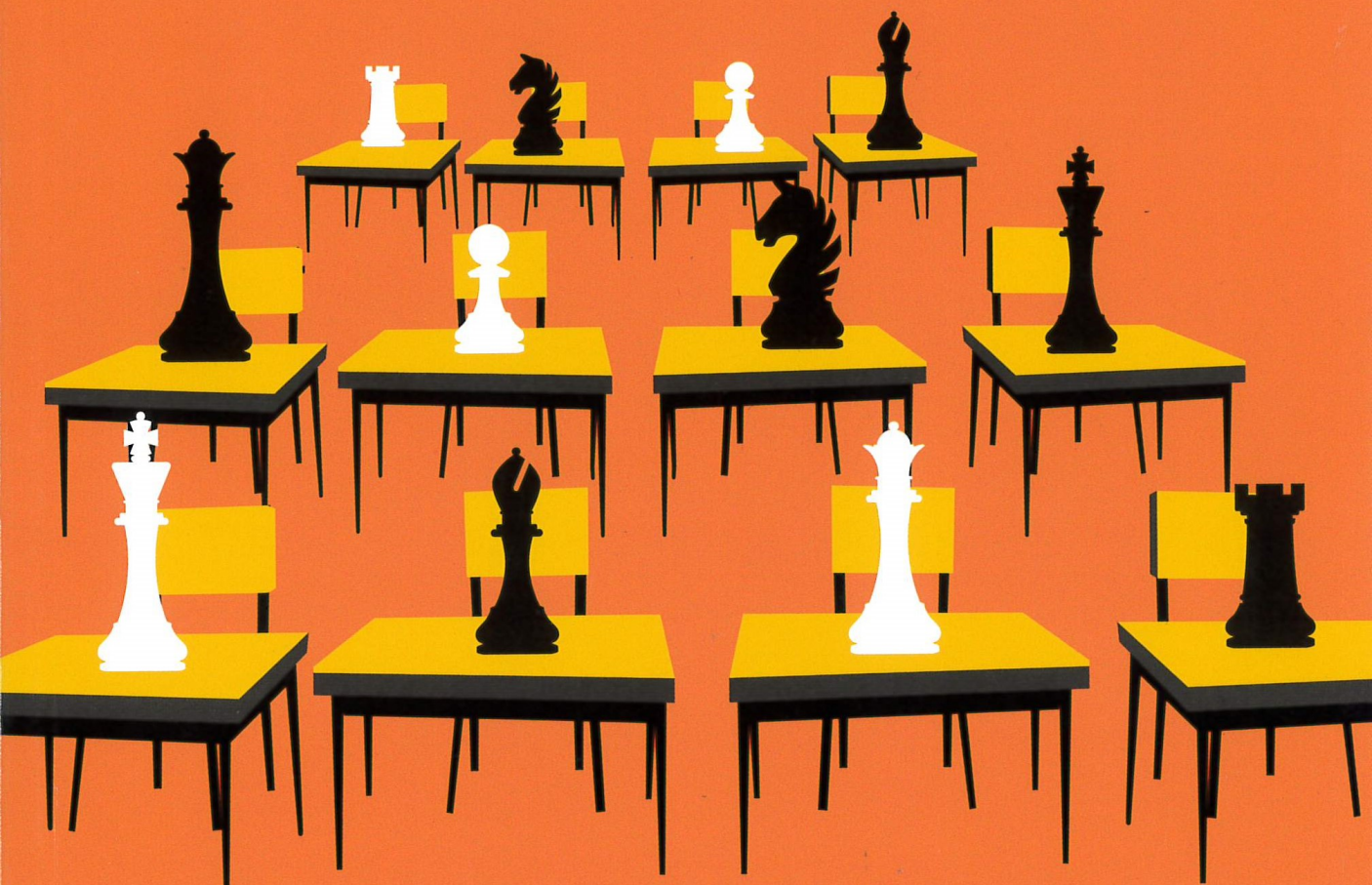
KAREL VAN DELFT

CHESS FOR EDUCATORS



How to Organize and Promote a Meaningful Chess Teaching Program

NEW IN CHESS

Chess for Educators

Karel van Delft

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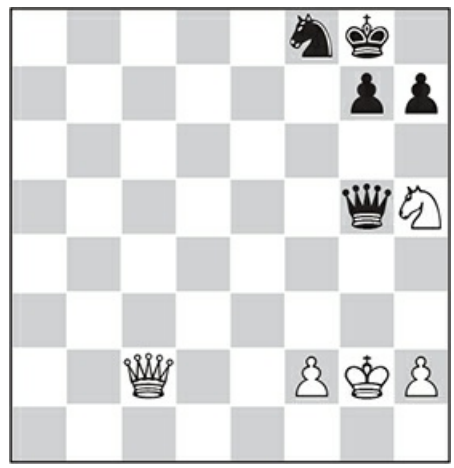
Explanation of Symbols

The chessboard with its coordinates:

❑	White to move
■	Black to move
♔	King
♕	Queen
♖	Rook
♗	Bishop
♘	Knight

Introduction



Chess is a playground for the brain. Children enjoy playing it, and it poses fascinating challenges to their brain. But the game also widens their horizon. Chess teaches us life lessons – for example, that you can solve one problem with another, as in the above diagram. The white king is in check, and his knight is attacked. One move solves both problems: 1.♘g3. Another example of an insight that children can pick up effortlessly during a chess lesson: at the chessboard, you always have to look first what your opponent can do, and this is just like in traffic – if you don't look what others are doing, accidents may happen.

I have given chess lessons to all kinds of groups of children for the past thirty years, and have also immersed myself in the psychology of this wonderful game. I have come to the conclusion, just like many of my colleague psychologists, that chess is a metaphor for life. You can learn to shape your personality, and develop self-knowledge, self-confidence, self-management and a 'growth mindset': 'looking, thinking and doing', judgement and planning (the latter is also the title of a book by former World Champion Max Euwe).

Chess can contribute to the cognitive, social, emotional and meta-cognitive development of children. For children with special needs and other groups, chess can also be a means for empowerment. It helps them to develop self-respect, and to get a grip on themselves and their environment.

In other words, especially for children, chess has many benefits. What are these exactly, and how can chess have a positive influence on the education of children? That is what we examine in this book. We will discuss didactics and teaching methods, the organization of school clubs, scientific research on the benefits of chess education, and chess as a means of emancipation within the scope of school chess and special needs groups.

Variety, fascination and participation (being actively involved in a learning process) are the cornerstones. Likewise, the key to the activities is that pleasure and learning are the main things, while winning is a derivative.

There is a distinction between competitive chess and educational (instructional) chess. Both forms include similar aspects, like: learning to play chess, deliberate practice (a well-thought-out way of learning and training), didactics, empathy from teachers and the application of psychological insights (with regard to teaching methods and self-management).

With school chess, the emphasis is on education, personal development, enjoyment, and, certainly in the case of pupils with special needs, 'empowerment'.

With competitive chess, the accent is on achieving results. Here, more time is devoted to chess, the level is higher, and more themes and techniques are discussed. Also, the role of parents is often more important.

In both competitive and educational chess, there is still a world to be won in the area of the contents and the structurization of training. A lot is already being done in many different countries all over the world. I will give an (of course, inconclusive) overview in Chapter 1 below.

A lot of scientific research has been done on the question of which effects chess education can have. It may be that this question is wrongly formulated. A better question seems to be: which combination of which chess-teaching methods and which form of didactic coaching can lead to optimal learning effects for certain target groups, and in which circumstances? In other words, it's all about combinations – in the same way that the combination of hydrogen and oxygen produces water.

Much research has been done into the benefits of chess for education and for personal development. Often this involves experimental and quantitative research into, especially, cognitive aspects. Benefits are possible partly thanks to the intrinsic characteristics of the game, and partly thanks to the teaching methods and the stimulating role that can be fulfilled by teachers. But research has also been done into social, emotional and meta-cognitive effects.

Children like to learn via playing. This is a very effective way to learn. Chess fits well with this idea. During a chess lesson you are going out on an adventure, it's a marvellous and exciting voyage of discovery. On the one hand, you let yourself be surprised ('in search of the unexpected'), on the other hand you are thinking systematically (chess thinking is based on pattern recognition, reasoning with the help of rules-of-thumb, and calculation, i.e. 'if this, then that'). The 'seventeenth chess piece' (Lasker) also plays a role. That seventeenth piece is you, with your personality, your emotions, your willpower, and your way of thinking.

Chess is a metaphor for life: you analyse, make plans, take decisions and search for creative solutions (cognitive). You learn about self-management, taking blows, and dealing with challenges (emotional). You discuss positions with others (social). You learn to reflect on your behaviour and on situations (meta-cognitive).

In chess instruction, content (for instance, tactics, openings, endgames), methods (for instance, discovery learning, frontal teaching, working in small groups), circumstances (for example, noise in the classroom, the time of day) and the role of the teacher (empathic or not, stimulating or not) are relevant factors. The question is what the influence of these factors is on the results of the research. Certain combinations of content, methods, circumstances and role of teacher can have more effect than others.

If you incorporate all kinds of different research in different combinations into one grand-scale ‘meta-analysis’, then the enormous amount of data may cause you to miss certain specific relations (subpopulations). Moreover, different learning effects may take place with different pupils. Chess may be especially helpful for one pupil to learn to deal better with defeat, while another will mainly learn to think more creatively – and so on. Also, certain teaching methods may be better suited for children of a certain age. Besides, there are often differences between boys and girls. In much of the research, this distinction is not made. Because there are so many variables playing a role, it is difficult to discover a very large effect on a single dimension in quantitative research.

Moreover, effects don’t need to be limited to the development of practical skills that are also applicable in other domains of life (the ‘transfer issue’). A positive self-image and learning attitude may also be developed, providing a child with insight in, and a grip on, its own mind and its environment (empowerment).

In fact, scientific research on the effects of chess on life skills has produced only a limited amount of evidence of such effects so far. It’s not only that there is such multitude of variables, but specialists like Fernand Gobet have also criticized the methodology of much research that has been done. In Chapters 19 and 20, we will go deeper into the different methods of research that have been used, the issues that can play a role in research, and how research may be conducted in the future.

Practice teaches us that there are many examples showing that children benefit from chess instruction in many different ways. They have fun, and they derive self-confidence from it. This is an argument in favour of ‘blended research’: besides quantitative (statistic and experimental) research, also qualitative research (observations, interviews, taking stock of experiences, and the like).

When pupils enjoy chess lessons, and derive self-confidence from them, then that is a beneficiary effect. Children as well as parents and teachers will notice this.

In this book, we also pay special attention to specific groups of children, for example girls and special needs groups.

Girls play chess less often than boys, and perform less well on average. They often have a different learning attitude. Often, in research, no distinction is made between boys and girls. In cases where this distinction is made, often differences in learning effects become apparent. We will elaborate on this in Chapter 13.

Research and practical experience teach us that chess can play an important role for the personality development and emancipation of groups of people and children with special needs. Chapters 8-12 and 14 are devoted to this subject.

This book provides insights and practical methods. Its content is based on scientific research and practical experience. Teaching chess in primary schools can be simple: you explain a few things to children, and they play a game. But it’s possible to do more.

Karel van Delft

Apeldoorn, December 2020

CHAPTER 1

School chess worldwide

Everywhere in the world, chess is being played in schools. There are all kinds of different organization models and teaching methods. There are international contacts, and there is an exchange of knowledge, insights and experience – for example, at the annual London Chess Conference. Via Internet, organizations as well as individuals can develop their own ideas and initiatives.

Below we give a compact description of a couple of initiatives. On my website www.chesstalent.com, there is a collection of links to websites of a large number of organizations.

In Armenia, chess has been a compulsory subject on primary schools for 7- to 10-year-old children since 2011. The idea behind this is that chess can stimulate children's cognitive development as well as the development of their personalities. Chess is very popular in Armenia. Chess idols and role models are the late former World Champion Tigran Petrosian and the current world top player Levon Aronian. The country has 3.5 million inhabitants. In the capital, Yerevan, there is a chess academy, where, among others, chess teachers are trained. Also, scientific research on the effects of chess education is being done at the university.

Schools have received chess materials from the government, and they organize tournaments. A curriculum has been made, and approximately 2000 chess teachers have been trained. Manuals, work books, instructional books for teachers and a psychological handbook have been developed. The initiator, GM Smbat Lputian, said at the London Chess Conference 2019 that practice is stubborn. Education hinges upon good teachers. Especially training so many chess teachers in such a short time is no sinecure.

In Spain, chess has been included in different ways in the school curriculum in 10 of its 17 regions.

In Belgium, there is a virtual teaching platform (schaakschool.be) that puts free chess lessons at the disposal of schools.

The Chess Institute of Canada (CIC) is a non-profit organization which, among others, develops activities at primary schools. This organization uses chess as a means of imparting life skills to children.

The Danish project *Skoleskak* reaches one-third of all primary school pupils in the country. *Skoleskak* trains teachers to give chess instruction during school hours.

The *Deutsche Schulschachstiftung* and the *Deutsche Schachjugend* (the youth section of the German national chess federation) organize an annual school chess congress where chess teachers and organizers from all over Germany participate.

In England, an organization called *Chess in Schools and Communities* is active. Its aim is to use chess to enable children to perform better in school, and to stimulate their social

development. Every school that participates in the CSC programme is visited by a chess teacher once a week.

Partly due to the efforts of GM Judit Polgar, chess has become an optional subject on primary schools in Hungary starting from the school season 2013-2014. Polgar is currently developing her own school-teaching method under the name of ‘Chess palace’. Fun is the most important thing – the chess pieces are your friends.

In the Netherlands, there is an extensive and multifaceted school chess culture. Many schools are working with the Steps Method. There are many youth tournaments and school championships. Many trainers have a website with information about youth chess.

In Turkey, children can play chess at school as an optional subject. Thousands of teachers have been trained there.

The USA have an extensive school chess culture. There are interesting youth chess websites; some by commercial organizations, others by private persons and clubs.

In South-Africa, the MiniChess project includes a teaching method with mini-games.

You can bring chess teachers to schools, but you can also train schoolmasters to be chess teachers. In Sweden, around 1500 teachers have been trained to become chess teachers, and chess clubs have been established in approximately 400 primary schools. IM Jesper Hall is the moving spirit behind this project. He is at the same time the chairman of the education committee of the European chess federation ECU. Hall also features in the first part of the video that can be found on YouTube under www.youtube.com/watch?time_continue=40&v=d4GNZk_X2SY&feature=emb_logo; this is an impression of a meeting on quality standards in school chess at the 2019 London Chess Conference, also featuring Armenian GM Smbat Lputian.

CHAPTER 2

Didactics in school chess

Many children like to play chess – certainly if they can be active and can learn interesting things. Primary schools are a natural environment for teaching chess, either during regular lessons or via a school club, after school hours. Whether a school chess club becomes a success depends on the question if there is an empathic adult, who can teach, organize, and motivate children. In this chapter, we present a number of points of attention, discuss several methods, and provide a number of useful references.

There are good reasons for giving chess instruction at schools. Chess is a metaphor for life, and it can stimulate the development of children: socially (for example, when they analyse together), emotionally (for example, coping with defeats), cognitively (for example, reasoning) and meta-cognitively (reflecting on one's own behaviour). This is partly intrinsically connected to the game of chess, and partly to the way chess is taught.

The success of a school chess club is dependent, on the one hand, on the competence of the teacher, and, on the other hand, on the teaching method used.

We can define a method as a number of mutually connected activities that take place in a certain way, aimed at certain goals.

Key words for my own method are variety, fascination and participation. Lessons have to be interesting.

Information has to be passed on in such a way that children understand it, and also they have to be able to discover certain aspects of the game by themselves (discovery learning). This implies that the teacher not only passes on knowledge, but the pupils also learn by playing games, playing out game positions, and analysing positions and games.

It is important for children to have success experiences. Chess instruction should be an adventure, an inspiring voyage of discovery.

Children inside a group should be of approximately the same level, and groups should be not too big. A maximum of twelve pupils is fine.

No great investments are needed to give chess lessons. You need a classroom and chess pieces and boards. A demonstration board is useful, and a digital blackboard and/or a computer provide extra teaching options.

If the pupils already have some experience with chess, then you can also use chess clocks. You can make scoresheets yourself. For younger children, it's better to make these on A4 format.

It's always sensible to exchange experience and knowledge with other people who are engaged in school chess.

There may be differences between youth sections of chess clubs and school chess. At clubs, the groups are often smaller (often a maximum of ten children per group), the children spend more time on chess every week, and the level inside a group is often similar. Some children who play

at a club have ambitions. They play often, train a lot, and the training programme and coaching are beneficial for their self-insight and self-management. Such a programme and such coaching make sense if a child plays chess for more than ten hours a week.

At schools, children usually receive one hour of chess instruction every week. If these lessons are compulsory, then the classes will often be larger, and not all of the children will be equally motivated. The level differs, and some children will have behavioural issues. In such situations, it is a good recommendation to divide a class into smaller groups with children of the same level. If children play chess for one hour a week only, variety is very important. A talented and motivated child can play chess for many hours every week. For such a child, one hour of tactics is not much. However, if children play chess for one hour every week only, an hour with only tactics is far too much.

Children want to play and to discover. Playing is a natural way of learning things. You should take this as your starting-point. If, at a school, you have only one hour per week, then divide this time into half an hour for playing (you can make pairings for a competition with the free-of-charge pairing program Sevilla) and half an hour for teaching.

If children do not know the rules of the game, then you can start with mini-games. These are simple playing positions, like for instance with a rook against four pawns. The teacher explains how the rook and the pawn move and how they capture. If the rook captures all the pawns, the rook side wins. If one of the pawns makes it to the other side of the board, the pawn side wins. For such games, you need only two minutes for explanation, sometimes a little guidance is needed during the first few moves, and then the children can already play a game.

You can split up a lesson into three components: practice, explanation, and self-playing. It's always useful to start with a question round: ask the children if they have any questions, or if they've had an experience they want to share with the class. For example, one child may have given a simul(-taneous display) to its family members, or another has discovered a nice website. By telling each other about this, children can stimulate each other. It is useful to start a lesson with tactical exercises. In each lesson, you can analyse one game played by one of the children. If a computer is available, with an Internet connection, you can, for example, do a chess quiz on a website together. By visiting different websites, you can stimulate children to play chess also in their free time. You can, for instance, finish a rook ending against player duos – the pupils should take the side that is winning. The duos will learn to consult with each other, and they will learn from the explanations you give during play. For younger children, fairy-tales and stories are interesting. Apart from the lessons, you can also, for example, play matches against other schools, or organize small tournaments. You can also show videos with chess subjects.

Points of attention

Many authors claim that chess instruction stimulates the personal development of children. Curiously, most authors don't mention anything about the contents of the lessons, and the way in which they are given.

Chess lessons have to be given in a didactically appropriate way, if you want them to have any effect.

Didactics is about the manner of teaching.

Didactics is just like chess: knowledge alone is not enough – you have to develop skills and routines as well. You have to prepare lessons well, and you have to evaluate them. It is useful to exchange your experiences in this field with other chess teachers.

Here is a list of points of attention which you can use as a checklist for preparing and evaluating chess lessons:

- Enjoyment is the greatest motivator when learning.
- Empathy is the basis of teaching. Listen carefully to questions and comments from children. Show personal involvement.
- When you organize chess lessons, pay attention to practical issues like: a good room (furniture, light, oxygen, no noise), a demonstration board, chessboards and pieces, and, if possible, a computer, Internet and a digital blackboard.
- Make a basic plan for your lessons: question round, tactics, game analysis, a variety subject, and playing games.
- Basic questions for instruction are: who, what, where, when, why, how.
- Explain briefly what you are going to discuss during the coming lesson, and why.
- The level of the instruction should correspond to the level of the pupils.
- Use variety in didactic techniques: verbal explanation, showing examples, discussion, study groups, games, exercises.
- For inexperienced teachers, manuals on existing methods may be useful.
- ‘Go with the flow’: use opportunities that present themselves. For example, you have prepared a nice lesson. Then two children tell you that they have played a game at home, which they have notated. Forget your preparations, and allow the children to show their game to the class. The lesson you have prepared you can also give next week. Don’t be rigid in your teaching.
- Suggestions by children are welcome. Where possible, allow the children to be the ‘co-author of their own development’. Make the children committed to the instruction. You are creating the lesson together with your pupils.
- Stimulate their fascination by showing examples. For example, show interesting websites that children can visit on their own.
- Success experiences are important.
- Don’t give an overdose of information. Knowledge should be converted into insights and skills by making exercises and playing games.
- Studying together is a useful way of working. For example, let children take a look on a website in duos.
- Discovery learning is important. By asking questions, you can stimulate children’s thinking. Knowledge and insights will sink in better if children discover solutions and answers by themselves.
- Give the children enough time to think about answers. Quality is more important than

quantity.

- Subdivide a group with children of different levels into smaller groups of similar level.
- Use different teaching methods, to repeat knowledge and skills in a playful manner. For example, re-introduce tactical subjects in a quiz, identify them when you are discussing a game, or show a YouTube video.
- Awarding points during a lesson can have a stimulating effect. Many children like this. It promotes their concentration. You can do this, for example, by organizing quizzes, having them solve tactical exercises, or asking questions during the analysis of a game.
- Order. A classroom should be quiet, without distractions. A relaxed atmosphere is conducive to learning. Concentration is an important aspect in chess. Chaos will produce nothing. Yelling is prohibited. Use clear rules of conduct, and explain them. Anyone who does not obey the rules, has to leave. For example, subdividing a class into small groups in which chess problems are solved together will direct the energy of children in a positive way.
- Use words and comparisons that correspond to the children's level and to their perception of their environment.
- Make use of different channels to present information. This will have more impact. For instance, explain a game on a demonstration board (patterns) and also give verbal explanation.
- When you show a game on a demonstration board, it is useful if children can also play through the game on a board themselves, and try out moves.
- Start a lesson by giving concrete examples. Start from simple and move on to complex.
- Give feedback on a child's behaviour, don't disqualify them as a person.
- Stimulate children to play chess in their free time. You can do this by giving them tips about websites, having them play games at home, placing chessboards everywhere in the school (nice during breaks), etcetera. Ask children for any ideas they may have. Create a chess culture together with the children.
- To get more insight into individual children, you can conduct short interviews. For example, during a competition you can ask the children to come up to you one by one, ask them a few brief questions, and quickly put them on paper: what do you like during a lesson, what don't you like, do you have any suggestions for the lesson, what can the teacher do better, what can you do better yourself? Ask a why-question after each answer. You can present the results of such an inquiry to the class at a later stage, and attach conclusions to them together with the class.

Parents can play an important role in school chess. It is important that they recognize the importance of chess for the development of their children. They can help with the lessons, man the bar, provide transportation, help with keeping order, inspire children, make the pairings for a competition, and pay for activities. A teacher can keep parents up-to-date on the developments by direct contact and with a newsletter. Regular contact will motivate parents to contribute in all kinds of ways.

Variety in the lessons

Besides teaching tactics and analysing the children's own games, a great number of other items can be used to provide variety.

For example: quizzes; simuls; videos; playing against computer programmes together; making a chess magazine; making a newsletter or a calendar; opening traps; short attacking games; a crossword puzzle with chess words; interviewing, together with the class, a child who has played in a tournament; playing, together with the class, a game against the chess programme Fritz in 'drunk' mode; talks by children about chess books; discussing a classical game (or a game by the teacher) in quiz form; making diagrams from own games; making chess posters; posting a chess blog on the internet; mini-games; showing the 'impossible' with studies by Saavedra and Réti; a discussion about how best to prepare for a tournament (sleep, tactics, self-image); playing out endgames on websites; giving explanation about the Fritz chess program and chess apps like Lichess. As a project, you can organize a small chess tournament together with children (playing room, posters, playing schedule, etc.). You can expand this list by exchanging ideas with other chess teachers and by looking on chess websites. For more information on these subjects, see our Alphabet of Methods in Chapter 21.

Methods

As a basis for your chess instruction, you can make use of a certain method. There are many methods around. In the Netherlands, for example, the Steps Method is popular.

CHAPTER 3

Pre-school chess

What is the earliest age when children can learn to play chess? What is the best way for them to learn chess? In this chapter, we will discuss insights and experiences with children under 6 who learn to play chess.

You can use insights when you are developing a talented child towards top performance. You can use insights in order for chess instruction to benefit the personal development of children. And then you can use insights to develop both performance ability and personal development.

Research

Scientific research on very young chess-playing children is scarce. More information can be obtained in practice, by means of interviews and observations. Accounts in books and on websites can give anecdotal information. One or two people, like Laszlo Polgar, for instance, have developed their own theory.

Insights can also be extracted from research on the talent development of infants in areas other than chess. Scientific literature on developmental psychology and cognitive psychology also provides insights.

It may be useful to make a single methodological remark about research on chess education here. In many articles, the blessings of chess instruction are praised. Chess education is supposed to be good for almost anything, e.g. concentration, creativity, mathematics, etcetera. This is supposed to be the result of a transfer of learning effects to other domains. Many scientists, however, are of the opinion that transfer only takes place if the skills learned are also part of another domain.

There is little methodological research with a good scientific basis. A lot of scientific research on the presupposed transfer effects and the benefits of chess instruction is shaky, as the researchers Prof. IM Fernand Gobet and Dr. Guillermo Campitelli argue in an article called ‘Educational benefits of chess instruction: A critical review’. This article is discussed in Chapter 19 of this book.

Often, researchers do not explain, or do not explain clearly, what the contents, methods and time schemes are of the chess lessons they have investigated. Often, also, no distinction is made between boys and girls.

What is it in those examined chess lessons that causes all these different effects? Is it, for instance, the French Opening, the visualization of tactical variations, or the logic of rook endings? Or does a teacher’s empathy play a role, or perhaps the size of the group, or the cooperation between children? Or the fact that they are acquiring knowledge on either a weekly or a daily basis – or, on the other hand, that they do a lot of exercises? Are possible learning effects the result of intrinsic characteristics of the chess game, and/or are they a result of the way in which chess lessons are given?

What is talent?

There are various definitions of talent. It can, for instance, be used as a synonym for ‘giftedness’, which signifies that somebody is capable of performing well in a certain area.

In this chapter, talent is viewed in its denotation of ‘aptitude’, in other words: the potential to quickly and aptly develop cognitive, social, emotional and physical functions to perform a certain task.

The required potential differs with every task. For singing, running or playing chess, partly different functions are required – or to a different extent.

Chess makes demands on a person’s cognitive development. Memory is important, since the basis of chess thinking is pattern recognition. You have to perceive, judge, analyse, reason, visualize, think ahead, solve problems, take decisions, and make plans. It’s also important to be able to think from the perspective of the opponent.

Other important skills are concentration, patience, perseverance and self-control (do not capture a piece right away, maybe your own king will be mated).

In the denotation of ‘aptitude’, talent is a matter of ‘nature’, i.e. genetically determined qualities which are already present at birth. Besides nature there is also nurture, which is a generic term for all the environmental influences on one’s development.

Nature and nurture both play a role in the development of people. For instance, they can both be found in Prof. Elshout (University of Amsterdam)’s definition of performance ability as the resultant of talent, good training circumstances and motivation.

‘Aptitude’ is beginner’s luck, but is in itself not sufficient to develop good performance ability. Research shows that the quality of education and upbringing can make a 30-point difference in IQ-tests.

How to start young

You can start teaching chess as soon as a child shows interest. Interest can arise if children get acquainted with chess in a way that appeals to them.

Children may see a chessboard, or may see other people play chess, or may see a book with nice pictures, or a video. Role models can be an important factor. Infants like to imitate older children and adults.

Children are by nature curious and inquisitive. They want to discover the world.

Children are motivated to learn if they see the use of it for themselves, and if they can give shape to it themselves.

It doesn’t make any sense to force a child’s development – on the contrary, this has a contra-productive effect.

If, cognitively, children are not far enough developed to play chess, then it makes no sense to teach it to them. They won’t understand it, won’t enjoy it, won’t make any progress, and won’t have any success experiences. This is demotivating for them.

A baby is not yet able to walk or talk. To be able to learn certain things, the brain of a child has to have reached a certain level of development. The tempo of development differs per child.

Many children have to be approximately six years old before they reach the level of cognitive development that is required to learn to play chess.

A survey from the Dutch chess federation KNSB shows that it has several dozens of children under 6 among its members.

Examples

There are many examples of children who already play chess at three or four years of age. That does not necessarily mean that they will become top players later in life.

GM Loek van Wely took his chessboard with him to kindergarten. GM Susan Polgar was the under-12 chess champion in Budapest at four.

GM Roeland Pruijssers learned to play chess from his father when he was 3½ years old. The chessboard was put on the table seven days a week; 15 minutes in the morning, and 15 minutes in late afternoon. Henk Pruijssers taught Roeland according to the Steps Method. Starting at four, Roeland took part in tournaments; at five he won his first youth tournament.

Jutta Hempel (1960) from the German village of Flensburg was able to watch a chess game and reproduce it from memory when she was three. At four, she played games. At five, she was the best youth player of her home town. At six, she made a score of 9½-2½ in a simul against adults that lasted four hours. At seven, she could play six blindfold games simultaneously. At nine, she made two draws against an international master.

On the ChessBase website (http://en.chessbase.com) there is a story about the four-year-old Sparsh Bisht from India. When he was three years and ten months old, he saw his father playing chess on his laptop. He was interested, and learned the rules of the game within a week. Four months later, he was taking part in tournaments. In a local event for under-7 players he came second.

Grandmaster Samuel Reshevsky (1911-1992) belonged to the world top. He was born in Poland as the youngest of six children. At five, he learned to play chess by watching games played by his father. His parents let him play against club players, and it turned out that he was talented. From his sixth year onwards, he gave simultaneous exhibitions throughout Poland, and later in Europe. Eventually, the family emigrated to the USA.

The American Kayden Troff became World Champion under 14 in Slovenia in 2012. In a radio interview in the USA he told that he had started playing chess by looking at games by his father and his older brothers. When he was three, he indicated to them that he wanted to play too. Later, their father gave lessons to the sons. Troff himself doesn't consider beginning at a young age to be a deciding factor. It's primarily important how much time you spend on chess. He trained two hours every day from when he was six, four hours a day from his ninth, and six to seven hours a day from his eleventh year. His training sessions consisted of several items, and over the years this shifted. For a large part, he studied openings and middlegames, and he played a lot of games, also blitz. For longer games he often turned to the Internet, because there are not many strong players living in Utah. He analyses many opening lines with the computer, and gets homework from trainers, like making game analyses and reading chess books.

Many grandmasters started playing chess when they were five or six. To become very strong,

you don’t necessarily have to start very early.

The 13th World Champion Garry Kasparov joined a chess club at seven in a Pioneers’ Palace in the city of his birth, Baku in Azerbaijan.

World top player Levon Aronian learned to play chess from his sister when he was nine.

The American Paul Morphy (1837-1884) was ten years old when he learned to play chess. He grew out to become the strongest player of his time. In those times, ten years was a perfectly good age to start. Possibly, learning effects are less at a younger age, as in that period the brain has, cognitively, not far enough developed to analyse and reason about abstract things. It is imaginable that Morphy could even have become much stronger.

World Champion Magnus Carlsen learned to play chess when he was five, but at that point he wasn’t interested in the game all the time. When he was eight, he became more motivated and started playing chess seriously. At thirteen, he became a grandmaster. Carlsen has a good memory by nature, and has been able to concentrate well for long stretches of time from the first year of his life.

Two years

Two-year-old children can already show interest in the chessboard. This interest can be stimulated. You can give an own chessboard and (coloured) pieces to infants. You can use the pieces to build small towers with the child, or place pieces neatly in the middle of a square. While doing this, you can mention the names of the pieces repeatedly. You can also put the pieces in the starting position and take turns putting the pieces somewhere – at random: a rook moves from h8 to c5 just like that. As soon as all the pieces are standing in the middle of the board, the game is ‘over’. If you use a chess clock, it’s almost like the real thing. You can have the chess programme Fritz play a game against itself by pressing the space button of your computer in turns. It is possible that an infant will already show interest in the movie ‘Lang leve de koningin’ (= Long Live the Queen’) and in YouTube videos of chess-playing children or a chess-playing uncle. Looking at photos in a chess book or on a website is fun, too – certainly if the child recognizes people they know. A little later, a child might think it’s fun to put all the chess pieces on the board in the same array as they are standing in a diagram in a book. Colouring pictures with chess pieces is also a good idea, or playing with a garden chess set.

On her blog, GM Susan Polgar tells about her participation in the ‘First Congress on Pedagogics and Social Applications of Chess’ in the Spanish city of Buitrago. It included two lectures on chess in kindergarten, where infants from the age of two to five learn to play chess. She also told about a simultaneous display she had given in Venezuela, where the three-year-old girl Esmeralda Blanco turned out to know the rules of the game. One of the lectures was given by Adriana Salazar from Bogota, Columbia (a six-time Chess Olympiad participant), who demonstrated her teaching method in a workshop. She explained how she attracted the children’s attention during the chess lessons. Salazar starts by showing the chessboard in a fun way (a world of chocolate and vanilla), making use of songs. Her enthusiasm is an important factor. See the Spanish-language website www.ajedrezenelaula.com.

In Lagomar, Uruguay, chess lessons have been given at a kindergarten to two-to-five-year

olds for the past 25 years already. Chess teacher Esteban Jaurequizar said that the 200 infants get weekly chess lessons in the Centro Educativo Vaz Ferreira. With very young children, it is important to arouse their interest and then to keep hold of it. According to the chess teacher, a warm relationship with the pupils and continuous interaction are a few of the things that contribute to this. Lessons should be fun, exciting, and full of energy. Young children like fantasy worlds, and chess lessons should tie in with this. Therefore, it is important to tell stories, and to use words the children know. Jaurequizar said that giving instruction to infants requires continuous attention and a lot of energy.

Both teachers said that it is very important to present new information very slowly and systematically, piece by piece, and in a fun way (stories, songs, showing things physically).

Potential

Curiously, there are a number of children who perform extremely well at a very young age in the areas of mathematics, music and chess. Combinations of the three also occur – with boys as well as girls.

The eight-year-old Canadian girl Harmony Zhu became chess World Champion in her girls' age category in the United Arabic Emirates in 2014. She is not only good at chess, but also at playing the piano. As a seven-year-old she already performed twice in Carnegie Hall in New York.

Performance ability is probably connected with a knowledge basis of a great number of patterns that are commanded by these children. There are no 'prodigies' in areas that demand a great deal of life experience. It is also clear that there are always adults who are guiding such children intensively.

In his book *We Are Our Brains*, the Dutch neurobiologist Prof. Dick Swaab explains how the development of the brain already takes shape in the womb, and how, especially in the first years of our lives, social circumstances are strong determinants for the further development of the brain. The implications this may have for education is discussed by psychologist professor Jelle Jolles in his book *Ellis en het verbreinen*.

It is clear that in cultures and social environments where a strong appeal is made to learning abilities at a very young age, there will be many more people who perform at a very high level.

Children like to play. Playing has an essential role in the development and the learning of children. By playing, children discover the world around them, and they develop knowledge, insights and skills in social, emotional, cognitive (also, creative) and physical areas.

Playing stimulates the development of the brain. It is best to offer chess instruction as playfully as possible, especially to infants. Playing is not only fun, it is also necessary – for children as well as adults.

Children have a great developing potential. Maria Montessori claimed that by nature children also have a great urge for self-development. She summarized her view in her phrase 'Help me to do it myself'. Teachers have to recognize what the needs and the strengths of children are. They have to anticipate this by creating the right learning environment.

Biographies of successful youth players show that they were given a lot of room to

experiment and to develop their own insights.

For instance, teachers can present chess positions with a degree of complexity that a child will just be able to handle (zone of proximal development – Lev Vygotski). Explanation has to be brief and to-the-point. Too much information will distract a child's attention from the essence, and will restrain its imagination. By asking questions, a teacher can guide the child in its search for the solution to a problem. The child has to draw its own conclusions. By doing this, it develops insights and creative skills.

For children to be able to experiment and to learn to act independently, it is important that they be given 'maximum autonomy'. This means that they get freedom to act to the extent that they can handle it.

There are 'sensitive periods' in the development of a child. During these periods, a child is optimally able to learn something, like for instance a language. According to GM and psychologist Nikolai Krogius (*Psychologie im Schach*), chess players perform worse tactically if they learn to play chess only after their tenth year.

Developmental psychologist Jean Piaget distinguished four developmental phases in cognitive development, starting from the premise of a burgeoning potential within children. He took little account of stimulating environmental factors.

If children think differently in every phase, then they will also learn differently in different phases. The question is then what the optimal circumstances and teaching methods are in each developmental phase.

In any case, it is clear that the development of thinking moves from concrete to abstract. That is also the most effective order in which chess is taught to children.

Intelligence does play a role with chess, but this role is limited. This has become clear from research by, among others, Merim Bilalic.

More intelligent children learn faster, and highly gifted children often have other learning styles. But performance is mainly determined by training and motivation. If you are not motivated, then you will not train enthusiastically. If you don't get good training, you cannot learn much.

People identify and arrange realities with language. An interesting question is: what role does language play with chess and with learning chess? With language you can transfer knowledge, and make yourself familiar with it. With language, you can ask questions.

Parents play an important role in the development of their children. They enable their children to practice a sport by their financial support. Also, they have to do all kinds of things, like bringing the children to chess lessons and to tournaments. They exert emotional influence. This influence can be negative, if their demands on their children are either too high or too low.

Five out of six talented children stop with top-class sport between their twelfth and eighteenth years, as has been found in a research among young physical sportsmen by Van Rossum (Vrije Universiteit Amsterdam, 1991). Important causes are: not enough success experiences, the quality of training circumstances, a negative role played by parents, and social circumstances (like influence of peers).

It seems plausible that these causes will also be of influence on mind sporters, and on the motivation of young children.

Polgar

The Hungarian psychologist Laszlo Polgar starts from the premise that geniuses are made, not born. Gender differences don't play a role. Even before he and his wife had any children, Polgar wrote the book *Bring Up Genius!* (*Nevelj zsenit!*).

With his wife Klara, Laszlo educated his three daughters Susan, Sofia and Judit at home. At four, the girls learned to play chess. Polgar is convinced of the importance of early specialization. Education should start before a child's third year, and specialization should start at their sixth. Eventually, this will lead to a happy life.

By studying 400 biographies of geniuses like Mozart and Gauss, Polgar discovered that they had specialized at a young age, and had been supported by a motivated parent or teacher. Also, they derived a lot of pleasure from what they were doing. This was nourished by success experiences. He thinks that discipline is vital, to teach the child to develop perseverance. Talent (aptitude) does not play a role in his opinion – the determining factor is intensive study with a good method and good trainers. Children have an enormous amount of energy, and this is usually badly utilized. In this context, he thinks it is important for children to be the 'co-author' of their own development. This means that they are motivated by success experiences, and they also put some thought themselves in what they are doing, and why.

In Polgar's opinion, if a child specializes at a young age, a transfer takes place, and then the child can also learn quickly and in a structured way in other areas.

Polgar thinks that his theory can be applied to any other learning domain. Because Susan showed an interest in chess when she was four, the choice fell on that game. An additional advantage of chess is that performances are objectively measurable with the Elo rating system.

When she was nine, Judit, the youngest of the three daughters, beat five opponents in a blindfold simul in New York. Judit became a grandmaster at fifteen, and her eldest sister Susan, at 21, became the second female grandmaster after Nona Gaprindashvili. The middle sister, Sofia, became an international master.

In 1988, the Hungarian women's team won the gold medal at the Thessaloniki Chess Olympiad. The team consisted of the three Polgar sisters and Ildiko Madl. Judit had just turned twelve. On second board, she scored 12½/13 with a Tournament Performance Rating of 2694. Susan (first board) and Sofia (third board) also won gold medals for the best board scores.

At twelve, Judit also reached 57th place in the FIDE world rankings, and at nineteen she even made it to the top ten. In 2002, she defeated World Champion Kasparov in a game with a classical time limit. In 2004, Judit was eighth in the world rankings, and attained her highest rating ever: 2735.

When Laszlo Polgar started his experiment, he was faced with a lot of opposition by, among others, the authorities. People feared for the social-emotional development of the girls. Thanks to social media like YouTube, anyone can now see how well the three sisters have fared.

Performance ability

From biographies of the Polgar sisters (the book *De Polgar-zusters of: de creatie van drie schaakgenieën* (= *The Polgar sisters, or: the creation of three chess geniuses*) by Ed van Eeden) and the American Joshua Waitzkin (the book *Searching for Bobby Fischer* by Fred Waitzkin) we can derive a number of determinants that influence the performance ability of young chess players:

- Stimulation of early learning experiences
- A stimulating learning environment
- Setting high but attainable goals
- Learning in a playful way
- Making children self-confident at a young age
- Much variety in exercises
- A systematic teaching approach
- A realistic assessment of developing potential and capacity (versus overburdening)
- Don't project excessive expectations on children
- Don't under-burden children
- Recognize the limitations of the regular school system
- Qualified and empathic teachers and trainers
- Let children draw their own conclusions during learning processes
- Putting success experiences into proportion
- Developing perseverance step by step
- Accepting that children will inevitably make mistakes
- Put trust in children's intrinsic motivation
- Take children seriously
- Take personality traits and developmental phases into account.

Nowadays, children are able to develop better and more quickly as experts than before. More is known about didactics and coaching methods, there are good, affordable chess methods, and there are specialized trainers. The computer and the Internet offer a lot of information that can be used during training sessions. Moreover, there are many tournaments in which children can gain experience. Also, worldwide there are persons, organizations and governments that offer financial support to youth players who are performing well.

Chess didactics

Didactics is the art of teaching. This can be done in many different ways. All kinds of aspects play a role with teaching – naturally, also when you teach very young children. To name a few: learning goal, age, learning style, learning capacity, expectation patterns and (lack of) support by parents, empathy of the teacher, group processes, role models, the structure of the learning material, fantasy, providing the right amount of information and adjusting to the developmental level, adjusting to the frame of reference and interests, learning alone or with others, (lack of)

success experiences, feedback, self-image, degree of structure in the teaching method, short attention span, frequence of learning moments, little explanation and lots of action, language use of the teacher, asking questions (formulating answers develops your thinking), playful material, playing methods.

Children differ in their speed of development, speed of understanding, and interests. The task of a teacher is to estimate which methods catch on with some children, and which catch on with others.

It is important that a teacher is enthusiastic and empathic. He can employ a multitude of methods, but it is important that a systematic build-up of knowledge, insight and skills is taking place. With a varied supply of games, learning will remain enjoyable, and knowledge and insight will be gained.

Teaching four-year-olds can work fine, provided that it happens in small groups with children of the same level.

A good teaching method moves from simple to complex. This applies to knowledge as well as to the training of skills.

Do it slowly, train something more than once if the subject is not clear. Repeat a lot – this will enable knowledge and skills to embed themselves in the children's memory. Limit yourself to brief explanations, and above all let the children do and try out many things themselves. Explain one thing at a time, and start training on that subject. Ask many short questions ('What can you do', 'Why are you doing this'), listen carefully to the answer, and correct your pupils with tips and further questions.

There is no sense in teaching new knowledge if the already acquired knowledge is not being used yet. That doesn't mean that a child needs a full year to finish a part of a course. What is a year? There is a difference between a weekly 30-minute lesson with a large group of children, and several lessons per week with a small group and a good teacher. Moreover, children differ, for instance with regard to motivation and learning ability.

In their chess development, children go through various phases: material, space, time. They understand simple and concrete matters sooner than complex and abstract matters.

What a child can handle depends on its cognitive development: how far has their brain developed, and what have they learned already?

It is possible to a certain extent to stimulate a child's development. Forcing things has no sense, and has a frustrating effect.

A board full of pieces is obscure for children. It makes no sense, and can have a demotivating effect, if anybody tries to teach them to play chess at too young an age. Mini-chess with a single piece and a few pawns is a perfect alternative. You can also start with a rook (which moves straight) and a bishop (which moves diagonally). You can take turns making moves. Who will capture the other first? Material balances are difficult for young children. In the early stage, you can skip these. If one side captures a rook and the other a bishop, at least both of you have caught a piece.

Naming squares is difficult. You can make a game of it: does your house have an address? Squares also have an address. You can find it if you look at the letters and the numbers next to

the board. Let's try it together.

Be careful with terminology. Infants don't understand what 'developing the pieces' means. But you can explain that 'all your friends want to join in the game'.

Children learn best if they enjoy what they are learning.

They enjoy learning if they understand what it's about, if there is a challenge, and if the new knowledge they are presented with connects to their level.

It is also important that children learn in their own tempo. If things go too fast, they won't understand what it's about. If things go too slowly, they will get bored.

Young children mostly make their moves very quickly and impulsively. It's no use asking them to take more time to think. What should they be thinking about? Give them something to think about. For example: first look what your opponent can do – what is his best move?

If this works, then you can give them another task: think of two good moves, and choose the best one.

Show moves on the board, and verbalize what is happening. Give direction to their thinking and playing by asking questions.

By giving feedback to a child, you give it information about its performance. Good feedback puts the accent on effort. Bad feedback puts the accent on results ('you've lost') or on the person ('you can't do it').

Young children are often unable to concentrate for a long time. They mainly want to play. It is important to present knowledge briefly and concretely, and train immediately with the material in the form of different games. Variety in the methods is important.

Do not stick rigidly to a lesson as you've planned it beforehand. Perhaps one of the children will ask a question about a certain subject. React to such questions. Perhaps the weather is much too hot for serious explanation, and it's time to play games or watch chess videos.

Take into account the degree of complexity of the knowledge you are offering to children. Observe carefully how children react during a lesson. If their attention fades, you, as their teacher, are doing something wrong.

Take care that children are sitting straight behind the board, otherwise they will not be able to get a good view of what is happening.

For a young beginner, mating the enemy king means doing a lot of things at once: you have to know how the pieces move, you have to have space orientation to see which squares are 'taken from' your opponent's king, and then you also have to understand that, for example, the king is not able to take the piece.

