a tough professional preparation that precedes them (according to Mérő, to reach the level of Grandmaster, if the candidate has any chance at all, one needs at least ten years of maturity). And we cannot stress it enough that – because of the gained experience – one can perfectly agree with Csaba Csíkos, who says: „So we say that the professional mental patterns evolving as a synthesis of the appropriately working skills, and the information gained during a long learning process liberate significant resources for the meta-level elements of thinking.” (Csíkos [2007]).

4. Summarizing thoughts

The new era poses enormous challenge and requirements urging solutions to the individuals of this era, as a result to the professions dealing with human resources preparation and management as well as to experts! The present work conceived in such a researcher-developer creative community – exemplifying a transdisciplinary approach –, which intended to present the mental results of the first attempt of our co-operation. One of the defining venues of this researcher-developer activity was the application of chess in leadership trainings (especially among beginner and unexperienced leaders), from which we hope to broaden the philosophy and the way of thinking of leaders with the possibilities of preparation for this new era – based on homeostasis. The endeavour to enrich the new approach that is to be created through the development of skills and abilities of the individual along with a proved potential possibility are in the centre of this issue. Experience led us to believe that this problem approaching way – well-known from chess – is useful generally in unexpected situations, in case of difficulties like fast decision-making situations of forced, quick changes or it is useful in reacting from a new approach to potential crisis situations, too. In the centre of this approach there are new cognitive patterns and models, the logical and intuitive skills development of leaders, as well as the intuitive approach of the concept of „learning to study” and quick problem solving as the application of chess as the method of training through the mental patterns and analogies of chess.

Bibliography

- Csíkos, Csaba (2007): Metacognition. The pedagogy of knowledge referring to knowledge. Technological Publishing House, Budapest, Hungary /Metakogníció. A tudásra vonatkozó tudás pedagógiája. Műszaki Könyvkiadó, Bp./
- Csíkos, Csaba (2008): Playing chess, as the field of research of the beginner-expert problematics /A sakkozás, mint a kezdő-szakértő problematika vizsgálatának terepe/ <http://drseres.com/sakk/presentations/hadmernok/htm/csikos.htm>
- Csikszentmihályi, Mihály (1990). Flow: The Psychology of Optimal Experience'. New York: Harper and Row.
- Finkeller, R. et al.: Chess. The 2000 years of the game. Kulturtrade Publishing House, 1993 /Sakk. A játék 2000 éve. Kulturtrade Kiadó, 1993/
- Hajnal, Klára (2008): Knowledge sharing in the present era of business decisions /Tudásmegosztás az üzleti döntések mai korszakában/ <http://www.vati.edu.hu/node/161>
- Hardicsay, Péter (2004): Why does a chess player think differently? Spiral Publishing House, Budapest, Hungary /Miért gondolkodik másként a sakkozó? Spirál Könyvkiadó, Bp./
- Hardicsay, Péter (2008): Chess trainer Modok and Partner Ltd., Budapest, Hungary /Sakkedző Modok és Tsa Kft. Bp./
- Kende, György (2006): Chess as martial game and the instrument of skills development, Military Science 1 – published in English <http://www.chessville.com/misc/ChessAsMartialGame.htm>) /A sakk mint hadijáték és a képességfejlesztés eszköze Hadtudomány 1.sz./
- Kende, György – Seres, György (2006): [Use of chess in military education](http://www.drseres.com/publik/pdf/use_of_chess.pdf) New Challenges http://www.drseres.com/publik/pdf/use_of_chess.pdf
- Krogus, Ny. (1983): Psychologie im Schach Sportverlag, Berlin
- Lotman J.. (1973): Text – Model – Type, Gondolat Publishing House /Szöveg – Modell – Tipus Gondolat Kiadó/
- Mérő, László (1994): Turns of minds – The limits of rational thinking and artificial intelligence, HypoTEX Publishing House, Budapest, Hungary /Észjárások - A racionális gondolkodás korlátai és a mesterséges intelligencia HypoTEX Kiadó, Bp./
- Mérő, László (2001): New turns of minds – The power and limits of rational thinking Tercium Publishing House /Új észjárások – A racionális gondolkodás ereje és korlátai Tercium Kiadó/

Mérő, László (2007): Chess as a model of competence – psychological experiments with chess players /A sakk, mint kompetenciamodell – pszichológiai kísérletek sakkozókka/
<http://drseres.com/sakk/eloadas.htm>

Munzert, R. (1998): Schachpsychologie Joachim Beyer Verlag, Hollfed.

Noszkay, Erzsébet (1988): Healthy or sick – The diagnostic model of the company, Budapest, Hungary /Egészséges vagy beteg - A vállalat diagnosztikai modellje. KJK Bp./

Noszkay, Erzsébet (2007): New paths, new methodological solutions in higher education O & TUMEN the knowledge management method of the competence-based training, Science of Leadership 10/2006 /Új utak, új módszertani megoldások a felsőoktatásban - O & TUMEN, a kompetenciaalapú képzés tudásmenedzselési módszere. Vezetéstudomány, 2006/10. sz./

Noszkay, Erzsébet (2008): Chess strategies as analogies and models – the teaching of chess in the improvement of manager consciousness, Military Engineer, Special Edition /A sakk-stratégiák, mint analógiák és modellek;- a sakktanítás szerepe a menedzsertudatosság fejlesztésében ZMNE Hadmérnök Különszám/
http://www.zmne.hu/hadmernok/kulonszamok/sakk_2007/index.htm ISSN 1788 -1919)

Ridderstråle J. - Nordström K. (2001): Fuky business A tehetség táncoltatja a tőkét KJK Bp.

Simon, H. A., and Chase, W. G. (1973): Skill in chess. American Scientist

Sántáné – Tóth E. – Biró M. – Kő A.- Lovrics L. (2008): Decision supporting systems, Budapest, Hungary /Döntéstámogató rendszerek Panem GazdaságInformatika Bp./

Szilágyi, Péter (2007): Stages and milestones – The research of the skills developing effects of chess abroad and in Hungary /Állomások és mérföldkövek - A sakk képességfejlesztő hatásainak kutatása külföldön és Magyarországon Új Pedagógiai Szemle, 6. sz./

Velencei, Jolán (2007): Knowledge sharing of the business decision-maker in the e-era (PhD thesis), Budapest, Hungary /Az üzleti döntéshozó tudásmegosztása az e-korszakban (PhD Értekezés) Bp./