There is a distinction between playing games and solving positions (diagrams).

When playing games, you have to think divergently, you have to find solutions yourself, to achieve a good result – like with a mini-game.

When solving diagrams, you have to think convergently: find the correct solution – like with tactical exercises.

Don't explain information to children by using a demo board or a digital blackboard only. Have them carry out the moves on their own boards in duos. Then they are also able to try out

moves on their own board. Also, they will be able to channel their physical energy.

You can also make diagrams on a sheet of paper and let children indicate how a piece or a pawn moves with arrows. Free diagram generators for teachers can be found on the Internet.

Teaching material

Varied teaching material for young children is available – like mini-games, CD-ROMs, apps, booklets and websites.

The list of sources on my website www.chesstalent.com gives a number of websites with information.

CHAPTER 4

Organization of a school chess club

In this chapter we present, one by one, a number of points of attention that are useful when you want to organize a school chess club.

The advantage of checklists is that you keep a good view, and you won't easily forget anything. Also, it makes it easy to evaluate afterwards. If you are working together with several other people, it makes it easier to allocate tasks.

The basis of each checklist is: who, what, where, why, when and how.

Why

- Chess is fun.
- Chess is good for your personal development.
- You will make friends.

Ambitions

Chess is for everybody: for children who want to have fun playing a game, and also for children who want to become good chess players. The club offers activities for all of them.

Mentality and behaviour

- The motto of the World Chess Federation FIDE is 'Gens Una Sumus' (We are one people). At a school chess club, everybody respects each other, and everybody helps. And you can only play chess properly if it is quiet.
- We all adhere to the rules – otherwise you have to leave.

Organization

- One adult who coordinates
- A clear plan on paper of organization, lessons and activities
- Attention for structure (organization) and culture (stimulating atmosphere)
- Tasks: who is responsible for which task, e.g.: coordination; secretary; administration; finances; sponsor-finding; teaching; guest lessons; head of competition; tournament organizer; tournament staff; arbiter; publicity; PR; website; small bar; transportation; supervision of teams; welcoming new members; contact with parents; discussing games with children; making photos/videos; etc.
- Impediments: individualization (children's ties with clubs tend to be less strong); alternatives (Internet); teachers have many tasks and don't much fancy extra activities; volunteers for teaching and organization are hard to find (busy, not inclined to tie themselves); it's hard to find a driving force (a coordinator who keeps a good overview and stimulates)
- Solutions for impediments: a clear plan/scenario; allocation of tasks in bite-sized chunks;

enjoyment; hire a teacher/coordinator; clear, inspirational communication. Brainstorm (looking at problems from a different perspective: search for another angle, turn limitations into possibilities).

Acquiring inspiration and knowledge

- Visit another school chess club to watch and gather ideas
- Search information on the Internet
- Website of your national chess federation
- Books and websites.

Creating a chess culture

Chess sets at school for play during breaks; showing chess movies; computers with chess programs; simul during the break; etc.

Finances

- If there are expenses for the club, find sources of income via school (subsidy) and/or parents (contribution)
- Possible expenses: teacher, chess materials, educational tools, activities.

School

Support from the school management and teachers (they see the use; put a room at your disposal; purchasing chess materials).

Parents

- Make an inventory of parents who want to do something, and of the ideas they have.
- Let parents join in the lessons: potential teachers or contributors; help with keeping order.

Support

Are there any chess players who want to help now and then? (giving simuls; discussing games, possibly individually or in small groups) E.g. club members, older youth players, parents, other family members, teachers.

Cooperation

- Exchanging experiences with other school chess clubs, competition of schools, match, tournament
- Cooperation with a chess club: the club provides a trainer, the most motivated children become members of the club
- Intervision with other chess teachers.

Membership recruitment

- Recruiting participants: posters, flyers with information about content and practical matters

- Warm-up meeting with explanation about the school chess club and an activity (simul, blitz)
- Ask children to bring their friends. You can always come by, to take a look and join in.

Communication and promotion

- Communicate in a clear way with all those involved; be accessible and approachable
- Mention the advantage of learning chess in recruitment utterances
- Communication through own website, social media, school chess website, flyers, oral contact, email, newsletters, posters, press releases, or a notice board
- Flyer with tips on playing chess by oneself (websites, computer, CD-ROMs, advice)
- Ask for permission when you publish photos and videos.

Materials

- Pieces, boards (with coordinates)
- Chess clocks
- Demo board
- Computers and digital blackboard
- Scoresheets (also on A4 format)
- Sort the materials: if things look messy, this will cause unrest
- A fixed place to store material
- Children help with setting up and clearing up material.

Lessons room

- Lessons will go much better if practical matters have been arranged properly
- Enough space, lighting, oxygen, furniture, quiet
- Set-up of tables: everybody has to have a good view of the demo board or the digital blackboard.

Instruction

- Chess teacher (chess knowledge, didactic knowledge, empathy). Who: school teacher, parent, grandparent, club member, older youth player? Volunteer or hired hand? A professional provides continuity and quality
- Weekly chess hour, calendar, which day, times
- Teaching goals: 1) Knowledge, insight, skills; 2) Attitude, fascination; 3) Learning how to occupy yourself with chess
- Group size in the lessons, level of the participants (preferably homogeneous)
- Establish the level of the participants (e.g. by asking questions, testing with diagrams), make a division into groups
- In case of a single group with diverging levels: divide into small sub-groups
- Only allow motivated pupils

- Order; adopt the school rules
- Ask the school for any special details about children (ADHD, medication, etc.)
- Tables for pupils in U-form or in rows are both possible (good view of the demo board)
- Teaching method: explanation, training, playing
- Components of a lesson: question round, tactics, discussion of a game, varia, playing games
- Lesson material: e.g. accounts for online tactics exercises and a small textbook
- Working towards certificates or not
- Year plan for lessons (list of subjects and methods)
- For each lesson, make a plan on paper and prepare the content (what are you going to do, and how)
- Make a report after each lesson
- Active role for children (e.g. talks, operating the computer, keeping account of names on the list)
- Evaluate with children every now and then (good ideas, commitment, self-reflection of teacher)
- Homework: no exercises (teacher would have to check these, the feedback is much later, so it won't come across); rather, stimulate pupils to play chess themselves (e.g. playing games on their own, mini-games, chess websites, Tandem chess).

Competition

- Competition: make pairings (on a laptop with free-of-charge Sevilla program), hang up rankings
- Possibly: prizes
- Possibly: supervision of the competition by a parent if the teacher is giving instruction to a part of the group
- Small, homogeneous groups (this gives a good chance of success experiences)
- If possible, notate the games and discuss them later in a lesson (full games or positions)
- If possible, record games with a DGT board. The teacher can make photos of interesting positions.
- Game rules can be found on the websites of national federations and World Chess Federation FIDE.

Extra activities

- Guest teachers
- Mini-games tournament
- Visiting tournaments (inform children about regional youth tournaments)
- Matches against other schools
- Taking part in a competition between schools
- Duo tournament (adult + child)

- Simuls for members by the strongest players of the school
- Simuls for members and non-members (pupils, family members, teachers, local residents, etc.)
- Local, regional and national championships
- Etcetera (ask for ideas, look what others are doing, see the Alphabet of Methods in Chapter 21 of this book).

CHAPTER 5

Organization of a youth tournament

When you organize a school chess tournament, you have to think of a great number of practical matters.

You can divide the below list into lists of activities before, during and after the tournament. Some of the activities (e.g. publicity) you do both before, during and after the tournament. You can make a scheme in which you fill in 'who, when, how' for every item.

In any case, it is always handy if there is a coordinator who keeps a good overview of things.

A detailed scenario for a tournament can be found in the book *Developing Chess Talent*, which I wrote with my son Merijn van Delft.

- Date
- Location (rent a venue)
- Organization work group
- Scenario on paper, allocation of tasks
- Budget, treasurer
- Sponsor(s)
- Publicity, press releases
- How many computers, printers; operation, transport
- Insurance
- How many players?
- Which age categories or level groups
- Invitation policy, maximum number of participants
- How to enrol
- Cost of participation
- Prizes; a small present for all the participants
- Registration, entry on tournament day
- How many rounds, time control
- Setting up the furniture in the room
- Numbering boards
- Playing materials (boards, pieces, clocks)
- Pairing system (Swiss or round-robin), pairing program
- Arbiters, match rules, tournament rules
- Forms (pairings, results, result forms)
- Microphones for announcements
- First Aid
- Organization room

- Accessibility per phone and email address
- Box with organization materials (adhesive tape, scissors, USB stick, pens, etc.)
- Internet connection to own website
- Recreation room
- Who opens the tournament?
- Badges for staff
- Bar (food, drinks)
- Who does the prize-giving?
- Cleaning up of the playing hall.

CHAPTER 6

The role of parents

Chess can have many benefits for children, but only if you use it correctly. Parents have a lot of influence on their children's lives. They can offer possibilities, and they are role models. On the other hand, parents' influence can also be destructive for the personal development and the chess development of children.

What can you expect from a child? Was the upbringing and the disciplined chess training of the Polgar sisters immoral? Or would it have been immoral if the sisters hadn't received a challenging upbringing, education and training? Do we have to allow children to 'be children' and allow them to stay glued to their smartphones for 17 hours a week?

Use 'sensitive periods' in a child's development. When children are older than ten, it is harder for them to learn things in many cases. Children can handle a lot (under the right conditions).

Laszlo Polgar claims that we have to let children be the 'co-authors of their upbringing'. Chess development and personal development can reinforce each other. Stimulate the commitment of children to the direction of their lives; where possible, make children co-responsible for tasks and for their own behaviour. Ask children: 'What do we do, and why?'

What are chess contests and trainings about? As GM David Bronstein said, 'Researching, developing possibilities. That's what chess is about.'

Always keep a good balance between results, enjoyment, and learning.

Talent is a combination of inborn qualities enabling one to develop certain skills. Talent can be developed, or not. A child's IQ, for instance, can be raised by 30 points with a better quality of education and upbringing.

There is a difference between intrinsic and extrinsic motivation. Intrinsic motivation arises from inside (fascination). Extrinsic motivation arises due to a reward from outside (not enduring).

Damaging for motivation are: peptalk (empty slogans), feedback aimed at the person or at a result (instead of at the effort that was made), an excess of external rewards (a trophy is nice, but fascination is the motor of continuous development).

There are various things parents do better to avoid:

- Setting challenges and demands too high (parents often project their own ambitions on their children).
- Setting challenges and demands too low (make an agreement with your child: we are a team, I'm driving the car to tournaments and you do your daily tactics, even though sometimes you don't feel like doing them).
- Looking at your child's board all the time.
- Telling them immediately after the game where they could have made better moves.
- Participating in gossip circuits.

There are various things parents can do to support their child:

– Think about your role as a parent, and about your behaviour.
– Show empathy: understanding and support.
– Create a stimulating environment.
– Discuss activities and experiences with your child, allow them to draw their own conclusions where possible.

All people have their own preferences, prospects and circumstances. Make your own jigsaw puzzle with regard to the development and the coaching of your child. It helps if you sometimes look how other people do things – you can learn from others.

Talent development has many aspects. How to deal with those?

– Write down catchwords about relevant aspects and put them in a schema or a mindmap.
– Develop behaviour routines.
– Make a training programme.
– Evaluate regularly.
– Read about talent development and exchange experiences with others.

Coaching and education (upbringing, schooling) are sometimes difficult. You don't always have a good answer to a question or a problem, for instance with regard to your double role as a parent and a coach. It sometimes happens that children do not listen to good advice. In such cases, there is a trick you can use. Ask your child a question about a problem ('what would you do?') and give it time to think about it before answering. Or ask a teacher or trainer to explain something to your child, if your child doesn't accept it from you.

Polgar and Waitzkin used a number of educational principles, which are important both for the stimulation of ambitious youth players and for their personal development. See also Chapter 3.

CHAPTER 7

Chess as a metaphor for life according to Moreno

What you do on the chessboard, you can do in your life too. Chess is regularly used as a metaphor for life. Garry Kasparov published a book titled *How Life Imitates Chess* and Peter Kurzdorfer wrote *The Tao of Chess*. The American chess trainer and psychologist Fernando Moreno also sees possibilities to use chess as a metaphor for life. Using chess, he teaches young people to develop their social-emotional and cognitive skills. Thus, they get a view of, and a grip on, themselves and their lives: Chess for Success.

Moreno is the author of the book *Teaching Life Skills Through Chess* with the subtitle 'A Guide for Educators and Counselors'. The publisher is American Literary Press, Inc. (2002). As said, the book is about learning life skills through chess, and it is a guide for educators and 'counselors', which, depending on the context, can be interpreted as consultants, mentors, coaches, or therapists.

Moreno has done an excellent pioneering job with this book. So far, little scientific research has been done on the therapeutic value of chess for learning social skills. Moreno aims at young people in backward or problem situations. By descent he is a Spaniard, and he is bilingual. Many young people in his target group are Afro-Americans or Hispano-Americans.

Language

In his book, Moreno refers to a story in which the origin of chess is sought in India. Two kings were searching for a game with which they could fight each other in a peaceful way. The game *Chaturanga* was devised, which is a predecessor of today's chess. In our time, chess has been spread all over the world, and, to quote Emanuel Lasker, it is an international language.

This provides points of departure for mutual understanding, Moreno claims. Although people come from different cultures and speak different languages, on the chessboard they can communicate by playing according to the universal rules. People of different origins can exchange their ideas on the chessboard. Chess is a common language, and contacts via the chessboard can lead to mutual understanding and appreciation. Thus, chess is a bridge between diverse cultures.

Self-image

Moreno thinks that chess stimulates the functioning of the brain, and thereby contributes to intellectual emancipation. Certainly for young people in backward situations, success experiences on the chessboard contribute to a positive self-image.

He tells the story of the 'Royal Knights', young persons from the East Harlem ghetto in New York. The boys originated from many different countries, and they threatened to drown in the new culture that they didn't understand. They were taught English as a second language by the teacher Bill Hall. He managed to awaken an enthusiasm for chess in them. In 1987, they formed

a team and took part in the National Junior High School Chess Tournament. Later, the team, supported by a sponsor, was even the first American school team that went to the Soviet Union to play matches there. Chess motivated these boys to make something of their lives. They broadened their social horizon enormously.

Moreno claims that learning to play chess has a positive influence on a person's decisiveness and his ability to deal with problems and challenges. Moreno ascertains that many boys in socially backward situations are not taken seriously by teachers in the USA. They are seen as stupid, and obviously this often functions as a self-fulfilling prophecy.

As their mentor, Moreno taught a number of such boys to play chess. This gave them more motivation, and led to better school results. As a result, their teachers got a more positive impression of the boys and approached them in a more positive way.

School teaching plan

Since chess can play a role in improving cognitive and social skills, Moreno advocates including chess in school teaching plans. Of course, it is fine to establish school chess clubs alongside this, and point the way to chess clubs to young people.

With cognitive skills he means, among others: weighing alternatives, making decisions, conditional thinking (if this, then that) setting short- and long-term goals, overlooking the consequences of your actions, and applying rules.

With social skills he means, among others: self-discipline, waiting your turn, having a positive self-image, taking responsibility, coping with defeat, showing respect for others, and sportsmanship.

Chess also teaches to children that you can achieve something intellectual if you make an effort for it. This may seem normal, but it is not something that is seen as self-evident in socially backward environments.

Moreno points at publications by Dr. Robert Ferguson which show that children develop their social and thinking skills with chess, leading to better learning performances in a range of fields, from arithmetics to linguistics.

It has to be added that possibly not only brain functions are developed, but also (or: alongside this) children receive more attention through chess lessons, with the result that they become more motivated to learn.

In my own research, I have found a connection between chess and arithmetics, but not between chess and linguistics ('Chess as a subject in primary school?', Karel van Delft, 1992, University of Amsterdam).

Self-control

In his book, Moreno explains the game of chess. The game is played by two players who make moves in turns on a board with 64 squares. Each of them has 16 pieces and pawns at their disposal. The aim of the game is to give mate to the enemy king. During the game, a player has to find the balance between protecting his own king and attacking the opponent's king. In

everyday life, we make use of skills and tools. It is the same on the chessboard. The way we use our skills and tools determines the difference between success and failure. Just as we have to take circumstances into account in everyday life, in chess we have to reckon with our opponent. You can influence your fate by making the right moves with your pieces and pawns. This also involves keeping your feelings under control.

You can learn self-control by reflecting on your behaviour and talking about it with a teacher and with training partners. Next, you must practice it. This is also the rationale behind the Apeldoorn Analysis Questionnaire (by Dharma Tjiam & Karel van Delft, see my book *Developing Chess Talent*).

Through chess, a teacher can give both intellectual, social and emotional attention to young people, Moreno claims. If these aspects go hand in hand, then pupils will become optimally motivated. After all, they are being taken seriously, and they are presented with interesting challenges.

It is these intellectual and social aspects that form the basis for Moreno's method. He has applied this method at a number of primary and secondary schools. It teaches pupils to improve their decision-making. Also, they develop social skills that enable them to cope with frustrations and conflicts. Moreover, it has a positive influence on their self-control, their self-confidence and their self-image.

Cognitive behavioural therapy

Theoretically, Moreno bases his model on what he calls cognitive behavioural therapy. The starting-point here is that learning social skills lays the foundations for social and intellectual development.

Via his method, young people learn to convert intellectual and social-emotional skills which they use in chess into skills they can use in their daily life. One of these skills, for example, is 'self-talk': just as you reason out the options in a chess position, in the same way you can also deal with difficult circumstances in your life via self-talk.

It is also important to oversee the consequences of an action, and to recognize the perspective of others, before you make a decision.

Moreno emphasizes that social-emotional skills are necessary to be successful in life. You cannot be successful with intellectual skills only. In conversations with educators and mentors, Moreno often notices that they have difficulty using his method because they are not good at chess. He claims that it is not necessary for them to be very good at chess. Teaching social skills is important, not training chess players to become champions. The process is more important than the result on the chessboard.

Knowledge of the game is necessary, but as a teacher you can embark upon an adventure together with pupils, and discover the secrets of the game together. Moreno makes a virtue of necessity: if, being the teacher, you indicate that you are not a good chess player, and you sometimes feel uncertain, this will be a good basis for an open communication with your pupils. This will break the ice, since pupils, in turn, are often uncertain about what a teacher expects from them. They appreciate it when a teacher takes an open stance.

Many people think that chess is complex, Moreno says, because it has been explained to them in a wrong way. His advice is to start with a single piece instead of a full board. Of course, the Steps Method by Dutchman Van Wijgerden is an excellent method to master the basics of the game quickly and adequately. This method comprises explanations of themes and exercises. An advantage of this method on DVD is, moreover, that it provides direct feedback on the exercises made.

Made-to-measure

Moreno rejects the idea of a standard method of using chess for advisory conversations. He claims that each mentor and each pupil is unique. This requires for the contact to be made-to-measure. Each mentor has his own style, and each pupil comes with individual needs and specific problems.

In his book, Moreno describes a number of general principles and techniques he has used himself. Sometimes he also uses them in combination with a role play or traditional play therapy. Chess as a tool for therapies is not a magic potion, but the method proves to be workable in situations ranging from children from backward situations to highly gifted children – from pre-school children to secondary school pupils. And also in diverse contexts: from drug use and domestic violence to motivation problems, a negative self-image and conflict situations with fellow pupils.

Obviously, the goal of counselling conversations is the first matter of importance. The idea is that the mentor uses chess positions to reflect real-life situations. By discussing these positions, the mentor gains insight in the pupil's thoughts and feelings. Also, he can transfer insights by using certain sample positions. It is clear that the experience and creativity of the mentor or therapist play an important role here. Just as there are recurring themes in chess, young people have problems that occur more often in their lives. But just like the circumstances on the chessboard may differ, people also differ in their personalities and personal circumstances.

It is up to the mentor to form a picture, and to make a plan to teach the pupil to deal with his problems. In other words: what matters is a view (of the problem) and a grip (on the solution).

Some young people have trouble putting their feelings and thoughts into words. They are not apt at this, and/or find it threatening. Using a chess position to represent a situation is much less threatening. In Moreno's experience, young people start talking more easily after some time during the discussion of chess positions.

Plan

Moreno repeatedly keeps drawing parallels during his chess trainings. Just like chess pieces have different functions in different positions, people are also different in their talents and their behaviour. A knight and a bishop are different, but they are of equal value. Just like your move influences what your opponent will do, in the same way your behaviour also influences the way another person reacts. Just like you have to think of a plan and make decisions in a chess position, in the same way you have to assess situations and make decisions in your own life too. Every plan in a chess position has a goal. What is your goal in life? In the same way that you can

analyse a game and learn from that, you can also learn from your experiences in your own life.

This method can be used for individual counselling and in group sessions. In groups, for example, you can analyse positions and thereby learn to cooperate, form an opinion, and learn to listen to other people's ideas.

One method is, for example, to have duos play against each other. The counsellor observes and, obviously, only gives constructive feedback. Moreno walks around and stops a game if he sees a position illustrating a certain principle. One principle that often applies is, for instance: 'think before you move, and look at the consequences. What is your intention?'

It is important that young people play against opponents of a similar level. This way, they won't often lose, and they will gather success experiences. Moreno also lets some of his pupils explain positions to other pupils. This allows them to acquire social skills, and allows their self-confidence to grow.

Sometimes a weaker player plays with rooks and pawns, while the opposing side has bishops and pawns. This gives the rook side more chance to have a success experience. To the objection that this is 'not fair', he replies that life itself often isn't fair, but you have to make the best of it. Grab your chances, one of those little pawns can also grow to be a queen!

Learning

In his lessons, Moreno emphasizes that learning the game is more important than gaining a point. He also discusses what pupils feel when they are making decisions, and how this influences their concentration. Of course, these conclusions are also intended to apply in real life. In real life also, the way you feel influences what you do. And what you do has consequences.

When he has groups of four young people playing against each other, Moreno observes how they consult with each other. He doesn't accept it when one of them blames someone else for a bad move. Everyone has to think for himself, and is responsible for his own standpoints and decisions. You don't have to accept a bad move indiscriminately, just as you don't have to use drugs because your friends are doing it. And you don't have to join in when someone is being bullied: you don't have to play bad moves because others play bad moves too, do you? Think about it!

It is important to learn to cooperate with other people. Have you ever seen a chess game in which a player won by playing with one piece only? If we forget the Fool's Mate for the moment, that's a difficult one.

Young people with a bad command of English are presented with a comparison of the queen with rook plus bishop. The rook can move straight and the bishop, diagonally, but the queen can move in both ways. Similarly, if you speak both Spanish and English, you have many extra possibilities.

Of course, the teacher is not just rattling off a lesson. He connects to existing problems, and to his pupils' frame of reference. One of them can't concentrate, another is not good at listening to what other people say. Nobody is perfect.

Besides positions from games played by pupils, the teacher can also present positions in

which the pupils can recognize a certain theme. What you discover by yourself, you will understand better.

If a child does not take account of others, Moreno sometimes makes a move that goes against the rules of the World Chess Federation FIDE. If the child then protests, it's 'Bob's your uncle' for the trainer: 'But you don't play by the rules in class either, do you? This is no fun anymore. But if you go by the rules, you can learn something, and it's fun too.'

At another moment, Moreno may suggest a wrong move. If the children follow his advice, they will notice that this move loses the game. He rejects their criticism: you have to think for yourself. So, on the one hand you have to think for yourself, and on the other hand you have to have consideration for others. Sometimes also there are advantages and, at the same time, disadvantages in a position. That makes things complicated. Just like in real life!

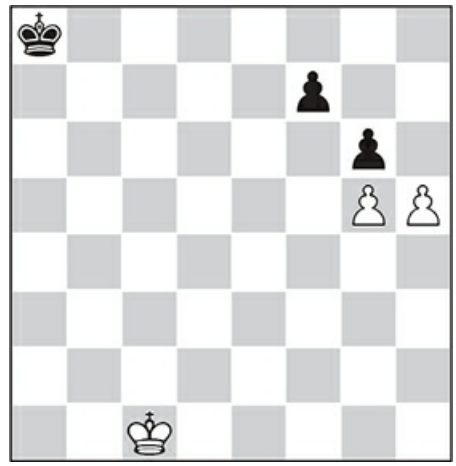
Locus of control

Psychologists talk about the 'locus of control': are you yourself responsible for what you do, or do you project the reason why something happens on others?

Children whose parents are addicted to drugs often feel responsible for the situation, and are insecure. In a chess game, you are only responsible for your own pieces. You are not responsible for what your opponent does. If you use your own pieces well, you stand a good chance to win the game. But do mind what you are doing, because if you let go of the piece, you have made your move. Sometimes you can also avoid misfortune if you anticipate, and make a move that prevents certain moves by your opponent. With a good strategy, you can solve quite a few problems, and achieve your aims. And also in real life you can use thinking strategies to solve problems.

Of course, life is difficult when you come from a backward situation. But just look at the pawn. It is very small and insignificant. However, if it has a good plan, and uses its chances well, it can reach the other side of the board. And then it can turn into any piece it wants to. And you can also become anything you want in life.

Naturally, his pupil, Abdul, was right when he wondered whether it wasn't a bit unfair that White makes the first move. Well, Moreno remonstrated, it's the same in the real world. So, do you resign immediately if you are black, or do you try harder?



Solving conflicts. How will you achieve more: by capturing the pawn, or by pushing it?

CHAPTER 8

Chess, intelligence, and teaching highly gifted children

This text is an adaptation of my article on chess lessons to highly gifted pupils on ‘Leonardo schools’ in the Netherlands. This umbrella organization no longer exists. The article appeared on the website of the Max Euwe Centre (2011). In the Netherlands, there are still classes for highly gifted pupils, where chess is part of the teaching plan.

Why and how is chess being taught to classes for highly gifted pupils? What is the relation between intelligence and chess? What is a good teaching method? Which practical experiences have been gained? Has there been any research on chess lessons to highly gifted children? Is chess useful because it has cognitive transfer effects to other areas of learning, or is it perhaps rather an excellent tool to develop social and emotional skills? Or, rather, are there any meta-cognitive transfer effects (learning to think)? To what extent is the Dutch Steps Method useful as a bottom-up method in an educational system that favours top-down learning?

In my search for answers to these questions, I have done some library research (in the Dutch-, English- and German-speaking regions) and I have observed chess lessons on three Leonardo schools. I have held correspondence and conversations with chess teachers and scientists. Also, I have conducted an inquiry among eighteen chess teachers at Leonardo schools. Besides, I draw from my own experience as a chess teacher of highly gifted children.

Highly gifted

Highly-giftedness is often defined as: an IQ above 130, creativity in inventing solutions, and perseverance in task performance (after a definition of highly-giftedness by the American psychology professor Joseph Renzulli).

Special education for highly gifted children (two percent of all children) is important, since these children often get stuck in regular education. Only one in six finish a university study. They think differently and faster than their peers, and often function emotionally and cognitively at different age levels. Lack of understanding and acceptation by their environment often leads to sub-optimal performance as well as social and emotional problems. Often, these children cannot fulfil the requirements of the educational system (for example, learning small facts by heart). Moreover, they are often pigeonholed as ADHD because of their deviant behaviour. This behaviour disappears in most cases if they are enabled to develop their talents in an environment with equals in development.

Just like other children, highly gifted children need safety, acceptation, a positive self-image and a stimulating living and learning environment.

Highly gifted education offers regular subject matter in a more compact way, and accelerated, in the pupils’ own tempo, in a challenging learning environment. There are extra compulsory subjects like science, philosophy, drama, Spanish, and also chess. Partly because of these extra compulsory subjects, the children develop a versatile, enterprising, and investigative attitude.

Where in regular education teaching is often bottom-up (from elements to the whole), highly gifted education is often top-down (starting from the aim, and the whole), and what pupils learn is based on insight.

Highly gifted education is currently in the pioneer phase. There is still a lot of demand for suitable educational methods. These are being partially developed by co-creation between teachers (exchanging insights, experiences and methods).

How to give chess instruction?

An important question is: what is the best way to give chess instruction to classes of highly gifted children? In practice, chess teachers are trying to find their own ways.

If you only use lessons and exercises of the, in the Netherlands, often-employed Steps Method, then we speak of a 'bottom-up' method. However, highly gifted education advocates a 'top-down' approach. There is a field of tension here. This gap can be bridged, among others, if teachers study the manuals by Steps author IM Cor van Wijgerden (see 'Steps Method' in Chapter 21). He provides considerations that are worthy of attention, and practical methods which are also applicable to highly gifted education.

During a personal coversation, Cor van Wijgerden claimed that his much-employed Steps Method is often applied too rigidly. Themes are explained, exercises are made, but many of the didactic considerations and pieces of advice by the author are applied only sparsely.

Structure of my chess lessons

I give chess instruction to highly gifted children myself, starting from the idea that chess is a metaphor for life, a game of possibilities and limitations.

Each of my lessons starts with a question round, allowing the children to tell which chess experiences they have gained in the preceding week. This regularly leads to spontaneous short two-minute talks about, for example, Tandem Chess, Internet chess, or a chess computer. Books borrowed from the library and family tournaments organized by the children themselves are also mentioned.

The next items are: doing exercises, explanation, and the children playing games or mini-games. Many different subjects and methods are used.

Children don't get any homework, but they do get tips on how they can occupy themselves with chess.

While the children are playing chess with each other, I walk around. Now and then I make a suggestion, or ask a question. Children ask me many questions, and tell enthusiastically about their experiences. In this way, a teacher is able to provide individual attention.

That chess can have a range of (meta-)cognitive, social and emotional effects is because it is a game. Playing games is an approved way of discovery learning. You investigate, take blows, search for possibilities and go for challenges. In doing this, you can develop your own thinking style. You investigate possibilities and limitations, and finding your way among these is precisely the essence of chess. This applies to all children – also to highly gifted children.

Transfer effects

Various researchers think that ‘transfer’ effects (of chess to other areas) occur especially with beginners.

It is possible that there is only a limited direct connection (‘transfer’) between the development of ‘chess thinking’ and other cognitive areas. The conclusions of various research projects suggest that chess often generates more motivation to learn by discovery.

My hypothesis is that chess can be an important instrument for generating meta-cognitive transfer effects. This means that children learn to think via chess instruction, and it stimulates them to start to think about how they think. The way in which a teacher teaches (showing empathy, asking many questions, dialogues, investigating together) plays a major role here.

Since highly gifted children have a great need for intellectual challenges and opportunities to express and develop themselves in their own way, it is plausible to assume that they will benefit from playing chess. Practical experience also points in that direction.

In an earlier research (Universiteit van Amsterdam, 1992), I found out that on average, chess-playing pupils perform better in CITO tests at school than non-chess-playing children (the CITO test was a school test to determine performance level for the eldest pupils in primary education in the Netherlands). This project is described in my book *Developing Chess Talent*.

Educative value

Much has been written about the educative value of chess – by chess promoters as well as scientists. Supporters praise our sport to the skies, claiming that pupils benefit from it in a cognitive, meta-cognitive, social and emotional sense.

They mention, among others:

Cognitive: learning to investigate (scientific thinking, testing hypotheses), analysing, studying, reasoning (inductively and deductively), anticipating, combining, making plans, weighing alternatives, visualizing, taking initiatives, assessing risks, experimenting, making decisions, applying heuristics (rules of thumb), recognizing patterns, dealing with paradoxes, marvelling, problematizing (question after question – is this really true?), flexible thinking, brainstorming (thinking divergently, and then convergently), verifying, falsifying, concentrating, focussing, space-oriented thinking, using intuition, verbalizing ideas, using fantasy and imagination, searching for original solutions, creative thinking, improving memory, and processing information more effectively.

Meta-cognitive: learning to think about your own thinking and behaviour. By taking your own decisions and developing your own initiatives, you develop independent thinking. Chess is conducive to your self-image and your self-management.

Social: in chess you learn to cooperate, to place yourself in someone else’s shoes, and to debate. You develop respect for your opponent. It is a safe way to get to know new people, and to develop contacts: the game is very factual, but while playing it you can build up contacts with opponents and training partners in your own way. Chess can also stimulate the development of ambitions. It offers the possibility to enter into contacts with people all over the world via the Internet (visiting websites, playing chess online).

Emotional: it shapes your character. You gain success experiences because you learn new things. You also learn to cope with frustrations (because sometimes it is difficult). You develop personality traits like patience, a sense of responsibility, resilience, concentration, perseverance and self-discipline. You learn to put things in perspective: when you lose game, it's 0-1, but if you learn three things, it's 3-0. You develop pleasure in investigating and learning. 'Chess, just like love and music, has the power to make people happy' (Siegbert Tarrasch).

Methods

Curiously, giving chess instruction is mentioned in all research projects, but in most cases it isn't clear what these chess lessons comprise.

What are the methods that all these teachers use: do they only teach tactics, do they discuss games, do they give frontal education or hold group discussions? Etcetera. All these variables seem to be of influence. If methods with (interacting) components ('variables') are not clearly named, the discussion of research results is a matter of comparing apples with oranges.

Much research has been done on children with an average intelligence, or groups with varying intelligence. Research on the effects of chess instruction on highly gifted children is extremely scarce, and thus far remains methodologically limited.

Many psychology scientists are as yet sceptical about the possibility of a direct cognitive transfer (of knowledge and skills) between various areas of knowledge (e.g. from chess to arithmetics). But this does not rule out that there can be indirect effects. Learning chess with a stimulating teacher can perhaps stimulate children's self-image and motivation.

Kasparov's IQ

According to research done by the German magazine *Der Spiegel*, the IQ of former World Champion Garry Kasparov is 135, and he has a fantastic memory. But one world champion is a highly limited sample, and if his memory played an important role in his chess, then would that apply to all top chess players? Was this strong memory produced by a great amount of brainwork, or did he already have it, and is that the reason why he was able to accomplish so much in chess? In other words: is there a causal relation?

And – what is exactly the story of Kasparov's IQ? Compare this to Laszlo Polgar's view that talent is nurtured, and the remark by Prof. Kohnstamm that there is a range of 30 points in the possible development of IQ. And is intelligence actually something unequivocal? The American psychologists Joy Paul Guilford has developed a theory in which he claims that intelligence consists of several dimensions.

Can we predict how good someone can become at chess? It is clear that certain brain functions are at play, and that practice makes perfect. How does a grandmaster think? How does he learn?

Is being able to play chess well a partial giftedness, perhaps? In the same way that someone can also be good at playing a musical instrument?

Which functions actually play a role in chess thinking? Calculating ability, memory, reasoning, seeing connections, intuition (subconscious recognizing and reasoning), creativity,

pattern recognition? How do these functions relate to each other – do they interact? Is this equally important for every playing style? How do you operationalize (measure) those abstract concepts in good research?

Until a certain level, are certain functions perhaps more important than others? In this respect, it is useful to look at comparative research into the functioning of the cerebral hemispheres, and its influence on pattern recognition and creativity.

Brain research

Good research should take the following aspects into account: control of gender differences and age differences, longitudinal effects of education, influence of teachers, replication of research, looking specifically at used teaching methods, and the possible stimulating role of parents and group processes.

Research could also be supplemented with brain research via brain scans.

In the past, psychological research was often carried out by looking at people's behaviour, and comparing that with their earlier behaviour, or the behaviour of other people. This can be done in natural situations or via experiments. You can also ask questions to people (introspection).

Behaviour is controlled by the functioning of the brain. Only recently, possibilities have been discovered to determine where certain functions in the brain are localized, and to measure activity in the brain. This research is still largely in its infancy.

A point of attention is that many thinking processes run unconsciously.

A lot of research is done on short-term effects. Longitudinal research is rare.

Probably, a number of myths are at play here – for instance, about the supposed role of three-dimensional insight in chess thinking. Various strong mind sporters, among them a World Champion in draughts, claim that they score feebly on this dimension.

Therapeutic tool

The psycho-analysts Gaines, Berkovitz and Kohn (2000) indicate that chess can be an important instrument in social-emotional counselling of young people. They use chess as a therapeutic tool. Since the contact is realized through chess, they can circumvent inhibitions, and they provide life insights by analogies with chess positions. They also claim that chess is suitable as a diagnostic and assessment tool. In this respect, Moreno's book *Teaching life skills through chess* is interesting (see Chapter 7).

Role of intelligence

Roland Grabner has conducted doctoral research into the role of intelligence and expertise in chess performance ('Expertise, intelligence, and neural efficiency in tournament chess. A psychometric, behavioural, and neurophysiological investigation', 2005). He took a sample of 90 persons with an Elo rating between 1311 and 2387. This resulted in a 0.35 correlation between intelligence and playing strength. This means that 12 percent of the difference in playing strength can be explained by intelligence. That is a significant, but not extraordinary large correlation.

All the testees in his sample with 2200 Elo had received training for at least ten years.

Grabner concludes that an average intelligence level seems to be enough to achieve a 2000 Elo rating. High intelligence is not a necessary condition for a higher Elo rating, and also it doesn't automatically lead to one. However, a certain measure of intelligence is needed to be able to learn chess. In an email, he indicated that he hadn't done any research on where this lower limit lies.

Expertise

According to Grabner, much training and playing and good supervision are important conditions for achieving good results.

Looking at general intelligence, Grabner claims that 'hardware' qualities can be considered, like good data processing and a good working memory. How fast, and how well, can a person process information? We are talking about neurofysiological properties here.

Expertise ('software') is about experience; how long and how well a person has studied, trained and practiced. Clearly, one needs to study and train for many years to acquire a large amount of knowledge. Above all, chess level seems to be a derivative of long-term intensive training.

In the second study of his dissertation, Grabner examined the significance of intelligence and playing strength (measured by Elo rating) for achieving results and for the brain activity connected with it, and how these two factors cooperate.

The set-up of the investigation with 47 chess players comprised four conditions, formed by stronger and weaker chess players with higher and lower intelligence.

These four groups were given chess exercises requiring fast processing of simple questions, remembering positions, and solving chess problems.

The conclusion was that both intelligence and playing strength have an influence on the speed with which exercises are solved.

The best performances were made by those with a high intelligence and high playing strength. The worst performances were made by those with a low intelligence and low playing strength.

Grabner concluded that lower intelligence could be compensated by higher playing strength (more knowledge).

Grabner measured brain activity with EEG. His conclusion: in the field of neurophysiology, independent effects of intelligence and playing strength are measurable. It was concluded that more intelligent players need less energy during the solving (neural efficiency).

It is clear, as Grabner claims, that a certain minimum of intelligence is needed to be able to perform. If this lower limit does exist, then further development of expertise will be mainly a question of training and acquiring knowledge. Performance will be improved by an early start and goal-oriented training. The amount of acquired expertise partly depends on motivation and available learning opportunities.

Grabner concludes that brain research points out that the brain is more mouldable than had been assumed earlier. This applies to brain structure as well as brain functions.

Djakow

The first research into chess and intelligence was done in 1927 by Djakow et al. They didn't find any extreme intelligence with eight grandmasters.

In 1987, the psychologists Jörg Doll and Ulrich Mayr conducted a research among 27 Germany Bundesliga players (Elo between 2220 and 2425). They did find a higher-than-normal intelligence, but no correlation between IQ and playing strength. Perhaps their sample was too homogeneous.

Merim Bilalic and Peter McLeod ('Does Chess Need Intelligence? – A Study with Young Chess Players', Oxford University) claim that studies show that intelligence, visual-three-dimensional skills and memory play no significant role (or no role at all) during later phases of acquisition of chess skills. Chess skills, they assume, depend more on knowledge (stored patterns, chunks and templates) than on analytical capacities such as searching or calculating variations.

Experts have stored between 10,000 and 100,000 chunks in their memories. These constellations are connected to normal moves and plans. To memorize these patterns, a chess player has to train a lot.

Diverse research suggests that intelligence is only of influence at the start of a chess career. Since a correlation between intelligence and chess skill does exist with beginners, intelligent children will be more successful in the beginning. This may lead to greater motivation and interest, causing them to spend more time on chess.

Sensitive periods

Krogius (in his book *Psychologie im Schach*) assumed that chess players who learned the game after their tenth year, made more tactical mistakes later. This is in accordance with the theory that there are sensitive periods which are optimal for children to learn certain skills.

Herbert Simon and William Chase presented the '10-year rule': it takes at least ten years before anyone can become a grandmaster. Nowadays, this period turns out to be shorter – possibly under the influence of the computer. These days there are many databases available, and you can go through them faster before a screen than by reading books. This may be especially of influence on the function of pattern recognition. Also, at present there are more opportunities for chess players to acquire experience in tournaments. Experience acquisition plays an important role in processing and generating knowledge and insight, and in skill acquisition.

Simon and Chase (1973) estimated that 10,000 to 50,000 training hours were needed to obtain master level. They compared this in a study with a database of 34 Argentinian players. On average these players trained for 11,053 hours before reaching this level. However, there was a quite large spread: from 3,016 to 23,608 hours.

A.D. de Groot

Simon and Chase elaborated on the work of the founding father of cognitive research into chess thinking, A.D. de Groot. This psychologist from Amsterdam was also a chess player of master strength. In 1946, he published his thesis called 'Het denken van den schaker', which was

translated in 1965 as ‘Thought and Choice in Chess’.

By asking adult chess players to think out loud (speech protocols), he found out that strong chess players do not consider more moves, do not look more deeply and do not look at more positions than weaker players. They do look at positions in a different way than amateurs do. He concluded that pattern recognition plays an important role in their chess thinking.

Ferguson

Robert Ferguson (1995) thought that chess promotes critical and creative thinking. He conducted a research among highly gifted children (grade 7-9) with an above 130 IQ at the Bradford Area School District in the USA.

Supposed advantages

Fernand Gobet (himself an IM) and Guillermo Campitelli uttered criticism on the supposition of advantages of chess education in their article ‘Educational benefits of chess instruction, A critical review’ (see Chapter 19). They wondered whether chess had a transfer value to other learning domains. Is there any evidence for this, or is it just a case of wishful thinking? Their conclusion: the evidence is not conclusive, and not always present.

The researchers pointed out that for a long time it had been thought that learning transfers were possible. For example, by learning Latin, you could train your mind. Edward Thorndike set against this that a transfer is only possible if all the components of the domains are the same.

Other researchers have suggested that the best way to train transferable skills is to train general skills, like learning strategies, problem-solving methods and reasoning techniques (Grotzer & Perkens, 2000).

Whatever the case, it is clear that the higher the level of expertise in a certain domain, the more limited the transfer is.

Diverse research (Frydman &Lynn 1992, and Horgan & Morgan 1990) has suggested a higher intelligence among young chess players than among young non-chess players. There is a correlation here, but not a causal connection. It is possible that chess promotes intelligence. On the other hand, intelligent people may also be more inclined to opt for chess. Also, all kinds of other explanations are possible, for instance that chess and IQ are improved by higher motivation.

Ideal experiments

Gobet and Campitelli point out that unequivocal conclusions require ideal experiments. These are characterized by: experimental group v. control group; measuring effects via pre-test and post-test; being on the alert for placebo effects; random assignment of participants to conditions (or equal starting conditions, or measuring via pre-test that conditions are equal); participants do not know that they are taking part in an experiment, and the same applies to the person who conducts the experiment (double blind design). At the same time, different people have to carry out diverse tasks during the experiment.

In practice, this is mostly unfeasible. That is why experiments are often quasi-experiments,

starting out with already existing groups.

In their search for empirical evidence, Gobet and Campitelli found only a few studies that meet approved scientific research criteria to a certain extent: Christiaen & Verhofstadt-Denève (1981), Ferguson's studies, and Margulies.

Some effects on better school grades, creativity and memory were found. However, those effects could not be unequivocally attributed to chess training. Possibly, motivation and intellectual engagement also play an important role.

The researchers point at suggestions by De Groot (1977), who claimed that chess may be able to yield benefits on 'low' and 'high' levels.

With low levels, he was thinking of improved concentration, learning to cope with defeat, learning that you have to train to improve a certain skill, and learning motivation.

With high levels, he was thinking of an increase in intelligence, creativity, and school results.

Gobet and Campitelli concluded that research has mainly been done into 'high' levels, and that the results of the research are not unequivocal. They assume that any possible effects occur especially at the beginning, because at later stages there is more domain-specific knowledge.

Building

Professor psychologist Jelle Jolles ('Bouwen aan het brein: over talenten en creativiteit in relatie tot hersen- en cognitieve ontwikkeling' = 'Building the brain: on talents and creativity in relation to brain development and cognitive development') says that recently a lot of insight has been gained in the development of the brain. The brain continues to ripen until after the twentieth year.

Brain functions and behaviour are the result of a combined action of genetic (nature) and environmental (nurture) factors.

As it turns out, it is especially environmental factors that determine – in the right phases – the development of the brain and the effectivity of cognitive functioning, Jolles claims. Family, social environment and the nature and quality of education play an important role in the development of the brain and of a child's talents. In his survey article, he draws on findings from neuro-science and cognitive and biological psychology.

With regard to the development of talent, aptitude and ability, according to Jolles the basic aptitude is biological in nature, and the environment determines 'what comes out of it', 'what is actualized'. Highly giftedness is not fixed in the genes, but is a result of a cooperation between biological and psycho-social factors, including upbringing and education at school.

Jolles raises the question of what the factors are which determine whether talent will actually develop itself. Can those talents be stimulated, and if yes, how? And also, are there any pitfalls, like a child's motivation or the influence of peers? Which biological factors (foods, illnesses, sleep) play a role, and how can the social environment be adjusted to achieve an optimal functional development?

In this respect, Jolles mentions a number of potentially relevant insights. Of eminent importance are the speed of data processing and the efficiency with which sensory stimuli are

retained in the working memory, compared to that which has been fixed in the long-term memory. It is probable that talented children are able to make connections quickly, and that this process can also be stimulated by offering measured chunks of information, and teaching the child the skills to link the relevant chunks of information to each other.

It is possible that gifted children are under-stimulated in schools because there is little attention for them.

There is a significant variation in neurological speed of development of cognitive faculties. It is dangerous to quickly write off children who develop more slowly.

Discussion piece for chess teachers

The Dutch chess teachers Poulien Knipscheer, Boris Friesen and PieterJan Mellegers claim in a discussion piece about chess instruction for highly gifted children that it is necessary for a chess trainer to have a diploma of the national federation KNSB. Other requirements should be: experience with the Steps Method, experience with teaching large groups of children with large level differences, evidence of good behaviour, and special schooling for the education of highly gifted pupils.

They mention as components of a chess lesson: instruction, training, using various game forms to train skills, and playing games.

They claim that it is very important to take breaks during chess lessons, because chess is a subject where good concentration is important.

They want to pay attention to matters like sportsmanlike conduct, respect for the opponent, and being a good loser.

Sixteen pupils is a lot for a lesson group. Also, level differences will be large. The trio thinks that it is useful to engage the group's regular teacher. Another possibility is to divide the group into sub-groups according to level. One suggestion is to let individual pupils work independently with the Steps Method.

The trio considers giving the pupils homework an important support for the learning process, because then the children will also be occupying themselves with chess at home. The homework may consist of making two pages of exercises from the Steps Method, or, for example, playing chess online three times.

Their advice is to stimulate the children to take part in school championships and regional tournaments.

As regards material, a minimum of sixteen sets of boards and pieces, Steps Method workbooks, one demonstration board, and a blackboard or a whiteboard should be available. The laptops or pc's of the children should contain chess software. Instead of a demonstration board and a blackboard, a digital blackboard can also be used. With this board, the pupils can also take a look on the Internet.

As learning goals Knipscheer, Friesen and Mellegers mention passing diploma 2 or 3 of the Steps Method, and, for example, being a good loser, and being able to discuss a chess position.

Inquiry among chess teachers at Leonardo schools

An inquiry by the author of this book on Leonardo schools among their own chess teachers was filled in by eighteen people. A handful of teachers did not fill in the questionnaire.

Seven respondents had one or more websites. The age of the teachers varied from 20 to 68, and it is remarkable that eight of the teachers were more than 60 years old. Two of the respondents were females. Their Elo rating varied from around 1500 to 2250. Four of the teachers had a rating above 2000. With the exception of two teachers, all of them had a trainer diploma of the national chess federation KNSB. The education of the teachers was HBO or academic.

Their motives to give these chess instruction varied: in general, the trainers took pleasure in giving lessons. The fact that Leonardo schools form a special target group was called an extra challenge by a number of the teachers. Almost all of the teachers also gave lessons elsewhere, often at clubs, or as a private teacher. Seven teachers gave lessons on two or more Leonardo schools. On average, the teachers gave lessons to four classes.

One hour

Mostly a chess lesson lasts one hour – or 45 minutes at some schools. Almost everywhere the lessons are given on a weekly basis.

Most of the groups consist of 16 children – sometimes a few less, sometimes a few more.

Most of the teachers say that the size of the group is not a problem. But they do make a few comments, like: the group should not get any bigger; I can just about manage it; the level difference and behavioural problems are sometimes too big; didactically, you have to take into account that sometimes the groups are big; individual attention is hardly possible.

It is easier to remember many names for one teacher than it is for another. When exercises are made, teachers tell the pupils to write their names on a piece of paper; or they put name-plates next to the children; others make pictures and add the names to them. Another method is to make a short film in which every child mentions its name. One teacher had hung up class photos on his kitchen door and learned a few of them by heart each day.

The teachers spend on average approximately three hours on one hour of teaching. These extra hours are spent on travelling, preparing lessons, consulting with the school, and checking homework.

All the teachers get a free hand from the schools to give their own shape and content to the lessons. Almost all the teachers mention that the level within the groups varies greatly. In most of the classes there is a difference of two to three years between the children’s ages. The teachers do not regard this as a problem.

A majority of the teachers work at class level. A minority of them work with sub-groups, or try to differentiate on level during exercises.

Different

Highly gifted children think and learn differently than most other children. To the question to what extent this can be noticed in chess lessons, and how the teacher deals with this, varying reactions were given: the differences with talented youth players were not enormous; sometimes

the lesson was considered to be too easy, although training is necessary to put insights into practice; the questions were different and emotional reactions were sometimes fierce; coping with defeat or adhering to rules will sooner be problematic; children are quicker to take initiatives; interest in backgrounds; children were more stubborn; highly gifted children are not always talented chess players; quicker absorption of information; sometimes there is little discipline and perseverance; sometimes fear of failure; sometimes they wanted to reason all the way back to Genesis; it's hard to cope with defeat; and sometimes there were unique individual solving strategies.

The question of how children of different levels can be given instruction at the same time yielded a number of suggestions: ask questions on the levels of weaker and stronger pupils; speak on different levels during discussion of games; divide the class into level groups during exercises; explain a theme centrally and differentiate with exercises and playing-out tasks; keep your instructions short, with a lot of variety, and keep the lesson interesting on different levels, for example during game analyses; pose tougher questions to better pupils and easier questions to weaker pupils; divide the class into two level groups and give instruction to one group while the other group is making exercises; give instruction to one half of the class while the regular teacher supervises a competition among the other half in another classroom; let the pupils work in duos, allowing them to help each other; stratified teaching – meaning that you explain a combination to one pupil while another is learning how the pieces move. One teacher replied: 'Sometimes I too don't know what to do anymore.'

Structure

50% of the teachers mention that they sometimes have difficulty keeping order. Reactions were: seek help from the regular teacher if you notice it's not working; the arrangement of a classroom is sometimes messy and inconvenient; use strict rules, like raising a finger if you want to ask something, and a clear allocation of tasks during the cleaning-up; you can stop the lesson for a moment and ask the children what they think of their own behaviour; impose clear rules and ignore outright pranksters, or leave them to the regular teacher; it helps if you use a variety of didactic methods; work with a silence sign and reward children who keep quiet with a sticker; 'with some of the classes I already know I'll have problems during the entire year'; it's important to pay attention to preconditions and to impose limits; some children, and especially girls and pre-adolescents, don't want anything to do with chess anymore during the third year, and then I look for assignments that are more related to chess culture than chess technique; rebelling pupils no longer accept the pattern of explanation-exercise-playing after three years; good timing and consistent behaviour are important; don't stick with one pupil all the time, keep addressing the whole group; prevention is better than solving, so offer them a lot of structure and be clear; mind that you don't give too much of a free hand to the group; problems mainly arise if the level does not catch on; give the silence sign and fall back on the authority of the regular teacher.

Almost all the teachers worked with Van Wijgerden's Steps Method. One of the teachers used the American Chess Magnet method. Another teacher worked with many varying methods (films, other games, chess games, analysis, group discussions) with the Steps Method as a part of

the lesson.

Lessons plan

Most of the teachers work with a global lessons plan for the entire year. They prepare separately for each lesson.

A number of teachers improvise if points of departure for certain other subjects occur.

With most of the teachers, the lesson material is taken from the Steps Method. A number of them supplement this with discussions of own games and showing films. One female teacher allowed children to play on her own website. There is also the Chess Magnet method. Some teachers make their own material.

The teachers use a great number of different methods: instruction; making exercise sheets; playing out positions; playing games; discussing games; mating race; exercises on the computer; chess exercise circuit; simuls; letting pupils investigate positions in duos; internal competition; letting pupils investigate a position from the demo board on their own boards; games with single chess pieces and pawns; giving more attention to children who perform less well; puzzles like mating positions that have to be made with four cards; Raindrop Chess; Tandem Chess; tournaments with chess clocks; solving studies, or mate in two or three moves, with the entire class; giving mate with one or two rooks or with the queen; playing a game on their own laptop; playing a game against a computer with the entire class on a digital blackboard on the Internet; analysing a game with the class; letting two children play against each other, while the entire class may shout suggestions just like during a soccer game; watching chess videos; and pointing out chess tips on the chess page of the school's website.

Playing

In many lessons, we see instruction, making exercises and self-playing occur again and again. Often these lesson parts are allotted approximately the same amount of time. Sometimes half of the time is spent on playing games. A number of teachers analyse played games with the children.

Especially with beginners, playing little games (which they have mastered pretty well) appeals more to their imagination than playing full chess games. Various teachers let the children choose here. Suggestions for games are: the Chess Tutor games (step 1 and 2), Troyis, and giving mate with a single piece.

One method consists in playing through short games in which mate occurs after just a few moves (see, for instance, on the Internet 'Bill Wall's Chess Traps and Miniatures Collection').

With beginners, sometimes points are awarded for the number of captured pieces.

Other methods are: eight pawns versus eight (who reaches the other side first?); mirror chess; swamp chess; queen versus eight pawns; a knight gobbling up pawns; Losing Chess.

Rewarding systems may vary. Roughly 50% of the teachers work towards the Steps diplomas. Some of them work with cups as prizes and publish rankings of mutual competitions. Sometimes they also work with stickers. In general, teachers aim for intrinsic motivation, and they give a lot of compliments.

Learning targets

Highly gifted education starts from a ‘top-down’ approach. A number of teachers claimed that they had never heard of this concept. One individual teacher conducted a research on the Internet after this questionnaire. To his pleasant surprise, he saw that he had actually been applying the principle already.

A number of teachers explicitly wondered whether this approach was suitable for giving chess instruction, and preferred to stick to the build-up of the Steps Method.

Peace and quiet is something most teachers find very important during their lessons. A number of children appreciate this very much. Some teachers remark that during games they find silence less important than during their explanation. One teacher used a ‘time measurer’ during the games: there had to be silence during the first twenty minutes, and after that, whispering was allowed.

Not all teachers manage to keep the silence all the time. Some of them also wonder whether the children will experience any hindrance if it’s a little more noisy.

Part of the teachers used specific learning targets, like Steps diplomas or rating gain. One teacher remarked that the difference between children was too large to be able to formulate one general learning target. Another mentioned enjoying playing as an important learning target.

Assessment

Roughly one-third of the teachers had regular contact with other chess teachers of highly gifted pupils, one-third had contact every now and then, and one-third hardly or never. A national LinkedIn network was visited by only a few of the teachers.

The contact with the regular teachers was mostly good. Only a few teachers ever had contact with the national Leonardo foundation. Also, only one or two of them had ever followed a course organized by the national foundation.

Formal assessments of the chess performances of the children differed per school. At a number of schools, the chess teacher wrote down a couple of lines of text in a portfolio. One or two of these teachers mentioned that they made things easy for themselves by putting the Steps diplomas in the portfolio. At various schools, no assessment was given because the level differed strongly, or because the chess lessons had only just started.

Most of the schools did not ask for a report after every lesson. Some of the teachers handed in a lessons plan or, afterwards, a lesson report.

Giving chess lessons to highly gifted classes sometimes isn’t easy. Teachers mentioned a number of obstacles: too little (serious) games are being played to be able to integrate the acquired knowledge well; there is a level difference, and this leads to unrest and lack of interest; some children don’t like chess; and some children display special behaviour. A number of teachers said they didn’t have any problems at all. One of them even said: ‘Actually it’s a piece of cake.’

Two-third of the teachers made mention of behaviour problems with a few children.

Two-third of the lessons were attended by the regular teacher, one-third were not.

Feedback

Roughly 50 percent of the teachers sometimes received didactic feedback from the regular teacher. A few of the teachers asked for feedback themselves.

Sometimes children have specific limitations. Generally, consultation on this between the regular teacher and the chess teacher was good.

At approximately 50% of schools, little attention was devoted to extracurricular chess. On various schools, children played against each other during free hours.

Most of the schools have chess material of their own. Some have obtained chess material from the chess federation. Some teachers take their own chess material to the lessons.

One-third of teachers never showed a chess movie. The others used, among others, YouTube videos, ‘Lang leve de koningin’ (= ‘Long Live the Queen’) and ‘Searching for Bobby Fischer’.

One-third of the teachers never gave any homework. Some did this every now and then. Various teachers let children make exercises from the Steps Method. One teacher let the children do mate-in-one exercises from Polgar’s book. Another frequently gave tips (look for chess books in the library, and tell something about them at school; look on the Internet, etc.).

Motivation

Most pupils are often motivated to learn chess, as the teachers reported.

Teachers did a range of things to stimulate their pupils’ motivation: show them/let them experience that they have really learned something; praise good results; hold out the prospect of rewards to them; variety; challenges; chess competition; give good lessons, and see to it that they learn in a fun way; hand out cups as prizes; radiate enthusiasm yourself; give fun lessons; personal involvement; take the children seriously; playing games; give compliments; play other games for variety; enable them to have success experiences; incite surprise.

Useful information about chess didactics for chess teachers on Leonardo schools turned out to be scarce. The teachers mentioned the introduction to the Steps Method, the book *The Chess Instructor*, Chess Magnet School and the book *Developing Chess Talent*. One teacher advised to observe lessons by regular teachers at schools.

CHAPTER 9

Chess for the blind and partially sighted

In Hamburg, from 1997 to 2010, Willie Rühr gave chess lessons at a school and boarding school for blind and partially sighted children. He stopped when one of the female teachers, with whom he had a good cooperation, retired. Chess was an extracurricular subject. Every Monday starting at 16.00h there was a 90-minute lesson. The children who followed the chess lessons started at roughly ten years of age. The oldest participants were about eighteen years old.

Rühr has an Elo rating of 2040, and has given trainings at roughly twenty Hamburg chess clubs as a profession for many years. Also, he coached the German blind women's team for fifteen years, and several times also the male blind team.

Your own playing strength is not the most important thing when you teach blind and partially sighted children, Rühr says: 'The most important things are patience and empathy.' Patience is needed because visually handicapped children learn much more slowly than children who can see: 'It takes them four times as much time to absorb information. Empathy is also very important, to give children confidence and stimulate them.'

Incidentally, boys were much more motivated than girls, in Rühr's experience. Girls tended to come rather for company, while boys more often wanted to achieve something. With becoming pride, he tells about his pupil Alexander, who started with an Elo rating of about 1100, and after a few years of working with him achieved a 1780 rating. 'I thought it was really marvellous that he beat me once in a simul. And I do not let my pupils win just like that!' Together with this boy, Rühr participated in a team in the Hamburg companies competition. Around 70 six-player teams took part in this competition. Blind, partially sighted and sighted players joined hands to take part as a team on behalf of a Hamburg blind players' club. A large advantage of participating in this competition is that the matches start at 18.00h, Rühr says.

Teaching chess was not the main goal of the chess lessons at the school for the blind. 'The main intention was to stimulate the children's personal development, cognitively as well as social-emotionally. For that matter, we could just as well have started a course in painting. The school acknowledged that in that respect chess could fulfil an important role, and that's why they hired me.'

Willie Rühr had to reinvent the wheel. He couldn't fall back on a special teaching method for blind children. 'Of course I had a lot of training experience with sighted children, but blind children do learn in a different way.'

Rühr always told his pupils that good communication is important. 'If you have questions, I'll explain it one more time. Stupid questions don't exist.' Rühr often discussed positions that had occurred in earlier games between the pupils. Also, he treated a lot of tactical motifs and mating exercises. Half of the lesson was spent on a discussion of positions, and the other half on mutual games. Each child had their own adapted feeling-board and they called their moves out loud.

Rühr walked around to give support where necessary. He taught partially sighted children to notate their moves on paper, while blind children used a dictating machine. Rühr said he never used audiovisual material in his trainings.

He learned the best way to teach these groups in practice. He did have regular talks with coaches of the German blind players' team, among them IM Helmut Reefschläger and FM Detlef Neukirch. Besides that, he exchanged experiences with players from the national blind teams.

When you teach blind and partially sighted children, eight is the maximum size of a group, Rühr claims. 'With sighted children I could manage twelve or fourteen in one group.'

One difference with normal chess clubs and normal teaching is the performance pressure, as Rühr calls it. 'With normal clubs, I had the feeling that there had to be results at any cost. At the school for the blind, everyone was happy if the children just showed personal development through chess.'

To trainers who want to give chess lessons to blind and partially sighted children, Willie Rühr's advice is twofold: 'Patience and empathy. You have to do it together with the children. If you are willing and able to do that, then you can achieve a lot of things. I've really received a lot of appreciation.'

A more extensive story titled 'On blind and partially sighted chess players' can be found on the website of the Dutch Max Euwe Centre (www.maxeuwe.nl).

CHAPTER 10

Chess for the deaf and hard of hearing

Deaf and hard-of-hearing children have more trouble learning chess than most other children. This is due to communication problems, and to a delayed language development, the result of which is that their reading is worse and their cognitive and social-emotional development are delayed. Also, incomprehension and practical obstacles in their environment may lead to a lack of self-confidence as well as a lack of interest.

Roughly 1 in 1000 children are born (nearly) deaf. There is a same number of children with serious hearing problems. These numbers are the same all over the world.

Thus Dr. Anika Smeijers, who is hearing, and is a paediatrician and a researcher on medical care for the deaf and the hard of hearing at the Universiteit van Amsterdam. She is also a linguist, specialized in sign language and language development disorders.

Smeijers cooperates closely with Ingrid Jansen, the deaf interim secretary of an Amsterdam chess club for the deaf called Tot Ons Genoegen (TOG, = For Our Pleasure), which will celebrate its hundredth anniversary on 30 March 2021. The club has 21 members, and will organize the European Chess Championship for the deaf in 2021. The information given by Smeijers and Jansen is mainly based on the Dutch situation. Information on deafness and hard-of-hearingness in the chess world is scarce, also internationally.

When you are deaf, you can't hear speech, so you can't understand what a teacher is saying. You have to resort mainly to sign language, reading, or watching. Looking at the teacher and the chessboard in turn costs time and is tiring as well. As a result, acquisition of knowledge will be slower. Reading is a problem too, since letters and words are coupled to sounds that deaf people cannot hear. Already in the first three years (and even before birth), a language deficiency arises, for example because parents have no command of sign language, or are still learning it.

Lower linguistic skill means slower cognitive development. Language carries thinking – if your vocabulary is limited, you are also less good at reading and you have more difficulty formulating your thoughts and thinking abstractly.

Nevertheless, there are possibilities for development. Deaf people can play chess on a high level – this is, for example, demonstrated by grandmaster Yehuda Gruenfeld, who became Israelian Champion in 1982.

Teaching deaf and hard-of-hearing children has to meet certain requirements. A teacher must have a command of sign language, and must talk in a visible way, so that the children can read his lips. Also, he has to adapt his tempo and his teaching methods, for example by giving children the time to look to and fro – first at his explanations, then at the chessboard. He also has to take good note of social and emotional aspects. Empathy, stimulation of empowerment and referring to role models are important.

There are no specific chess teaching methods or chess trainings for the deaf and the hard of

hearing. In most cases, these children have learned to play chess from a motivated teacher on a school for the deaf – or from an acquaintance, or a family member.

Participation in chess clubs is not easy. Teachers are not adjusted to these children, sometimes there is incomprehension, and social and – consequently – emotional contact are often laborious.

To be able to teach chess to deaf and hard-of-hearing children in a good way, diverse solutions are needed – for example, teachers who have a command of sign language and can play chess. They need good teaching methods. It is important to have lesson material that is adjusted to special needs children. As Smeijers and Jansen say, the presentation should be as clear and simple as possible language-wise.

There are also misunderstandings. Many think that deaf people are better able to concentrate, but often this isn't the case. They are more easily distracted by things that take place on the edge of their visual field, as has been proved in a research by Dr. Corrie Tijsseling.

The chess club TOG has no junior members, but they want to stimulate young people to play chess. All kinds of side-activities will be organized during the European Championship: lesson packages and instruction material will be made available, chess lessons will be given on schools for the deaf, and there are several inspiring activities.

CHAPTER 11

Chess and autism

Chess bridges a gap between people. It is a socio-educational weapon in the struggle for emancipation, empowerment and talent development. This certainly applies to autistic young people who learn to play chess. For them, chess is a bridge between two worlds.

Autism is a congenital neurological disorder. The precise cause is not known. Autism occurs in various forms and gradations. Its symptoms are limited social skills, a need for structure, as well as problems with emotions, empathy, self-image, language, imaginative powers and motion skills. Autists have trouble internalizing sensory stimuli and information as a coherent whole. Autists often have a limited field of interest, in which they are able to specialize strongly. Their behaviour varies from hyper-active to extremely withdrawn. As a weapon against the complex outside world, autists seek refuge in fixed habits and patterns. Unexpected changes can lead to panic. This handicap may be combined with retardedness, but also with high giftedness. The better their environment is adjusted to them, the better autists can develop their qualities.

Chess often connects to the qualities of children and adults with autism, and it stimulates their development. It enriches their lives. Chess:
- can provide social contacts
- offers a cognitive challenge
- gives pleasure
- brings success experiences; it can make you proud of yourself
- is a nice hobby, in which you can become an expert.

Children with autism often have the following problems:
- They are slow to process information.
- They are quickly over-stimulated.
- They have limited powers of imagination.
- They have trouble maintaining social contacts.
- They have strong emotions.
- They have trouble communicating.
- They display unrestrained behaviour.
- They have motor limitations.

Chess is suitable for people with autism thanks to the characteristics of the game:
- It is a sport for everyone (from 3 years of age).
- It is an individual sport (the only person you can consult during a game is you yourself).
- It is not a physical sport.

– The game has clear rules, is logical, objective, methodical.
– The game is non-linguistic, you process images.
– You can do it in your own tempo.
– It is a safe game.
– Via chess you can share your interest with others, and you can belong to a group (identity).
– The playing environment is structured, peaceful, orderly (low-stimulus).
– There are lots of playing opportunities (computer, Internet, club, family, acquaintances).
– You can train on your own (computer, Internet, books).
– After a game you communicate with each other: about content.

Chess thinking is mainly based on pattern recognition, application of rules of thumb, and calculating and reasoning about possibilities.

There are many good chess players with autism, especially Aspergers. They are good at various things that are important in chess. They are good at systematic thinking; they have an eye for detail, good concentration, and a good visual memory. Also, they are good at working independently and at calculation.

Qualities of a good chess teacher for autistic young people are:
– He understands autism.
– He can play chess.
– He is empathic.
– He has didactic skills (patience, language use, structure) and social skills.

More information can be found, also in English, on the website www.schaken-en-autisme.nl. Here, among others, you can download an extensive PowerPoint presentation in English.

CHAPTER 12

Chess and dyslexia

Dyslectic pupils on a primary school say that when they are occupied with chess, it is difficult for them to read texts, notate games and listen to extensive explanations. Being dyslexics, they think a lot in pictures. This comes in handy when you are visualizing positions that may occur, one boy says. But that does require a certain knowledge of chess, a girl says. Otherwise you can visualize a position, but you can't assess it. Picture-thinkers are often slightly more creative. And both these children think that this is handy in chess. 'But I do think it's hard to tell something about it, since I don't know how it is to be not dyslectic,' the girl says.

Dyslexics have limitations with regard to chess study and playing games, as experience shows. Little has been written about the relation between chess and dyslexia so far.

Insight in dyslexia and in ways to deal with it, is useful for dyslectic chess players and for teachers.

This chapter presents a number of experiences by dyslectic people and people around them.

Dyslexia is a collective term for a whole range of problems with language processing. Dyslectic people have problems with reading and writing, and with listening, talking, remembering and learning. The degree of dyslexia differs per person. There are different varieties, and various causes of dyslexia. Often, the brain is not capable of adequately interpreting visual or auditive information.

Dyslexics differ in the areas of attention, observation, memory, thinking and language. This influences the development of their skills and, as a consequence, their behaviour. Environment plays a role, too: dyslexia does not exist if people don't have to write, read, and count.

Dyslexics need more sound-information than others to understand what someone is saying, and have more trouble processing speech sounds. Listening to someone can be a problem. A noisy classroom or a loud environment may mean that you can easily miss a lot of things, or misinterpret them. A sequential build-up of material is hard to follow. The short-term memory is often weak, and it is harder to store information in the long-term memory.

Learning to automatize skills is often more difficult. Often, children are overwhelmed by the multitude of stimuli they absorb from their environment. Observation is often done multi-dimensionally: all senses are used.

Causes

It is not clear why boys are more often dyslectic than girls. Highly giftedness also occurs more often in combination with dyslexia. In three of my own chess classes for highly gifted children, 10 out of 61 pupils turned out to have the diagnosis of dyslexia. Approximately one-third of the other children say they are picture-thinkers.

The amount of dyslectic people differs per country. This has to do with the regularity of the language. Various studies have indicated that 5 to 10 percent of people have dyslexia in one form

or another.

The causes for dyslexia are not entirely clear. Dyslexia never disappears completely. Dyslexia can be diagnosed when children have trouble reading, or with automation operations. Tests can provide clarity. There are treatments, counselling and tools available. Through training, it is possible to compensate limitations by using other brain functions. This is especially effective when it is done at a young age.

If there is something you are not good at, this can make you insecure – certainly if people in your environment deal with it in the wrong way, thinking, for example, that you are lazy or stupid. Dyslectic children can experience emotional problems like fear of failure, stress, uncertainty, grief, anger, and tension. Wrong reactions to a child from its environment may cause emotional problems to grow larger.

Scientists offer various explanatory models. It is certain that dyslexia has to do with the working of the brain. It is a congenital disorder that is hereditary. There is a defect in the brain, and the two hemispheres are asymmetrical. With most dyslexics, the right half of the brain is dominant. Dyslexia can also be traced in a chromosome.

Hemispheres

The left hemisphere is specialized in processing verbal and numerical information. This processing occurs sequentially, in a linear and orderly way. It is the active, verbal, logical, rational and analytical part of the brain (speech, reading, writing, counting, logic, analysis, relations, parts). This hemisphere is suited for language, mathematics, logical operations, and processing serial information.

The right hemisphere is the intuitive, creative, mainly non-verbal part of the brain (pictures, three-dimensional skills, imagination, musicality, emotions, humour, motion, the whole). It works out three-dimensional forms and images. It sees the wood rather than the trees, and understands complex configurations and structures. It is stronger in pattern recognition, face recognition, three-dimensional relations, non-verbal forming of ideas, and parallel processing of diverse chunks of information.

So, the two brain halves process information in very different ways. The right hemisphere is more concentrated on the whole, whereas the left hemisphere focusses on the details.

Most people have a dominant left hemisphere. Education is often adapted to that as well. With most dyslexics, it is the right hemisphere that is dominant. Domination of the right hemisphere in itself does not cause dyslexia. It can, however, play a role in combination with other factors.

One of the causes of the creativity of dyslexics is that the right hemisphere is functioning more emphatically. There is a built-in skill of viewing alternatives in different ways.

Seeing things differently, a creative view, is often a limitation at school – certainly where it comes to reading. Creative thinking is not the most efficient way to read a word.

Since dyslexics think in pictures instead of words, they often benefit from a way of learning that differs from the prevalent way.

Dyslexics also have strong sides. They have a better general overview, they think in pictures,

and they have a lively imagination.

The good news is that you can still accomplish a lot if you are dyslectic. Examples are Albert Einstein, Thomas Edison, Walt Disney and Pablo Picasso.

Pieces of advice

Dyslexia causes learning problems. There are various possibilities for pupils to deal with this:

- You can convert texts into spoken language, for instance via the free international computer program www.robobraille.org/web3.
- You can learn by doing things in practice.
- You can talk with a fellow pupil about what you learn.
- You can look if certain information is available in a more accessible way.
- You can search video images about certain subjects on the Internet.
- If helps if you accept your disorder emotionally, because then you will not erect extra blockades for yourself. ‘I can’t do it’ is a self-fulfilling prophecy.
- Dyslexia plays a greater role if you are tired, so it is important to take regular breaks.
- Texts are often better readable in a larger font. You can adjust the character size on your computer.
- You can choose texts by authors who formulate clearly.
- You can re-formulate certain issues in a positive way. For instance, you can conclude that instead of being easily distracted, you are very conscious of your environment.

A teacher can also do a lot, for example:

- Make dyslexia discussable in a class.
- Show appreciation for limitations.
- Take care that it is quiet and orderly in class.
- Present information in pictures.
- When explaining something, use different channels of communication (text, pictures, speech).
- Structurize information in a list of catchwords.
- Give a pupil more time for his tasks.
- Speak in short and clear sentences.
- Give feedback in small steps.
- Give compliments about the efforts made by pupils.
- Help pupils to develop self-confidence.
- Help pupils to develop study skills in a suitable way.
- Elaborate on strong qualities of pupils.
- Draw their attention to role models.
- Don’t criticize all the mistakes.
- See to it that learning remains fun.

Chess advice

There are specific pieces of advice for dyslectic chess players:

- You can learn to play chess in many different ways. Dyslexics can become good chess players, as Richard James claims in his article ‘Chess and special needs education.’ He points out that achieving good results can give children an important feeling of self-esteem.
- You can exempt a player from the duty of notating his moves – especially young chess players. It is useful to inform the arbiter about this.
- A dyslectic chess player may ask an assistant to notate his moves. It may happen that he gets five minutes less thinking time in that case.
- A board can be equipped with larger letters and numbers.
- When solving diagram positions, a child can cover the diagrams with a transparent sheet with coordinates on each square.
- A chess player can accept his limitations. Parents can stimulate a dyslectic child to notate its moves and take mistakes for granted, as the mother of a young chess player said. Then, it is useful to enter a game into a chess program shortly afterwards. This way, notation mistakes will quickly come to light, and the chess player will often still remember the moves that were actually played.
- A chess teacher can use mainly diagrams, videos and photos in his lessons – for example, with PowerPoint, or on a sheet with a summary of a subject.
- It makes no sense to make life more difficult than you have to. A Belgian mother quoted her dyslectic daughter: the girl thinks that she will never learn to read, ‘but I’ll just marry a man who can read to the children, and then I will teach them to play chess.’

Evaluation

A strong 19-year-old Dutch player (Elo rating appr. 2350, later he became an IM) reported that he had recently been diagnosed with dyslexia. He had trouble especially with reading. In spelling, however, he did even better than average. He said that apparently through the years he had been able to compensate his dyslexia well, and because of that the diagnosis was not made until late.

When playing chess games, he experienced limitations due to his dyslexia. He often started immediately calculating variations in a position. He thought, however, that it is better to verbalize the position first, i.e. evaluate it: ‘Evaluating is simply telling what the strong and weak points are for White and for Black in a position. Players who are good at this don’t have to look at all the possible moves anymore, because they know where the weakness is in the opponent’s or their own position. Then they can attack that weakness, and repair their own weakness. If you know this, you can cast aside a whole lot of moves and make chess a lot easier.’

By training a lot, he had improved in verbalizing and evaluating positions.

At training sessions, he experienced problems because of his dyslexia. He had always had a lot of trouble with languages – also with English. This language is important for chess players because there are many English-language websites, books and videos. Also when following the commentaries during tournaments, having trouble with the English language was difficult for

him, but by training it became easier and easier.

This chess player couldn't find any advantages of dyslexia. 'At school and at university you still get extra time with exams; it would be nice if dyslectic chess players also get extra time for their games, although I don't think this will ever happen.'

He gives the following tip to dyslectic chess players: train your position evaluation a lot, and discuss these positions with your trainer and your training partner.

Gyarmathy

The Hungarian psychologist Eva Gyarmathy pleads for the use of strategy games like chess in education in the digital age. On her website www.diszlexia.hu (see English button) she claims that chess stimulates holistic, visual thinking, systematic thinking, decision-making, problem-solving and creative thinking. This is a route towards critical thinking that is necessary to have in the digital age. Chess improves your memory and your concentration. She claims that for this reason, chess prevents specific learning problems like dyslexia by neurological harmonization.

Gyarmathy claims that one-third of children has learning problems. Children process information in different ways, logically and visually-auditively. Chess can turn children into critical thinkers and good problem-solvers. Dyslectic children have a different 'wiring' in their heads; they think in a more holistic way, and in pictures rather than logically-sequentially. Learning with the help of mind games goes a long way to meeting this issue. Learning in different ways is related to the functioning of the two hemispheres. Gyarmathy pleads for an education system which appeals to both hemispheres.

To stimulate sensory perception and motor development, she pleads for more attention to be paid to physical exercise and arts in education. Dyslexia has a neurological basis. To what extent this deviation leads to a disorder depends on environmental factors. If people don't have to write, read and count, then dyslexia does not exist. Therefore, dyslexia is determined by culture.

It is important that dyslectic children are conscious of their limitations and their strong sides, and learn to deal with them.

When the tide changes, ships come loose. A number of changes that are good for dyslectics are also good for all other pupils, like: more efficient teaching methods; better organization; more concise explanation; and more transparent tasks. It is important to exploit the strong sides and so increase the energy of the system. After all, you don't place sun collectors in the shade either.

Gyarmathy cooperates with grandmaster Judit Polgar in a Hungarian school chess project. She is connected to the Institute for Cognitive Neuroscience and Psychology of the Hungarian Academy of Science.

In Hungary, the national school curriculum has space for chess lessons. One of the methods being applied is that of Judit Polgar. This method is a means, and not a goal in itself. There are courses for teachers who want to learn the method.

Gyarmathy says that there is a need for methodologically well-funded research, longitudinal studies, and good tests. Moreover, it is necessary to identify, with research, the most important variables that cause chess to be beneficial.

Gyarmathy conducts research into the effects of chess education at schools. She reports in a correspondence that the first results of this research are very encouraging.

As an important step in the right direction she mentions the ‘Chess in School’ declaration of the European Parliament (2012), in which the importance of chess as an educational tool is endorsed.

CHAPTER 13

Girls’ and women’s chess

A question from a girl: ‘Why do you have to play chess against each other, and not with each other?’

In research into the effects of chess education, regularly differences are found in scores between girls and boys. Curiously, most of the research makes no distinction between the sexes.

Nature (genes) and nurture (social circumstances) play a role in people’s development.

Half of junior chess players in elementary schools are often girls, but in chess clubs girls are often in the minority, and in chess clubs for adults often only a few percent of the members are women. On average, girls perform worse than boys in chess.

With the transition to secondary school age, the number of girls playing chess strongly decreases. At this age, boys more often have one single interest, while girls are more often interested in a whole range of things. Also, boys are more competitively inclined. They train harder to get results. As it turns out, girls who obtain results often continue in chess. Success experiences play a role in the development of motivation. Girls will visit a chess club more easily if there are also other girls there. This is more enjoyable for them, and it motivates them to keep playing chess.

What is the explanation for the differences between girls and boys in performance and activities?

That girls can, by definition, achieve less than boys in the field of chess, has been under discussion since the successes of the Polgar sisters. The youngest of them, Judit, once made it to eighth place in the world rankings. Opinions differ about the question whether positive discrimination of women and separate women’s competitions are good ideas. An advantage can be that this will cause a number of girls and women to have more stimulating success experiences. A disadvantage can be that top women players experience fewer challenges.

The main theme of the 2019 London Chess Conference was ‘Chess and Female Empowerment’.

April Cronin (a primary school head teacher and a former Irish women’s chess champion) has been involved with chess in primary schools for a long time. She is a role model for girls. According to Cronin, it is necessary to devote attention to certain matters if you want to stimulate girls to play chess. She bases her vision on her own observations in practice. Children between 7 and 11 years old are often very enthusiastic about chess. In her experience, the game is often too difficult for children before their seventh year. Parents often have positive expectations of chess (learning to concentrate and to think). Children often enjoy making plans and decisions. Losing is no fun, but with good guidance you can develop perseverance. Learning to think ahead is an important life skill. Chess can help one to develop a ‘growth mindset’. If there are few girls who play chess, then girls will soon get the idea that it is not for them. Therefore, Cronin considers it an advantage that there are separate girls’ and women’s

tournaments.

Cronin has noticed that girls often play defensive chess. She stimulates them to play more aggressively so as to gain more experience. The cause of their defensive play is, in her view, perfectionism – they want to do things right. She thinks this is the result of a socialization process. She thinks it is important to try and find out what girls like about chess. Among her own pupils, she has found that girls score on average higher than boys when they are asked how much fun it is to solve chess positions.

During the London conference, a round-table discussion took place with, among others, GM Judit Polgar. The central question was: 'A century of women's chess, what have we learned?'

For Polgar, girls' or women's titles were never a goal in themselves. Her parents had the same ambition level for their daughters as they would have had for boys. She was glad about this as far as her own case was concerned. But she realizes that varied views on girls' chess are possible as regards goals, tools and processes.

According to the chess journalist John Saunders, it is of influence whether there are many women involved in the organization of a chess tournament (as a commentator, a photographer, or an arbiter, for instance).

It is striking that many more girls than boys stop playing chess when they go to secondary school. Different explanations for this are possible. Perhaps girls have more interests, or they prefer to socialize mainly with girls. Polgar thinks that you shouldn't look at the moment itself, but at earlier developments: how do parents bring up their children? That leads to all kinds of expectation patterns, which children internalize into their self-image and their behaviour. Another aspect is that girls reach adolescence earlier than boys.

According to Lilli Hahn (German Youth Chess Association), separate girls' tournaments can stimulate girls and can generate media attention. Also, role models can stimulate girls.

Polgar organizes tournaments herself. In them, she only distinguishes by age. She thinks that too low ambitions are damaging for the development potential of girls. She emphasizes that parents and environment play a large role in a girl's self-image, ambitions, and her way of dealing with challenges.

Hahn points out that there are also sports (like dancing) that develop special programmes to attract more boys. Perhaps something can be learned from them.

Polgar refers to a book by the psychologist Carol Dweck on growth mindset. Developing such a mindset was something her parents also envisaged during her upbringing. She claims that chess is a suitable means for this. You can give specific positive feedback on concrete performance and behaviour literally after every move. She also uses these insights quite consciously in the upbringing of her own children. She thinks that with success experiences you can stimulate curiosity and the preparedness to take up challenges in children.

At the London conference, Alice O'Gorman gave an account of an inquiry by the European chess federation ECU into girls' and women's chess. Questionnaires had been sent to national federations. During the conference, not all of the data had been sent in yet. The average percentage of female members in chess federations is 9. In Georgia it is highest: 26 percent. The number of women in the national top-100 is on average 3.7 percent. As they get older, the

percentage of female chess players gets lower and lower.

‘Do boys and girls learn chess differently?’ The Chessity website of the online teaching programme of the same name has done research on this question by looking at the way pupils use the website. The data from the Chessity database show that girls read the introductory instructions in a more disciplined way, while boys learn more by trial and error. This certainly applies to the beginners’ lessons. Girls are more inclined to solve chess positions, while boys more often prefer to play games. The Chessity programme has diplomas. It is striking that approximately the same amount of girls and boys pass the highest test if the lessons are given by their own teacher during school hours. If the lessons are given during school hours by a hired chess teacher, then the ratio of children passing the exam is one girl to three boys.

CHAPTER 14

Social and therapeutic chess

Chess can be beneficial for anybody's personal development: emotionally, socially, cognitively as well as meta-cognitively. and it can be meaningful especially for the personal development of children with 'special needs'.

Chess is an approved instrument for emancipation (full participation in society) and empowerment (getting a view of and a grip on yourself and your environment). Chess offers people with limitations, among others, a hobby, a challenge, contact opportunities and development opportunities. Various chapters in this book have been devoted to these subjects.

In this chapter, we discuss a few other groups. Scientific research is scarce, and often comes with methodological limitations. In such cases, 'best practices' are the most valuable.

Unique is the Spanish magazine *Ajedrez Social y Terapéutico* on social and therapeutic chess. Dozens of magazines from the 'Magic Extremadura' club can be read free of charge on this club's website. In the first issue of this magazine (2013), chief editor and psychologist Juan Antonio Montero Aleu indicated what he means by social and therapeutic chess. Social chess is aimed at people who (threaten to) find themselves in a situation of social exclusion. Therapeutic chess is chess as an instrument for the treatment of people's limitations. To be able to use chess for this, it is necessary to understand their needs and problems, and to know which teaching methods are useful for solving or reducing these problems.

ADHD

Chess probably offers possibilities as a treatment method for children with ADHD. After eleven weekly chess lessons, a majority of children with ADHD showed fewer symptoms. This conclusion was drawn by Hilario Blasco-Fontecilla et al. in their research report 'Efficacy of chess training for the treatment of ADHD: A prospective, open label study'.

The researchers involved parents of 44 children aged 6-17 years with the diagnosis ADHD (based on DSM-IV characteristics. The DSM is a diagnostic and statistical manual of mental disorders published by the American Psychiatric Association) in their research (Madrid 2014). The children (70 percent of whom were boys) were given one-hour chess lessons every week in a group of maximally 10 children, for a period of eleven weeks. Before and after the lessons, their parent filled in questionnaires (SNAP-IV en CPRS-HI). Statistic analyses showed positive effects. The investigators claim that any follow-up research should involve more participants, and also that a better research design is necessary (control conditions).

According to the researchers, 4 to 8 percent of children worldwide suffer from Attention Deficit Hyperactivity Disorder (ADHD). Characteristics are, among others, concentration problems, hyperactivity and impulsiveness. This leads to all kinds of personal and social problems.

ADHD is often treated with a combination of interventions: medication, psychological

therapies (a.o. cognitive behavioural therapy) and psycho-education (offering insight). Reported side-effects of medication are insomnia, lack of appetite, and a delay in growth. One-third of the children don't react to medication.

Chess therapy might be able to improve these children's attention and concentration. Playing chess requires application of all kinds of complex cognitive strategies.

The investigators ascertain that no previous empirical research has been conducted into the effects of chess instruction on ADHD. They also ascertain that children with a higher intelligence derive more profit from the chess lessons. The authors do not exclude a placebo-effect (e.g., that the children are given more attention) as an alternative explanation for the results of their research.

The researchers note that the play element of chess can motivate children with ADHD to join an activity.

At the 2016 London Chess Conference, Luis Blasco from Spain told about his experiences with chess lessons to children with ADHD in Madrid. A video of the lecture and an interview can be found on the website chesstalent.com. Blasco mainly works with mini-games, i.e. chess games with only a few pieces. These are less complex, and easier to learn. Blasco has noticed many different positive results due to the chess lessons, among them improved concentration, improved results with problem-solving tasks, and improved social skills. The children also get to know themselves better. Parents and family members are emphatically involved in the children's development of chess skills. This is done by giving information and involving them in lessons and activities. Blasco sees one contra-indication: children have to be interested in chess, otherwise it's no use.

The author of this book regularly teaches children with ADHD in chess lessons at primary schools. I have noted that a number of these children become more calm as they get immersed in playing chess games. It is often hard for them to keep paying attention during explanations. Children regularly suffer from too many stimuli in their environment. In such cases it often helps to give them a quiet spot in a classroom, where they can occupy themselves with an activity. Children with ADHD often like to learn by gaming on a computer (in their own tempo and on their own level), and it makes them calmer.

It is useful to explicitly use the term ADHD when dealing with children with ADHD, also vis-à-vis their lesson group. A teacher may tell these children that he understands that they are busy. Acceptance is important for a child's feeling of self-respect. The teacher can send children out of the classroom when they are too busy, but it is better to tell children that they can take a time-out if they feel the need for it. Precisely this option of controlling a situation themselves will improve a child's ability to deal with more stimuli. Explaining to the rest of a group that one of the pupils is 'sometimes busy in his head' can lead to greater acceptance. The teacher might ask the children, for example, who is actually perfect.

For one, the school system often isn't perfect. If it were better adapted to children with 'special needs' then these children would experience far less problems and would be much better able to develop themselves.

The Down Syndrome

In various places in the world, initiatives have been started with regard to chess for children with the ‘Down Syndrome’, an intellectual disability. Chess is an instrument that may help these children with their social integration, education and self-respect, and it gives them a lot of pleasure.

At the 2017 London Chess Conference, the Spanish journalist and chess promoter FM Leontxo Garcia gave a talk on chess for people with ‘special needs’, among others the Down Syndrome. He said: ‘To get the best source for that, you have to go to Mexico City. There you will find Comunidad Down, a social centre where they’ve been using chess with several people for years, with very good results. I was there, interviewing professionals and residents, playing blitz games with Down people – very impressive.’

The project is described on the Spanish-language ChessBase website. The centre cooperates with the Escuela Nacional de Ajedrez (ESNAJ). They have developed their own lessons programme, in which the children’s own teachers play an important role. For example, children learn to discover the chessboard by walking over a large coloured chessboard and imitating moves (senso-motoric). The chess lessons have led to positive learning effects with the pupils in the areas of logical reasoning, self-control, improving self-esteem, concentration, and an objective view on their own possibilities.

Various videos about this project can be found on YouTube. Search terms are: ‘Síndrome de Down Ajedrez’ and ‘Fundación Comunidad Down’. Videos about chess lessons can be found with the search term ‘Clase de Ajedrez’.

Director Roberto Ferriz Barrios of the centre sent us some more information. The philosophy and instruction method are described in the programme document ‘Club Ludea’ (http://esnaj.mx/pdf/dbase.pdf). The national chess school has social and educative objectives, and the programme is intended for schools as well as special needs groups like elder people, young delinquents, rural communities and young people with Down Syndrome.

On www.esnaj.mx you can find, among others, bulletins and videos that provide more information.

The ESNAJ has developed its own pedagogic and didactic method and philosophy – the Ludea method. Its objectives are: developing logical, mathematical and critical thinking, as well as learning to analyse and solve problems via mind sports. Some of the aspects are creative thinking, resolution, and sportsmanship.

The principles of this method are based, among others, on respect for the individual, and creating a learning environment that stimulates harmony and ability to cope for oneself. In this context, play is a fundamental part of development. In accordance with constructivism (active interaction with reality), the players/pupils are at the centre. They are given exercises, and also there is attention for kinaesthetic body intelligence, which refers to the set of cognitive skills that facilitates the connection and coordination of the mind with the body.

The programme is applied in an adopted form at the Comunidad Down. To this end, teachers of the centre collaborate with ESNAJ teachers. Besides methods like letting children experience

the chessboard in a physical way, there is, for example, also the method of ‘storytelling’ for young children.

On the social projects of ESNAJ there is a documentary called ‘Peón e4’ on YouTube, with English-language subtitles. The first part is about pupils with a mental disorder: https://youtu.be/XQIWVblgc3s. Children with the Down Syndrome have taken part in blitz chess tournaments, breaking the paradigm that only very intelligent people can play chess, says ESNAJ director Roberto Ferriz Barrios in the film.

Barrios: ‘The teachers who work with people with the Down Syndrome are pedagogues who are specialized in special education. The educational tools are diverse, and are mostly the same as, or very similar to, those we use in our pre-school teaching programme (adaptation to the needs of the students, or to the group level).’

In Apeldoorn (the Netherlands) there is an annual national championship for people with an intellectual disability. Matthijs Visser (b. 1988) is one of the participants. He has the Down Syndrome. Despite his disability, he has two Steps Method diplomas.

Matthijs’s parents decided to send him to a normal primary school instead of special education. At the primary school, he was given extra guidance. When he was nine, he learned to play chess at the after-school chess club of the primary school De Sjofar. This was a club that sometimes had even more than 100 members, led by an enthusiastic kindergarten teacher. At the club, children played chess games, and parents gave lessons according to the Steps Method. Also, there were various annual youth tournaments, in which Matthijs took part with great enthusiasm. Here, he followed lessons according to the Steps Method, and passed his two exams.

Matthijs’s father, Andries Visser, was taught chess by both Matthijs and his little brother and sister, while they were following lessons at primary school.

From his thirteenth year, Matthijs Visser was a member of the Apeldoorn club De Schaakmaat (= The Chess Mate). Here he learned to notate own his games.

He kept playing in the youth section until he was 25. After that, he played for another two years in the senior competition of the club together with his father. In recent years he has been playing against various club players at home, almost on a weekly basis. With his father, Matthijs also visits a one-day seven-round rapid tournament three times a year. Most of the time, he scores two or three points there.

Today, Matthijs lives in his own apartment in ‘De Parel’ (= The Pearl’), an assisted living facility. On the grounds of this healthcare institution, he works partly in a supermarket (mainly checkout) and in the restaurant.

‘Thinking’, he replies when asked what he likes in chess. ‘Making plans. I’m getting better and better, too.’

What is the best way to learn chess if you have the Down Syndrome? ‘Especially looking and doing, making it very practical, concrete and tangible,’ his father Andries says. With the Down Syndrome, the best way to learn is visually and sensomotor. Reading texts is difficult, but if a teacher shows things on a board or a demonstration board, then it works. It is important to make use of sensory and physical experiences. You can, for example, learn how the pieces go by

moving pieces around on a large garden chess set. ‘Most people with Down Syndrome think more slowly than many other people, but they have the same social and emotional needs.’ This means that a chess lesson is successful if it is enjoyable and pleasant – if you gain success experiences there, and if teachers are empathic, and take your limitations into consideration.

Matthijs and Andries Visser know only one other chess player who has the Down Syndrome. Matthijs is proving that with the Down Syndrome you can still achieve a lot in chess. ‘Perhaps it helps that Matthijs has a very strong visual memory,’ says father Andries. ‘I only have to ride a route on the bike with him once, and then he will know it precisely.’ Pattern recognition is also very important in chess. ‘Learning chess has been important for Mathijs’s cognitive development; it has helped him to learn to remember things and make connections. Also, it has been a positive stimulus in the contact with other children, because Matthijs is not so good at talking, but he is good at playing games and he is social with other people.’

The author of this book had a seven-year-old boy with the Down Syndrome in a school class in Utrecht. He was following lessons in a normal school class, supported by a special supervisor. He took part in a series of ten weekly one-hour chess lessons during school time. He found it hard to understand the game, but he liked the atmosphere very much. A mini-game with single pieces (Square4Chess) went better. He liked that game very much. The teacher and the other children involved him in the lesson in all sorts of ways. During discussions of chess exercises, children would give solutions, and then the boy would sometimes carry out the moves. In one of the lessons, ‘spice nuts chess’ was played. By jumping with the knight you could win (and eat) spice nuts. In the weeks after that, he kept asking about that game during the question round. His supervisor told us that at home he had talked his entire family into learning chess.

Hospitals and physical limitations

Through chess you learn something new, you can immerse yourself in something positive, you make contacts, you get new challenges, you stimulate the functioning of your brain. Chess is beneficial for people’s well-being and health. If people feel better psychologically, this will make itself felt in their physical condition. Through chess you use your brain, and it will remain fit for a longer period of time. Learning chess shows you that you can learn new things, and thereby contributes to a positive self-image.

Chess offers people with an illness or a physical limitation the opportunity to pursue a mind sport. They can play competitively, and maintain and develop social contacts.

At the 2016 London Chess Conference, Anna Harazinska told about her experiences with chess in hospitals in Poland – among others, children’s hospitals and institutions for handicapped children. The project, called ‘Therapy through chess’, focusses on teaching chess to patients in hospitals. The lessons are given by teachers from hospitals and by volunteers, trained by the Polish chess federation. The federation has also supplied chess sets and demonstration boards.

The project is intended for people with mental or physical problems who are forced to stay in hospital for a long time. Special attention is given to children.

Harazinska claims that patients stimulate various cognitive functions through the chess

lessons, such as memory, and also analytical and creative thinking. Chess also stimulates concentration and perseverance. Chess takes your mind off day-to-day problems and thoughts of illness. Patients become motivated to engage in the struggle against their illness. ‘They can win on the board and then they can win in life.’

Depressions

A depression is a disorder that makes people cheerless. They lose their interest in other people and in the things around them. Children and young people can get depressed too.

The cause of depressions is a combination of genetic predisposition, personality traits and negative life experiences. Treatment is possible through (a combination of) medication, psychotherapy, psycho-education, a healthy lifestyle and stimulating activities. Not everything helps for everybody to the same extent. Going for walks may be good. Chess may also help people to fight depressions, as practical experience has shown.

Precisely for young people who like to play chess, the game can have a positive effect. Not so much by playing long games, but rather by discussing positions and games, making exercises, visiting interesting websites and the like with a trainer (and possibly a group of people). Chess activates cognitive functions. Chess also activates emotions: beautiful positions can make you happy and fascinate you. You put your mind on different things in a positive way, in interaction with other people – all the more so if you have success experiences.

Use of medication is experienced passively. With chess, you are active: you assess a situation and make plans. This stimulates you to get a view of and a grip on situations.

The author of this book has given trainings to depressive young people various times. In those sessions, the subjects raised for discussion were mainly those that these young people found enjoyable and interesting. Learning goals were: 1. Learning to play better chess, and finding out how you can occupy yourself with chess; 2. Deriving pleasure from chess.

One father called the chess activities a ‘lifebuoy’. It was the only thing his son was really interested in during a depression.

A primary school pupil who suffered from a depression said that he found chess interesting, and that it took his mind off negative feelings. He experienced the solving of chess problems as something he took pleasure in.

During a chess training, personal conversations may soon be struck up. It helps if people with psychological problems pour out their hearts, and put their thoughts and feelings into words.

Chess is a metaphor for life. It is playing with ideas and rules of thumb. Each move has advantages and disadvantages which you have to weigh up against each other. Actually, chess is just like soccer: you have to do it all together, and win. Winning is not always scoring 1-0. Having fun and learning interesting things are also ways to win. During a chess training you can make links between positions on the chessboard and situations in your own life.

An advantage of chess is that you can play it on the computer and on the Internet. A trainer can show video films and websites, and can explain how a pupil can occupy himself actively with this. He can suggest how his pupil can play against a computer – with house-mates, for

instance. Doing things together stimulates your own activities and deepens your social contacts.

The Münchener Schachstiftung

The Münchener Schachstiftung (a German non-profit institute) has taught chess to roughly 5,000 people with a limitation during a period of twelve years. Often this was done free of charge thanks to benefactors. Target groups are, among others, children from problem families, refugee children, physically handicapped people, children in hospitals, elder people and autists. The aim of the chess lessons is to teach thinking strategies and develop social-emotional skills, as well as enhancing self-confidence. GM Stefan Kindermann is the chairman of this foundation. With the help of chess, people with a limitation can show their qualities, he says. There are examples and pictures of their activities on the foundation's website: www.schachstiftung-muenchen.de. For the realization of the projects, the chess foundation cooperates closely with the Münchener Schachakademie.

The dream multiplier: it's better to play chess than to kick people

The Moroccan Amsterdamer Mustapha Eljarmouni created possibilities for his autistic son to play chess. At the same time, he made the world a little better. This was adapted for the screen in a film called *De Droomvermenigvulderaar* (*The Dream Multiplier*) with English subtitling.

Social integration and social construct

People with a physical or a mental limitation emancipate by playing chess. They can develop their talents, because the sport is trainable, affordable, available, and to a reasonable extent accessible and understandable. Chess is a textbook example of social integration: chess players with a limitation simply belong. These conclusions were drawn by the Belgian Tieme Verlinde in his master's thesis on remedial teaching titled 'Schaken: meer dan enkel stukjes schuiven?' (= 'Chess: more than just shuffling pieces?'; University of Ghent, 2012). Verlinde conducted his academic research in Flanders. The central research question was: 'Do persons with a limitation and/or a label experience sufficient participation and accessibility in chess in Flanders, and what themes are important in their perception of chess?'

The research was qualitative. Verlinde examined chess players with a limitation's perception of their environment by means of semi-structured interviews. This form of research distinguishes itself from quantitative research, which concentrates on drawing statistic-based conclusions on the basis of large-scale or experimental research. A big advantage of this method is, moreover, that the researcher is optimally able to listen to the unique experiences, stories, perceptions and lines of thought of experience experts.

Of essential importance, Verlinde claims, is that the concept of 'limitation' is a 'social construct'. A person has a limitation to the extent that people in his environment call a physical or mental limitation a limitation. So this is not just about the personal traits of someone with a limitation, but certainly also about the attitude of the people in his environment.

CHAPTER 15

Class management

If all goes well, a chess lesson is a ‘playground for the brain’, full of discoveries and fun. This is only possible if there is order in a lesson – meaning that a lesson takes place in a structured way. This is necessary, so that pupils will feel at ease, and will be able to concentrate and learn well.

Keeping order is a well-established concept, but it is better to speak of class management. This term describes, besides controlling problems, also especially the pupils’ developing opportunities. The goal of a lesson is to instruct in a productive way. Important conditions for this are a good structure and an inspirational culture.

Sometimes, as a teacher, you are working with a small group of super-motivated pupils. Then you won’t easily get problems. But sometimes it’s different.

Often in (chess) education, the learning performance isn’t optimal. This is regrettable, and unnecessary. There are various possible causes, which may be connected with the teacher, the pupils, or the setting. Teachers may be badly prepared, pupils may have a bad learning attitude, or the classroom may be a mess. And sometimes it seems as if ‘achievement’ is a dirty word.

As a teacher, you should ask yourself: am I inspiring children, or am I controlling them?

A class is a world in itself. There always all sorts of things happening. There are many factors that influence a lesson. The better a teacher understands this, the more he will be able to exert a positive influence on it.

Below we give an extensive (not exhaustive) list with points of attention. Only if you have a good view of these, you can get a grip.

Useful insights can be translated into a good teaching method and practical routines.

Disorder and noise are counter-productive in a class. Allowing unrest means rewarding negative behaviour. This will be at the expense of the pleasure, the well-being and the performance ability of well-meaning pupils: they won’t feel at ease, they can’t concentrate, and will learn less.

Pupils show behaviour – always. They cannot *not* behave. Behaviour is the consequence of thinking, feeling and wanting. This happens consciously as well as unconsciously – controlled as well as uncontrolled.

It is important for a teacher to realize why pupils behave in a certain way, and how he can influence their behaviour. Important in this respect is that prevention is better than cure.

How do you create a relaxed, inspiring lesson, in which everybody is functioning in a constructive way?

Motivation plays a crucial role. You can promote it with variety, fascination, and participation. In other words: alternation, awakening interest, and enabling pupils to be actively occupied with a subject.

Unrest during a lesson can arise due to many different causes. For example:

- Pupils do not always have themselves well in hand (they don't feel well, have psychological problems, are sensitive to stimuli, or are troubled by hormones).
- Pupils bully other pupils.
- Boredom: the level of the lesson does not correspond to the level of the pupils.
- Lack of interest: the subject does not interest pupils.
- Pupils seek out their boundaries.
- The teacher teaches badly (unclear, incompetent, no authority, bad-tempered, unprepared).
- The group is too big (too many stimuli, pupils get insufficient attention).
- The classroom is below par (cramped, inconveniently arranged).
- The lesson is too difficult for pupils.
- Weather circumstances.

You can compare teaching with regulating traffic. You can choose between motivating participants, establishing rules, keeping order and putting up obstacles. You can also use all four of them.

Ask yourself as a teacher: how would I react if I were a pupil? What can I do better as a teacher?

Points of attention classroom

- There is enough light and oxygen, a good temperature.
- The room is conveniently arranged.
- The room is low on stimuli: no rubbish, no distraction.
- Arrangement of the tables depending on the method used (U-shape, loose tables, islands, central space).
- Tables and chairs at the right height.
- The pupils have their own places. The teacher keeps an eye on combinations of pupils.
- The pupils have a good view of the (digital) blackboard and the teacher.
- The teacher has a good view of the pupils.
- The teacher's table is put in a place where the teacher has a good view.
- There is a table in the front part of the class for a pupil who is easily distracted, or a pupil who disturbs others.
- Children with visual or auditive problems are situated in the front part of the class.
- A surveyable walking route for pupils who have to collect material or go to the toilet.
- A closet for materials, conveniently arranged.
- Space for presentations (e.g. a small table next to a digital blackboard).

Points of attention lesson content and structure

- Good preparation provides a lesson with structure and content.
- Making a concise lesson report forces you to self-reflect and is convenient for school reports.

- A good lesson needs clear rules and structure. These are not open for discussion.
- Make the division of roles clear, and radiate non-verbally that the teacher decides what happens.
- Create structure with rules and routines.
- Write down the names of absentees.
- Define learning goals (per year and per lesson).
- Make a year plan and, for every lesson, a lesson plan.
- Determine which foreknowledge and skills are required.
- The instruction corresponds to the learning level and the social-emotional development of the pupils (‘zone of proximal development’ – Lev Vygotski).
- Establish content and methods.
- Welcome pupils at the beginning of the lesson.
- Clearly indicate the design of a lesson; tell, and write on the blackboard, what will happen during the lesson.
- Make the lesson goals clear for pupils in every lesson (what are we going to do, how and why).
- Make clear what you expect from pupils.
- Start on a subject by recapitulating foreknowledge.
- No overloaded programme, not too many items.
- Design of a lesson: first learn-things, then do-things.
- Alternate methods in a lesson.
- Energy management: balance between exertion and relaxation.
- Go with the flow: sometimes, you have to adapt the lesson to unexpected occurrences (e.g. respond to an interesting question).
- Clear closure of the lesson; for example, draw a few conclusions from the lesson.

Points of attention teacher

- Presentation
- Well-rested, relaxed, self-confident, optimistic
- Open, friendly; communicating in a positive way
- Laughing is healthy.
- Consequent behaviour through attitude, body language, words (pupils unconsciously interpret what they see).
- Use your own style.
- Show non-verbally that you are sure of yourself.
- Always keep calm, use silences.
- Speak calmly.
- Humour can put things in perspective.
- Shouting down pupils is a sign of incapacity.

- Communicate in a personal way, use first person: I appreciate this, I am bothered by your behaviour.
- Don't act like Mr Popular, that is an admission of weakness.
- Be fair. Admit it when you make a mistake.
- Show something of yourself (e.g. discuss one of your own games).
- Do what you say, keep your appointments.
- Formulate concisely, use language that corresponds to the pupils' language use and their perception of their environment.

Relation with pupils

- Show empathy.
- Pupils hear the words of a teacher, but feel his attitude.
- Learn the names of pupils as soon as possible. A face map is handy.
- Calling pupils regularly by their names makes the contact more personal.
- Make clear to pupils what you expect from them as a teacher.
- Hear each other out, both pupil and teacher.
- Involve pupils actively with the lesson, e.g. by giving tasks and asking questions.
- Where possible, establish rules (and the consequences of breaking them) and routines in dialogue with pupils – this will increase their commitment.
- Short individual talks provide more insight in pupils and foster a bond of trust.
- Give personal attention ('That's a nice T-shirt').
- Be alert to psychological and physical problems. E.g., in case of ADHD, give a pupil the opportunity of a self-chosen time-out.
- Have an eye for pupils' personal aspects. Show interest. Perhaps their grandmother is ill, or their parents are divorced?
- Give extra attention if a pupil is afraid of something.
- During the question round at the start of the lesson, and at other moments, give pupils room to share their own experiences and insights with the class and the teacher.
- Take pupils seriously, having a say in matters is possible (e.g. in a question round).
- Look pupils in the face when you talk to them; if possible, at eye level.
- Share enthusiasm of pupils.
- Celebrate important events (first lesson, parting).
- Develop traditions together, e.g. a simul by the teacher before Christmas and Summer holidays.
- Send a message now and then, for example with a birthday or a success experience. But also after sad events.
- Visit pupils with long-time illnesses.
- Reflect on experiences together with pupils. For example, take a look at a self-made photo or video of a tournament.

– Allow room for questions.
– Rule: it is allowed to make mistakes. ‘You have the right to be wrong.’ As long as you are honest.
– Show respect for each other.
– Give pupils trust.
– Go out together (e.g. to a tournament).
– Where possible, be personal. Tell what you used to do in such a situation.

Together

– Teach pupils to create win-win situations.
– Teach pupils to cooperate: ‘First ask your neighbour, then ask me.’
– Stimulate pupils to help each other (‘Do as you would be done by’, ‘If you explain something, you learn something too’).
– Be curious together: ‘Let’s find this out together on the Internet.’
– Where possible, tell pupils to solve their mutual problems themselves: ‘First talk about it with each other, and if necessary we’ll talk with the three of us.’

View and grip

– First establish the motives behind certain behaviour, only then react.
– Listen and observe well.
– If necessary, check a theory about certain behaviour.

Adjusting behaviour

– Communicate behaviour rules clearly: calm behaviour is the norm; we are here to learn; zero tolerance; if you don’t join, you’re out.
– Deal with misbehaviour and unrest directly and resolutely. Don’t threaten, but act.
– Find a balance between reward, punishment and ignoring.
– You can exert influence on pupils non-verbally – by your calm, resolute attitude, your clear voice, your appearance, standing upright, inserting pauses and looking someone in the face.
– Call pupils by their names if you tackle them on their conduct.
– Look at causes for behaviour. Is a pupil engaging in a struggle for power, or does he have a personal problem? Only if you know the cause of someone’s behaviour you will know the right way to approach it.
– Always judge a pupil by his behaviour, don’t disqualify him as a human being. Say this explicitly, if necessary.
– Use codes: silence sign, raise your finger if you want to ask a question.
– Clear and appropriate sanctions on breaking behaviour rules (separate seat in the front part of the class; send the pupil away and inform their parents).
– Indicate clearly why certain rules are as they are.

- Clear feedback on disapproval of behaviour (give reason).
- Where possible, correct individually.
- Correction of behaviour can function as a signal to the rest of the class.
- Formulate correction of behaviour positively, indicate how something should be done in the right way.
- Channel restless behaviour by giving a pupil a task, or letting him answer a question.
- If necessary, move a pupil to another place in the class.
- Sometimes, looking a pupil in the eye is enough already – or frowning at him.
- Unsettle problematic behaviour of a pupil with a laugh and an in-perspective relativization.
- Walk around through the room (take different perspectives).
- Emphasize something by adding a pause.
- Be alert to bullying behaviour. Name it immediately, condemn it, and discuss it. What are we going to do about it?
- Don't use a red pen with an assessment.
- If necessary, let a class work in absolute silence for five minutes ('we are going to have a rest moment right now').
- Pitfall: too much attention to negative pupils, you should rather reward constructive pupils.
- Return later, individually, to a severe correction of behaviour. Ask the pupil why he or she misbehaved, and draw a conclusion together about future behaviour.
- Sometimes, criticism can function as unintentional confirmation, for example if a pupil gets a form of punishment that makes him a hero in the eyes of fellow pupils.
- The pupil who causes unrest is the one who has a problem. He is the cause, and he will be the most troubled by it. As a teacher, you want to help him find a constructive solution.

Complimenting, stimulation

- Compliment pupils, emphasize success experiences (effort is more important than result).
- Aim feedback (assessment of pupil) at behaviour, not at a result or a person.
- Discover what pupils are good at. Help and stimulate pupils to excel at something. Via talks, pupils can, e.g., show their expertise in something.
- Check if pupils have limitations. Take this into account. Make limitations discussable and transfer it into a positive initiative (e.g. prepare a talk together with them on chess and dyslexia, ADHD, hearing problems or visual limitations).
- Applaud together with the class in the event of success.
- Believe in pupils, and show it.
- Give pupils trust.
- Teaching style.
- Appeal to pupils' interests, for example compare behaviour rules in class with rules that apply in their soccer selection.
- Content: teach what is useful.

– Clear, concise explanation via various channels (verbal, visual), much training and discovering.
– Brief, frontal teaching; let pupils do a lot themselves.
– Watch out for information overkill (World Champion Capablanca: ‘I don’t know much, but what I do know I command well.’).
– Involve pupils in the lesson with questions. Use sufficient waiting time. Then more pupils will react, and the quality of the answers will be better.
– A lesson should be enjoyable and inspiring. Surprise pupils with something nice now and then.
– Choosing can be quite difficult. Help pupils by asking good questions and giving tips.
– Emphasize the importance of creativity and experiment. Discuss what this is, try out things together.
– Make beautiful products together (e.g. a video or a chess newspaper).
– Use personal stories to explain issues. Ask pupils to tell about their own experiences.
– Let pupils assist you (e.g. handing out quiz forms, connecting laptop).
– Where possible, be flexible, for example respond to a question and change the lesson scheme.
– Find a balance in which you do support your pupils, but let them think at the same time.

Making it visual

– Show tangible achievements: drawing on the wall, competition results on the board, photos and games on an Internet site.

Test

– Waiting too long with the assessment of a test will reduce its impact on pupils.

Closure

– Close off the lesson clearly. For example, let pupils summarize briefly what they have learned.

Communication to school and parents

– As a specialist teacher, communicate well with regular teachers and sometimes with parents.

Evaluation

Self-evaluation: keep improving yourself. Teaching is comprehensible, put into words what happened in a lesson in a lesson report.

Intervision with colleagues: exchange experiences and ideas, learn from each other, take a look during each other’s lessons.

Evaluation with the class: invite pupils to make critical (but constructive) remarks during the question round or at the closure. Ask questions to individual pupils every now and then. Once a year, interview pupils briefly.

Points of attention pupils

- Pupils differ.
- Which learning goals and expectations do pupils have?
- Pupils may interpret something in a different way than the teacher intended it.
- The norm is that pupils are co-responsible for a good lesson. If they misbehave, they have to account for this, or experience the consequences.
- Discussion: let pupils explain why a chess lesson has to be quiet and orderly. ‘What does a good chess lesson look like?’
- Question to pupils: ‘Do you like the lesson? Why, or why not? What are we going to do about this together?’
- Pupils enjoy being self-determining and being able to show their qualities, e.g. in a work group or with a talk.
- Group size and level: too large groups and diverging level is asking for problems (certainly if there are nuisances in the group).
- Split too large groups into smaller groups.
- Separate busy pupils.
- Pupils concentrate if they are motivated and involved.
- Pupils are motivated if:
  - they think a subject is important (interest; means to achieve an ambition)
  - the method appeals to them
  - they feel at ease.
- Pupils are not motivated if:
  - the subject matter is too easy or too difficult
  - they have personal problems
  - they don’t feel well
  - other pupils influence them in a negative way.
- Does difficult behaviour by a pupil arise from an urge to seek out their boundaries or from psychological problems?
- Rules: raise your finger before you ask a question, silence sign from the teacher.
- Enhance commitment by developing projects in dialogue (‘how are we going to tackle this…’).
- Give positive direction to energy (e.g. during an analysis on a demo board, give pupils their own board with pieces).
- Channel behaviour by allowing pupils to score points (in competition, tactics training and game analyses in quiz form with scorecard).
- Hang up the ranking list in class (make performance visual).
- Let pupils base success experiences on their own performance (make them understand that the main thing they should do is improve themselves).
- Do not allow talking during a competition (analysis after the game in a separate room).

- With projects, create small discussion groups.
- Not everything should be done in group form (e.g. tactics individually, and game analyses in duos and plenary).
- Make a sociogram; what relations are there in a class, separate certain children, or, on the contrary, let them cooperate.
- Isolate nuisances (difficult children who are turning things upside down on purpose) and name their behaviour (Who are you, to disturb the learning opportunities of others? Better seven pupils who learn something than eight who learn nothing, so buzz off, or do you want to apologize?).
- Rest corner for children for whom it’s all getting too much emotionally.
- A specialist teacher sees his pupils only one hour every week. Refer difficult pupils immediately to their own regular teacher.
- Make sub-groups of equal level (or with complementary qualities).

CHAPTER 16

A.D. de Groot on Polgar

The Dutch professor A.D. de Groot has, among others, done pioneering research with his thesis titled *Het denken van den schaker* (1946). In 1965, it was translated into English as *Thought and Choice in Chess*. In 1992 I visited him at the Rijksuniversiteit Groningen.

De Groot was also a chess player of master strength. I have included notes of this conversation, and from articles by him, in my master's thesis at the Universiteit van Amsterdam titled 'Op weg naar de schaak-top, een onderzoek naar sociale determinanten van het prestatievermogen van jonge schakers' (= 'On the road to the chess top, an research into social determinants of the performances of young chess players').

De Groot plumbed deep into Laszlo Polgar's method. Together with his wife Klara, Laszlo educated their three daughters Susan, Sofia and Judit at home. By working with a well-thought-out training scheme, the daughters made it to the world top in chess. Susan became a grandmaster and a Women's World Champion, Sofia became an international master, and Judit became a grandmaster who made it to the world top ten among the men.

Below I give the 'Kanttekeningen van A.D. de Groot' ('Annotations to A.D. de Groot') from my master's thesis.

De Groot heard from Klara Polgar herself that her husband attributed their daughters' successes exclusively to his educational method. In his observations in the magazine *Didaktief* (= *Didactive*), De Groot also wants to assume that Polgar meant that his educational method could work for all gifted children. Even then, the important claim remains upright that early specialization and making 'prodigy achievements' is not bad but good for the development of a child's personality.

De Groot notes here that Polgar kept his daughters away from school, sneering at the accepted school type, where, as he claims, the concept of equal chances amounts to an equal learning curriculum, which De Groot qualifies as sub-optimal for gifted children. He considers that, as long as the girls were not demonstrably damaged in their personality development, this was at worst an instructive experiment that is worth being studied by experts – albeit from a distance, for privacy reasons.

In passing, De Groot gives a definition of giftedness: the level someone can reach under circumstances that are optimally geared for the goal that is to be achieved.

In a second column, De Groot quotes from a manuscript that had been handed over to him, from the philosopher Endre Farkas, who was a friend of the Polgars. It contains conversations with Polgar about his educational method. De Groot quotes Polgar: 'Genius is not born; genius is nurtured', and in this respect a child was emphatically supposed to be the 'co-author of his upbringing'. Polgar puts the emphasis on early specializations (four to five years old) and on the role of the educator. The goal of education is 'happiness'. De Groot summarizes the value of

Polgar's life's work with the phrase: 'it's not true that such a thing is not possible!'

What he means by this, De Groot discusses in a third column. Polgar has – on good grounds, he thinks – put up for discussion the claims that: 1) only males are good at chess, 2) early specialization in education is wrong, and 3) it is not possible to create a prodigy by education.

However, De Groot thinks that Polgar, like other inspired innovators, is a victim of 'always or never' thinking, where things that may be beneficial to some, degenerate into the idea that 'this has to be possible for all'.

De Groot speaks of 'equality verdicts' which are harmful because they are not rooted in reality, and lead to 'stupid' criteria in education, arouse false expectations, and consequently even prevent good (namely, differential) educational policy.

Characteristics of the Polgar education

After consulting various sources (among others, the book *De Polgar zusters* (= *The Polgar Sisters*) by Ed van Eeden), I have given an overview in my research report of the suppositions Polgar apparently used as starting-points in his educational method.

School, culture and society:

- Schools waste talent (among others, lack of differentiation).
- Cultural values influence upbringing, and, consequently, also learning performance.
- The method is a means of providing society with high-quality specialists.
- That girls often perform less well is the result of a socialization process.

Learning and achieving:

- Learning performance has to be stimulated at an early age.
- There are no genetic influences on performance.
- A genius is the product of hard work and favourable circumstances.
- It is important to give positive feedback to children.
- To be able to perform, children have to be intrinsically motivated.
- It is important to set high but attainable goals.
- Learning has to include an element of play.
- To be able to achieve, it is important for children to be made self-conscious at an early stage; in this respect, they are the 'co-author of their own upbringing'.
- It is important to train in a versatile way.
- To be able to achieve, discipline – a strict scheme – is important.

Characteristics of children:

- Children have a high developing potential and can be entrusted to do more than is generally assumed.
- Children can handle a lot (if they are allowed to retreat to work on their own).

Parents:

– Parents fulfil an important role in the development of the performance ability of their children.
– Parents have the moral obligation to enable the children to develop optimally.

Personal development:
– His daughters did not find themselves in social isolation since they had each other, and also adults with whom they shared interests.
– Such an approach is good for a child's personality development.

In the research report, attention has also been paid to conclusions that can be drawn from the book *Searching for Bobby Fischer*, which is about the upbringing and the chess development of the young American chess talent Joshua Waitzkin.

Various insights drawn from these sources have been incorporated in the book *Developing Chess Talent* (Karel van Delft, Merijn van Delft, 2010).

CHAPTER 17

Memorandum ‘Chess Instruction in School?’

In 1977, psychology professor A.D. de Groot wrote a memorandum for the Dutch chess federation KNSB about the benefits of school chess, titled ‘Chess Instruction in School? – a few arguments and counterarguments’. The below summary follows the twelve points he discussed.

This memorandum is historically important. Just as De Groot was the founding father of the research into chess players’ thinking as well as cognitive psychology with his thesis ‘Thought and Choice in Chess’, his Memorandum was also a fundamental article. He raised essential questions (about transfer, the translation of insights into practice and the like). De Groot wrote the memorandum in English.

1. If any transfer effects are possible, then is the invested time justified?

2. The issue needs to be divided into sub-problems and introductory questions.
About chess instruction:
– in which grades?
– until which level?
– which methods?
– as an obligatory subject or elective?
About learning effects:
– which kinds? (cognitive, emotional, attitudinal, moral)
– with which of the pupils do you expect effects? (all of them, a few)
– in which respect is it valuable?
– is this unique for chess, or can it also be attained in other fields?
– are there, besides positive side-effects, also negative ones?
About the competition with other subjects:
– how valuable is pupil time?
– is chess superior to other subjects (which ones?) in producing learning effects?
About types of arguments for and against:
– is there any scientific evidence?
– which experiential knowledge is available? (other countries, experts)
– which common-sense arguments are there? (which of them are valid?)

3. It is important to present benefits in a clear-cut way, to refute any prejudices by opponents.
Chess instruction: doesn’t take much time, give it in the highest classes of primary school, with the best method and a good, enthusiastic teacher.
– Compete with other school activities that take little time and have little prestige.
– Identify learning effects that are unique to chess.

– Consider both cognitive and non-cognitive learning effects.
– Use three kinds of arguments: valid evidence that is generalizable, experiential information, common sense.

4. Existing cognitive research (reference to Chase & Simon) is hardly relevant, since it deals with chess skills of a higher level with adults. This tells nothing about possible learning effects with children.

Learning effects become increasingly domain-specific as a chess player reaches a higher level. With this, transfer options to other learning domains decrease.

5. Little research has been done on learning effects of school chess. Moreover, much of the research has methodological shortcomings. For the time being, neither experimental cognitive research (laboratoria) nor applied education research yield much. Only the research by Christiaen can perhaps stand the test of criticism (see Chapter 19).

6. Experience proves that school chess in the Netherlands is on the increase, and that children's and teachers' enthusiasm is high.

7. The most important arguments are of the common-sense type. Such arguments may be convincing, if they have been embedded in a healthy rational problem analysis and are supported by empirical research findings. Under Nos. 8, 9 and 10, further arguments are given.

8. Chess is cultural heritage. It is a value in itself, just like, for instance, music. Chess is attractive due to its logical beauty.

Chess has significance for experiments in the area of cognitive research (experimental) and artificial intelligence (applied research).

Chess offers opportunities for international interchange.

Chess offers the possibility of an intellectual sporting challenge.

The educational objectives are: teaching the rules, explaining the general idea of the game, making clear how valuable it can be.

9. Chess contributes to non-cognitive learning goals:
– learning to wait your turn
– playing by the rules (no cheating)
– trying to win and coping with defeat
– learning that you will perform better by putting in effort
– etcetera.

Chess is an objective sport; it helps you to develop a sense of reality.

10. Possible cognitive or intellectual learning effects of chess education serve educational purposes.
– Easy-to-define knowledge objectives, like learning to master the game rules, a few mating

combinations and a few openings. Research by Christiaen seems to indicate that this benefits motivation and general school results.
- Learning objectives of the understanding type, like learning what the game is about, what it means in our culture and what the chess world looks like.
- Learning to think productively and creatively: distinguishing alternatives, systematic scanning of options, weighing and deciding, conditional thinking, looking ahead and planning, critically testing reality.

11. Two possible objections to chess education are:
- Many learning effects described above are not specific to chess.
- Where they are specific to chess, there are hardly any transfer effects to other areas of mental activity.

Heuristics (= general methods for solving problems) can be taught in many ways. This does not make chess superfluous, for three reasons:
- Heuristics only take root if they are stimulated in more than one area. Chess can be a fertile, unorthodox addition to the learning curriculum.
- Some learning effects are specifically connected to learning by doing, where pupils themselves are responsible and make their own decisions. Games, and certainly chess, give direct feedback (the opponent's move) and are therefore very well suited for this.
- Draughts and go can perhaps achieve the mentioned effect as well, but chess is more widespread in our culture.
- Transfer effects are not only a matter of psychology, but also of education. The question is how education can be shaped in such a way that transfer from one domain to the other is made possible. For example, learning of decision-making and planning can also have benefits outside chess.

12. De Groot is not a 'believer' in the blessings of chess, but he does think that there are strong arguments for the introduction of chess in schools.

CHAPTER 18

Chess as a subject in primary school

Are there any good arguments for the introduction of chess as a (facultative) subject in primary school? This question was the occasion for a terminal project by Karel van Delft at the faculty of psychology of the Amsterdam University in 1992. Van Delft did research on six primary schools in Apeldoorn. Among others, 77 chess players from the 8th grade were compared with 201 non-chess players. The research clearly showed that the chess players performed significantly better in the Dutch CITO final test on arithmetics, reading and writing, and data processing. Significantly, when a distinction in gender was made, the boys showed the same pattern, whereas with the girls the chess players only performed better at arithmetics. After a correction on children with an extremely low score (below the 15th percentile score – mainly non-chess players), the picture remained the same. The graph below illustrates this. At a school where half of the 34 children began to play chess in the 3rd grade, the chess players already turned out to be better pupils from the start. However, this group turned out to be too small to draw any clear conclusions.

Next, it was presupposed that the better children play chess, the better they will perform at arithmetics and data processing. This hypothesis was tested with 106 pupils from the 7th grade (three school classes), 50% of whom played chess. With boys there turned out to be little or no connection between their level of arithmetics and their chess-playing. With girls, a certain connection was found between arithmetics and chess skills. This group also showed that boys are better at chess and arithmetics than girls. We should add that the fact that hardly any connection was found, may have been caused by lots of other factors blurring the image, like for instance motivation and the effects of training. Incidentally, no difference in intelligence was found between the chess players and the non-chess players (Raven-test). The chess abilities were measured with an especially designed chess skills test consisting of a number of exercise diagrams. We deliberately opted against rating lists of school competitions, since in that setting features like impulsivity, self-consciousness, fighting spirit, etcetera, may easily be of influence.

This research also showed that the connection between competition results and theoretical chess knowledge was significant, but not very strong. In any case, a differentiation in gender has turned out to be advisable for this type of research. This differentiation had not been made in earlier research. It also turned out that there are clearly fewer girls than boys playing chess. Apparently there is a mechanism of (self-)selection at work here.

This research was especially aimed at finding out if so-called cognitive effects of passing on knowledge exist in chess teaching. As Prof. A.D. de Groot already claimed a number of years ago, in a memorandum called ‘Chess instruction in school?’ for the benefit of the Dutch Chess Federation KNSB, it cannot be excluded that chess teaching also has a number of non-cognitive learning effects. We can think of things like: learning to accept defeat, learning that progress can be made by study, etcetera. De Groot also supposes that chess can be related to a productive and

creative way of thinking: distinguishing alternatives, going through options systematically, making your own decisions, learning to think conditionally and think ahead, and critical reality-testing. However, these suppositions are based on research on adults (retrospective interviews with, among others, Boris Spassky and the Dutch writer Godfried Bomans).

Here is a table showing the average percentile scores of chess players and non-chess players for the CITO school test at a primary school in Apeldoorn. The data of eight successive school years are given.

Boys	**chess players (56)**	**non-chess players (82)**
Linguistic skill	63.1 %	46.8 %
Arithmetic skill	72.9 %	59.7 %
Data processing	68.8 %	52.3 %
Girls	**chess players (21)**	**non-chess players (119)**
Linguistic skill	62.4 %	60.6 %
Arithmetic skill	72.6 %	56.3 %
Data processing	65.0 %	59.4 %

The research project can be found in the list of sources on my website www.chesstalent.com.

CHAPTER 19

Methods of research on the benefits of chess instruction

Lots of scientific researchers have devoted themselves to research on the possible benefits of chess instruction for the development of school children. These benefits consist of learning effects in cognitive, social, emotional and/or meta-cognitive areas. This chapter discusses articles by Fernand Gobet and Giovanni Sala on the right methods to carry out quantitative and experimental research. Also, we discuss a plea by GM Jonathan Rowson to teach and research from a holistic education paradigm.

Possible benefits could be the result of intrinsic characteristics of the chess game. Other benefits might occur as a result of the way in which chess instruction is given. It is possible that either both factors play separate roles, or both play a combined role – or, possibly, only one of them plays a role in certain situations.

Here, a distinction can be made between aspects of the chess game (for instance, rules, techniques, tactics, strategy) and the (cognitive) age of pupils, gender of pupils and transfer domains (areas on which chess might be able to exert positive learning effects).

Perhaps, effects only occur after a minimum number of chess lessons, and perhaps there is an incubation period for some effects.

Possibly also, certain groups of pupils derive either more or less benefit from chess lessons than others.

Causal connections don't have to be singular. It is possible that a certain effect occurs only due to a combination of factors.

Possibly there are intervening variables at play. Perhaps pupils get more attention in a chess lesson (the Hawthorne effect) and/or there are role models, motivating them to learn and perform better.

Enthusiasm can work contagiously and can be a self-fulfilling prophecy. A motivated chess teacher can stir up so much enjoyment of the game with his pupils that they start studying it, and, while doing so, develop study skills, motivation and self-discipline – traits that are also of use in other domains of life and learning.

Many researchers claim that they find significant effects. The question is how significant these effects are. If you have a great number of variables, a few of them will always be significant to a certain extent, by coincidence.

A critical question is whether the amount of invested time and means weighs up against a learning profit that may be limited.

Various studies appear to be a kind of 'testimony literature', where the author does not get any further than avowing his belief in the glory of the chess game, as we will see in the critical review by Gobet and Campitelli described below.

There are a great many variables, of which possibly only a limited number (possibly in

combinations) yield positive learning effects.

Notably, many authors do not plumb deep into the content and the methods used in chess instruction. Often, also, no distinction is made between boys and girls.

On the Internet there are articles and websites with research summaries. There are conferences on chess education, like the London Chess Conference, reports of which can be found on websites.

An important question is: which research methods are used?

Educational benefits of chess instruction: a critical review

Fernand Gobet and Guillermo Campitelli are strongly critical about the existing research into the benefits of chess instruction. They describe this in an article titled 'Educational benefits of chess instruction: A critical review' (in: *Education in Chess*, ed. T. Redman 2006).

The researchers observe that there are many claims that chess would offer educational benefits for children. In many countries, chess instruction is given at schools, and there is a worldwide interest in the possible benefits of chess lessons.

It is implicitly assumed that skills acquired through chess are of influence on other areas (domains), i.e. that they have 'transfer' effects.

The authors want to critically check whether chess has any educational benefits. They are enthusiastic chess players themselves. Gobet is an international master, and Campitelli has coached Argentinian top chess players. Both of them have also given chess lessons.

Their research starts with a few questions. First they examine the way the issue of transfer of skills from one domain to the other is regarded in psychology and in education. After that, they examine whether chess players differ from the rest of the population. Next, they examine what would be the ideal experimental research set-up for establishing the existence of such a transfer. After establishing such a research set-up, they compare experimental research that has been done in this area. They conclude that there is no real convincing evidence for transfer.

Many scientists think that transfer is only possible if the same knowledge is also used in another domain. A number of psychological researchers think that there is such a thing as general intelligence. The best way to develop transferable qualities, they argue, consists in teaching general skills such as learning strategies, methods for solving problems, and reasoning techniques.

In any case, it is clear that the more expertise there is, the more knowledge will be domain-bound, and the less transfer is possible.

The authors observe that a lot of research has been done into cognitive aspects of chess skill. Performance ability is the result of training, not of talent only. Developing expertise in chess requires the acquisition of special knowledge; among others, the storing of a great number of patterns in the memory. These patterns play a large role in making good moves and making evaluations and plans. Patterns also play an important role in search strategies.

Various empirical research shows that chess players are more intelligent on average than non-chess players. With children there is also some correlation between the measure of chess skill

and intelligence. Incidentally, a relation between visual dimensional qualities and chess has not been found.

However, this research is based on correlational data. An alternative explanation is that cleverer people will be more inclined to take up chess. Also, for instance, it may be that both chess and intelligence are influenced by a third factor, for example motivation.

With an experiment you can check whether an activity (e.g. chess instruction) has a positive effect (e.g. on school results, cognitive qualities, or attitude).

An ideal experiment has to fulfil a number of conditions: a random distribution of participants into experimental groups and control groups (two control groups, one of which gets an alternative treatment to avoid placebo effects), pretest, posttest to measure effects, assigning tasks to different people in the experiment (no foreknowledge effects), prevent that the participants and the supervisor are aware that they are subjected to an experiment, and subdivision into groups.

Such an experiment is hard to carry out, for various reasons of a practical, administrative and ethical nature.

For this reason, often a mitigated design is used – a quasi-experiment, starting with existing groups. Conclusions drawn on the basis of such research have limited value, since the researcher has no control of the cause-effect relations.

Gobet and Campitelli assessed various research projects on the basis of the above-mentioned scientific criteria.

They selected empirical research projects, the supposed effects of which had been measured objectively, and in which it was clear which method had been used. Consequently, many articles had to be dropped because they were surveys of earlier articles, descriptions of educational methods, observations of anecdotes, or opinionated stories.

Statistically, most of the researches were in order (with $p < .05$), but only a handful of them fulfilled the selection criteria.

Gobet and Campitelli assessed research projects by Christiaen, Frank, Liptrap, Ferguson (two), Margulies and Fried & Ginsburg.

Gobet and Campitelli provided these projects with various methodological comments. All of them mentioned a few positive effects. But all the projects showed methodological shortcomings. Only three of the studies had worked with a random distribution of participants. With the quasi-experimental designs, the statistic techniques used were too weak to derive causal relations from them. Because in some of the research projects a large amount of variables was measured, it is possible that certain effects were found purely by a chance factor.

None of the researchers looked at long-term effects of chess education.

In the research projects, the influence of the instructor was not excluded. Many chess teachers are very enthusiastic about their subject, and precisely this is an attitude that may lead to certain effects.

Not a single project has been repeated under similar circumstances.

In the discussion part of their work, Gobet and Campitelli conclude that the research projects

discussed do not change anything in the general view that skills have no transfer value to other learning domains.

It has not been proved that chess contributes to intelligence. Vice versa, it may be that more intelligent people feel more attracted to chess than others, or there may be a third explanatory variable.

To prove possible transfer effects of chess skills, a good research design is needed. It is important that the research is described in sufficient detail, so that replication tests and additional statistical analyses can be made. Moreover, publication in peer reviewed journals is required (only D'Hondt and Christiaen).

None of the research offers any indication of what is specific for chess instruction. Often, alternative explanations for found effects are possible, like a placebo effect (any intervention would be of influence) or the influence of a motivated and talented teacher. Often also, a theory on the reasons why chess would be useful is lacking.

Gobet and Campitelli make a number of recommendations for future research:

- More research, with a method as similar as possible to the ideal experiment.
- Certain factors have to be checked, like placebo effects and the role of the chess teacher.
- Research publications have to fulfil the criteria of peer reviewed journals.
- Authors should avoid selective accounts of research results as much as possible.

Where experimental research is difficult, new statistic techniques may be of help. Such techniques require large samples and a number of variables. Moreover, they are ideally measured over a longer period of time.

An alternative is to carry out a detailed analysis of what is being learned during a chess lesson. This information can be related to characteristics of other domains, thus establishing an empirical link between changes due to chess lessons and possible transfer to other domains. Ideally, this should be combined with a theoretical analysis of the cognitive processes involved.

These are recommendations for research into transfer effects. Additional research might be done into a comparison of various methods to give chess instruction. Also interesting would be a research into the learning process of beginning chess players.

Gobet and Campitelli conclude that chess teachers find that chess instruction offers lots of benefits.

The research projects discussed concern high-level profit, but it turns out that the profit is, at most, limited.

They draw three conclusions:

1. Educational effects of voluntary chess lessons remain unclear.
2. Compulsory chess instruction is not to be recommended; this can lead to motivation issues.
3. Chess instruction can be useful for beginners, but not for advanced players.

It is possible that better research will yield other results. It is also possible that chess doesn't make children smarter, but it can provide many 'low-level' skills. This is a term coined by A.D.

de Groot, signifying, among others, concentration, learning to accept loss, the insight that you can learn by doing, and also: developing more interest in school.

Moves in Mind

In their book *Moves in Mind* (2004), Gobet, De Voogt and Retschitzki claim that their conclusions coincide with A.D. de Groot's supposition (in his 1977 article 'Chess Instruction in Schools') that possibly the benefits of chess are mainly in the area of 'low-level' profits, like improved concentration and interest in learning, rather than in 'high-level' profits like increased intelligence and creativity.

Research Agenda

At the 2013 London Chess Conference, Fernand Gobet held a lecture titled 'A Research Agenda for Scholastic Chess'. As a research agenda he proposed: 1. The issue of transfer (better data needed), 2. Understanding of the mechanisms involved, 3. How can chess instruction be improved?

Gobet claims that there is no scientific proof that skills that are needed for chess have transfer value to other domains, like mathematics. He refers to an ideal research design with a random distribution of test subjects, pretests, three research groups (experimental, control, placebo) and posttests. He argues that a placebo group is needed to overcome unwanted influences, like expectations of the test leader.

Non-chess-related factors can cause positive effects of chess instruction: 1) Chess teachers are very strongly motivated, 2) The subject is new, and deviates from the usual school activities, 3) Chess is a game, and therefore fun, 4) Chess is a competitive activity, 5) Chess shows that school can be enjoyable and interesting.

With a placebo group (playing video games and Go) it can be made clear what the difference with chess instruction will be.

Gobet does not exclude that research may bring to light that chess can have positive effects due to a number of characteristics of the game, like creating combinations.

Transfer effects might possibly take place with regard to attention, learning, problem-solving and decision-making.

Many parameters of the chess game have not been systematically studied in research, Gobet claims. How long should a chess lesson last, how many chess lessons are needed, what are optimal instruction methods?

Gobet points out that many chess lessons are restricted to purely chess-technical aspects. He urges that relations are made between chess instruction and other school subjects. For instance, you could use the value of the pieces or the system of coordinates during mathematics – or the myth of the grain corn. For determining distance you can use a study by Réti. In history lessons, you might compare changes in society with historical changes in the game rules of chess.

'Do the benefits of chess instruction transfer to academic and cognitive skills? A meta-analysis'

This article by Giovanni Sala and Fernand Gobet appeared in 2016. It is an open-access article that can be found on various websites.

The aim of this paper is to provide an answer to the question to what extent skills that have been obtained via chess lessons at school have a transfer effect on mathematics, reading and general cognitive skills. To this end, empirical evidence of 24 studies is quantitatively evaluated.

The results show a moderate overall effect, with a slightly stronger effect on mathematical skill than on reading skill. Also, the enduring effect of lessons is positive and significant. The authors note that there is not a single existing research project with an ideal design.

The research has social relevance. Research in the USA as well as in Europe points at moderate mathematical skills of pupils in the area of STEM subjects (Science, Technology, Engineering, Mathematics). Chess instruction might be able to fulfil a role in the development of better education in these areas. The European Parliament has declared itself in favour of stimulating school chess as an educational tool. Chess instruction is said to be good not only for mathematics education but also for other skills, for example reading, general cognitive abilities like concentration and intelligence, and furthermore for the use of heuristics and thinking skills.

The authors add that this implies the assumption that there is a transfer of chess skills to other domains.

Transfer occurs when acquired skills in one domain are generalized to other domains, or improve general cognitive abilities.

We speak of ‘near-transfer’ when domains are closely connected (e.g. geometry and calculus) and of ‘far-transfer’ if domains have hardly or no relation (e.g. geography and Latin). It is generally assumed that transfer is a function of the extent to which two domains share characteristics. However, this picture is not always unequivocal. It is clear that the more specialized a skill is, the smaller the probability of transfer will be.

In education, the issue of transfer of knowledge and skills produces a number of practical questions. Arguably, education is always about supposed transfer possibilities to other domains and situations. The question here is how education should be designed to achieve the desired transfer effects. One approach is to teach general strategies with regard to learning, problem-solving and reasoning heuristics. Another approach is to teach a certain activity (like chess), hoping that pupils will learn more generally applicable skills from it.

Here, it is useful to understand which cognitive abilities play a role in chess. A lot is known about perception, learning, memory and problem-solving, but less is known about other learning aspects. The question is, for instance, whether chess makes you more intelligent, or whether intelligent people play chess more often. Various researchers point out that learning decision-making and information processing in chess may be of influence on other life domains. Also, learning to concentrate and to solve problems could be applied more broadly than just in chess. Gobet and Campitelli (2006) find no clear evidence of this supposition, but neither do they find a refutation (due to methodological flaws in research).

Recent studies explain why chess enhances cognitive and mathematic skills. The reason is that chess has a number of elements in common with the mathematic domain, and it promotes

thinking habits. With chess, children learn strategic thinking, problem-solving, cognitive skills like concentration, and meta-cognitive skills like planning.

The meta-analysis of Sala and Gobet is aimed at testing these supposed effects.

Research into school chess might have important consequences for the understanding of transfer possibilities to academic and cognitive abilities. Similar research is currently being done into the influence of video games. In both cases, it is possible that transfer effects are the result of placebo effects.

The meta-analysis investigates studies of the possible benefits of chess lessons with regard to mathematical skills, reading skills and various cognitive skills (general intelligence, meta-cognition, concentration and three-dimensional skills).

The meta-analysis is, on the one hand, aimed at measuring benefits by chess instruction, by comparing experimental groups and control groups. On the other hand, the meta-analysis aims for an evaluation of the possible role of diverse factors in that process.

The following factors were considered: Outcome (mathematics, reading, cognitive skills); Duration (how much lesson time); Grade (primary school, secondary school) and Category (special educational needs or not). Also considered were Publication (in a peer-reviewed magazine) and Design quality.

From the meta-analysis, the researchers conclude that ‘Chess instruction improves children’s mathematical, reading, and cognitive skills moderately’.

They make two marginal notes. Firstly, the ‘overall effect size’ is not convincingly large. Secondly, the stimulating role of teachers may have been of influence (the placebo effect).

The research results seem to point out that there may be transfer effects after all if chess lessons are given for more than 30 hours (see also Trinchero, Chapter 20). Neither do they exclude the possibility that chess instruction contributes to the development of cognitive skills that are also used in mathematics.

Because there was hardly a single research project that included an active control group, it is possible that there were placebo effects (as a result of: stimulation by and expectations of the teacher; it being nice to do something new). Also, the measured effects (dependent variables) in the meta-analysis were often dissimilar (for example, meta-cognition is not the same thing as general intelligence).

Sala and Gobet’s conclusion: Even though, under specific circumstances, chess has a positive effect on children’s abilities, there are still doubts about the effectivity of its application in practice. The question remains whether positive effects are the result of placebo effects or of chess instruction. In the latter case, research will have to ascertain causal relations between chess, specific cognitive abilities, and their influence on specific learning domains.

Future research will have to meet higher methodological requirements (‘ideal design’) and will have to pay attention to the question whether there are different effects as a result of different teaching methods.

The need for evidence

What is the best way to research the educational benefits of chess instruction? This question is discussed by GM Jonathan Rowson in his book *The Moves That Matter*. Chapter 18, titled 'The need for evidence', is devoted to this subject, and in Chapter 20, 'The joy of teaching', he also gives a few relevant considerations. Rowson criticizes positivism, i.e. the notion that only empirical sciences produce valid knowledge. He pleads for a holistic approach, and for an educational philosophy that links to social eco-systems.

Rowson tells a story about a meeting in February 2013. On the agenda was the development and implementation of a large-scale research into the effects of chess in education. Participants in the project were four researchers of the Institute of Education at the University of London, two representatives of the Educational Endowment Foundation (which provided the financial aid) and three people on behalf of the chess and education charity Chess in Schools and Communities (CSC): tournament director IM Malcolm Pein, Sandy Ruxton and Rowson himself.

Pein has developed an extensive chess teaching programme, and he has access to a large number of schools, where the research was going to take place.

The research aim was to find evidence for the proposition that chess at schools is useful, especially for children from the poorest families.

Rowson claims that many educational professionals are focussed on test results rather than the social and emotional contexts and thinking dispositions that arguably give rise to them.

At schools, many subjects are being taught, and the lesson programme is overfull. To be able to add chess to the curriculum, therefore, one needs to come up with good arguments. Apart from scientific research, many people expect to see that chess has positive effects, like improvement in the areas of concentration, planning, reasoning, etcetera.

The meeting led to a subsidy of £ 689,150. The project could start. However, Rowson still felt stuck with the idea that the essence was lacking in the set-up of the research. He felt that in the discussion, the chess players remained in the margin when the focus was on what the subsidizers had in mind, and on the tools the researchers wanted to use.

The research aim was especially to measure the effectivity on mathematics of the 30-weeks CSC programme. The research was held among 4,009 pupils of Year 5 (age nine to ten) at one hundred schools. In late 2016, the research results were published. The conclusion was: no evidence of effect.

A disappointing result. But it was understandable, Rowson claims, if you look at the research design.

He concludes that the researchers do X (chess curriculum) and then, one year later, expect a result Y (better SATs test compared to control groups).

'No evidence of effect' does not mean 'evidence of no effect', Rowson claims. 'To make fuller sense of the relationship between chess and education, we need to think more broadly and deeply than a single quantitative study, no matter how rigorous it seems to be.'

Rowson gives five considerations and problems with reference to the research project, which was led by John Jerrim:

1. The underlying research philosophy is outdated: 'The randomised-control trial approach is

typically grounded in a perspective known as positivism, where social and psychological phenomena are modelled as if they were amenable to the techniques of natural science.' It's easier to discern constants and variables in nature than in open-ended ecosystems, like, for instance, with a child, a class, a school, a community, or the world.

2. The research aim is questionable. The researchers were searching for short-term improvements on certain test scores. However, chess can have broader educational benefits.

3. The question is whether effects will take place within the scope of one year. Chess shapes your thinking in all sorts of subtle ways, and effects may remain unnoticed until later.

4. The research conditions too may have been of influence. Perhaps there is a kind of placebo effect in chess education that leads to the necessity of first having to think positively about it before it can have any effect.

5. The greatest shortcoming of the research is that, with regard to many positive results, 'how chess is taught might matter more than the fact that it is being taught'. Perhaps the 'active ingredient' that is being transferred is something to do with a way of thinking and being of the teacher that is transferred via chess lessons. Many people have such experiences, but replicating them is not easy.

Rowson cites Albert Einstein, who said that education is what remains when what has been learned is forgotten: 'What remains might be the key outcome.' He is convinced that chess potentially fosters a variety of learning and thinking dispositions. He mentions, among others, prolonged concentration, an inclination to find evidence that challenges one's own ideas, coping emotionally with mistakes, and grit (determination).

Rowson cites Matthew Lipman, the founder of the Philosophy for Children movement, and a champion of the teaching of thinking skills: 'The child who has gained proficiency in thinking skills is not merely a child who has grown, but a child whose very capacity for growth has increased.'

The problem is that such effects cannot be proved directly in the current education paradigm (= conceptual framework). Rowson advocates a different approach: 'The research design we seek would test whether chess helps foster thinking and learning dispositions in ways that have yet to be conceived, and I think that aim is connected with the more profound challenge of how we see reality as a whole.' This means that the research question about the role that chess can play in education has to be formulated differently.

The most important thing is that the rationale of intended education goals is clear. Do you want better exam results, or, for example, more refined perception, or happier children?

The question of what we learn and why is the domain of the philosophy of education. Unfortunately there is little attention for this, Rowson claims. He concludes: 'It is a sign of wayward civilisation that we don't take the living questions – what and how should we learn, and why – more seriously, because the answers create and recreate the world.'

In Chapter 20 of his book, titled 'The joy of teaching', Rowson quotes the French writer Antoine de Saint-Exupéry, who said that if you want to get people to build a ship, you have to make them long for the sea – not tell them they have to gather wood. Something similar also applies to education: 'At its heart, teaching is not so much about conveying knowledge as

modelling a state of being, a sensibility (…).'

The real challenge in education is to teach others 'how to look'. 'The most important task for the chess teacher is helping students to direct their attention, because chess skill is marked, above all, by looking at the right things, in the right way for the right amount of time.'

John Jerrim presented the EEF research at the 2016 London Chess Conference (10-12 December). This presentation has been recorded on video, and can be found in the list of sources on my website www.chesstalent.com. His conclusions led to a quite spicy discussion.

Jerrim's research method and, consequently, his results, were disputed by researcher Giovanni Sala of the Liverpool University, who had obtained his Ph.D under professor and IM Fernand Gobet. Sala was programmed as a speaker for 11 December, but this fell through because the programme overran its time. Eventually, the organization decided to make a video recording with him one day later. Both these presentations were published on the website of the London Chess Conference.

Giovanni Sala held his presentation under the title 'Comments on current chess and education research'. He gave a review of the existing literature, discussed methodological issues, gave his commentary on Jerrim's research, and made recommendations for future research.

He indicated that a meta-analysis (i.e., a combination of existing researches) by Gobet and himself had shown modest effects of chess education in the area of maths and several cognitive abilities. That research project is described in the first part of this chapter. There is also other research suggesting that chess can contribute to general cognitive skills like, for instance, concentration and *fluid intelligence* (being able to think and reason abstractly and solve problems). Chess could be a tool for cognitive training. Sala claims that this has never been systematically investigated. Simply put, a possible research model comes down to the following: chess influences cognition, and cognition influences behaviour.

Sala criticizes Jerrim on a number of points, for instance:

– the post-test was not taken immediately after the chess lessons;
– the tests were too easy (the ceiling effect – many participants reach an optimal score, but a higher score isn't possible, so it is not possible to make sufficient distinctions between participants with different qualities);
– the lesson method was focussed on chess, but not on non-specific chess skills; and
– 25 to 30 hours of instruction may be not enough to produce any effects.

Sala claims that there is little knowledge of all sorts of cognitive mechanisms that are of influence during learning processes. He makes various suggestions for future research: more research into (neuro-)cognitive mechanisms, using differing lesson methods (e.g. mini-games), teaching groups during longer periods of time, variable lengths of lessons, more measuring moments, and attention for non-cognitive issues like motivational aspects and mindset.

The author of this book made a video-interview with Jerrim at the request of conference director John Foley. This was done immediately after Jerrim's presentation. The interview contains some critical questions, similar to the criticisms of Sala and Rowson. See the list of sources on my website www.chesstalent.com for a link to this video interview.

The author of this book also made a video interview with Jonathan Rowson on *The Moves*

That Matter, immediately after Rowson's presentation of this book during the 2019 London Chess Conference. The link to this video interview can also be found on my website.

CHAPTER 20

Research into the benefits of chess instruction

The previous chapter was about the quality of research methods. In the present chapter, we discuss various publications about the possible benefits of chess instruction for the development of children, i.e. effects in cognitive, social, emotional and/or meta-cognitive areas.

This chapter cannot be exhaustive. Its intention is to give an impression of all kinds of issues that research has paid attention to. Internet sites of various conferences, for instance in London (UK) and Yerevan (Armenia), offer extensive information about research. In Spain, the Magic Extremadura club publishes a free online magazine every two months about 'special needs' groups. Videos by the author of this book on special needs themes can be found on www.chesstalent.com.

Research that does not meet strict methodological criteria can at least be considered for its explorative merits.

'Does Chess Need Intelligence? – A Study with Young Chess Players'

In the article 'Does Chess Need Intelligence? – A Study with Young Chess Players' (Brunel University 2007), the authors, Merim Bilalic, Peter McLeod and Fernand Gobet, claim that intelligence has a certain influence on the performance of young chess players, but that it is mainly training that determines chess performance.

In this longitudinal research project, it was, for instance, found that children with an IQ average of 115 who played chess for 200 hours per year, performed better in a chess test than children with an average IQ of 130 who played chess for 50 hours per year.

In this research among 57 youth chess players, visual three-dimensional qualities and memory turned out not to be of influence on performance. Various other factors did turn out to be of influence on performance: training, experience, age, and gender. Various factors seem to be mutually connected in their influence on performance. The researchers added the critical comment that in many studies the influence of a single variable is looked at, while there is often a complex of variables at play that are mutually connected. The fact that research results point out that intelligence plays at best a limited role in chess performance, is in sharp contrast with the intelligent image of chess, as the authors write.

Diverse research has shown that especially recognition of many patterns is the basis of successful performance. This requires much training, and especially focussed training (deliberate practice).

With beginners, intelligence might have a positive influence on performance, the researchers write, referring to earlier research (Frydman & Lynn, 1992; Horgan & Morgan, 1990). It is possible that more intelligent children learn the principles faster. This leads to success experiences and higher motivation.

The researchers assume that, possibly, a certain lower limit of intelligence is needed, but that

above this limit, intelligence has hardly or no influence on performance.

Chess works because it is self-motivating

The website of the American Oklahoma Scholastic Chess Organization (http://okschess.org) provides links to various research projects, and identifies, on the basis of those, a number of transfer benefits.

In his article titled 'Why play chess', Jim Celone explains why chess is a good educational instrument: 'Chess works because it is self-motivating.'

He mentions the following benefits: mathematical insight, scientific skills, language abilities, communicative skills, creativity, concentration, logical reasoning, critical thinking, memory, problem-solving, intellectual maturity, self-appreciation, cause-and-effect analysis, complex decision-making, pattern recognition, sportsmanship, coping with setbacks, learning from mistakes, sense of responsibility, discipline, measurable individual progress, team spirit, being part of a positive pluriformal community, cultural enrichment, social skills, empathic consciousness, greater commitment to school.

Celone observes that there are three areas in which child prodigies excel: music, mathematics, and chess.

The Benefits of Chess in Education

In a collection of articles called *The Benefits of Chess in Education*, Patrick S. McDonald included a series of English-language articles on the benefits of chess instruction. These articles are about research as well as anecdotal experiences by teachers, parents and youth players. This collection can be downloaded, among others, on the website of the Canadian chess federation.

Blended learning

'Cognitive Benefits of Chess Training in Novice Children' describes a research by the Romanians Fotinica Gliga and Petru Iulian Flesner (WESC, 2013).

The researchers arranged for 20 beginners on a primary school to follow ten chess lessons by a grandmaster, after which they played a competition. A control group consisted of 18 pupils who got mathematics lessons. The children in both groups were on average almost ten years old, and roughly half of them were girls. The chess lessons consisted of various methods ('blended learning').

Cognitive skills increased in both groups. The chess players performed significantly better than the control group during a school performance test. Dealing well with monotony turned out to be a good predictor of competition results – which is not the case with IQ.

Chess as an Element of Mathematics Lessons

'Chess as an Element of Mathematics Lessons in Schools for Children with Learning Difficulties – A Comparative Study' by a.o. Harold Niesch (Leipzig University, Germany, 2008) investigates the influence of chess instruction on the mathematics subject in schools for children with learning difficulties. The researchers conclude that chess could be a valuable aid for children

with learning difficulties in the area of mathematics.

The research was concluded among pupils of around 11 years old with learning difficulties like dyscalculia and ADD (attention deficit disorder).

The children in the experimental group were given chess lessons instead of mathematics lessons one hour every week for a year. The benefit of the chess instruction was measured via the development of concentration and arithmetics.

Chess classes scored significantly better on arithmetics and simple addition than control classes.

The researches note that many children have an aversion to mathematics. This is because mathematics is abstract, and they do not see any practical use of it for their own lives. This applies all the more to children with lower intelligence, concentration problems or learning difficulties (especially dyscalculia).

Much research is being done into adapted education methods for such children. The researchers write that there are indications that complex games like chess may fulfil a positive role here. Chess serves as a model for cognitive abilities like perception, information processing, memory, logical thinking and problem-solving. It is possible that chess has a positive influence on these abilities.

Apart from this, diverse research proves that gaming can improve children's concentration. Moreover, it also motivates children to make use of books and computers. Also, a game that a child finds interesting can grow into a life-long hobby.

Mind sports like chess have various mathematical aspects as well, like geometry and set theory. Many mathematical problems have a relation with chess.

The researchers point at the possibility that learning chess contributes to learning to deal with mathematical concepts in an informal way. This is supposed to have a better effect than formal learning.

Making Chess Attractive to Educators

'Making Chess Attractive to Educators in the Classroom' is the title of a lecture by the American chess teacher Damian Nash (2011).

Education authorities are increasingly asking educators to teach knowledge, while it is rather more important to learn to think in a process-based way. Schools want to pursue both aims, but the development of process-based thinking is suffering.

Nash presents some ideas of how chess can fulfil a role in education with learning to think in a process-based way. Here, chess is a means, and not a goal in itself. Chess instruction should not function as a way to train pupils to become strong chess players – it is a tool to develop critical thinkers.

Nash points out that with productive thinking, schools aim for 'Higher Order Thinking Skills'.

According to Bloom's well-known educational taxonomy, higher skills are: creating, evaluating and analysing. Lower skills are: applying, understanding and remembering.

All thinking skills can be categorized under one of these six levels, Nash claims. And, he

says, you can learn all these skills through chess. He describes a method to do this in his lecture.

For a similar approach, Nash refers to the books *Teaching Life Skills Through Chess* by Fernando Moreno and *The Tao of Chess* by Peter Kurzdorfer.

Nash claims that becoming a chess expert requires many hours of training. However, these are chiefly needed for 'lower order thinking skills', like learning openings. The benefit of chess instruction exists, in his opinion, mainly in the beginners' phase.

Literacy and social capital

The research report 'Chess Development in Aberdeen's Primary Schools: a Study of Literacy and Social Capital' by Dod Forrest, Iain Davidson, Janet Shucksmith and Tony Glendinning (2005) concludes that chess can give children in disadvantaged areas a new perspective on the world. Chess is not only for smart people. Disadvantaged people can learn it too. Chess also provides new contacts, and a social network is important if you want to develop yourself.

At a school where chess lessons were given, the level of 'literacy' (reading, writing and understanding) rose. Social skills also improved. Curiously, the level of arithmetics did not rise.

What Might Chess Teach Us About Learning?

Chess mainly has an impact on a general level, grandmaster Jonathan Rowson opines in his lecture titled 'What Might Chess Teach Us About Learning?' (Chess in Schools and Communities Conference, University of Aberdeen, 2007). He refers, among others, to attitudes and thinking habits. You develop perseverance, you become inventive and curious, you will start to experiment, etcetera.

Chess teaches us that thinking can be enjoyable and productive.

An important aspect of learning chess, Rowson claims, is self-education. It teaches you thinking abilities, and the ability to assign meanings to things.

Losing touch with school

Many pupils do not really feel at home at school; they become alienated. This is claimed by 'Public Health' professor Janet Shucksmith in her lecture called 'Considering the Whole Child in Chess in Schools and Communities' (Chess in Schools and Communities International Conference, Aberdeen 2007).

Children often feel that they have little control over their own situation at school. They do want to learn, but they have problems with what they have to learn, and the way they have to learn it.

An important characteristic of chess is that it is a game. You play it. Shucksmith also emphasizes that chess is a metaphor for life. It stimulates thinking abilities, and it has social aspects. Shucksmith thinks that the existing research into the benefits of chess has been mainly aimed at cognitive aspects. She pleads for a holistic approach, looking at the whole child, and also at, for instance, cultural, social and emotional aspects. She also points out that benefits may only find expression in the long term ('sleeper effect').

Chess as a part of mathematics lessons

‘Chess: Just a game or a powerful teaching strategy for learning mathematics’. In this Australian research (2007), Steve Tobias, Steve Carroll, Harry Poulton and Sam Grumont present favourable effects of chess as a part of mathematics lessons.

In their research report, they point out that there are not only effects in mathematics lessons. There are also favourable effects in a more general sense, like a more positive learning attitude of young people towards challenging learning subjects.

Mathematics education is often associated with learning abstract principles, algorithms, as well as conceptual and procedural abilities. Many pupils are not motivated because they don’t see any relevance of this subject for themselves. Also, they often find it uninteresting, or too difficult.

When chess became part of the mathematics lessons, students started to find it more interesting. Perhaps partly because enthusiastic chess teachers from outside the school were present, pupils became more motivated to work on their strategy skills and their reasoning skills.

The pupils felt that they had more ‘ownership’ of their lessons. Because pupils looked at games by other pupils, and talked about games, they became more conscious of various possibilities, and of ways to develop strategies or plans. Many pupils became enthusiastic, and wanted to learn more. Teachers noticed a positive effect on the effort and perseverance of pupils in mathematics lessons. The researchers also report an increase in meta-cognition, self-consciousness and self-regulation with pupils.

Observation and concentration

‘Schachunterricht an der Olewig Grundschule in Trier’ (‘Chess instruction at the Olewig primary school in Trier’): at the Olewig primary school in the German town of Trier, a research into chess instruction was held during four years. These were lessons of one hour per week. The research was carried out by the Trier University. Three times per year, the pupils were tested on intelligence, behaviour and performance.

The research results showed a complex, not always unequivocal picture. However, there were a number of results that point at a positive influence of chess education.

It turned out that especially children who performed badly at school profited the most of the chess instruction.

By chess instruction, especially observation and concentration are improved. The test scores in these areas were compared to those of a control school.

Compared with the national scores, on the test schools the results on performance motivation, social skills, mathematics, reading proficiency and idea of grammar were excellent.

These data are included in a PowerPoint presentation of the Deutsche Schulschachstiftung (2012) and the Deutsche Schachjugend, and also in a research report.

As part of this research project, doctoral research has been done by Anne Krämer. The English title of her dissertation is: ‘The Effects of Chess Lesson on Particular Aspects of Cognitive, Motivational and Social Development in Primary School Pupils’.

The researchers point out that this is a field study, where a number of variables (like the

arrival of new teachers and new pupils) are not under control.

The researchers claim that it was a good thing that the project lasted four years. Many research projects cover a significantly shorter period of time.

Many other researches compare chess with special subjects, like mathematics or physics. Broader aspects of thinking and personality development are not considered, and the researchers claim that precisely these aspects are very important for primary school children.

In the Trier research, the effects on certain specific school subjects were not primarily considered. General effects of the chess programme on intellectual abilities and performance were looked at, as well as integration in school life and performance motivation.

Chess lessons took place conform the guidelines and the method of the 'Schulschachpatent' (= 'school chess patent') of the 'Deutsche Schach Jugend' (the youth department of the German chess federation), using the principles of the 'Laboratorium school' of the pedagogue Hartmut von Hentig, like 'learning with all senses' and 'learning by doing'.

The research makes clear that there are methodological points of attention. For instance, with one of the tests, the results on concentration were significantly better at the test school than at the control school. However, it turned out that this difference had to be ascribed to a sub-group of children who performed better.

In the tables they present, the researchers make no distinction between boys and girls. This might produce an obscured picture. Sub-groups with high and low scores taken together might suggest an artificial, non-existing average.

Personality development

The Austrian Chess Federation published the 'Wiener Schulschach-Enquete, Schach als Faktor der Persönlichkeitsentwicklung' ('Vienna School Chess Study, Chess as a Part of Personality Development') in 2011.

This study aims to identify, on the basis of practical experience and scientific research, the benefits of chess for the development of children and young people.

In this study, the Trier research is summarized, and it is concluded that it does not produce an unequivocal image, but that nevertheless there are sufficient indications that chess can make a positive contribution to education in a number of ways.

Dr. Otmar Weiß (Professor of the Institut für Sportwissenschaft at the Vienna University) claims in a contribution that chess contributes to someone's identity, and that it connects to the needs of the 'homo ludens' (the playing human).

Chess also offers people the possibility to show their individual qualities. According to Weiß, chess teaches people self-control, enhances their personal development, and contributes to social integration. It also contributes to personality development and sports norms.

The grammar school teacher Karl-Heinz Schein identifies a number of benefits of chess education: positive image, social aspects (children help each other, cooperation, friendships arise), emotional competences (dealing with loss and win, developing self-confidence, success experiences), concentration ability, general education (chess is an item of cultural value),

personal status (parents appreciate it), formulating and communicating (as a result of analysing games), enjoyment (competitive aspect, use of computers and Internet), enduring (a game for life), democratic (little costs, no elite sport), and fascination (easy to learn, and the learning never finishes).

Walter Rädler, the chairman of the German School Chess Foundation, describes aspects of a school chess club, and requirements schools have to fulfil to be recognized as a chess school. He also describes the 'School chess patent', which is a two-day course for school chess teachers. The foundation has developed a 'Methodenkoffer' (instruction toolbox) with all sorts of teaching material. The foundation organizes an annual school chess congress, which lasts a full weekend.

The Austrian grammar school teacher Hans Dietmar Stummer of BG/BRG Bad Ischl describes a teaching plan for chess as a choice subject. The aim is to promote logical-systematic thinking in children through chess, with the emphasis on legal, economical and aesthetic-creative viewpoints.

Another intention is to learn to become better at chess, and to acquire information about training methods.

Besides theoretical knowledge, students also have to gather practical experience, for example with the organization of a tournament.

After three years, students have to be able to pass a trainers' or arbiters' diploma with a national sports organization.

The students have to learn about regulations and chess organizations. They have to gather knowledge of chess history, culture, and philosophical matters.

Chess-technically, there is a clearly described programme, involving openings, middlegame (strategy and tactics) and endgame. Knowledge of chess computer programs and use of computers (a.o. databases) and the Internet for training are also on the programme, as well as training methods (from diary to game analyses).

The subject of chess psychology includes, among others, the following components: motivation, relaxing techniques, identification of own strong and weak points, preparing for certain opponents, psychology during the game, psychological tricks, coping with win or defeat, as well as the thinking of chess players and a scientific knowledge of chess.

There is also a component that deals with marketing, communication, organization and juridical aspects of organizations.

Talent development and making individual training programmes are also included in the curriculum.

Teaching methods used are descriptive education, discovery education, question-based education, various instruments (media), group training, individual training, and individual self-study.

Use of strategy games

At the 2013 London Chess Conference, the Hungarian psychologist Eva Gyarmathy held a lecture on the use of strategy games in education in the digital age. Gyarmathy collaborates with Judit Polgar in a Hungarian school chess project. She is connected to the Institute for Cognitive

Neuroscience and Psychology at the Hungarian Academy of Sciences.

She claims that one-third of children has learning difficulties. She gives information on chess and dyslexia at www.diszlexia.hu (English-language button). Children process information in different ways, logically and visually-auditively. Chess can turn children into critical thinkers and good problem-solvers, she claims. Dyslectic children have a different 'wiring' in their heads: they think holistically and in pictures rather than logical-sequential. Learning via mind games is a way of dealing with this.

Learning in different ways has to do with the functioning of the two brain hemispheres. Gyarmathy advocates an educational system that appeals more to both hemispheres. She makes an argument for this in an article titled 'The effect of culture on the literacy, the developing brain and the specific learning difficulties'.

In Hungary, there is room for chess instruction in the national school curriculum. One of the methods applied is a method developed by Judit Polgar. It is a means, not a goal in itself. There are courses for teachers who want to learn the method.

Gyarmathy states that there is a need for methodologically well-founded research, longitudinal studies and good tests. Moreover, it is necessary that, by means of research, the most important variables that make chess beneficial are identified.

As an important step in the right direction, she mentions the 'Chess in School' declaration of the European Parliament (2012), in which the importance of chess as an educational tool is described.

What chess can do for society

The Spanish journalist FM Leontxo Garcia has given a lecture titled 'What chess can do for society and why' on diverse conferences. He mentions a large number of supposed benefits of chess – it is said to promote: concentration, memory, logical thinking, scientific thinking, self-reflection, sense of responsibility, motivation, self-appreciation, planning, perceiving the results of your actions, arithmetics, imagination, creativity, patience, discipline, perseverance, multi-focussing, weighing up risks, sportsmanship, cold-bloodedness, observing rules, respecting the opponent, three-dimensional visualization, and fighting spirit. All of these things together make up a nice research agenda.

According to Leontxo Garcia, chess connects to five of the eight components of Howard Gardner's intelligence model (language, logical-mathematic, three-dimensional, intra-personal, interpersonal).

Chess is a form of intellectual training (use it or lose it).

Garcia claims that chess can be a good instrument for the emancipation of diverse groups of people and children with a limitation: ADHD, autists, children with cancer, children with Down syndrome, blind, deaf, and physically handicapped people ('social chess'). Chess is highly usable here because it can be played on the Internet, and because it is cheap.

Garcia concludes his lecture with a quote by grandmaster Tarrasch: 'Chess, like love, like music, has the power to make men happy.'

PISA scores in mathematics

The Italian Roberto Trinchero (Turin University) presented at the 2013 London Chess Conference his research called ‘Can chess training improve Pisa scores in mathematics? An experiment in Italian primary schools.’

Trinchero concludes that a combination of chess instruction by a teacher in class and online training can significantly improve the scores of a group of children on the OECD-Pisa Mathematics Scale.

Children especially score higher on the skill of problem-solving. The benefit is significantly larger in sub-groups that have received more chess instruction in class and via Internet training.

PISA (Programme for International Student Assessment) is a large-scale international cooperative research, carried out under the supervision of OECD (Organization for Economic Cooperation and Development).

Trinchero’s research was carried out among 568 pupils (eight to ten years old) at primary schools in the Italian cities of Asti and Bergamo. There were four research conditions: experimental, control, experimental without pretest, and control without pretest.

Trinchero claims that the research results indicate that chess instruction is a valuable tool if it is included in regular mathematics lessons. In the introduction of his research report, Trinchero provides a framework for his research. Chess is a popular game that is associated with concepts like intelligence, strategy and reasoning. Chess is a well-verifiable task environment for examining cognitive processes and ability in the areas of perception, information management, attention, memory, logical thinking and problem-solving.

Especially, a lot of research has been done to seek a connection between chess and mathematical skills. Various researches indicate that there is a connection between chess and various skills that are important for solving mathematical problems (high level of attention and concentration, attention for details, perseverance, recognition of strategic aspects in situations and applying these aspects when developing strategies, critical self-reflection and predicting courses of events). All these are skills that are important for school children.

Trinchero notes that also in other researches a relation between chess instruction and mathematical skills has been found, but only with a minimum of 30 hours of chess instruction per year.

Trinchero points out that nowadays children divide their attention over many things at the same time. Their attention span is often short, and this can hamper their ability to concentrate on a single problem. In chess, children have to concentrate exclusively on one problem. Not only do they have to look at a chess position, but they also have to make interpretations: which pieces are on the board, which relations are there between pieces, which threats are there, which tactical options and strategies are possible? The more attention you pay to such things, the better your chances are to win a chess game. Similar questions play a role in the solving of mathematical problems.

Just like with chess, in mathematics self-image, motivation, concentration and effort play an important role in successful problem-solving.

Intellectual and Social-Emotional Enrichment

Chess promotes cognitive qualities, coping (dealing with a social situation), cognitive capacity (problem-solving) and social-emotional development.

This is the conclusion of Ramon Aciego, Lorena Garcia and Moises Betancort of the La Laguna University (Spain) in their 2012 publication ‘The Benefits of Chess for the Intellectual and Social-Emotional Enrichment in Schoolchildren’.

On the island of Tenerife, these researchers examined the benefits of a year of after-school chess on the intellectual and social-emotional development of 170 school children (6-16 years old). They were compared with 60 children who played soccer or basketball.

The design of the research was quasi-experimental. This means that the investigated children were not randomly divided over the groups, but they had chosen their groups.

Measurements were made with an IQ test, a self-report questionnaire and an assessment questionnaire for teachers.

The authors ascertained that many studies and experiments focus on cognitive processes (informative processing) with chess players. However, social-emotional (socioaffective) aspects also play a role. Successful chess players turn out to have a more constructive mindset than others. Research (Ruiz 2006) also proves that performance level can be improved by a psychological intervention (therapy of acceptance and commitment). Other research (Bilalic, McLeod, Gobet 2007) shows that personality traits of children influence their chess performance. This raises a question: what is the influence of emotional aspects versus cognitive aspects? Do extrovert children opt for chess sooner than others? Does the competitive character of chess appeal more to boys than to girls? And to what extent do didactic methods play a role in this?

The researchers claim that it will be interesting to work out in future research whether using diverse didactic methods will make a difference. This research was conducted among children who had opted for chess instruction themselves. It will be interesting to work out which positive learning effects are possible with children who do not opt for chess instruction.

CHAPTER 21

Alphabet of methods and teaching tips for chess education

What you do in a chess lesson or training depends on a number of circumstances – for example, the size of the lesson group, the subjects under discussion, the chess level of the pupils, their thinking level, as well as available tools and possibilities.

Below we give a number of methods and teaching tips a teacher can use. Not everything is applicable for everyone, let alone in equal measure. The idea is that trainers adopt insights and implement them as part of their activities. By developing routines, you will be able to apply a great number of insights automatically. A number of these subjects are also quite suitable for a checklist.

A good training is like a tasty and nourishing dish. There is a good balance between the various ingredients.

Abstracting

Abstracting is deriving the general from the particular. This is a useful thinking skill. If pupils formulate the essence of a position in a rule of thumb, they are abstracting. This requires thinking actively about an experience and a theme. This leads to more insight, and better storage of a subject in the memory. By coupling a picture (pattern) to a concept, you will make the concept applicable in similar situations in the future.

Acronym

An acronym is a letter-word. It is constructed from the first letters of a number of words. It can serve as a mnemonic device. For example: if one of your pieces is under attack, you can use CIEPC, which stands for Capture, Interpose, Evade, Protect, Counterattack.

Activating previously obtained knowledge

Knowledge is understood best when it is presented in a meaningful context. It is an important teaching principle to connect new knowledge with relevant previously obtained knowledge. With this aim, a teacher can start a lesson by repeating knowledge and asking pupils questions about it.

Active learning

Pupils will learn more and better if they are actively occupied with a subject. Explanation about a subject provides basic information and gives direction to pupils' thinking. Being actively involved with it (discussion, playing games, making exercises, etc.) will give pupils more insight than merely listening passively. Active learning motivates pupils.

Activity

If you want to win in chess, you have to make your pieces active. Activity is the difference between possibilities and limitations. Take a position, and describe the possibilities and limitations for both sides.

Adventure

Chess is a playground for the brain – it is a great adventure. You can present a game as an exciting tale to children. Who of the children plays soccer at a club? Well, has your soccer coach ever told you about cooperation? Chess is also a team sport – all the pieces should cooperate. The white queen immediately joins the attack, but is that wise? What do you think? And what about the white king, by the way? Has he never heard of castling, and defending? Or is castling only for scaredy-cats? Give examples, make comparisons, ask questions, tell anecdotes. Make the game alive.

Alphabet game

Pupils get five minutes to write down an alphabet with as many chess terms as possible. They can do this either individually or in a group. Next, the teacher discusses the lists with the complete class. The pupil who has filled in the most letters, wins. Concepts that are unknown, are explained briefly.

Alternation

Alternation often improves efficient and effective learning. You use your energy better, and the training is more fun. You can, for example, alternate doing subjects with learning ones, or easy tactical exercises with difficult ones, fun subjects with boring ones, or individual learning with cooperation.

Analysing games (see also Game quiz)

You learn a lot by analysing games – especially your own games, because then you learn from your own mistakes.

If pupils notate their own games, the teacher can later discuss these games with them. Obviously, the teacher has to keep in mind the level of the children, and should only discuss themes that are in accordance with their level.

For young children, it is difficult to notate an entire game. You can, for instance, agree that they write down the first ten moves. A disadvantage of this arrangement is that you can only discuss openings.

The DGT board is a beautiful solution. These boards (which are also used in top tournaments) record moves and save them in a Fritz computer program. From there, you can play through the game. A teacher can also make prints of the games for his pupils.

Also, a teacher can notate an entire game himself every now and then, while the children are playing. In one of the following lessons, the teacher can then present the game on a demonstration board or a digital blackboard, and discuss the most important moves. The teacher can demonstrate these, but the pupils can also do this themselves. The teacher can stand in the

back of the classroom, and add remarks or corrections to the pupils' explanations. It is especially useful if the teacher helps the children to find the right moves by asking questions ('discovery learning').

The teacher can encourage children to play a game at home and notate it. Children often enjoy playing against their father, mother, brother or sister, and bringing the game along to school. The teacher can also show a chess book and discuss a game in it.

It is useful if children have their own chessboard in class, on which they can play the moves of the game that is being analysed. This gives direction to their energy, and enables them to try out their own ideas.

If children enter games in Fritz themselves, and demonstrate them on a digital blackboard, they will learn to work with the Fritz program without effort. The teacher explains the way the program works.

When children play games in a schools' championship, the teacher can record fragments on video, or make pictures. Later he can show the footage in class (possibly also on his own website) and discuss it. The teacher can make a round and ask all the participants what their most remarkable experience or learning moment was.

The teacher can play against a chess program, like Lichess, together with the class. At each move, the teacher asks the pupils to give suggestions, and their reasons for them. He also gives suggestions himself. The class chooses a move together. As this can be quite time-consuming, the teacher can also play a few moves every now and then and explain what is happening on the board.

The Fritz chess program offers the possibility of activating the 'crazy' or 'drunken' mode. Playing such a game against the program may easily turn into a kind of penalty shootout. Children love it!

Variety makes lessons more fun. The teacher can make a video of a game between two children with a camera. He can upload the memory card of the camera on his laptop, and present the video on a digital blackboard. He can stop the video at any move. The pupils play through the game on their own boards. This way, each move can be discussed.

Analysis questionnaire

The 'Analysis Questionnaire' has been created by Karel van Delft and IM Dharma Tjiam. This questionnaire consists of chess-technical as well as psychological questions, plus a survey of tactical motifs and the Elements of Steinitz. Chess players can fill in the list and discuss it with a trainer or with training partners. Trainers can also use the list for an oral interview with pupils. An option is to use only a part of the list, or to shorten the list for beginning chess players.

Anti-blunder weapon: take your opponent seriously

You won't get an easy win if you give your pieces and pawns to your opponent for free. How can you avoid blunders? By taking your opponent seriously. How much percent of the moves in a game does your opponent make? Fifty percent! That's half of all the moves. Therefore, it is wise to first look what your opponent can do (moves, plan) before you make a move yourself.

You can also think of the ‘street-crossing rule’: before you cross a street, you look if there is any traffic approaching. Or else…?

Apps

There are many chess apps, i.e. programs to play chess on mobile devices. Some are free of charge. The teacher, or a pupil, can explain how apps work. This gives extra opportunities to pupils to play chess.

Apronus en Lichess mini-games

Mini-games are chess games with only a couple of pieces. On the Apronus website you can make mini-games both with and without the kings, see www.apronus.com/chess/diagram/editor. Click on the ‘empty’ button and then slide your pieces and/or pawns on the board, then click on ‘export’. On the next page, click on the second link. Then you can play a game.

You can also make mini-games on Lichess.org. Here you do have to put kings on the board. On the Menu page of www.lichess.org you go Tools and then Board Editor. You empty the board and slide pieces and/or pawns on the board. Using ‘analysis’ you can make moves for both colours. With ‘Go on from here’ you can play against a computer program or against a friend.

Arrangement of the classroom

It is important to arrange the classroom in the right way. Pupils have to have a good view of a demonstration board or a digital board. If a classroom is messy, then this will have a distracting effect. It is also not in line with the norm that you have to behave seriously during lessons.

Assessment of positions

If children know a little more about tactics, and regularly play chess games, it is time to start discussing chess games. You don’t always have to discuss an entire game. Quality goes before quantity. You can also assess a few positions from a game.

You can go through Steinitz’s List of Elements with the children.

Projecting the position on a digital blackboard with the help of a chess program is often more practical than using a demonstration board. You can enter variations and it’s easy to return to the game.

For the assessment of a position, three questions are very important: 1) What does my opponent want, and what can he do? 2) Where do I put my pieces? 3) Which pieces do I want to exchange? Answering these questions leads to a search strategy (see elsewhere in this chapter).

Our Masterplan is, of course, to mate the enemy king. Most of the time you can’t do this immediately. Therefore, we have to get a good position first. We can achieve this by putting our pieces on active squares, and by letting them cooperate. First we start collecting small advantages, like winning a pawn or conquering an open file (a highway for the pieces). We collect small advantages with the help of small plans. You can make such a plan by talking to yourself in silence (verbalizing) about what is possible and what isn’t. While doing this, we constantly pay attention to how active our pieces are, whether we have any influence in the

centre, and the state of our pawn structure. Only after we have obtained a number of advantages, we are strong enough to set up an attack.

You can compare the pawn structure to the skeleton of your body. If it collapses, your whole body collapses. To make this clear, children can play games with each other. After a few minutes, the teacher stops the games. The children take the pieces from the board. How are the pawn structures looking? The teacher makes a round of the boards with the pupils, and first asks them to name the strong and weak aspects of the respective pawn structures. Then the teacher explains what the strong and the weak aspects are.

Attack on the king

The goal in chess is to mate the enemy king. To achieve that, you have to attack the king.

For this purpose, it is useful to develop all your pieces in the opening (‘all your friends want to join the party’). The teacher can show various miniature games in which one of the kings is quickly mated. A suitable opening is the King’s Gambit. Here, children learn that the activity of their pieces is much more important than winning or losing just a little pawn. What do you prefer? A pawn that doesn’t do much, or highways for your pieces? In chess literature, there are plenty of examples of attacks on the king. The teacher may also use his own games, or games by pupils. It is useful for a teacher to collect training material and sample games that relate to the subjects he brings up.

Automation

Automation is making yourself familiar with knowledge and skills in such a way that you can apply them automatically. That is practical, since it allows you to utilize a great deal of your knowledge in your games. For example, you automatize knowledge about tactical motifs (like a pin, or a discovery attack) by solving a number of chess exercises on this theme. The more you train, the better you will be able to recognize themes, also during games. The question is how much time the teacher spends on this in chess lessons. If he gives chess instruction for only 30 minutes a week, it may easily become boring if he only trains tactical exercises. He can also spend ten minutes on one tactical theme in each lesson and, besides this, discuss games and apply variety in subjects and methods. During these games and varied subjects, the teacher can also identify the tactical motifs that crop up. Variety makes chess fun. Pupils who enjoy chess, and get fascinated by the game, will play it more often, and then they will inevitably automatize themes. Ambitious pupils have to invest working hours, that is how it is with all sports. They can, for instance, make tactical exercises for 20 minutes every day to automatize their knowledge and skills.

Baby studies

Baby studies are endgame studies with a maximum of five pieces. Some of these, like several ones by Réti, are suited for discussion with school children. The nice thing about studies is that they are often paradoxical. Just like other endgame studies, baby studies are useful for the stimulation of creative thinking.

Balance

To learn to play chess and to become a stronger chess player, you have to have a balance between various components (building-blocks). There has to be a balance between knowledge and ability, in other words: theoretical know-how and practice. Components of a teaching programme also need to be balanced. A beginner will benefit greatly from knowing (and being able to apply) the 'three golden rules of the opening', but detailed knowledge of openings is not so relevant. It is useful to devote attention to diverse study components, like tactics, discussing own games, discussing sample games, opening traps and simple endings. With all these components, it is important that pupils are actively occupied, converting their knowledge into ability. World Champion Mikhail Botvinnik had a chess school in Moscow. One of his well-known comments was: 'You can't teach chess, you can only learn chess.'

Besides regular study components, there are also many 'varia', ranging from giving talks to playing against a computer together. You can spend roughly half of the time on actually playing chess games.

A teacher also has to look for a balance in the design of his lessons. Spending an entire lesson on one subject may easily get boring for many children. Too many subjects may lead to unrest in class. It is not necessary that all the subjects return every week. A teacher will be wise to identify cross-bracings between study components. When discussing the pupils' own games, for example, the teacher can point at tactical motifs.

Basic pattern of lessons

Lessons can have a fixed basic pattern. For example: 1) Question round; 2) Tactics; 3) Game discussion; 4) Varia; 5) Competition. Variations can be introduced in every component. Also, one of the lessons may be entirely dedicated to the 'Varia' part, like, for instance, making chess posters.

Beginners

For young children and beginners, useful learning materials and methods are, among others, Part I of the Steps Method, or the Chess Tutor DVD's (both of them are available in various languages), CD-ROM Fritz & Chesster, mini-games with a few pieces, the *Chess Course* books by GM Lev Alburt, a quiz with yes/no questions for beginners (sit down if you don't know the answer), and talk chess (play a game against each other and mention the reason for your choice at every move).

App: Chessmatec.com.

Websites: Raindrop Chess, Troyis, Jeugdschaakpagina (Dutch), Chess Kids Academy, Chess for Heroes, Lichess.org, Chess.com, Bill Wall (opening traps) and Professorchess.com.

Films: 'Knights of the South Bronx', 'Searching for Bobby Fischer', 'Lang leve de koningin' (Dutch) and 'Chess Fever'. If you use the search term 'chess', you will find many videos on YouTube.

Biases

A bias is an inclination to view an issue from a distorted perspective. How do you observe? Do you see an old woman or a young lady in this drawing? Do you see a vase, or two faces looking at each other?

In a chess position you can also focus on certain features, while ignoring others. For example, you only pay attention on how you can give mate, not to your opponent's mate threat. A pupil may lose a game because he assumes that he will beat a younger pupil 'anyway'.

A teacher can collect positions from his pupils' games, and illustrate biases with them. He can connect the conclusion to them that it's useful to see further than the end of your nose. Is there more than one way to look at a problem? See also the catchword 'Falsification' in this alphabet.

A survey of cognitive biases can be found on Wikipedia.

Biographies

On the Internet you can find a lot of information on the life stories of famous chess players. Pupils can give a talk about, for example, Magnus Carlsen, Garry Kasparov, David Bronstein or Mikhail Tal. They can tell something about these chess players and show a position from one of their games. Of course, a deep analysis is not required, but the final two or three moves of one of their combinations may be interesting.

Blended learning

This concept indicates a combination (mix) of different technical tools, instruction methods and didactic strategies. An advantage may be that pupils with different learning styles gain insights each in their own way. In general, variety in lessons motivates pupils.

Blindfold chess

Blindfold chess is playing chess without seeing the board. See also the catchword 'Visualization'.

Blitz chess

Blitz chess is when you play with a very short time limit: five minutes or less. Many youth players like blitz chess since it allows them to be actively occupied.

The idea that blitz chess leads to superficial thinking was conceived by three Russian psychologists around 1928. This idea was later superseded.

Blitz chess is an excellent way to dabble with ideas if you are learning a new opening. Also, blitz chess can be useful to train your decisiveness. And besides, you may simply find it fun.

A school chess club can organize a blitz tournament as a variety on the usual methods. It can be held once during a lesson hour (e.g. five rounds Swiss), but you can also organize an Open Championship of the school during an entire afternoon. It is instructive for children to be involved in the organization. They can help you make a scenario, and also help during the event itself. There may be children who can make a poster – or there may be children who don't want to play chess, but do want to enter the results into a computer program.

There are diverse variants of blitz chess. With 'student chess' both players start with a time

limit of five minutes. The player who wins gets one minute less on the clock in the next game.

With ‘Chess against the bear’, a strong player gets two minutes, and his opponent five minutes. The teacher can play against a pupil now and then during the lesson, and in the meantime give comments on the game (Banterblitz). This way, children will see all sorts of things happening, and they can learn from that. As a variant, the strongest pupil in the group can be the ‘bear’ and either he himself, another pupil or the teacher gives comments.

Blogs, websites

There are very many chess blogs and chess websites. With a digital blackboard or a computer you can visit websites. You can, for instance, agree that every week another child discusses a website.

Blunder

A blunder is a big mistake. Blunders occur if you do not pay attention, or if you assess something wrongly. You certainly want to avoid blunders. This means that you will have to understand and remember such situations. You can save blunder positions in a database, and print them out. If you look at them repeatedly, you will remember them more easily if a similar situation occurs again.

It also helps a lot if you take a good look at the position at every move. Always start with looking at the options your opponent has. If you don’t look, you won’t see anything.

Board vision, and identifying relations

Board vision means that you command a view of the entire board, and see where pieces and pawns are being attacked and defended. This way, you avoid blunders.

Young chess players often blunder pieces. This is because they look at their own options, and not at those of their opponent. Looking at your own options is more enjoyable, and easier emotionally. People, and certainly also children, are inclined to verify (why is something possible) not falsify (why is something not possible).

You can develop board vision by training with positions. It is necessary to always first look at your opponent’s options – this should be made into a routine.

You can train this during lessons by asking: Can your opponent: 1. give check; 2. capture something; 3. attack something?

Another exercise is identifying the relations between pieces and pawns. Relations are ways in which pieces and pawns influence each other, like attacking or defending, or standing in each other’s way. Set up a simple position with a few pieces and pawns, and let the pupils identify the relations. For instance: the pawn on a2 protects the pawn on b3, the ♖e8 attacks the ♘e3. You can also let groups of children think about this. First they discuss the position on their own board, and write down all the relations. Then the teacher discusses all the identified relations on a demonstration board. The pupil who identifies the most relations, wins.

One step further is identifying good moves that result in a meaningful relation. Here we are talking about candidate moves. Of course, this should be accompanied by an explanation why a

candidate move is good.

Body language

With body language (non-verbal communication) an opponent sometimes reveals the mental state he is in. Sometimes you can make use of that. If, for example, he seems to be panicking, you may conclude that he might blunder. You can never be sure – perhaps he will still make a good move by accident ('positional luck'). Also, you may become over-confident, and you shouldn't let that happen.

Sometimes what somebody shows is not unequivocal. If your opponent looks very stressed, he may be having a hard time – or perhaps it is just his way of concentrating thoroughly.

If, as a teacher, you use chess lessons to develop social and emotional skills too, then you may give a body language training once. Let children express emotions. One pupil says the word 'optimistic', and another shows a cheerful face – etcetera.

But be careful: emotions can also be feigned to put somebody on the wrong foot.

Having an eye for the body language of pupils is important when you teach. Is a child yawning? Has he perhaps been on a scouting camp (little sleep) or is there something wrong with your lessons? Is a child very quiet? Are you taking care that you're not only giving the word to the wiseacres?

Books

Many chess books have been published, at all levels and on all kinds of themes.

If you find a book interesting, then it's a good book. You don't have to read a book from the first page to the last. It is best if you get a global impression first, by looking at the Contents pages, and leafing through the book a bit. Next, you can read the parts you find interesting.

School children can visit the library and search for an interesting book there to give a talk about. In the Netherlands, a well-known book for beginners is *Oom Jan leert zijn neefje schaken* (= *Uncle Jan Teaches His Nephew To Play Chess*) by former World Champion Max Euwe and Albert Loon. This book can be downloaded free-of-charge on the Internet. On Bill Wall's Chess Page (http://billwall.phpwebhosting.com) you can find a PGN of the games in the book via search term 'Euwe - Uncle John Teaches Chess'.

Brooklyn Castle

Katie Dellamaggiore has made the film *Brooklyn Castle* (www.brooklyncastle.com). The film is about chess, but also about state education, chances at academic success and the 'American Dream'. All kinds of questions are addressed. How do you inspire your children? How can you remain enthusiastic? What are you proud of? What distinguishes chess instruction from instruction on other school subjects?

How do you deal with learning problems and behavioural problems? If chess has educational value, then how do you see this happening with your pupils? Which team-building methods do you use as a coach? How do pupils experience travelling to tournaments? How do you finance lessons? Which message do you pass on to your pupils?

Dellamaggiore asked pupils to write down why they played chess. One quote: ‘I like chess because it’s a thinking game that not only helps me in school but lets me see things in a new way, I also love chess cause I love the feeling of winning, even if I can’t always win.’

Browsing

Browsing means taking up something, or nosing about somewhere, for fun. If you want to advance in chess, you have to learn systematically. This means, among others, regularly making exercises and analysing games. But it also means using your imagination, and enjoying chess. You can use part of your study time to do all kinds of nice, varied things, like watching chess videos on YouTube, looking around for a bit on websites, leafing through a chessbook, and the like. This way you will come across all kinds of interesting things you may want to investigate further.

Buddy

Sometimes a new pupil joins the class. A teacher doesn’t always have enough time to talk with a new pupil to enable him to catch up if he is behind on the subject matter. If the pupil is strongly motivated, the teacher can recommend self-study by visiting websites. Another option is to ask another pupil to act as a buddy: the new pupil can then approach this buddy pupil if he has a question. Many children enjoy helping others. This is a useful group norm, and an insight you can teach to children: if we help each other, we will get a better world, and you will also learn something when you explain something to someone else.

Caissa

Caissa is the goddess of chess. It’s a creation by Sir William Jones (1746-1794). He wrote a poem titled ‘Caissa’. This may be a good subject for a talk.

Candidate moves

Candidate moves are moves that come into consideration to be played in a position. How do you recognize them? With knowledge, experience, calculation and elimination (which moves not?) – sometimes also with intuition (unconscious recognition).

Assess a position with your pupils. This is done by ‘thinking out loud’, i.e. putting thoughts into words. Which candidate moves do they see? Why are they candidate moves?

Castling

It is best for beginning chess players to castle as quickly and as safely as possible.

The golden rules of the opening are important. But many children don’t think of these during a game. Let children play games and tell them that they must castle as quickly as possible. They must not lose a piece or a pawn in the process. Let the children notate their moves. The pupil who castles first, wins. If both of them castle on the same move, it’s a draw. You can let children play this game against each other, and walk around and give comments. You can collect the scoresheets and discuss the games on a demonstration board.

You can also let two pupils play against each other, while the rest of the children are watching. The opponents can play on a demonstration board, but also on a normal board, while the other children are standing around in a circle. The teacher notates the moves. After the game is finished, the teacher discusses it.

Of course, there may be games where castling is no longer possible. For example, when the queens are exchanged and the king has to take back. If that happens, you can adjudicate the game a draw.

Catching criminals

It is wise for novice chess players to start with clear opening principles and apply the 'three golden rules of the opening'. Many children do not apply them in their games. They don't understand their use, or forget them, or it doesn't matter because their opponents don't apply them either. This is not good for their chess development. A teacher can react to this in different ways. It is useful to use all of these different ways, because this will lead to better understanding. The teacher can repeat the opening principles again and again during the games discussion, asking the children to name the rules. In a sample game, he can demonstrate how you can punish early queen moves. The teacher can agree with the pupils that they will all follow the rules, and then check this in different ways. You can agree that players call the teacher if one of them doesn't stick to the rules. Also, the teacher can walk around and 'catch criminals': if he sees that the rules are not applied, he tells the players to start the game over again.

The teacher can also topple the board over with a smile if he sees that the square on the right-hand side below is dark, saying: 'I'm from the chess police, now you won't forget it again.' It's important to always explain why you do something.

Children regularly play with only a few pieces. For example, they leave the queenside pieces in their starting positions. The American teacher FM Sunil Weeramantry has found a remedy to this. He grabs passively-posted pieces from the board and puts them in his pocket, saying 'You're not using these anyway'. The American trainer Dan Heisman mentions this example in one of his trainer columns 'Novice Nook', which can be found on his website. The idea behind this is that direct feedback on a concrete position is much more effective than abstract explanation at another moment. Chess training is not only teaching useful things, but also curing pupils of erratic behaviour as soon as possible.

CD-ROMs / DVD's

There are many instructive CD-ROMs and DVD's on the market. A teacher can make video recordings of a talk, put this on a DVD, and give it to the pupils.

Centre

The four central squares on the board are very important. Why would that be? Show an empty chessboard. That is the battlefield, where two armies are going to fight each other. The more each officer and soldier can do, the greater his chance of success will be. Ask the children to stand in the middle of the classroom. Next, they all get to stand in a corner of the room. Then,

they are all put in the middle of the room again. From which spot can you get to any point in the room the fastest? You may also show a city plan of your own hometown. From which spot can you get to any place in the city the fastest? Let the children put two kings on their own board. One king is supposed to get to as few squares as possible, the other to as many squares as possible. Discuss the answers on a demonstration board. Do the same with the other pieces. This seems rather laborious and time-consuming, however it's a life lesson!

Change of perspective

Why would only teachers give lessons? Why shouldn't pupils give lessons? The teacher can give them additional information and help the pupils with their approach. Pupils can, for instance, give instruction by giving a talk.

Chaos-coincidence strategy

Sometimes your position is a mess. You are behind in material, you have less space, your pieces don't cooperate, and you have less time to think as well. Moreover, your king is feeling the draught. In such cases it doesn't make much sense to make modest moves. You're already having a hard time, and this will make it worse. A better thing to do is to play as actively as possible, and try to complicate the position. The more options there are, the more chances your opponent will have to go wrong. Maybe he will also get irritated because he had already counted a full point. People who are irritated, will think less logically. As a result, your opponent may slip up. It's not certain, but you can give him the chance to make a mistake.

Checklist

A teacher can put all the subjects and methods he intends to use in a year on a checklist. This list comprises regularly returning subjects (tactics, game discussions, talks) and varia (once-only things, like a simul, a quiz, etc.)

It is useful to make a list of pupils who have, for instance, given a talk, operated the computer, or played on a DGT board.

Chessable

Chessable (www.chessable.com) is an online e-learning platform to improve one's chess. It has a free account. A number of interactive courses on the platform are free, others cost money.

Chessable has been online since 2016. The initiators are David Kramaley and IM John Bartholomew.

Part of the courses have been made specially for Chessable, others are digitalized adaptations of existing chess books. Apart from the course books with game viewers, there are also complementary videos. While looking at the videos, the user can stop them and train the themes of his choosing.

Chessable cooperates with big chess publishers, among them New In Chess.

The core function of the MoveTrainer program is 'spaced repetition'. This means that knowledge is repeated over a time interval that becomes longer as you progress. Other

educational psychological principles are applied, like implicit and explicit learning, feedback principles as well as learning by gaming and reward systems.

There are courses on the areas of openings, tactics, middle- and endgame. First, the user studies the theory, and after that he makes exercises and tests. The program gives direct feedback and keeps track of the user's progress. After a mistake, an exercise is repeated earlier. The program awards bonus points for good results.

Users can also mark positions themselves.

Via a chat function, users can also communicate with each other, and with authors.

Users can make their own courses and sell them via Chessable, or make them available for free. This offers opportunities for producing books for beginners. For this purpose, Chessable is developing a video series. Chessable will also be available in other languages than English in the future.

Chess calendar

Children can express their knowledge of and interest in chess by making illustrations on a self-made chess calendar. You can print out this calendar and reproduce it on a website. In a calendar, you can note down all the dates of chess activities, like lessons, events and tournaments.

Chess clock

When a chess clock is used, each of the two players gets a limited amount of time to think. Official chess contests are played with DGT-clocks. It is also possible to use a chess clock program via the Internet, or an app via a smartphone.

Chess clubs

Chess clubs have, as a rule, a weekly club night in which a mutual competition is played. Often also, teams of the club take part in the competitions of the regional or national chess federation. Some clubs organize an annual tournament. Sometimes there are extra activities, like lectures and simultaneous displays. Many clubs have an Internet site.

Many chess clubs have a youth section. Mostly, the members of the youth section meet once a week, often early in the evening. Most of the time, children get lessons of half an hour in a level group, and the other 30 minutes are reserved for a mutual competition.

Youth sections of chess clubs sometimes organize their own youth tournament. They also provide their members with regular information about other youth tournaments.

Some members of a school chess club are also member of a chess club. It can be interesting for the other children if they tell something about this at school – certainly if they come to school with a pennant or a cup they have won.

Chess comic book stories

Via Google you can look up chess comic book stories on the Internet. You can also make a chess comic book story yourself. You can copy this story onto a poster and hang it up in class. You can also put self-made comics on the class's chess website, or edit them as a YouTube video.

Chess exercise circuit

Positions on a board are more ‘alive’ than positions on a sheet of paper with diagrams.

An exercise circuit can contain, for example, eight positions. White or Black is on move, and has to win or make a draw. Pupils can solve these positions in random order. They do this on their own or with a partner, and are allotted a certain amount of time for it. They write down their solutions on a small answer form.

When the time is up, the teacher moves from one position to the other with the pupils and discusses the correct solutions. It is also interesting to discuss the ways in which children have come to wrong conclusions. You can learn from mistakes in thought. It is even better if you can distill a few rules of thumb from the positions. The teacher can write these down and hand them out on A4 sheets in the next lesson. He can also make a small poster with a list of them and hang it on the wall in the classroom.

The circuit may contain a mix of position types, but they can also be selected according to one or two themes. Another option is to ask every pupil to hand in an interesting position from one of their own games before the lesson. The teacher can also present positions from his own games.

The teacher can hand out the positions on paper and ask every child to put one of the positions on their board. This saves time.

Chess expression

Chess expression is when you combine a chess subject with a form of expression. This is a creative way to make something clear about a chess subject. Creativity is making something new, beautiful and useful. It is going on a search for unexpected connections.

Einstein said: ‘Logic will get you from A to B. Imagination will take you everywhere.’

You can stimulate your imagination among others by brainstorming.

How do you go about this?

– First you orientate yourself, then you make a scheme, then you carry it out (and adapt if necessary).
– Take your time, investigate all kinds of things, think, talk, dream, etcetera – devote a lesson to this.
– Do you do this on your own, or with a group?
– Look what others have done, think where you may find information and ideas.
– Brainstorm about a chess subject, an expression form, or a combination of those.
– Make a work scheme in catchwords: goal, task distribution, time plan, materials needed.

Chess subjects are, for example:

– Pawn structures, attacks on the king, endgame studies, chess problems, mating the enemy king
– How do you learn good chess.

You can find more subjects via:

– Google
– Chess websites.

Forms of expression are, for example:

- Dance
- Music, song (opera, rap, ballad, etc.)
- Drawing, paintings, comic book stories
- Text (prose, poetry, information)
- Photography, film
- Posters
- PowerPoint presentation
- Animations
- Puppet show, stage play, drama
- Origami.

Chess festival

A chess festival is an informal event with a plethora of chess activities. At such a festival, you can make many people acquainted with chess, and demonstrate all the things you are doing with your school chess club.

Here's a number of suggestions for activities: a match on ten boards 13- (children) versus 13+ (parents, grandmothers, etc.), a simul, a blitz simul on four boards with commentary, chess against the bear (one minute v. five minutes), Banterblitz, making colour plates, games of Chess Karate Kid, explanation about CD-ROMs, explanation about the Steps Method, explanation about Fritz, a prize contest, chess films, a course that teaches chess in half an hour, etcetera. A teacher can make the planning of the festival together with children, make a scenario, and give them a task with one of the activities. A few of the children can make photos and videos, and you can make a report of the festival on a website. Obviously, you also consider publicity, like making a press release for local media and Facebook pages. Also, you can make small posters that children can hang up in many different places.

Chess history

You can find information about chess history on Leo Hovestadt's 'Carolus Chess' website.

Jessica Fischer has put historical videos about chess on the Internet. The videos are suited for older, strongly motivated youth chess players. There are historical pictures on Asaf Feller's website.

Via searching machines you can, for instance, also find historical videos about the World Champions Bobby Fischer and Max Euwe on the Internet.

Chess instruction via YouTube

There are many videos with chess instruction on YouTube; for instance, on opening principles and tactics. These videos can be an excellent way to introduce or repeat knowledge. While you are collectively watching a video, you can agree that all the children write down two words. For example, one word that signifies an important chess term, and one word they did not know yet. After the video, the teacher makes a round and writes down the words. During this, other

children in the class may give explanations, if possible.

Chessity

Chessity is an online chess teaching method developed in the Netherlands. Children learn chess in a playful way, in their own tempo, on their own level. The program is interactive, and gives feedback to children. There are many related games, and children can play chess games. Also, they can get diplomas. For teachers, there is a pupil tracking system. Pupils and teachers can communicate via a community network. A knowledge centre on www.chessity.com offers didactic information.

Chess Karate Kid game cards

Children learn optimally if they enjoy a game and gather success experiences. The Chess Karate Kid game cards are named after the movie *The Karate Kid*. In this movie, a boy learns elementary skills, and when he integrates them later, he becomes a good karateka. On the game cards are 24 positions with a few pieces. The teacher can explain the rules of the game in a few minutes. The children start playing the games, and in this way they learn what they can do with the pieces. Google 'The Chess Karate Kid English version'.

ChessMatec

ChessMatec is an app developed in Israel by GM Boris Alterman and Luba Alterman. With this app, children learn chess in a playful way. The website is called www.chessmatec.com. Children can also play online via Chessmatec (online.chessmatec.com). For the program, a paid-for account is needed. It is possible to do a limited number of exercises without the account.

Characteristically for this method, hardly any language is used. Each subject starts with an example. The program is based on discovery learning. Besides exercises, there are tests and mini-games.

Boris Alterman claims that he believes in the 'hidden power' of chess. He sees chess as an instrument for developing cognitive and creative thinking, as well as personality.

Part of the chess lessons is about learning and training tactical skills. Via Chessmatec, children can all work on a computer on their own level, in their own tempo. The teacher can walk around, answer questions, and give tips – and compliments, of course! This method is much more enjoyable and more effective than doing tactical exercises on a demonstration board with the entire class.

Of course, children can also do exercises together. Many children also enjoy playing against each other online via Chessmatec.

There are online lesson plans available for teachers.

Chess Memory

Very young novice chess players can make drawings of the chess pieces. For each piece, you write down its name, and how many points it is worth. The teacher can copy and plastify these drawings. In this way, you make a Memory game with which children learn the pieces, their

names and their value in a playful way.

Chess movies: making your own chess book

The American chess trainer FM Bruce Pandolfini has written a series of chess books for young players and beginners. In two books titled *Chess Movies* he discusses short games and openings. After each ply (half-move) he gives a diagram with a couple of explanatory words about the move. Children can also make such books themselves. They can select a short game with an opening that interests them, and make a chess movie of it. Of course, this can also be done on the basis of a game they have played against each other. You can generate diagrams in various ways – for example, with the Fritz chess program, or with a diagram generator. You can put the diagrams and the text in a Word-file, and possibly also make a PDF-file of it. If the entire class does this in duos, you will soon have ten chess movies. Put these together, and Bob's your uncle – you have made a chess book as a class. Now you only need a cover, a table of contents, a foreword, and the book is ready. You can print the book, but you can also present it in PDF-format as an e-book.

Chess newspaper

A newspaper brings news. A chess newspaper brings chess news. Pupils can make a chess newspaper together. Each of them gets a task, on his own or in a group. One of them invents the title, another sends photos, other children write texts, make interviews or send in a game analysis, etcetera. You can start up the project with a brainstorming session about the contents, and then distribute the tasks. At certain moments, you can call an 'editorial meeting' in which everybody tells briefly what they are working on, and whether there are any problems that need solving. The teacher functions as a coach, answering questions and adjusting the process where necessary.

When pupils make a chess newspaper, they are training many different social and journalistic skills. Before making an interview, for example, you do some research (Google), asking the approved list of questions: who, what, where, why, when and how. When you write a story, you select a title, a lead (introduction paragraph) and a text scheme (one catchword for every aspect, on which you elaborate in paragraphs).

The chess newspaper can be printed and/or published on a website as a PDF.

When children make a chess newspaper, they are working very actively; they can work on their own level and follow their own interests. Also, pupils who are not strongly motivated to play chess can be motivated in this way to participate actively.

Chess police

In his book *My System,* Aron Nimzowitsch wrote that a passed pawn is a criminal that should be put under lock and key.

It is useful to explain this to children. Related to this topic, it is very understandable that action must be taken against chess pupils who behave 'criminally' as well. For example, they lay down the chessboard in the wrong way, with a light square at the bottom on the left, or when

they start a game they don't use the 'three golden rules of the opening'.

At such moments, the chess police intervenes. This role is fulfilled by the chess teacher. He smiles once, and then resolutely topples over the chessboard. That'll show them. Such an action will make a big impression, and things that make an impression get fixed in children's memories.

Chess puzzle

Select a position from one of your own games where a piece can be won on the next move. Print out the position and glue it to a piece of cardboard. Cut the position into four parts, and the puzzle is ready.

Chess suitcase

A school chess club may be small, while the level of the members differs greatly and there is only one teacher. In such cases, it may be an idea to give the lessons the character of a workshop. The teacher can start with a short discussion of a game, giving explanation on different levels ('layered'). After that, the pupils get to work in small groups. The teacher walks around, answers questions, gives tips, and discusses a position here and there. The children can play games or take something out of the chess suitcase. A chess suitcase is a kind of lucky bag. It may contain all kinds of materials, like a Raindrop Chess game, a pocket chess set, a small chess computer, game cards (Chess Karate Kid), a chess set for three or four persons, Solitaire chess, cards with positions and answers, chess magazines, chess books, CD-ROMs, chess clocks, scoresheets, a chess quiz, etcetera.

A nice mini-game is Square4Chess. This is played on a small board with 4x4 squares. Both players have four pieces of the same kind next to the board. You can agree together which pieces these are. There are three possibilities: placing a piece on the board, moving a piece on the board, or capturing a piece.

Chess variants

There are many different chess variants, like Tandem Chess, Atomic Chess, Losing Chess and Raindrop Chess. There are also variants where three or four persons play on one board.

In Adrey Caljé's book *Chess Variants*, 50 variants are described.

Chess wall

At school, you have to think about a lot more things than chess. But perhaps one square meter of a wall somewhere can be reserved for chess. There you can hang up competition pairings, posters, the chess photo of the week, and the like.

Chess websites

There are many Internet sites with information about chess. There are a number of sites that contain a lot of information that is useful for novice chess players. The teacher can take a look at a couple of these websites with children. That way, they will learn which websites are suitable for them, and which websites may also be enjoyable for them at home.

CIEPC

CIEPC is short for Capture, Interpose, Evade, Protect, Counterattack. These are the five options you have when one of your pieces is under attack. If you apply this mnemonic systematically, you will discover more defensive options in your games.

Classical games

Classical games are games from the past that are instructive. An example is the 'Evergreen' game Adolf Anderssen-Jean Dufresne (Berlin 1852). Such a game can easily be found in the database of Fritz, ChessBase or Chessgames.com. You can also find the game by Googling.

Naturally, making an analysis of such a game is much too difficult for school children. Moreover, computer analyses make clear that the players of this game made mistakes too. Which is not so surprising, since there is no such thing as a perfect game. You don't have to discuss such a game in its entirety. You can play through it quickly, highlighting one or two aspects (for instance, that the opening is called the Evans Gambit). In this example, what counts is the final combination. Depending on the level of the children, you can ask them to find the final move, or, for instance, the three final moves.

Clothing and chess

There are school chess teams who take part in tournaments wearing school shirts. This gives a feeling of unity, and you radiate that you are proud of yourself. Multiple World Champion GM Viswanathan Anand refuses to play with a necktie, because it makes him feel short of breath. World Champion GM Magnus Carlsen appears in advertisements for a clothing line. There is a lot that can be said about chess and clothing. The website www.maxeuwe.nl features an article by Karel van Delft about chess and clothing with around 40 photos (see menu 'activiteiten' – 'columns').

Columns

Many good chess players have written chess columns for newspapers. You can retrieve such columns on the Internet via Google. Many of the subjects are too difficult for school children, but sometimes the columns have diagrams that are also fun for them. A very well known columnist was grandmaster George Koltanowski, who wrote columns for the American *San Francisco Chronicle* for more than 50 years.

Commitment

Commitment means involvement and devotion to something, i.e.: intrinsic motivation. You do something because you want to do it, not because you have to (extrinsic motivation). Commitment can also be described as 'active involvement'. Pupils who show commitment are more involved in a lesson, and learn more and better. Commitment occurs when pupils understand that what they learn is important for them. Therefore, it is important that a teacher explains why he is doing something. And if the subject is enjoyable as well, then this will increase their effort and their positive self-image. Pupils are more motivated to make an effort if

they are personally involved in the planning of a lesson. You can, for example, talk about the use of having pupils give talks, and giving them the freedom to think of their own subject and their own way of presenting it. Laszlo Polgar calls this ‘making them the co-author of their own upbringing’.

Pupils will also be more committed if they are made responsible for certain tasks, like clearing away the material, giving simuls to younger children, or writing a small article for a website.

Communication

Communication is exchanging information. If everybody is talking at the same time, or people are not allowed to finish their sentences, then the communication is not good. It is useful to agree on certain game rules on communication, just like in traffic. You can agree, for example, that the children speak by turns. A teacher can demand from his pupils that they first raise a finger before saying something. In this way, a class conversation will develop in a structured way, i.e. efficiently and effectively.

If the communication in a class does not run smoothly, then a teacher can discuss this with the class, and establish a few game rules. If pupils understand why game rules are necessary, they will sooner adhere to them. Moreover, it will be clear what is allowed and what is not, and pupils can be kept to their word.

It is useful for a teacher to evaluate how he himself communicates (see also ‘Lesson evaluation’).

Competition

Besides lessons, many school chess clubs also have a competition. This can be organized either with or without chess clocks. With the Sevilla program, which is freely available on the Internet, you can make pairings and rankings. You can print these out, and can also publish them as a file on the Internet. Often there are several competition groups with participants of approximately equal strength.

If children play without a clock, the game will not always be finished when the teaching period is over. You can agree beforehand that the player who wins is three or more points ahead.

Competitive chess explained

A chess lesson can be dedicated to procedures during chess tournaments. There, chess players notate their games, use chess clocks, and are paired with the Swiss system. Perhaps there are a few pupils who have already played in tournaments. They can tell the class about it, and the other pupils can ask questions. The teacher gives additional information.

The teacher can make photos and video recordings of a youth tournament in which pupils participate. He can show the footage in a lesson, and discuss it with the pupils.

Computer

With chess programs like Fritz and ChessBase you can analyse games and positions. These

programs contain databases with games and opening books. You can make competition pairings with a computer. On the Internet, you can visit chess websites. You can play CD-ROMs and DVD's. Many computer chess programs can be adjusted to various levels. You can also play against a chess computer program as a duo, consulting with each other about the moves while you play.

Concentration

If you concentrate well, you will learn better and perform better during games. What is concentration, and how can you improve it?

A teacher can ask pupils to describe what concentration is, and what its use is for a chess player. Next, he asks pupils to describe hindrances that can ruin your concentration. This will probably produce a whole series of answers, like: not sleeping, chattering during the game, not taking your opponent seriously, etcetera. The teacher writes the answers down in red colour, in catchwords, making a list of them. Then the pupils name the opposites of the written-down catchwords. The teacher writes these down in green colour. And look: there you have a list of tips to improve your concentration. The teacher can make a list of these tips and print it out on a small poster.

Pupils will concentrate better if they convert the tips into routines.

During lessons and competitions, the goal is optimum performance. So, pupils must concentrate. This means that as a teacher you have to lay down the rule that the classroom has to be quiet. Pupils who cannot adhere to this rule are advised to leave the room.

Consultation game

A consultation game is a game in which players form a team together, and consult with each other about their moves. They can play against another team, or against a teacher – either or not in the form of a simultaneous display.

Sometimes there are games in which one player plays on a website against visitors of that website. The visitors email their chosen move, and the move that gets the most votes is played.

In 1921, a number of top players played a well-known consultation game against each other. Alekhine, Sämisch, Steiner, Tartakower and Vajda defeated Abonyi, Bogoljubow, Grünfeld, Kostic and Steck in 32 moves.

In a school class, groups of pupils can play consultation games against members of the school team. This gives the teacher time to engage in individual talks with pupils. He can observe how pupils play and how they consult with each other. He can also take a few pictures of interesting positions, which can be discussed later in class.

Cooperation

Chess players can cooperate in many different ways. They can analyse a game together, or do a chess quiz on a website together. They can play against a computer together, or train together with a teacher every week. By cooperating with each other, they can stimulate each other because everyone can bring in different ideas. Individual study can be boring, often it's much

more fun to study together.

If children get to cooperate in chess lessons, this will also promote the development of their social skills.

Copyright

You cannot publish footage and texts of others just like that due to copyright. You can make a reference to this material, or copy a single text fragment as a quote.

Co-responsible

The goal of school lessons is for children to develop their personalities, and gain knowledge, insights and skills. This will work best if they take a constructive and active stance. It is important that pupils feel co-responsible for the lessons. A teacher can stimulate this by taking them seriously and involving them in the design of the lessons on the one hand, and imposing clear limits to their behaviour on the other hand.

Correction

It is inconvenient if children keep making the same mistakes. This way you won't learn chess, and you may learn wrong things. Therefore, mistakes have to be corrected. The teacher can do this if, for example, children give a wrong answer to a question. But children can also correct each other, for example during a game when an illegal move is made.

Correspondence chess

Correspondence chess means that players send each other a move by turns. This used to be done with postcards. Nowadays, correspondence games are often played via the Internet. You can, for instance, send each other the moves by email. There are also websites where you can do this free of charge, like Chess.com. On this website, you can determine for yourself how much time you get for playing a move. This may be, for instance, a day, or a week. Also, you can play more than one correspondence game at the same time.

Children at a school chess club can, for instance, play two correspondence games against children from another school by email, playing one game with white, and one game with black. It is handy if a teacher saves the games in a computer program and projects them on a digital blackboard – otherwise it will take a lot of time to put up the position on the board every time. In each lesson, for instance, five minutes can be spent on these correspondence games.

Creativity

What is creativity? All kinds of descriptions are possible. For example: 'In search of the unexpected'. Another example: 'Doing something unusual with something that is self-evident'. Or: 'Imaginative power'. Or: 'Thinking of new, useful things'. Einstein said: 'Creativity is seeing what others see and thinking what no-one else ever thought.'

Often there are more possibilities in a chess position than you would think at first sight. A teacher can help pupils to discover them by asking them questions.

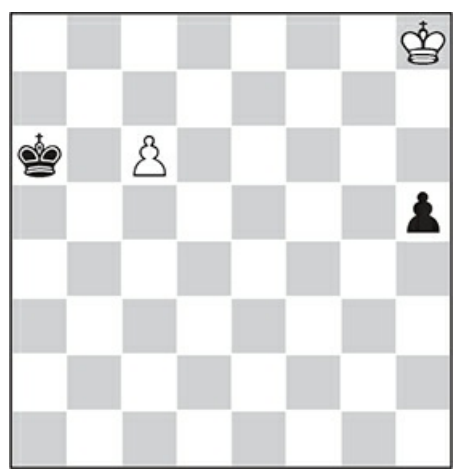
Creativity is playing with ideas. Sometimes you have to look at a problem from another angle. You can, for instance, say to yourself that you don't know what to do in a certain position. Then you can ask yourself what your opponent can actually do. As a result, you may get an idea.

Often, people look for a solution when it is better to first consider what is actually the problem. This sounds abstract, but a teacher can stimulate this search strategy by presenting chess positions (on the right level for the pupils, of course) and ask the pupils what the problem is in these positions.

The teacher shouldn't hold an abstract argument about creativity to pupils – he has to let them experience creative thinking in small steps. While doing this, you can name rules of thumb and search strategies.

Your brain functions consciously for a limited part, and unconsciously for the larger part. If you toy with ideas, sometimes you will suddenly see a solution. Then you can exclaim: 'Eureka' ('I've found it').

Creativity is a skill you can develop, by deriving inspiration from examples. A teacher can show a few positions, for example an endgame study by Réti:



White plays and holds the draw

Out of two impossible situations (the black king can stop the white pawn, and the white king cannot stop the black pawn), a possible solution emerges.

Chess is more than just a game. It is a sport, a science and an art. Perhaps you cannot make a beautiful painting or a piece of beautiful music, but you can enjoy looking at such a painting or listening to such a piece. It is the same with chess – have a look at a video on the 'Study of the millennium' by Leopold Adamovich Mitrofanov.

Teachers who want to delve more deeply into chess and creativity can read the book *Creative chess* by FM Amatzia Avni.

Grandmaster David Bronstein was a highly creative chess player. An interview with him has been included in my book *Developing Chess Talent*. Bronstein was always searching for new ideas. He wondered why chess players always had to play against each other on one board only. You can also play against each other on four boards. And you can also play inspirational music while you're doing it.

Cribbing

Chess is a great school subject. One of the reasons is that cribbing from other pupils is obligatory – because you can learn a lot from each other. It is known from many strong players that they learned chess by often watching other people play. The Cuban World Champion José Raúl Capablanca, for example, sat watching his father's games when he was four. World Champion Max Euwe already played chess games with his parents when he was four.

Database of own games

In a database of a chess program, you can store games and/or positions. This can, for instance, be done in the Fritz program. It is instructive to analyse games you have played. The things you have learned from an analysis you can add to the game as comments – either in words or in variations (possible alternative series of moves). By entering positions in Fritz or ChessBase you can indicate options, or a plan, in variations, and you can also use coloured arrows and coloured squares.

Databases of chess programs

Chess programs like ChessBase and Fritz contain databases with games by many players. The programs contain an opening book, in which correct move orders are given for every opening.

There are online databases with games, like Chessgames.com. The website of the Dutch chess publisher New In Chess (www.newinchess.com) also has a database. The online Nalimov endgame database gives an overview of all possible endgames with maximally six pieces and/or pawns. The online FinalGen endgame database gives an overview of all the possible endgames with one piece and an unlimited number of pawns. There are more formats, like the Syzygy-tablebases for seven pieces which is also integrated in Lichess.org.

DCCAP

If it's your turn to move, you can go through the DCCAP checklist: Danger (what can your opponent do?), Check, Capture, Attack, Plan. Systematic thinking often yields better results than haphazard thinking.

Dead-silent chess

Some children are inclined to make a lot of noise during a lesson or a competition. That is inconvenient. You cannot concentrate well in this way. Moreover, you disturb others, and that's not social. The teacher may grow tired of it as well. Growing tired is not a bad thing, but it has to result in something. It's better to lay down some rules: during the lesson we first raise our finger, and then we talk by turns. During the competition we only whisper, at most. This is not strange at all, since at a real chess club people don't talk either while they are playing a game.

If people who have to adhere to rules develop an understanding for these rules, they will accept them more easily.

It's okay to alternate 'quiet chess' with 'talking chess' once in a while. You can, for instance, organize a blitz chess tournament in which each player is asked to explain why he plays a certain

move.

What do you think it's like to be unable to speak or to hear anything? To experience what this is like, children can play a game of dead-silent chess in duos against a chess program. They have to consult with each other about moves, but are not allowed to speak. They may come up with alternatives like sign language, mailing, or writing down moves on a piece of paper. After the game, the teacher can discuss with the children how they have communicated, and ask what they have learned as human beings from the experiment. In this way, chess lessons can also contribute to the development of self-reflection and social skills.

In order to make clear that a person can do a lot even if he has a handicap, you can also show videos like the one about a blind chess player (the YouTube film 'Kijken met je vingers' = 'Looking with your fingers') and the one about two handicapped Chinese ballet dancers.

Many problems can be solved with creativity – this also applies to problems in a chess position. It's just that sometimes you have to make a big effort for it.

Deliberate practice

A 'deliberate practice' is a concentrated exercise which focusses on a certain task, while the conditions of a contest are mimicked.

It is important that someone is motivated, and realizes what, why and how he trains.

The contents of the training are geared to the level of the sportsman. Via feedback, he hears from a trainer whether he is training in the right way.

For a good training of skills, regular exercises have to be made. You can, for example, get five minutes to invent a small plan in a position.

The teacher has to select good exercises. An exercise is good if it requires you to make some effort, but it has to be possible for you to find a good answer. Also, training positions have to contain a theme that occurs more often in games.

Success experiences enhance motivation: effort is rewarded.

By mimicking the circumstances of a contest, the trainee learns to concentrate better and will achieve better results.

Demonstration board and digital blackboard

A demonstration board is a large chessboard on which you can show games and positions to an entire class. A modern variety is a digital blackboard, on which a teacher presents games and positions from a chess program on his computer. The digital blackboard offers many more possibilities, like watching videos and chess websites.

Developing pieces

Chess is war; it is a combat sport of the mind. In the opening you put all your pieces in active positions, in the middlegame you try to gain all sorts of advantages, and in the endgame you're going to checkmate the enemy king (and if you can do this earlier, then you do that, of course). If you don't develop your pieces well enough in the opening, you will be playing with only a few of your pieces. This won't bring you any success, in all probability. In a soccer team, all the

players are actively involved in the play too. Pupils can play a game against each other, and then after ten games everybody has to stop. The teacher moves from one board to another with the pupils, and assesses which of them have been sticking to the ‘three golden rules of the opening’ and have developed all their pieces.

DGT e-board

This chessboard and its pieces have sensors. With these, a game can be recorded on a computer via the Fritz program. The game can be broadcast live on the Internet, as is done at top tournaments. An e-board is a marvellous aid for chess lessons. If pupils play games with each other, two can play on an e-board by turns. The game is recorded. The pupils don’t have to notate the moves. That is nice, as this is not easy to do for novice chess players. The teacher also doesn’t have to keep standing close to the game to notate it; he can give attention to other children. The teacher can save the game in PGN. He can convert the PGN via Chessbase in a PGN-viewer and put it on a website or in a digital newsletter. Also, the game can be printed out and discussed with the pupils in a following lesson. Many children think it is wonderful when the teacher discusses their game and afterwards gives them a print-out of it.

Diagram generator

With the Fritz program, you can generate diagrams in an easy way. This is convenient if you want to present or print a number of positions.

You can also generate diagrams with a diagram generator. This is a small program that can be found on various websites. With the diagram generator of Chessvideos.tv you can also make diagrams without a king. See also Apronus.com.

Not all these programs have a print function. In that case, you can do the following: click on the ‘Print Screen’ button, paste the image in the Paint program, select the image, copy it into a new file in Paint. Save the image as a jpeg (on your desktop, for example). Then copy the jpeg into a Word document.

An extensive diagram generator is Chessdiagrammer.com by Ekkehard May. This is in German and partly in English. You can draw arrows with it, leave out the king, add symbols on squares, put coordinates on the side of the board, and much more.

Diary

In a diary, you can keep account of what you have done with chess and what you have learned. This is done mainly by children who play chess for more than a few hours a week. They can, for instance, print out instructive positions and paste them in their diary, or they can note down the results of tournaments and write down instructive rules of thumb. Rules of thumb are general rules that you can often use in chess, like for instance: ‘watch out for a back-rank mate’ or ‘think first what your opponent can do’. Keeping a diary is fun, and it enables you to repeat what you have learned now and then. You can also make a diary as a class. For instance, the teacher can ask at the end of each lesson what the class has learned, and then publish the most important things on a website or weblog – or make small posters.

Dice chess

By throwing a die, you determine whether you have to play with a pawn or with a certain piece. If this is not possible, then you lose your turn. There are dice with chess pieces on them (you can also make these yourself). You can also agree that you have to make a pawn move when you throw 1, a knight move with 2, etcetera. Sometimes a king can only avert a mate threat if the player throws a certain piece with his die. This does not always work. Here is a life lesson: life isn't always fair, you have to make the best of it.

Didactic methods

There are all kinds of categories of didactic methods, like offering information (teaching, demonstrating); dialectic methods (educational dialogue, group discussion); cooperative methods (group work, project work); games (role play, simulation game); tasks and assignments; or Socratic dialogue (letting the pupil discover the answer by asking why-questions). It is useful to alternate practical exercises (do-things) and theoretical transfer of knowledge (learn-things).

Differentiated teaching

Sometimes a lesson group consists of participants of different levels. This may be the case, for example, with a small after-school chess club.

You want to teach pupils on their own level. There are different solutions to this problem. You can create sub-groups, ask the pupils to make exercises, organize a 'layered discussion' of a game, or tell them to play a game or a mini-game with an opponent of their own level.

Various lesson components are: a question round, training, explanation, varia, and playing games.

During the question round, you reply to questions on diverse levels, while keeping in mind that you may be able to tell pupils of different levels something useful.

During training, you can ask the pupils to play out positions on different levels, and give individual explanations. You can, for instance, let them train tactics on the teaching program ChessMatec. With this program, children can work in their own tempo, on their own level. You can also let children solve positions on exercise sheets. This will give the teacher time to give individual attention to children.

With game explanations, there are various options. You can briefly discuss games with a few children, while other children are playing a game. You can also discuss a game and give explanations on different levels at the same time. The same goes for playing a game against a computer program together. One child learns how the pieces move, another is being taught combinations, and a third learns strategic ideas. It is important for the weakest children to understand that they don't have to understand everything.

The 'varia' part often includes methods and little games that children can play at their own level. For example, king + eight pawns versus king + eight pawns. A beginner learns that pawns move forward in a straight direction and capture diagonally. An advanced player will see breakthrough possibilities, backward pawns, doubled pawns, and *zugzwang*.

With, for example, Square4Chess, one player trains piece movement and capturing, another learns to anticipate the opponent's moves and create combinations. It's just like with soccer: we can all kick against a ball, but some, like Messi, are a little better at it than others.

Solitaire chess also can be solved on different levels. This is a game where you have to take one of your pieces in a position on each turn, until only one piece is left. See e.g. www.chess.com/solo-chess.

When playing games, the rule should be that children play against opponents of approximately the same level.

Dimensions

Books and computer screens are two-dimensional, while the chessboard and pieces during a game are three-dimensional. It is often efficient to work with two-dimensional material. Examples of these are books, computer screens and demonstration boards. For instance, on a digital blackboard or a computer screen you can quickly work through a number of tactical exercises.

Many good chess players say that they can concentrate better if they analyse a position three-dimensionally on a chessboard.

Combining two- and three-dimensional methods seems to be the most practical. You can, for example, train tactics on an exercise sheet with positions, and analyse in a small group with a normal chessboard and pieces.

Diplomas

Diplomas are not a goal in themselves. A diploma indicates that someone is sufficiently skilled to get a good result in a test. For example, the Steps Method is connected with a diploma system. In a number of chess diagrams, the right solutions have to be found. A good result means that someone has a certain amount of theoretical knowledge. But it doesn't tell you much about the application of knowledge in practice. Knowledge is not automatically the same as ability, it's just a condition for it. Curiously, many teachers do solve diagrams with children but don't analyse games with them.

Discovery learning

Discovery learning is a form of learning in which pupils discover something by themselves – for example, a thematic mate pattern or a solution principle. Discovering something by yourself gives pleasure. The theme will be better fixed in your memory since you are actively working on it.

The principle or theme that has to be discovered should be within the children's grasp. Otherwise it will lead to trial and error, frustrations, and zero learning efficiency (or worse: the pupils learning something in the wrong way). By asking questions, the teacher can help pupils to make discoveries.

A point of attention is that the pupils' energy should be mainly aimed at discovering principles. Whether or not they coincidentally give a correct answer to a question is not so

important. The point is that pupils should learn the principle or theme, and the search strategy that goes with it.

Double-Move Chess/Marseillais chess

With this little game, beginners can develop a feeling for combinations. White begins and plays two moves. Then Black plays two moves, and so on. If you play well, you can beat your opponent quickly. Of course the children get White by turns. You can count how many moves it takes a child to win a game by giving mate. You can, for example, also look who has won the most games after four games.

Duos

There are many methods in which pupils can work in duos. This enables children to learn to cooperate. They experience that together they know more than each of them separately. This is because not only you have more knowledge at your disposal, but you can also put ideas into each other's heads. If duos rotate in every new lesson, children will learn to cooperate with different other children. The formation of duos can, for instance, be based on the competition pairings. If there are differences in level, better pupils can explain things to children that perform less well.

Dyslexia and notation

Dyslectic children may have trouble notating moves. In the Facebook group Schaakpsychologie (= Chess Psychology) there are a couple of contributions containing tips to help dyslectic children. See also the English-language part of the website of the Hungarian psychologist Eva Gyarmathy.

Empathy

Without empathy and commitment to his pupils, it's better for a teacher not to be a teacher.

Endgames

Endgames are positions in which there are only a few pieces and pawns left on the board. It makes sense for beginners to start with simple endgames like king + queen against king and king + rook against king. You can train those endgames on various websites, like for instance Ideachess.com.

A good book for people who want to learn more about endgames is *Silman's Complete Endgame Course*. Other good books with good examples are *Just the Facts* by Lev Alburt and Nikolai Krogius, and *100 Endgames You Must Know* by Jesus de la Villa. Beginners are not supposed to read such books from the first page to the last, but chess teachers can derive instructive positions from them. The teacher can tell the pupils to first play out a position against each other. After that, he can discuss certain positions with the class.

If you want to know if a certain endgame with maximally six pieces and/or pawns is a win or a draw, you can consult the Nalimov endgame database on the Internet. The use is simple: by sliding a couple of pawns and/or pieces you can put them on the board, and you will see the

result immediately.

Endgame studies

These are composed positions in which White has to win or make a draw. Often the solution moves are paradoxical. Endgame studies are beautiful to look at. By solving them, chess players can train their creativity and their calculating abilities.

Harold van der Heijden has accumulated the largest collection of endgame studies. His website is called www.hhdbvi.nl (see also www.hhdbiv.nl).

An extensive source is the website Arves.org. Online databases are pdb.dieschwalbe.de and yacpdb.org. On this latter website you can also search for study composers, like for instance Yochanan Afek.

A teacher can look at studies for his own pleasure and present the final positions to his pupils.

Essay contest

All the children write an essay on chess. Subjects may be: my favourite experience, how difficult is chess, how would I teach chess, my most exciting game, what is the most dangerous piece, what have I learned in the chess lessons, etc.

By brainstorming, you can come up with subjects, and write them on a blackboard. Then, children who were unable to think of a subject can choose one from the list. When preparing to write a story, the pupils can make use of the Internet and books.

In a following lesson, the children read their story to the class, and the teacher can add explanations, examples, and anecdotes. The other pupils – and the teacher – can also ask questions.

Furthermore, children can make video recordings of the writing and the presentations. From these recordings you can compile one video which you can watch together later. Also, you can put the video, or part of it, on YouTube.

Experimenting

To experiment is to try out new things. You can, for instance, experiment with a new opening. You read something about it, you look on websites or on Google for a video about such an opening. After that, you play, for instance, a rapid game with this opening against a training partner. You write down the moves and enter them in Fritz. A free online alternative is Lichess.org. The computer analysis may point out mistakes or new ideas to you.

You can also experiment with your own behaviour. If you often make blunders, you can, for instance, force yourself to think of three good moves for your opponent before you make your own move. This way you will get much more insight into positions.

Facebook

Many chess players and chess organizations have a Facebook page. Google ‘facebook chess’ and you will find an enormous amount of pages. By clicking through these pages for a bit, you may stumble upon all kinds of interesting ideas as a chess teacher.

There is a Dutch Facebook group called ‘Chess Psychology’. It contains all kinds of ideas and experiences.

Fairy-tales and chess stories

Children like stories. Chess stories and fairy-tales are a suitable instrument for teaching the principles of chess to young children. The *Fritz & Chesster* CD-ROMs by the German chess teacher Björn Lengwenus are very enjoyable for children. A little prince and his niece go through all kinds of adventures, doing chess exercises between events. On the website ‘Jeugdschaakpagina’ (= ‘Youth Chess page’) by the Dutchman Jeroen Vuurboom there is a ‘schaakverhaal’ (= ‘chess story’). Language can be a problem, but if you see the game, you can invent your own story to go with it.

Former World Champion Max Euwe wrote the book *Oom Jan leert zijn neefje schaken* (= *Uncle Jan Teaches His Nephew To Play Chess*) with Albert Loon. This is a story about a boy who is taught chess by his uncle.

In various places on the Internet you can find the story of the grain corn. And there are videos with chess stories, like *Lang leve de koningin* (= *Long Live the Queen*).

Richard James wrote the book *Chess for kids* in English. In it, the seven-year-old twins Sam and Alice join the army when they hear that aliens from the planet Caissa are out to conquer Earth. The battle is decided on the chessboard. The story is supported by the website www.chesskids.org.uk.

Falsification and verification

Falsification means looking why something is not true. Verification is looking why something is true. People are inclined mainly to verify. Sometimes they even limit themselves to only that, and in that case we speak of wishful thinking. When you play chess, you have an opponent. He has other interests than you (except when you are both out to make a draw). When you think of a move, you always have to look first what the options for your opponent are. This is emotionally quite difficult, since you don’t want to think about good moves for your opponent at all. If you see a beautiful move for yourself, then the temptation can be strong to put such a splendid invention on the board right away. This is not always wise, since there just may be a hole in your reasoning. If you want to assess a position properly, you have to work out its possibilities and limitations systematically. You have to look at options for your opponent, and you have to be critical. You can train this way of thinking, and a teacher can help you with that. During the discussion of moves in positions and in games, he can ask the question ‘why isn’t this possible?’ every time.

Fear of failure

Fear of failure is an unpleasant state of mind which hinders performance. It is the result of a wrongly chosen perspective: to want to win at all costs, or not to lose in any case (result goal: 1-0). It is better to want to play as strongly as possible (performance goal). Thinking in new ways (cognitive re-structuring) is useful: play to enjoy interesting positions, and to learn from your

game.

Feedback

This means giving information about an activity to someone. Your feedback may refer to his performance, his behaviour (effort), or his person. Feedback has to be clear, and it has to tell something about someone's behaviour, not about someone's personality or performance (the opponent may be a better player). Good feedback also involves telling someone how he can improve his behaviour. Before you give feedback to a pupil, you have to give him the opportunity to first tell you what he thinks. By allowing this, you indicate that you are taking him seriously. This will increase the chance that a pupil will listen to what a teacher tells him.

You can also stimulate a pupil to reflect on his own behaviour by asking questions. With open questions, you give someone optimum space to vent his own opinion and feelings; with closed questions you offer him a limited number of options.

Feedback has more effect if it is given immediately. It makes little sense to let children make tactical exercises and discuss their answers only after a week.

Compliments are important. By giving compliments to pupils, you stimulate their positive self-image and their motivation, and also confirm their behaviour. A compliment can work wonders. It opens the door to a better contact between teacher and pupil.

Fischer Random Chess or Chess960

Former World Champion GM Bobby Fischer thought that the course of chess games was too strongly determined by opening knowledge. Therefore he pleaded for a game with varying starting positions of the pieces. The pawns are on their usual starting squares, but the pieces may be standing on other squares. In this form of chess, 960 different starting positions are possible.

There are a few rules, laying down that each player must have one light-squared bishop and one dark-squared one, and there are also fixed rules for castling.

Because many different starting positions are possible, it doesn't make any sense to study openings.

There are programs with which you can randomly determine the starting position. The DGT company has developed a small digital clock that can generate starting positions.

Flashcards

A flashcard is a card which has a question on one side and an answer on the other. You can ask a question in the form of a sentence, but you can also present a chess position or, for instance, a photo. By dividing A4-format sheets into eight parts, you can make flashcards that can be filled in by groups of children. They may use their own knowledge, but you may also allow them to look up the answers on the Internet. The teacher can plastify the cards, and take them along for the next lesson to play games with them. There are programs on the Internet with which you can make flashcards.

Flashcards are a fun way to stimulate thinking about subjects. Playing games with them is also fun (you can earn points!), and it enables you to exercise your memory in a spontaneous

way.

Four-player events

This is a form of tournament in which all four players face each other once. That makes three games per player. By drawing lots, you can give each player a starting number. With a pairing table (see elsewhere in this alphabet) you make the pairing. In most four-player events, the players are of approximately equal strength. Four-player events can be used, for example, to introduce a certain opening. The first seven moves of, for instance, the Benko Gambit or the Italian Opening are mandatory. The games have, for example, a time control of fifteen minutes per player. The players write down, for example, the first ten moves (after the mandatory ones). The teacher can start by showing a sample game. In between rounds he can discuss one game that made an impression on him every time. You cannot organize such a four-player event within one hour. But you can spend part of a lesson hour to a four-player event, spreading it out over a number of lessons. You can, for example, let the pupils play a game in one week and do an analysis in the next week. A four-player event can also be played instead of the mutual competition.

Four positions with four pupils

The teacher divides the class into fours, dividing them as homogeneously as possible. Each group gets a sheet with four positions, which must be solved on a board. The procedure is as follows: 1. Every pupil names characteristics in the positions that strike him; 2. Each pupil identifies candidate moves; 3. The candidate moves are calculated; 4. The definitive move is chosen, and the variation is written down.

Via this exercise, pupils learn to systematically analyse a position, verbalize, and consult with each other.

The teacher walks to and fro between the groups, gives tips, answers questions and gives feedback on chosen solutions.

Free chess

Often, after the instruction part, there is a competition in which children play chess against each other. You can also let them play free chess once in a while. That means that all the children can do what they like. They can play a chess game, but they can, for instance, also do a contest with five positions from the Chess Karate Kid game card. Some children will opt for Raindrop Chess, others for Tandem Chess or Losing Chess. Also, there may be children who prefer to play against a chess program on a laptop, alone or together, or solve a chess quiz. The teacher walks around, answers questions, and gives tips.

Freedom of choice

Pupils learn more from books they select themselves than from books they are told to read. Interest leads to more effort and better performance. This argues in favour of freedom of choice wherever this is possible with regard to subject choice and methods. Pupils can, for instance, be

given freedom of choice when making a chess poster, preparing a talk, or making an instruction video.

Fritz

The chess program Fritz, developed by the publisher ChessBase, offers a lot of possibilities. Among others, you can play against it at many levels, you can store games and positions in a database, and you can analyse games with the program. Also, you can print out games and positions and save them as jpegs. You can, for example, save the most interesting positions from every game as jpegs, and in the description enter the crucial move in words. By storing such positions, you force yourself to think carefully about a game. Also, you will start a beautiful collection of positions with knowledge you can repeat regularly.

One option is to put Fritz in 'drunk' mode and play against it with a group of novice players. Using a digital board will be convenient here. Another option is to play the game on a computer and carry out the moves on a demo board. In this way, each of the children (or duos) can carry out the moves on their own board and try out other moves.

Frontal teaching

The teacher is standing in front of the class and gives information. This can become wearisome after a while. To increase the commitment of the pupils, the teacher can ask questions in between events, or ask the children to solve positions. A teacher doesn't always have to be sitting or standing in front of the class. If, for instance, a pupil is giving a talk, or two children are demonstrating a game, then the teacher can also stand in the back of the classroom. This gives him a different perspective, and he also gets a better view of the behaviour of the pupils who are seated in the back of the room. Walking through the room, it's convenient for the teacher to use a pointer to point at things on a digital blackboard from a distance.

Front part of the class

Some children can easily get over-stimulated. They become excited by all the things going on around them. You can move such a child to the front part of the class. You do have to explain why you do this: it's in his own interest (more calm, learning more) and in the interest of the class (less unrest, learning more).

Gambits

Gambits are openings in which one player sacrifices a pawn to get an initiative with active piece play. The King's Gambit is an opening with which young players can train their tactics, and in which they can play for an attack on the enemy king. Some of the lessons may be devoted to a small theme tournament. The pairing happens in four-player groups with players of approximately the same level. The teacher starts with an explanation of, for example, a variation of the King's Gambit. The children play rapid games with this variation, notating, for example, their first fifteen moves. The teacher starts the next lesson with a discussion of some of the games. Then the children play their next game.

Game cards

The Chess Karate Kid game cards contain 24 positions with a few pieces and pawns. For instance, a rook versus four pawns: the rook wants to capture the pawns, but if one of the pawns reaches the other side of the board, the pawn side wins. The game rules are very easily explained, and in this way beginning chess players can immediately engage in little contests. This is enjoyable as well as instructive, because doing things yourself is a good way to learn something.

The name of the cards was derived from the movie *The Karate Kid*. In this movie, a teacher tells a boy to train all kinds of simple actions. Eventually, he integrates the various actions, and becomes a good karateka.

In the 'databank schaaktraining' (= chess training database) on the website Schaaktalent.nl you can download game cards. Of course, you can also make them yourself.

Game quiz

Lessons are more enjoyable if pupils take part actively and are able to discover things themselves – in other words, if they learn things in a playful way. Many children enjoy taking part in contests and scoring points.

A teacher can present games in quiz form. It's practical to take short games with a few clear tactical and positional themes. Children like it when a teacher shows games he has played himself.

Older children can also make a quiz from one of their own games, and show it to the class. They can, for example, first analyse such a game themselves and then check it with the Fritz chess program.

There are plenty of chess games that are suitable for game quizzes. Thematic sample games can be found in many books; for example, Euwe's *Chess Master vs. Chess Amateur* or *Kasparov Teaches Chess*.

There are also chess teachers who have put quiz games for beginners on the Internet.

The teacher can also present famous historical games or fragments in quiz form. For example, Morphy v. Duke Brunswick and Count Isouard, Anderssen v. Kieseritzky, Lasker's double bishop sacrifice, the endgame Loman v. Lasker.

You can present games or positions on a demo board or with a chess program and a digital blackboard. The latter is more practical, since you can present positions from your own database with one push on the button.

During game discussions, some children prefer it if they are also able to make the moves on their own board. Other children don't. Let them choose what they want.

In a game quiz, you can earn points for correct answers. The number of points depends on the degree of complexity of the question. The children do the quiz on their own or in duos. An advantage of duos is that children learn to verbalize and consult with each other. An option is to let the children work together with their opponent from that day's competition. That is a simple method to quickly divide a group into duos, and, in due time, see to it that every child cooperates with every other child once.

The children fill in their answers and the points they have earned on a quiz form. If you organize game quizzes more often, you can post a list of rankings on the wall. By coupling weaker players to stronger ones by means of the circulation system, they will score a few more points than they would do on their own. Success experiences are stimulating.

For each question, the children get, for example, 30 seconds, during which they are only allowed to whisper with their partner. This way the room will remain quiet, and concentration improves. Half a minute is not long, but this won't be a problem if the degree of complexity of the question corresponds with the pupils' knowledge level. Moreover, many children are unable to concentrate for long. Also, you have to work in a practical way with the limits of the lesson time. You can keep track of the time with a stopwatch. When the time has passed, the teacher gives a child the turn to answer the question – a different child first each time. It is useful to ask for other answers next. A teacher may ask a child how he or she has found their answer. Next, the teacher gives the correct answer and explains it.

Gaming as part of the lesson

There is an important distinction between acquiring knowledge and learning to work with knowledge. Acquiring knowledge is often a passive process, while learning to work with knowledge is an active process.

Gaming is the English term for playing games on a computer, whether or not in the form of video games.

Gaming can fulfil a useful function in education. Scientific research has been conducted on this subject.

Chess and gaming have several similarities. Chess instruction can have additional value for education in the same way as gaming can.

'Game based learning' is an educational method that lets pupils experience, understand, and solve problems using a system.

To achieve results, players need to master a context. You cannot win purely by knowing facts. You win a game by assessing phenomena, recognizing patterns, interpreting possibilities, using tools efficiently, and drawing conclusions.

When pupils are gaming, they understand why they are doing certain things. Through this, they will feel they have more influence on their own learning (empowerment). They are emotionally committed. They feel part of an exciting adventure. This promotes their intrinsic motivation.

Game based learning combines instruction, training and testing. Teachers supervise this process, they do not merely provide ready-made knowledge. Making exercises, the pupils take on challenges and solve problems. Tests are not about how well pupils are able to cough up information, but about how they deal with a theme in a certain context.

Socially, it is important that pupils are creative, and that they learn to use and update knowledge.

Creativity, according to a definition, is making something new that has value. Creative people are open to new experiences. They either have or develop a non-conformist personality.

Children prefer to be in a learning environment in which they are allowed to investigate things. They are curious by nature. In such a learning environment, they feel committed and become more creative. To stimulate creativity, teachers have to give their pupils freedom to develop their own ideas. School education can create conditions where there is space for creative thinking. Gaming and chess can fulfil a useful role here.

Information on gaming is given on the MindShift weblog, in an article titled 'How Games Lead Kids to the Good Stuff: Understanding Context'.

Educational methods, like gaming, are not isolated things. They are part of an educational vision and an educational culture. Sir Ken Robinson indicates in his TED Talk titled 'How to Escape Education's Death Valley' where the school system often falls short: in diversity, curiosity and creativity.

Using gaming as a training method can help children with learning problems and behavioural disturbances to reduce their problems. This is what Pier Prins, Albert Ponsioen and Esther ten Brink claim in their article 'Gebruik je hersens!' (= Use your Brains!'; Dutch magazine *De Psycholoog*, 2011). They mention four 'effective functions' (i.e., higher control functions in the brain) that come into play with self-regulation: working memory, planning abilities, self-control in the event of impulses, and cognitive flexibility (the ability to adapt to changing situations).

Similarly, chess teachers tell about practical experiences with children during chess lessons. A fascination for the game and being able to exert your own influence on an activity appear to be of influence.

Game designer, psychologist and film-maker Nicole Lazzaro has done research into games and fun. She claims that 'People play games to change or structure their internal experiences.'

Playing has a number of functions, like learning new things, learning to solve problems, developing social skills, and developing self-management by means of role play.

Neuroscience can provide more insights in the way this works in the brain. Dopamine, for instance, plays a role. It stimulates the rewarding system, focus and affection in the brain. Positive emotions are helpful for a better storage of experiences in our memory.

People often don't like hard work, but they do like fun. It is therefore clever to present work as a form of pleasure.

People who are in a positive mental situation are, among others, more creative, more productive and more emotionally committed to what they are doing. Important here is that a task should present a challenge that makes an optimum appeal on people's qualities. This can even lead to a state of 'flow'.

A game creates a positive mental state – in other words, commitment – in people by activating certain emotions in measured doses.

Lazzaro works according to the model 'The 4 Keys to Fun'. These are clusters of emotions which she groups around the key notions: curiosity, challenge, meaning and friendship. A good game contains at least three out of these four elements. She tells about this in a lecture that can be watched on YouTube: 'Psychology of Engagement and Fun in Game Apps'.

Curiosity: experimenting, trying out new things and gathering new experiences.

Challenge: a well-chosen degree of complexity (relation of a player's skills to the task, or: capacity and taskload), a goal, obstacles, and a strategy. You can increase the degree of complexity as you go along.

Meaning: creating value, because you learn something that has meaning for you.

Friendship: maintaining and developing social relations. People like to do things together with other people. This can be done in either a competitive or a cooperative way.

Such a categorization model is a simplification of reality, but it does provide us with a view of a number of characteristics, functions and processes of the brain.

Notably, chess also contains these four elements. A player gathers experience and can experiment. The game is a challenge where the player determines the degree of complexity himself, by his level. As he develops more knowledge and skills, he is shifting the degree of complexity. Chess can be meaningful, for instance because you learn to concentrate better, and solve problems better. And usually you play chess with an opponent, with whom you can analyse after the game.

Garden chess set

A school can purchase a large garden chess set and mark out a chessboard on the schoolyard by painting 32 paving stones in a different colour. Children, or groups of children, can then play chess against each other there. Just playing games on such a board is already a nice way to learn. Children who cannot play chess yet, can learn by watching.

Gens Una Sumus

This is Latin. It means: 'We are one family'. This is the official motto of the World Chess Federation FIDE. It expresses that chess is for all people, and that you can play chess with anybody, regardless of cultural differences or language barriers. A teacher may ask his pupils why chess is pre-eminently a democratic game.

Girls' chess

Girls are, already from a quite young age, generally less good at chess than boys. This is seen at tournaments and in competitions. At championships, there is often a category for girls and a general category (mainly boys). That girls do have the potential to be good at chess becomes clear from the successes of the three Polgar sisters. Judit became a grandmaster and even belonged to the top-ten of the world. Susan also became a grandmaster, and Sofia became an international master. From their youth onwards, they followed an intensive training programme.

Possibly, the fact that girls perform less well in chess has to do with a broader field of interest: chess is nice, but there are so many nice things. Dutch grandmaster Hein Donner once said that women are probably less good at chess because they have better things to do. Boys are often more focussed on a single field of interest. They are often more achievement-oriented as well. That girls perform less well on average does not mean that they also enjoy chess less. More than boys, girls are focussed on social aspects. During a chess lesson, a teacher can cater to the interests of girls, for instance, by letting them choose the subjects for their talks. It is important to

listen well, and to observe well. A teacher can also simply ask what girls like, and take that into consideration in the design of the lesson.

A mother said that her five-year-old daughter thought that the chess club was fun, but she disliked the competition. Why do you actually have to play against each other? the child wondered. And indeed, perhaps this isn't even necessary at all.

Giving your own chess lessons

You will learn a lot about a subject if you give a lesson about it, since you have to prepare the lesson, and you have to think carefully about what you are going to tell your pupils.

Pupils can also give a lesson of, for example, five minutes' length, on a certain subject. By doing this, they train a lot of different skills. They have to gather information, study a subject in depth, and give a clear presentation. Pupils can also give a short lesson as a duo. This can be stimulating, and it teaches them to cooperate.

The subject of such a small lesson depends on the chess level of the children. They can propose a subject themselves, or the teacher can give suggestions.

If pupils contribute to the instruction, they will become more committed and motivated. It also adds to the variety in the lessons.

The other pupils and the teacher can give feedback on the presentation.

Goal-setting

Goal-setting is useful. In a chess game you make all kinds of small plans to achieve (intermediate) goals. A teacher sets the goal of working through a number of subjects in a year, with the accompanying knowledge, insights, attitude (way of thinking) and skills. A pupil may want to set a goal of gaining 100 rating points in a year.

If you set yourself a goal, it makes sense to think how you want to achieve that goal – making a plan.

It is wise to set attainable goals, otherwise your efforts will mainly lead to frustration and your motivation will disappear.

It is also important to set performance goals instead of result goals. A performance goal concerns things you can control, like playing with good concentration. A result goal is about achieving a 1-0 score, and this is something you cannot always control (your opponent may be much stronger than you).

Efficient and effective goal-setting has a number of characteristics. The goals should be:

1. aimed at performance instead of result
2. high, but attainable and realistic
3. challenging, providing enjoyment in practising the sport
4. specific, concrete
5. aimed at a not too distant future
6. measurable, so that feedback and evaluation are possible.

Google

The Internet search machine Google is a rich source of information for chess players. You can find information, illustrations and videos there about subjects you are interested in. If, for instance, you want to start playing a certain opening, you can track down all kinds of interesting websites via Google. Google can also be very useful if you want to prepare a chess talk.

Go with the flow

If the teacher has done his job, he has prepared his chess lesson well with diverse lesson components and alternating methods. Then, a pupil announces during the question round that he has brought a game he has notated. He has played this game with his mother, and he is very proud of it.

This is a perfect moment to drop a few items for the day. They will get their turn next time. Use the demonstration board or a digital blackboard, and discuss the game.

Grading for report marks

If chess is a subject at school, then chess teachers often have to give report marks. You can base those on a combination of general impression, competition rankings, rankings of the tactics quiz, talks, posters made, a self-made test, and the like.

Group size

The size of a lesson group influences the way in which a lesson can be given. In a small group, more interaction is possible. In a larger group it is important that the level of the pupils doesn't diverge too much. For certain components of the lesson, you can divide a bigger group into several smaller groups.

Sometimes the teacher can explain something on several different levels at the same time. But this shouldn't take too long, because it will reduce the lesson effectiveness. Moreover, children get restless when information is too difficult, or too easy, for them.

A teacher can, for instance, divide a class into groups of four pupils, and tell them to solve an exercise sheet with four positions. This group size makes it possible for children to participate actively in a discussion. The teacher walks around, answers questions, and gives tips. After this, the answers can be discussed with the entire class. If the levels of the groups diverge and pupils are solving different positions, then the teacher can discuss the answers inside each smaller group.

Guest trainer

A guest trainer can provide variety, and he can introduce special subjects. A guest trainer may be a strong player, like the champion of a club or even an international master. But he/she can also be a former pupil, or a grandmother of one of the pupils. A lesson with a guest trainer can start with a question round: every child is allowed to ask one question about who the guest trainer is, and about chess subjects. It is nice if the lesson is varied, and contains diverse components. A strong guest trainer can perhaps play a blindfold game against the children, while the teacher shows the moves on a demonstration board. Another idea is 'chess against the bear', where the

guest trainer gets two minutes and his opponent (for instance, the class's strongest player) five minutes. During such a game, the guest trainer can also give live commentary (Banterblitz). A guest trainer can explain a game of his own, possibly in quiz form. It is practical if he shows a miniature game (20 moves max). The guest trainer may, for instance, also demonstrate a nice baby study (with a maximum of five pieces). At the end of the lesson, the guest trainer can give a clock simul against trios. In short – plenty of possibilities. By the way, a teacher doesn't have to invent all these options himself. It is actually better if he asks his pupils and the guest trainer to tell them their ideas beforehand. Allow yourself to be surprised. The more children are involved with the design of the lesson, the more motivated they will be.

Half-life of information

Information is quickly forgotten. It is said that after 24 hours, 50% of an explanation is already forgotten. This suggests that you should give pupils not too much content information, but rather tell them only the essential things. Therefore it is more effective to have pupils use their knowledge in an active way, thereby developing their skills. Certain knowledge (content information) is useful, such as the starting positions of the pieces, or certain tactical motifs. Apart from that, the most important thing is that pupils learn how to process information.

Happy

Are children happy when they get chess lessons? Why, or why not?

Holding a chair above your head

A pupil solves the first eight diagrams on an exercise sheet correctly, and the final four wrongly. They were much too difficult, he says. The teacher says this isn't so. He asks the pupil to hold a chair above his head. The pupil can manage this easily, but not after some time. The pupil is allowed to put the chair down. Some time later, he is asked to hold the chair above his head again. He can do this without trouble, until he gets tired again. The teacher explains that just like muscles, brains become tired if you use them for a while. Every now and then you have to take a break. This is true for both trainings and games. It is called energy management.

Homework

It is a moot question whether it is useful to give children a number of tactical exercises by way of chess homework. If a teacher does this, then it is useful to discuss the answers collectively with the group. Homework that has been corrected and handed back, will, as a rule, not be looked at again by children.

If children do things that interest them, then the learning effectiveness will be much higher than when they do something because it is obligatory.

It makes more sense to visit nice websites that appeal to the children during a lesson. In that case, there is a good chance that they will also work on the material at home.

Good websites are websites that correspond to the knowledge level of children, that contain a playing element, and where children can discover things themselves.

One idea is to give children the tip to play a small tournament with a few friends at home.

Also, some of the children may want to go to the library and discuss a subject from a book with the group in the next lesson. With such assignments, it is important that a pupil enjoys it, and that he is able to fulfil a concrete task.

How do you assess a position?

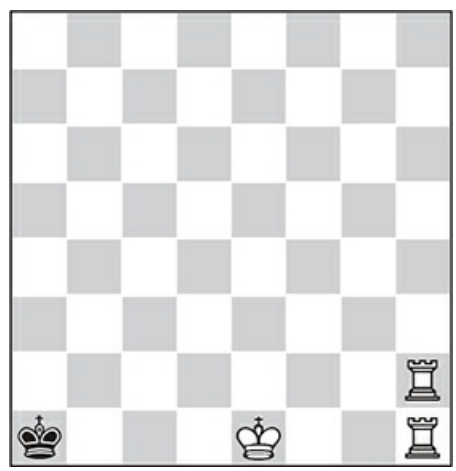
Pupils get a position on the board before them. They have to assess it. They write down the questions they ask to themselves. After that, the teacher discusses the position with the class, and answers questions.

How much can you see in one second?

'How much can you see in one second?' Stand up, close your eyes, turn around, open your eyes for one second, close your eyes, turn back, open your eyes, and tell what you have seen. The teacher continues to ask questions (e.g., which colour does a certain object have?). How come you can see so much in one second? What does this mean for your assessment of chess positions? Knowing is recognizing.

Humour

Laughing is healthy. Humour is based on unexpected turns – surprises. It is nice to discuss humoristic positions every now and then. For example:



White to move gives mate in one by castling

After demonstrating such an example, you can show a classical game in which one side wins a rook by means of a decoy followed by castling (e.g. Feuer-O'Kelly, Liège 1934).

Ik leer schaken (= I Learn To Play Chess)

The Dutch-language booklet *Ik leer schaken* (= *I Learn To Play Chess*) by Karel van Delft contains the game rules, diagrams for clarification, related mini-games, explanation about move notation with two sample games, as well as tips to learn better chess. The language used in the book is very simple. The booklet is intended for young children who want to learn chess quickly.

After that, of course, you have to play a lot and make exercises, but with this booklet in any case you can start playing chess quickly. The booklet can be downloaded free-of-charge on www.schaakacademieapeldoorn.nl, button ‘Zelf leren schaken’, download PDF.

Improved attention by music and drawing

If you enjoy something, you can concentrate better. Music can make you feel better. It is worthwhile to experiment with music on headphones during chess competition. Young children often have trouble sitting still during a lesson. If they are allowed to make a chess drawing in the meantime, a number of children will enjoy themselves much better.

Individual differences

There are individual differences between children. These are genetically and socially determined (nature and nurture). Their temperaments differ, but so do the areas in which they are talented. Children differ in the extent to which they are stimulated in their home situation. Children differ in the extent to which they develop – some children are late-developers. Children also differ in learning-style. And there are more differences – in fields of interest, for instance. It is useful to take these differences into account if you want to offer a child optimum chances to develop. It is good to find out what the talents of children are, and which surmountable obstacles to their development there are. By teaching according to different methods, you will give children optimum opportunities to learn something during lessons. If you take children seriously and tell them what their potential is, they will feel understood, and this will feed their motivation.

Informal tournament

A school club can organize an annual informal tournament, in which club members as well as non-club members are welcome. Think, for instance, of other children at school, parents, the local policeman, teachers, grandma’s and granddads, friends, etcetera. It’s quite convenient if they enrol in advance. Normally, a school club session lasts an hour, but for this occasion you can take, for instance, two hours. Then you can organize five rounds of blitz (10 minutes per player per game) according to Swiss pairings. Every player who has finished his game reports the result immediately. With Sevilla you can make pairings very quickly. Then you will have time left for a nice prize-giving at the end. The organization may be in the hands of the chess teacher and a few pupils and parents.

Interviews

An interview is a way of obtaining information by asking someone questions. Pupils can, for instance, make an interview with a fellow pupil who is a member of a chess club. Such an interview can take place orally in class in different ways. Children can sit in a circle and each child asks a question by turns. Another idea is a kind of ‘talkshow’ where one or two interviewers ask the interviewee questions. The interviewers and the interviewee can sit in the front part of the classroom, but everybody will have better sight of what is happening when they sit down in the middle of the room and the members of the audience sit around them in a circle.

Interviews can also be edited as a text or a video.

Knowledge and ability

Without knowledge, you can't play chess. You have to know the rules of the game. Next, you also have to recognize a number of patterns (e.g. mate patterns and combinations) and you have to know a number of rules of thumb (e.g. the three golden rules of the opening). Knowledge means knowing things, ability means that you can apply knowledge. By training your knowledge, you learn to convert it into skills (ability). To process your experiences, you analyse games.

Kriegspiel

This German word means: war game. It's a form of half-blindfold chess that is played on two boards. Each player sees only his own pieces.

One variant of this game is 'kantelschaak' (which would translate into something like 'topple-the-board-chess, or perhaps 'wallow chess', as suggested by John van de Laar), where the magnetic pieces of one player are on one side of the board, and the opponent's pieces on the other side. The board is turned over after a player has made a move. You can find a YouTube video with the Dutch search term for the game: 'kantelschaak'.

Language use

Language is an important means of communication. If you use language well, you can make a lot of things clear with it.

Your choice of words and the comparisons you make should connect to your pupils' level and their world of experience.

As a teacher, you should use active language: short sentences, and use the present simple as much as possible. Don't talk too much. Use different communication channels at the same time, for instance by showing a position on a demonstration board when you explain a theme.

Learning by doing

This is learning by working on something. Practice makes perfect. 'Best learning occurs at the spot' – this means that you will only really learn chess when you play it a lot.

Learning goals

Which learning goals does a lesson have? Which methods are suitable to achieve them? Do the pupils have enough foreknowledge?

Besides trying to achieve chess-technical learning goals, a teacher can also aim to pass on social, emotional, cognitive and meta-cognitive knowledge and skills to the pupils.

Learning in a playful way

Children like to play. By playing, they learn many different things, and develop skills in social, emotional, cognitive (also creative), meta-cognitive and physical areas. Children can learn chess by playing many different games and variants. Maria Montessori has formulated a number of

interesting insights on this topic. Famous is her statement: ‘Help me to do it myself’. Her starting-point is that children by nature have an urge to self-develop. Teachers have to recognize what the needs and strengths of children are. They have to anticipate by creating the right learning environment. Children differ in temperament and speed of development. This is clearly described in, for instance, the book *Ellis en het verbreinen* (= *Ellis and the braining*) by the neuropsychologist Prof. Jelle Jolles (jellejolles.nl). It is moreover important to realize that children have ‘sensitive periods’, which are good periods for them to acquire certain knowledge and skills. If you want to learn a language after your tenth year, you will have more trouble with it than children have who take in a language with their mother’s milk. In his book *Psychologie im Schach*, the Russian psychologist and chess grandmaster Nikolai Krogius describes a research that proved that chess players who didn’t learn the game until after their tenth year, later made a significantly larger amount of tactical errors in their games.

When a teacher presents tactical exercise material to his pupils, like in the Steps Method, it is useful for him to reflect on what his teaching goals are, and what the possibilities and the limitations are. If children know a number of tactical weapons (for instance, the double attack), this will lead to success experiences which will have a motivating effect. The use of such weapons needs practice. Pupils can train it by solving a number of diagrams. If you solve many of them, you will recognize patterns with increasing ease, and you will automatize skills. On the other hand, many children find it boring to make the same kind of exercise all the time. Moreover, most children only get half an hour of instruction every week. In such cases, it makes sense to introduce more variety in the lessons. Variety feeds fascination – certainly if children learn actively (participation) in many different ways. The teacher can offer a balanced mix of lesson components. He can teach knowledge and skills by, for instance, discussing with the children five diagrams on a certain tactical theme each week. Besides, he can discuss their own games and also name the tactical motifs in them. This book describes many more options. A teacher may see himself as a springboard and a signpost for his pupils. He can teach his pupils how they can learn things in an enjoyable way by pointing their attention to videos, books, and many other things. If children are enthusiastic about those media, they will start perusing them in their own time. Thus, they will learn in a playful way, and will then develop on their own strength.

Learning styles

Children have diverse learning styles, and therefore it is important to communicate by using several channels at a time, and using alternating working methods. Communicating over several channels at the same time is possible, for instance, by showing a position on a demonstration board and at the same time telling something about it. One method will be more suitable for one child, while another method will be more suitable for another child. Optimum reach can be achieved by using diverse methods to treat a subject.

Less is more

Watch out for profusion when you teach. Too much information won’t get through to the pupils,

and this is bad for their motivation. It is better to select a limited number of good examples – i.e. examples that illustrate a theme. Next, let the children train on that theme, by, for instance, solving diagrams, or by coming up with an example themselves. If they are actively occupied with it, then they will understand it better, memorize it better, and they will more easily recognize such themes during a game.

Lesson closure

You can start a lesson with a question round. In the same way, you can end a lesson with a closure. You can summarize the lesson by asking the pupils to name three conclusions or experiences. By making suggestions or asking further questions, the teacher can give direction to this. This way, you emphasize some of the essential components of the lesson's content and, for example, behaviour rules once again. The meeting is closed off in an orderly way.

Lesson evaluation

By evaluating your lessons as a teacher, you can learn from your experiences. This will enable you to steadily improve your teaching. Lesson evaluation can be done in different ways: you can reflect on your lessons yourself, or ask pupils what they think of the lessons and which suggestions they have. There is also the possibility of intervision (exchanging experiences with your colleagues), inviting a colleague to observe a lesson, or using checklists. Or you can make videos of your own lessons and watch them and reflect on them. You can do this, for instance, by very simply installing a camera on a tripod in the back of the class.

Lesson goals

It is important that a teacher realizes beforehand which goals he sets in a lesson, and how he wants to realize these goals. This involves both instruction content and methods. Fascination and motivation are important aspects too.

Lesson model

The structure of a lesson. What are the components of the lesson, what methods are used, what are the learning goals?

Lesson report

In a lesson report, the teacher writes down point by point what has happened during the lesson. Also, he indicates what he is going to do in the next lesson. Such reports allow a teacher to keep a good overview. If you work at a school as a chess teacher, you can also send those reports to the regular teachers and the headmaster. This allows them to see what happens during the chess lessons as well.

List of concepts chess terms

A list of concepts with chess terms is a useful basis for a multiple-choice quiz.

Such lists of concepts can be found, among others, in Wikipedia.

List of concepts education strategies

An extensive survey of methods and education strategies is given on the website www.beesburg.com/edtools/glossary.html.

Little facts

How many knights can you put on an empty board without covering the square of the other knights? You can solve this by reasoning, so you don't have to calculate it. It's 32, namely: all the white or the dark squares, since a knight changes colour on every move.

What is the maximum of moves a chess game can have? Mathematicians have worked this out: they say it's 5,949.

A teacher can mention little facts like this in every lesson. A rich source of information is Tim Krabbé's 'Chess Curiosities' website (English and Dutch).

Living chess game

In a living chess game, dressed-up people (or children) fulfil the roles of the chess pieces. Children can make a pretty coloured paper head covering to represent a chess piece. In a living chess game, you can reproduce a beautiful game from chess history. The teacher can first go through this game with the children. Of course, you will make photos and video recordings. Children can also make a coverage of the preparation and the performance. Perhaps one of the pupils who is not very good at chess, is very good at making footage. In this way, the child will make all the others happy, and it is a nice success experience.

Look, listen, ask

If you want to teach efficiently and effectively, it is important to have a perception of what motivates children. You can obtain such information by looking, listening, and asking children questions.

A tip for children who are assessing a position: Look, Think, Do – in that order!

Loss

Pupils have to learn to cope with loss. Every beginner will lose a lot of games. You shouldn't whine, but instead you should learn from your mistakes. If you are afraid to make mistakes, then you are not thinking creatively. This will hamper your development. Instead of looking at the result, you can also count all the good moves in a game. Then the result may be something like 15-14.

Magic of chess

Children aged around four are often not yet able to play a game – certainly not if they are just getting acquainted with chess. Yet, they often enjoy watching a real game develop. The teacher can, for example, take a game played by himself and show it move by move. You can also make a game up on the spot, making comments at every move: 'The white army and the black army are going to fight. They want to catch each other's king. White begins. The pawn can make two

steps at once on its first move. He plays the e-pawn. Look, at the edge of the board there are letters and numbers. This way, you can know the name of each square. You have an address too, don't you? Where do you live? Well, this pawn is going from e2 to e4. Black plays his knight to f6. A knight always moves one square straight and one square diagonally. It looks like the letter 'L'. All your friends want to join when you play chess. White plays his pawn to e5. Black plays his pawn from a7 to a6. This is allowed by the rules, because a pawn may choose if it moves one or two squares forward on its first move. But… ai, ah, oh! Black has made a mistake. Because a pawn moves straight, but captures diagonally. Capturing means that you stand on the square of another piece or pawn. And that piece or pawn is then out of the game. The white pawn can now capture the black knight.' Etcetera. Such a story shouldn't become too long. But stories are fun, and in this way you can discuss a couple of moves. If you tell it to them in a fun way, then children will experience it as a beautiful fairy-tale. You don't have to explain everything in a highly systematic way. Children don't learn a language from a grammar book either, do they?

After a difficult explanation like this, it's time for the children to get to it. For instance, put a few pawns on the board and give a rook to both children. The rook moves straight in all directions. You play by turns. Who can capture the most pawns?

Making a chess set

You can make a chess set in many different ways. You can turn a piece of cardboard into a board with the use of a couple of felt-tip pens. You can make the pieces from clay, papier-maché or wood.

For a living chess game, you can make headgear and painted robes to represent the pieces.

Making a circle at a distance

Two children play a blitz chess game. The teacher writes down the moves. The class is looking on. Everyone tries to stand as close to the board as possible. Most of the children hardly see what is happening on the board. If everyone takes a step back and stands at a distance of two meters, you will all have a good view. Let's check it together: is this correct? Great! The teacher can let the children experience this even more clearly with a comparison: hold the palm of your hand before your eyes at a distance of 30 centimeter. Can you see the lines in your hand? Yes. Now hold your hand before your eyes at 2 centimeters distance. Can you see the lines in your hand? No. So…?

Making comparisons

During game discussions, sometimes you can clarify the significance of something by making a comparison. Comparisons should correspond to the pupils' frame of reference.

Is there anyone here who crosses the street first and then looks if there's a car coming? Nobody? Then why do you make a move before looking what your opponent can do? Is there anyone who first puts on his coat, and then the rest of his clothes? Then why don't you look what is the cleverest order of moves in a chess game? Is there any soccer squad where one player has to do everything? Why don't soccer squads do this? Then why don't you first develop all your

pieces before you start an attack? All your friends want to join the party!

What is a faster way to travel by car, over highways or over country roads? Pieces like open files, so that they can move faster.

How does a chess player think? Chess is a kind of puzzle. First you have to look which pieces you have, and then you have to make them cooperate.

Chess is a combat sport of the mind. Attack and defence – which weapons do you use?

You can make comparisons with other sports. Draughts players often look at the position from the side of the opponent. Volleyball players take a time-out (a short break) to come to their senses. Ice hockeyers put one man in front (outpost) to seize opportunities and to annoy the opponent. Tennis players try to force their opponent to run from one side of the court to the other; with chess, if you have more space, you can move your pieces quickly from one wing to the other.

A single remark won't make a world of difference. But by using such comparisons more often, a teacher will mold his pupils' thinking.

When trying to keep order, you can make a comparison with traffic. You can make laws ('screaming is forbidden'), post a policeman (to arrest offenders) or refurnish the road with bumps (channelling behaviour, e.g. by making small groups, allotting inspirational tasks).

Making instruction videos for each other

A child can learn a lot by preparing a lesson by itself. They can make instruction videos of a few minutes' length. The teacher has a list with a number of subjects, but children may also choose a subject. The teacher gives a few tips on how to make such videos (determine the subject, make a plan of action, search for sources, what style will it be, which technical tools do you use).

The teacher introduces the activity with a short explanation of the use of instruction videos and the use of making such a video, either on your own or together (an effective form of self-learning by doing). As examples, he can show earlier-made videos, or, for instance, tell the story of the Khan Academy and show video fragments of that.

Making publications

You can learn a lot about a specific subject if you investigate it yourself, and make a publication about it.

For instance, you can make a chess newspaper, a poster, a video or a chess calendar with the class. Other ideas are photo collages, drawings, a crossword puzzle or an A4 sheet with chess rules of thumb.

On a website or a weblog, you can publish all kinds of things about the activities of your school chess class – for instance, beautiful games, positions, small quizzes, photos, videos of talks, etcetera.

Making videos

Chess teachers and their pupils can also make chess videos. With a photo camera (on a tripod, if necessary) you can, besides pictures, also make video recordings. You can cut the recordings

with a video processing program. Add a title, and upload the video to YouTube.

A teacher can, for instance, make video recordings during a school chess tournament, and interview pupils. Pupils can make their own instruction videos on, e.g., tactical motifs, endgames or opening traps.

Mantra

A mantra is a form of self-talk. It gives direction to your thoughts and your behaviour in a constructive way. For instance, before a game you can always say to yourself: 'I want to play a wonderful game.' Then you don't have to worry about anything else. If you try with all your might to play a wonderful game, then you are task-oriented – which is good. The American GM Ray Robson had a mantra during his entire youth. This is described in the book *Chess Child* by his father and coach Gary Robson.

Mass match

Schools can play against each other on, for instance, 20 boards. You can turn this into a big festival. Engage a funny ringmaster, hand out lemonade and medals to everyone present. Make a picture report. Ask children and their parents for more ideas. That will not only provide you with ideas, but will also enhance their commitment.

Mate exercises

Mate exercises are aimed at pattern recognition and the application of search strategies.

For school children, mate in one or two moves exercises are especially suitable. Search depth is not always a criterion for the degree of complexity of an exercise. A list of mate patterns, with examples, can be found on the website Chesstempo.com.

You can ask pupils to make mate exercises with a few pieces on their boards. After that, you move from board to board with the entire class to discuss the solutions.

Material

Use good material. Sometimes a chess set consists of different types of chess pieces, and the bishop is bigger than the king. This will obscure the view. How can you demand discipline from children during a lesson if you, the teacher, don't even have your things in order?

Material isn't everything

You can demonstrate this by showing an endgame with a king and a rook's pawn and a bishop of the wrong colour against a lone king.

Memory

Memory plays a very important role in chess thinking. Chess thinking is largely based on pattern recognition. We know what we recognize. These patterns are stored in our long-term memory. Repetition turns out to be an approved recipe for long-term remembrance of information, and for the ability to apply it.

The memory is part of our brain. The brain processes information and controls the body. It

consists of hundreds of millions of neurons which are mutually connected by countless links. Functional connections are strengthened, while other connections die off. Neuron complexes take care of the brain functions. In relation to this, there are ‘sensitive periods’ in which a child can develop optimally. Just like the best period to learn a language is the first years of your life, you will eventually develop better tactical chess skills if you start training them before your tenth year (see the research by psychologist GM Nikolai Krogius in his book *Psychologie im Schach*).

Chess is psychology. After all, everything we do is based on information processing. And this is what happens inside our brain. A large majority of processes occurs unconsciously a small minority occurs consciously. Which is just as well, as you would go crazy otherwise. An approved method (‘way along which’) is therefore to develop routines: training the brain to carry out processes outside our consciousness. By training you will automatically recognize patterns, just like you walk, or ride a bike, automatically.

Middlegame

The middlegame is the part of the game between the opening and the endgame. The middlegame begins when the players have finished the development of their pieces. Certain types of middlegame arise from the various opening systems – for instance, more open or more closed positions. For school players of a slightly more advanced level, it may be interesting to play out certain middlegame themes against each other – for instance, opening the h-file and an attack on the king. The books *Chess Master vs. Chess Amateur* and *Judgment and Planning in Chess* by Max Euwe contain games that lend themselves well for game quizzes. This gives pupils an idea how they can handle certain positions in the middlegame.

Miniatures

A miniature is a short chess game. Often we speak of a miniature if a game doesn’t last longer than 20 moves. To make clear that all kinds of things can go wrong already in the opening, a teacher may discuss a couple of miniature games in quiz form. He shows the moves on a demonstration board and pupils play through the game by themselves or in duos, on their own boards. After the decisive mistake, the teacher asks the pupils to guess the right winning move.

It’s easy to select short games in the Fritz database. For instance, you adjust the search filter (under the ‘edit’ button) to seven moves, and to 1-0 and 0-1. You click through the game selection and select the most attractive games.

A feeling for danger can be developed. On the one hand, it is an attitude (paying attention, taking your opponent seriously), on the other hand it is also a matter of pattern recognition.

Learning will go well if you think something is useful and enjoyable and if, also, you can be actively occupied with it.

Pupils can make a selection of opening mistakes themselves. On a Windows computer you can go to the database in the chess program Fritz. There, you filter the games with a limited number of moves, and click through them. You note down the numbers from the games you want to save. For example, you won’t want to save five examples of the same smothered mate with ♘d6#. Next, you select the games you want to save with the Ctrl-key. Right-click with your

mouse, select ‘export’ and ‘selection to textfile’ (check ‘pgn’ and ‘standard’) and there you are – now you have made your own PGN file with opening traps.

Mini-chess

Mini-chess is chess with only a few pieces, possibly on a smaller board. In this game, children can concentrate on the moves that matter. You can, for instance, place a white king and two pawns in such a way that a black bishop can give mate, or you can give a back-rank mate with your rook. Another idea is to put black pawns on the board in random positions, and then a white rook has to capture all the pawns in exactly four moves.

Mini-simuls

The strongest 25% of pupils in the group can give mini-simuls to trios. The teacher walks around. He has time to give individual attention to children. He can also give tips about the games. You can also agree that groups may skip a turn twice in every game, and are allowed to take back a move twice during the game.

Mistakes

Everybody makes mistakes. If you never dare to make mistakes, you won’t get any further. You can learn from your mistakes. Every pupil writes down a game and selects a mistake from it. The pupils hand in their games and mistakes (with explanation) to the teacher. In the next lesson, the teacher presents all the mistakes in a survey of positions. The class points out why certain moves are wrong. The pupil who has made the mistake, explains what he was thinking when he played the move. This may provide instructive starting-points for learning. After this, the teacher discusses with the class what would have been a good move.

Motivation

See, among others, ‘commitment’.

Move of the week

When pupils notate their games, beautiful moves can be saved from oblivion. There are many different kinds of beautiful moves imaginable, like a zwischenzug, *zugzwang*, sacrifices, discovered attacks, etcetera. You can also think of categories, like the most beautiful pawn move. Pupils can write their most beautiful move of the week on a score sheet. You can print out these positions as a quiz – or you can publish them on the Internet, or hang them up in class for a week.

Multi-event competition

A multi-event competition consists of a number of events, like blitz, a game quiz, a knowledge quiz, a few tactical exercises, answering questions with reference to a chess video, a simul against the teacher, etc.

For each event you can earn points, and each event takes a number of minutes (5-20). Depending on the number of participants, you can ask various people (parents, other pupils) to

run an event. Then the children move on from one event to the next. A training decathlon is described in my book *Developing Chess Talent*.

Myths

There are a number of chess myths. Telling a story can be a welcome change in a chess lesson.

The story of the grain corns is about a wise old man who invented chess for a king. He asked to be given his reward in grain corns. One for the first square, two for the second, four for the third, etcetera. The king felt insulted because he thought the reward the old man asked for was too meagre for such a beautiful game. Until someone calculated that it would amount to a gigantic number of grain corns.

The Dilaram Mate tells the story of a woman in a harem who was almost gambled away by a sheik in a chess game. Just in time, she whispered a rook sacrifice in his ear that led to mate in five. There are videos with this position on the Internet. An important role is played by the 'alfil' (a bishop that made two-square jumps and could jump over other pieces). It's also nice to play out this position with the modern game rules.

A lot of historical chess information can be found on Leo Hovestadt's 'Carolus Chess' website.

Newsletter

An organization can make a newsletter to send regular information to contacts. Schaakacademie Apeldoorn (= Apeldoorn Chess Academy), for instance, publishes a digital newsletter every two weeks. It is sent round by email to a list of contacts. In the email, there is a link to the website of the chess academy on which the newsletters can be read. The newsletters are also spread via social media (Facebook, LinkedIn, Twitter). They contain many pictures, of school chess, among others, with brief texts. With the help of these photos, not only news is spread, but also information about the content of chess lessons. Karel van Delft makes the newsletter, but in each issue there are various people contributing. These newsletters can be found on the website www.schaakacademieapeldoorn.nl.

Notation

By writing down a game ('notation'), you save it. Then, later, you can play through the game and analyse it. The standard format of scoresheets is half-A4. This is often too small for children who have just started playing chess. A simple solution is to enlarge the scoresheets to A4 format.

During notation, children can help each other with the naming of the moves.

You can also make a competition of notation learning. The teacher discusses a game by one of the pupils, and shows the moves on a demonstration board. The pupils write down the moves on a scoresheet. Then the teacher writes the move on the board. Each move that is correctly notated is worth a point.

Obviously, you can train both short and long notation.

Nutrition and physical aspects

Top-class sport is a matter of small differences. For an optimum performance, everything has to fit perfectly. These days, top-class chess players have to be in top condition, not only chess-technically but also mentally and physically. Having an extensive meal just before an important game is not clever in view of the need to digest, which leads to concentration loss. Most children are not top chess players. Still, it can be a good thing to talk about nutrition in a chess lesson – for example, if the school has organized a theme week on healthy living. There is no need to give very extensive information, but one or two anecdotes and a few tips may be interesting. Did you know, for instance, that it is clever to regularly drink water while you're playing chess?

On the Max Euwe Centre website there is an article by this book's author on chess and nutrition. Via Google Translate, non-Dutch speaking people can get an impression.

Objectivity

If you want to get better at chess, you have to be objective. This means that you have to analyse your games well. Winning or losing is not interesting. It's about what you learn from your games, and about having fun.

Online chess lessons

With video communication and online chess programs, it is possible to give chess lessons from a distance.

A widely used combination is the free chess website www.lichess.org with Zoom. Trainers also use, for instance, a combination of Playchess.com with Skype.

Giving chess lessons from a distance has advantages and disadvantages. These do not apply to everyone to the same extent. It also makes a difference whether you give an individual training or a training to a group.

It also makes a difference whether you teach adults or children. With children, there are differences in age, playfulness and motivation.

Some training participants prefer to receive their lessons together in a room, others prefer to get them online.

Advantages:

- You can bridge distances without having to travel.
- It is easier to organize more frequent, shorter training sessions, because no time has to be spent on travelling.
- You don't have to be in the same room (for example, for health reasons).
- You can share screens quickly and easily. You can present programs, documents and websites on a separate screen.
- In Zoom, you can see and hear each other, and you can make drawings and chat.
- Pupils can clearly see what a teacher is showing.
- For a teacher, it is easier to look up something without the others noticing anything (because they are busy looking at a certain screen).

– You can share documentation directly by sending files.
– You can record videos of training sessions, and send them to participants afterwards (for instance, via www.wetransfer.com).
– You can prepare material beforehand, and present it with a couple of mouse clicks (for example, videos, websites, positions in Lichess Study).
– You can easily let the pupils make exercises individually, and follow them as a teacher.
– Zoom is free for pupils.

Disadvantages:
– There are temporary as well as permanent disadvantages. Temporary disadvantages are to do with the time it takes to learn communication programs and chess programs, and also to solve technical problems. A short manual of technical tools is very useful.

It is useful to have an extra communication channel, like a mobile phone or video calling, in case there are technical problems. It is useful to organize a small-scale trial training in advance. When you give lessons to children, you can ask the parents to join during the first lesson, and to remain close at hand.
– Video communication is intensive and rich in stimuli. It is important to take regular breaks.
– Meeting each other inside a building is more social, you have more personal contact.
– Non-verbal communication is limited.
– Young, playful children sometimes test the limits by putting the video connection on black, or by switching off audio. It is important that a teacher imposes clear rules. As a host, you can exclude someone who can't behave properly from a lesson by using the 'mute' button.
– With regard to classroom management, the possibilities of a teacher are more limited.
– Group size has influence on lessons. A lesson group can be smaller with video communication – especially with younger children who do not get enough opportunity to speak in too large groups. With talented and motivated juniors, ten members seems to be about the maximum size.

The amount of online private and group trainings is steadily increasing. The advantage of the Internet is that you can watch a lot of websites and training programs. They may inspire you, and give you ideas in the areas of technique, content, lesson methods, and didactic methods.

With both online and offline lessons, chess instruction is all about 'self learning': how can the teacher best stimulate the pupils to train independently in a useful and inspiring way? Here, it is important that a teacher takes a deep interest in his pupils, and realizes what fascinates and motivates them (winning, social contacts, investigating problems, etcetera). A good training connects to these.

Online lessons too should start with an explanation of how and why you are going to discuss certain subjects and use certain methods. While explaining this, ask for the opinion of your pupils, and also ask for suggestions. This creates commitment: 'We are going on an adventure together, and together we are responsible for a good training.'

The basic structure of group lessons can be the same as that of lessons in a shared room:
1. Question round
2. Tactics
3. Strategy and analysis
4. Varia
5. Playing games with each other

Re 1. Sharing experiences, and pupils can ask questions (which you can refer to during the lesson).
Re 2. Various websites and programs. Giving links to websites.
Re 3. Discussing model games (or crucial positions) and own games, e.g. in quiz form.
Re 4. Exploring videos, websites, endgame exercises, learning to work with programs like Lichess, opening traps in quiz form, study tips, explanation about online databases, simul by the teacher, etcetera.
Re 5. This is perfectly well possible on Lichess. The program saves games automatically.

After each training session, it is useful to send an email or a chat message with links to discussed websites, conclusions and/or rules of thumb, possible documentation, as well as advice for self-study. Another idea is to include discussed themes and ideas in a digital newsletter and/or put them on a website.

The youth training 'Matches, Simultaneous and Analysis' (MSA) by the Apeldoorn Chess Academy is a format that can be used perfectly well online.

The training session lasts 4½ hours, including several breaks. Every time, a certain opening is the central theme.

Participants are sent an email with information about organization and technique beforehand. They also receive documentation to study and train beforehand.

The training, given by IM Nico Zwirs or IM Merijn van Delft, starts with an introduction. After this, the participants play a rapid game against an opponent of equal strength on Lichess. The trainer follows the games, and afterwards analyses several noteworthy positions with the group. After that, a second round follows, with reversed colours, again followed by an analysis. Finally, the trainer gives a simul. After each finished game he gives short comments. Participants can follow each other's games. This way, they remain actively involved in the training even after their own game is finished.

Afterwards, the trainer emails a report to the participants.

The website www.lichess.org is free. It has many features, like playing against others, playing against computers, exercises, videos, setting up your own positions and playing on from there (for example, endgames) and game analysis (as well as looking at opening books and top-level games). Lichess can be set in many different languages. Via Study, you can discuss positions while the pupils can also move the pieces. You can read PGN-files and FEN-codes. A teacher can organize tournaments and simultaneous exhibitions. In 'Lichess Study' you can set out material. In 'Board Editor' you can set up positions. By demonstrating this to pupils, you can teach them to do this themselves.

In lessons, the principles of variation, fascination and participation (taking part actively) are very important. The methods used should connect to these.

Empathy is important – certainly also online. Show your personal involvement to your pupils. The better your personal contact is, the better your training session will work out.

Here is a selection of subjects that have been used online with primary school pupils during lessons by the Apeldoorn Chess Academy:

- Question round: how are things at school, in life, and with your hobbies?
- Tactical exercises http://nl.chesstutor.eu
- Mate in one www.apronus.com/chess/puzzles
- Avoid mate (defend) www.apronus.com/chess/puzzles
- Steps Method CD-ROM
- Exercises via www.chessmatec.com
- Watching the Lichess website, and exploring possibilities via the menu
- Functions of Zoom
- Looking at the Apeldoorn Chess Academy Newsletter
- Explanation of Chess960 with sample video, and training via Lichess
- Lichess antichess
- 'Immortal games' via online database www.chessgames.com
- Miniatures by Greco in quiz form
- Gameviewer Chessbase (discussing a game as well as explanation about engine and variations)
- Mansube (Arabic study) www.youtube.com/watch?v=OKw5yr-WmsA
- With modern rules for the bishop (alfil) also mate in five
- Chessvision.ai: app to read a position on a website in Lichess and analyse
- Be careful with the move 2…f6. Example: 1.e4 e5 2.♘f3 f6 3.♘xe5 fxe5 4.♕h5+ ♔e7 5.♕xe5+ ♔f7 6.♗c4+ ♔g6 7.♕f5+ ♔h6 8.d4+ g5 9.h4
- Discussion of a game by the teacher
- Playing a game against Fritz together
- Copying FEN code and reading position in Fritz
- Giving mate with king and queen, watch out for danger (blundering a piece, stalemate)
- Playing mutual games on Lichess and discussing them
- Search strategy: first establish what the problem is, then search for a solution
- Via opening book and top games on Lichess, you can learn about openings you play yourself
- You can learn from losing, never be afraid
- It's all about three things: 1. Fun, 2. Learning, 3. Result (this will come later, if you train well)
- Don't play twice with the same piece in the opening
- Rules of thumb are general rules that help you when you are thinking and making plans

– Unpack your presents (be alert on danger and on your opponent's mistakes)
– Chess is a fighting sport: attack and defend
– Defending via CIEPC: Capture, Interpose, Evade, Protect, Counterattack
– Making a plan via DCCAP: Danger, Check, Capture, Attack, Plan
– Keep one rook on the board in an ending with pawns (*zugzwang*, staying flexible).

Opening repertoire

For beginners, it makes no sense to build up a solid opening repertoire. This requires a lot of knowledge, and moreover children won't know what to do if their opponent deviates. Also, they won't know what to do when the game moves on to the middlegame. It's already a good thing if beginners apply the three golden rules of the opening.

It is useful, though, to know the main lines of a few openings. This knowledge has to be based on insight – learning things by heart doesn't work. With these openings you can experiment in games. A suitable opening, for instance, is the King's Gambit (1.e4 e5 2.f4), where White sacrifices a pawn for a position that gives him attacking chances. For Black, the Benko Gambit (1.d4 ♘f6 2.c4 c5 3.d5 b5 4.cxb5 a6) is suitable. The principles are simple, and with such an opening you learn to build up a game methodically.

Opening traps

Opening traps give you an impression of certain openings, and teach you about pitfalls.

You can play through them, but you can also train them as a quiz. You get points for moves that punish a mistake.

Of course, the opening traps under discussion should correspond to the level of the pupils. There are books with opening traps, and a lot of them can also be found on the Internet. By Googling 'tricks and traps' you can find a lot of them. Another possibility is that pupils go to look for them, and compile them into a quiz.

A large collection of opening mistakes is 'Bill Wall's Chess Traps and Miniatures Collection', which can be found via Google.

Own board

It can sometimes be useful if, during a game analysis on a demo board or a digi-board, pupils have their own board (or one board for every duo), so they can carry out moves. This gives them a better feeling for positions. Moreover, children can also try out alternative variations on the board. Sometimes also they can lose a little unrest when they are able to move the pieces around.

Pairing systems

There are diverse programs for making pairings at competitions. An often-used system is the Swiss system. Here, chess players who have an (approximately) equal number of points are paired against each other, provided that they haven't played each other before. A good, free pairing program is Sevilla (www.jbfsoftware.com). This program has a manual, and information on its use can also be found on the Internet. Other pairing systems are, among others, the Keizer

system and the ladder competition.

Pairing table

This is a survey of the pairings in a tournament. The table indicates who has to play against whom in every round, and with which colour.

By a drawing of lots, players are given a starting number. The player who is mentioned first plays with white.

For example, a scheme for a four-player event is:

Round 1: 1-4 and 2-3.

Round 2: 3-1 and 4-2.

Round 3: 1-2 and 4-3.

Parents

Parents can stimulate their children in chess.

A teacher can inform parents via: a school chess website, a chess newspaper, a bulletin, personal conversations, and by offering them the possibility to email or phone him.

A chess teacher can approach parents and ask them to be the team captain at tournaments, or involve them in the school competition.

He can also stimulate parents to make chess exercises together with their children, visit websites and play games. Also, they can watch chess videos together with their children.

It is important that a chess teacher keeps in close contact with the regular teachers at a school, and aligns his contacts with parents with theirs. It is good to inform parents about what is going on in the field of chess. If parents want to discuss personal matters, it’s better to refer them to the regular teachers.

A school chess club can invite parents to take part in lessons. This way, they can learn to play chess and become motivated to help with the school chess club, or also give lessons themselves.

Sometimes a gossip circuit arises. A chess teacher should keep his distance from this.

Patience

Patience is an important quality for a chess teacher. He has to take the time to teach the pupils in a calm way. Pupils learn that they have to think calmly when they are playing a game. This also helps them to develop patience.

Pawns are different than pieces

Ask pupils in which ways pawns differ from pieces. Write down the answers on a blackboard in catchwords, and make a small poster.

Here are the answers:

1) They capture in a different way than they move; 2) They start on the second rank; 3) They cannot move back; 4) They have a limited range; 5) They move more slowly; 6) By promoting, they can turn into another piece; 7) They are worth less than pieces; 8) They can capture en passant; 9) There are more pawns than other pieces; 10) They are pre-eminently suitable for

protecting the king.

Pawn structure

The pawn structure is the skeleton of a chess position. If the pawns are badly positioned, then a position can collapse in no time. Seeing is believing. Let the children play a blitz game, and interrupt the game during the middlegame. Discuss positions in which the material is still even. Remove all the pieces from the board except the kings. Show the strong and weak aspects of the pawn structure, e.g. pawn islands, backward pawns, pawn chains, strong squares, and passed pawns. The pawn is the soul of chess, as Philidor already said.

And if you do mention Philidor, and you have a computer with Internet at hand, then take some time to Google with your pupils and find out who Philidor was. If you get an abundance of links, it is often handy to consult Wikipedia.

Perception

All is not what it looks like. Is what you think you are seeing really what is there? In a certain position, it looks as if White is totally lost. Two of his pieces are under attack. The white player makes the best of it, and retreats one of the attacked pieces. Black captures the other piece and wins. If the white player had taken some time to think, he would have seen that by applying the CIEPC rule he could have solved his problems. The C of Counterattack would have been very promising. Even better, the Fritz chess program gives ten moves leading to a better or even winning position for White. All is not what it looks like.

A teacher can go through games by his pupils, and extract a number of such examples from them. It is then up to the pupils to investigate the positions – for example, in quiz form.

An example from a school chess championship:

White to move and win

Lobron-Gretarsson, Leeuwarden 1995:

Black to move and draw by …♕d5+ followed by …♖d7
(the black player didn't see this in the game, and resigned).

PGN editor

PGN means Portable Game Notation. It is a much-used format to store chess games. The Fritz program is excellently suited for entering games, saving them in a database, and exporting them into a PGN-file. Fritz works on Windows computers.

Apple laptops sometimes have a chess program with which you can enter games and export them into PGN-files.

On the Internet you can find free PGN editors.

PGN viewer

If you don't have a chess program to play games from PGN-files, then there are alternatives. You can right-click on a PGN-file and read the score in Notepad.

You can also enter the file online in the PGN viewer on Chesstempo.com.

Photo quiz

While pupils are playing games in a competition, the teacher can walk around with a camera. He can make a picture of each position that shows an interesting theme. What is interesting, depends on the level of the pupils. For beginners, you can take a position in which a piece can be captured, or where an opening trick is possible. For more advanced players, the question may be for instance what an interesting plan may be in the position. The teacher can present the pictures in the next lesson, and discuss them with the class – in quiz form, for example. The teacher may also add to the discussion some positions from Fritz that can be played out on a digital blackboard.

Photos and face map

Pupils, or the teacher, can make a chess picture of each pupil on A4 format. You can think of photos with many different facial expressions, either in combination with chess positions or not. It may be a portrait picture, but it may also be an artistic picture. You can hang up all the pictures

on the wall, but you can also put a collage of the photos on an A3-format poster. Also, you can put the pictures on a chess website of the class.

For a teacher, a ‘face map’ with photos and names can be very convenient – certainly if he sees a group of pupils only a limited amount of times, for instance in a ten-lesson beginners’ course. Nobody likes to be addressed with ‘Hey, you there’. A name is an important part of someone’s identity. If a teacher knows the names of his pupils, then the lesson will be much more personal. Also, if a class is unquiet, it is convenient to have the children’s names at hand. It enables the teacher to call a child directly by its name if he wants to correct his or her behaviour. Addressing a pupil directly is much more effective than making a general remark.

Besides a series of photos, a video recording can also be handy. The teacher walks through the classroom with a photo camera or a smartphone, and each child tells him his or her first name. This will take about a minute. After you have watched the video for a few times, you will know most of the names. You can also turn the video into a photo survey.

Place of the teacher in the classroom

Traditionally, a teacher stands in front in the classroom, where the digi-board or the demonstration board stands. If pupils demonstrate something on the demo board, or give a talk, then the teacher can also stand in the back of the class. Then he will notice other things that are happening in class. Also, in this way the teacher will have a little more contact with children who are sitting in the back of the classroom. Passing on knowledge is best done in small, compact amounts. Information will sink in if pupils train with it on chessboards, or perform tasks on a computer. This is best done in duos or small groups. In this situation, the teacher can walk through the room. He answers questions, asks questions, and gives tips. Contact moments like this, to help pupils on their way, only need to take a few seconds to half a minute. In a time span of fifteen minutes, a teacher can have contact moments with many children individually, criss-cross through the classroom.

Increasingly often, children have an own computer at their disposal. They can train on it in their own tempo, on their own level. The teacher can walk around and give individual advice.

Plan

A plan is a method to achieve a goal. You look at the possibilities and limitations in a chess position. You set goals you want to achieve, and decide how you are going to do this. If you work with plans, then you will achieve more than if you just make haphazard moves. It was not for nothing that former World Champion Max Euwe gave one of his books the title *Judgment and Planning in Chess*.

Playing out positions

There is a difference between knowledge and ability. Knowledge means that you understand things, while ability means that you are capable of applying knowledge. You develop skills by training with knowledge: learning by doing.

One possible route is when a teacher gives an explanation (knowledge) and after that, for

example, presents a number of positions for the pupils to train with.

Another route is to let pupils solve positions without giving an introduction. Here, the pupils have to discover the theme themselves (‘discovery learning’).

With either of these methods, the teacher can put the pupils on the right track by asking helpful questions: On which wing is Black stronger? How vulnerable is the king? What do we think of a sacrifice here? What would you play if you could make two moves in a row? Can you gain a tempo?

Or you can simply ask: ‘Why?’ That is the most important question in life as well as in chess.

You can present tactical positions to pupils in various ways: for example, on an exercise sheet with diagrams, a number of positions on boards (chess exercise circuit) or by a presentation on a digital blackboard. Individually, pupils can also train positions with, for instance, the ChessMatec program or a Tutor DVD. An advantage of the latter is that pupils can train on their own level in their own tempo.

In the Lichess.org program you can set up positions yourself, and then you can play them out against a chess program on various levels.

You can serve up strategic positions to pupils in diagram form, but you can also let them play out the positions against each other in duos. After the positions have been played out, the teacher discusses them with the children. Depending on the group size, this can be done on a normal board or on a demonstration board or a digital blackboard. When you use a demonstration board, it will be good if children also have the position before them on their own ‘normal’ boards. Then they can play with the pieces themselves, and try out the options more easily.

Strategic positions can be, for example, positions where a passed pawn can be created, or where a rook ending has to be played out.

If children notate their games, then the teacher can derive useful play-out positions from them.

Positions are especially useful if they contain a clear theme. A theme is a type of position with certain characteristics that often occurs in games.

Playing style

Of course it makes sense for children to learn a number of universal chess principles, like healthy opening moves. It is also good to experiment with, for instance, various openings or methods during lessons. You have to have the courage to experience things to find out whether they are useful.

Playing style (e.g. 1.d4 or 1.e4) is an expression of someone’s preference – maybe even of his style or his personality. To be able to apply your own playing style is important for your enjoyment of the game. It is unwise for a teacher to deny this to a pupil and impose his own opening repertoire. This can cause severe damage to the motivation and creativity of children. What the teacher can do is point out to a pupil that it is useful to regularly experiment with different openings.

Points chess

Little novice chess players are not capable of making any grand plans yet. But they can try to capture as many pieces and pawns from each other. And giving mate is also allowed. With points chess, the usual values of the pieces in points is used (Queen 9, Rook 5, Bishop 3, Knight 3, pawn 1). The player who has collected the most points is the winner.

If children play without a clock, then quite regularly games will need to be adjudicated at the end of a lesson hour. You can, for example, use the rule that a player wins if he is three or more points ahead.

Position of the week

As a little extra, a teacher can hang a ‘position of the week’ on the wall in each lesson. Interested pupils can rack their brains on it during the week. In the next lesson, the teacher discusses the position.

Posters

Teachers and pupils can make chess posters and hang them on the wall in the classroom. They can also put the posters on a website as a PDF. If the posters have been put on a website, the makers can present them to the class.

You can make posters on, e.g., A4 or A3 format. Many different types of posters are imaginable, like chess drawings or pictures of chess-playing pupils. For beginners, a poster that explains the movements of the pieces is handy. The teacher can make a poster that shows all the lesson components that will be treated in a year. On a poster with diagrams you can represent examples of all the tactical motifs, or of pawn structures, or of baby endgame studies. Also, you can make a poster with the most important rules of thumb. You can make a collage of chess books and chess movies. A short manual of a digital chess clock is also an idea. If you Google ‘chess’, you will certainly come across more ideas. How many ideas can you think of with the class in three minutes?

Making a poster can be a fun way to repeat knowledge. Pupils can, for instance, select the four most interesting positions from their own games for a poster. If they work with the Steps Method workbooks, they can, for instance, put on the poster the six diagrams they find the most instructive.

Post-mortem

This means literally ‘after death’. In chess circles, it denotes an after-play analysis of your game with your opponent. Together you try as objectively as possible to find out what the good and bad moves were, and why this was so. You can learn a lot from such analyses. You can, for instance, incorporate newly-acquired knowledge in a database with your own games, in which you add comments to your games in variations and words. You can also make diagrams with instructive moves, and save them in a database. This takes time, but it is more instructive to investigate one game thoroughly than to just look at ten games superficially.

Private trainer

Ambitious pupils will benefit from a private trainer. One hour of instruction per week is already fine. Analysis of the pupil's own games should be central. In his own games, a player shows what he is capable of, and here and there it will be possible to find clues for improvement.

A trainer:

- explains the ideas behind moves (a computer only gives variations)
- can answer questions about positions and can point out errors of reasoning
- provides training material that connects to the pupil's development
- listens and gives answers to questions, and gives specific advice
- helps setting up a training programme and selecting good tournaments to play in
- can help with psychological problems with regard to time-trouble, decision-making, self-management
- can act as a sounding board if you want to talk about problems
- can supervise pupils during tournaments.

It is important that a private trainer feels committed to his pupil. Only then they can work well together in training sessions and experience the fascination of chess.

Private trainers cost money most of the time. This is not strange. Piano lessons, swimming lessons and tennis lessons also cost money. One idea is for two pupils to share the costs of a trainer. An advantage of this may be that the pupils will also train together.

Prizes

Children enjoy winning prizes in tournaments. A prize is a reward, a form of appreciation. Often there are prizes in the shape of cups, but sometimes there is also a table with a collection of chess books or toys out of which children can make their choice. Actually, if all the children have done their best, all of them deserve a prize. You can take care of this by giving all the participants a pennant or a medal. A prize doesn't have to be big. In a mutual competition in a class, you can hand out to the winner a print of the final rankings, under applause. There are, for instance, children who are already quite proud when they have ended up in the upper half of the list. Other children simply enjoy showing the final rankings at home.

Problem chess

Problem chess consists of forced combinations ending in mate in a fixed number of moves. As a rule, mate in one or two moves is good training material for school chess players. However, mate-in-two exercises can be very difficult already. It can be interesting to show an attractive problem to pupils now and then.

The link list of the website Probleemblad.nl (Dutch) gives an overview of websites in a series of countries.

Project: chess

At school, children have to do a project now and then. They may do one on chess. If you look at a few chess websites, you are sure to come across all kinds of subjects that interest you. You can

gather more information about them, for example via Internet search machines, or by interviewing experienced chess players.

Prophylaxis

A chess player always has to look first what his opponent can do. Prophylaxis is making a move that prevents a plan of the opponent, and, moreover, also improves one's own position.

Proverbs

Name a proverb, a wisdom or a saying, and tell the class what significance it may have for chess. For example: 'He who digs a pit will fall into it' or 'It isn't over until the fat lady sings.'

Proverbs and sayings put general wisdoms into words. Besides pattern recognition, calculating moves and reasoning, chess thinking also consists of the application of general rules, i.e. rules of thumb. We should be able to exploit that similarity in one way or another.

You can talk about proverbs in a group discussion. You can also ask older children to notate their games and single out a remarkable move in them. They can search for a proverb to go with it. If children find this difficult, then you can make a list of proverbs children may use when they are searching for such a combination of position with proverb.

Children can also do this in duos. What one of them doesn't know, the other may know, and in this way you learn that you can stimulate each other to invent things. This method is also suitable for giving children who are not the best players in their class a chance to show their qualities. The teacher can enter the position into Fritz, or make a PowerPoint presentation of it, and discuss it with the class in a following lesson. Every child can then explain his or her proverb of choice. In this way, pupils can process their experiences in an active way, they can use their creativity and can learn from each other. By verbalizing knowledge, you convert information into insights that children can remember and will be able to apply more often.

One option is that the teacher introduces the subject with a position from one of his own games. Books like *The Tao of Chess* by Peter Kurzdorfer or *The wisest things ever said about chess* by Andrew Soltis may provide inspiration for the teacher.

You can make the theme broader by letting the pupils quote statements by chess players. For instance, the American chess columnist GM George Koltanowski (19,000 columns in the *San Francisco Chronicle* in 52 years) once said: 'Pawns are like buttons. Lose too many and the pants fall down by themselves.'

On the Internet there are surveys with chess sayings. See, for example, Chessquotes.com.

Pupil tracking system

In a pupil tracking system, a teacher writes down the performance and progress of his pupils. A simple form is to note down results of tactics exercises, game quizzes and competition results. Besides that, a teacher can also write down a few observations and experiences.

Pupil versus teacher

Many children enjoy playing chess against their teacher. This can be done in a simul. It can also

be done in a blitz game.

The pupil gets ten minutes thinking time. He can play, for instance, with orange-coloured chess pieces. The other children are standing around the board in a circle. They can give suggestions and warnings if there is any danger. The teacher has five minutes thinking time, and has to notate the moves until he has no more than one minute left. A few of the children can make photos and/or video-recordings.

Afterwards, the teacher discusses the game with the children. This shouldn't take too long – fifteen minutes is enough. Limit yourself to the main points, and to one single comment per move. If thematic moves occur, then ask the children questions. This way they will be actively involved in the demonstration game. You can do this on a demo board. If you do it on a digital blackboard, it will also be a good occasion for demonstrating a chess program like Fritz or Lichess. For the pupil who plays, it will be nice if the game and any footage of it are published on a website. Also, the teacher can give him a DVD with a PGN-file of the game and footage.

Purchase of chess materials

To give chess lessons, you need boards and pieces. With a group of pupils, a demonstration board also comes in handy. There are many chess shops that sell chess materials.

Putting up the pieces

An in-between game: how long does it take you to put up all the pieces correctly? You can use a stopwatch.

You can also put pieces on top of each other, by the way. Who can make a small tower with the most pieces?

Question round

During a question round at the start of a lesson, pupils can ask questions, make comments, and tell about their experiences.

This is a good way to get to know the children better, and to learn what is on their minds. Also, in this way children can function as role models for each other. For example, one of the children may tell that he or she has given a simul at a family party. Another child may tell that he or she has been to a youth tournament. By asking and telling things that are connected with these subjects, the teacher can elaborate on themes of the children's interest.

Questions

Let children find out as many things as possible by themselves. You can stimulate this by asking questions. If a position is too complicated, you can ask sub-questions, leading them to the right answer.

Pose easy questions to weaker pupils, and difficult questions to stronger pupils. This way they can all have success experiences by giving good answers. Also, teach children not to search for direct answers, but to ask questions to the position itself: what is going on here?

When children answer questions, they are thinking actively. That is more productive than

listening passively to a teacher. By asking questions, a teacher also gets a clear picture of what children already know and can do, and what they don't know and can't do.

There is a distinction between open and closed questions. Closed questions are aimed at factual answers. Open questions are aimed at more extensive information, and the pupils' own experiences and opinions.

Quiz

A quiz is an active form of repeating or acquiring knowledge. With a quiz you can earn points. More information can be found under the catchword 'Game quiz'. You can also discuss tactical exercises in quiz form.

Children can also make a quiz themselves: each of them comes up with a couple of questions, and they make a quiz together. It can be about knowledge, but also, for instance, about solving positions.

Many children like quizzes. Experience shows that they will often concentrate well during a quiz because they want to perform well.

With a stopwatch you can employ a time limit for the answering of the questions.

Raindrop Chess

Raindrop Chess is a chess game in which you first have to draw cards before you can put the pieces on the board. On the one hand, there is a luck factor, and on the other hand it will help if you know a thing or two about chess. With this game, children can learn the movements of the pieces in a fun way, and can also learn a few basic techniques. The game rules are described on the website Raindropchess.com. On this site you can also play a game of Raindrop Chess against each other.

Rating viewer

A rating is a number that indicates playing strength. The current rating system in the chess world was invented by Professor Arpad Elo. Hence the name 'Elo rating'. The system is based on a 'normal distribution'. With the rating system, a chess player can compare his playing strength with that of other players. There are rating viewers on different websites.

A rating often rises with jumps after a temporary standstill. This is because a player who acquires knowledge on a higher level needs time to convert it into skills. Often this goes wrong in the beginning, and therefore it takes some time before it is conveyed by his rating. This is called an 'incubation period'.

A rating is an average. If, for instance, there is a difference of 100 rating points between two players, then their expected score after ten games is approximately 6½-3½. If they play only one game, it is not a given that the player with the higher rating wins. For example, the players' knowledge of a certain opening may be of influence, or whether their concentration is good, or whether any blunders are made.

Reading to young children

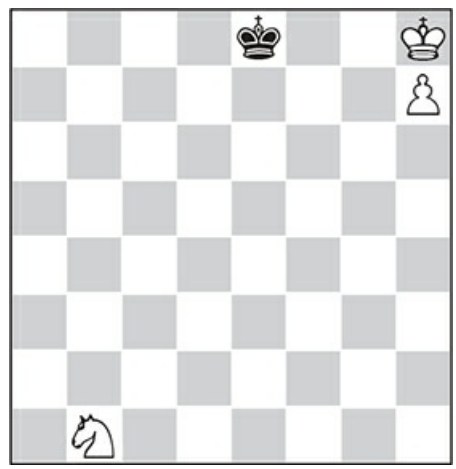
Especially young children like to be read to. You can combine this with teaching them chess. The teacher can, for example, read to the children from a chessbook for young readers, and in the meantime discuss chess positions. If there is too much text in some places, the teacher can summarize a piece now and then.

The comic book *Chess Guide* by Anatoly Karpov is nice.

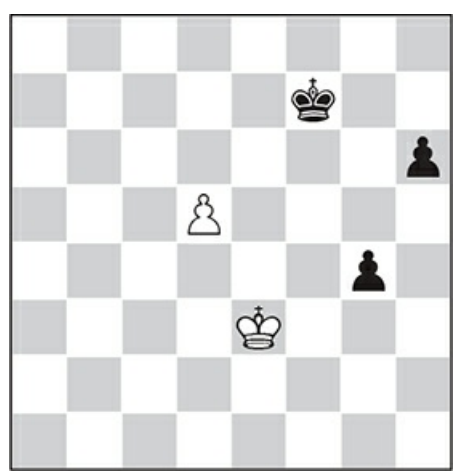
Reasoning

Reasoning is taking logical steps to come to a conclusion. In chess, you cannot calculate everything, but you can often, without calculation, find out by reasoning which move is good or bad – or which phases your plan has to comprise.

Two examples:



Black to move makes a draw with …♔f7 and loses with …♔f8. Black can only hold the draw if he keeps the white king imprisoned on the h8-square. He can only do this by putting his king on the square f7 or f8. Moreover, it should not be possible for White to chase Black's king away with the knight. The knight changes colours on each move. So the black king has to move to a square where the knight cannot chase it away every time. Therefore, it has to be put on the colour square the knight is on in the starting position.



It doesn't matter whose move it is – Black is winning. First, Black attacks the white pawn. If the white king defends the pawn, the black pawns will push through. If the white king walks towards the black pawns, Black first conquers the white pawn. The endgame of king with two connected passed pawns v. lone king is winning. If the white king walks towards the black pawns, Black plays …h6-h5. The h-pawn protects the g-pawn. If the white king wants to capture the h-pawn, then the g-pawn walks on.

So, you don't start by calculating, but you look at the characteristics of the position: 1) The white pawn is vulnerable; 2) The black h-pawn can protect the g-pawn; 3) King with two connected pawns is winning.

Reframing behaviour

Reframing behaviour is positively re-formulating behaviour that is experienced as negative.

Negative behaviour is not acceptable in a lesson group. It causes unrest, and children will learn less, or nothing.

Is one of the pupils restless? Ask yourself what can be the cause of this behaviour. Does the pupil have problems at home, medical problems, or perhaps psychological problems, like fear of failure?

Is negative behaviour intentional (e.g. bullying) or unintentional (e.g. easily distracted)?

Name the behaviour, make it discussable. Tell the pupil this behaviour is negative and it won't yield anything good. Accept the pupil for what he is (no loss of face). You are judging his behaviour, not rejecting him as a human being. If possible, discuss any problems in a one-to-one conversation. Ask what the pupil wants to do with his energy. Give him suggestions for behaving in a positive way. If possible, give the pupil responsibilities. Channel his behaviour in a positive way. Evaluate later how it's going with his behaviour. If it works, the pupil will think differently about himself (cognitive re-structuring) and will behave differently.

Sometimes you can channel behaviour in a simple way. You can put a pupil who is easily distracted, or a pupil who is out to stir up trouble, on a chair in front of the class. Tell the pupil and the class why you are doing this, and then everyone will know what is going on.

As a teacher, you cannot always prevent negative behaviour. Also, you can't always correct it. Not every pupil is approachable. In such cases, the rule applies that always applies: there are rules in the class, and whoever doesn't adhere to them will have to leave.

If, for instance, children have ADHD, then you can agree that they are allowed to take a time-out every now and then.

Relevance of subject matter

'What's the use of this to me?', pupils at school often wonder. If it's of no use to you, then why should you learn or train something? It is important for a teacher to be able to explain why pupils should occupy themselves with a certain subject. If he does this successfully, then it will promote their motivation to learn. A teacher may, for instance, explain that you cannot speak or write if you don't know any words. Thus, he appeals to their frame of reference. In the same way, you cannot play decent chess if you don't know any tactics. A single clever pupil might comment

that that doesn't make any difference: if you both play badly, a game can still be very exciting! The teacher can then reply that it is even more exciting if you both do play well. And, with a wink, he can add that school life sometimes asks difficult things from children. The teacher can invite the pupil to think with him, in his own interest: 'Why don't we make the best of it together? What do you suggest?'

You can give chess instruction using methods that pupils find enjoyable and meaningful. For instance, by making a chess newspaper together, or giving a talk.

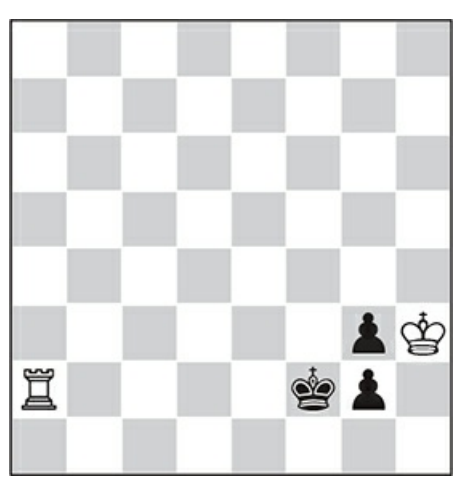
Repetition

A Russian saying goes: 'Repetition is the mother of learning.' An Albanese saying goes: 'Repetition is the father of boredom,' as trainer FM Arben Dardha told during a workshop by the author of this book for the Belgian organisation 'Go for Grandmaster'. These two insights can be combined.

Repeat information regularly, causing it to take root in the (long-term) memory. This happens in the optimal way when pupils really understand the information, and work with it actively (knowledge and ability). You can repeat a theme by using different examples and methods. When pupils see different examples, they have to think for themselves, and by working actively on a theme they will remember it better. A teacher can, for example, again show a few examples of a pinned piece before introducing a new subject.

Resigning

No one ever won a game by resigning, said Savielly Tartakower. Pupils can be asked to answer the question what the reasons may be for not resigning a game. Sometimes a position looks totally hopeless. For example:



Here I resigned as Black in a rapid game against Tom Molewijk, however afterwards I found out that …♕g1 would have held the draw with a stalemate trick. My friend GM Artur Jussupow later told me this trick also featured in a study by our mutual friend, Grandmaster of Chess Composition Yochanan Afek. It can be worthwhile to first give your imagination another chance to find something beautiful.

Sometimes players even resign in won positions. To illustrate this, the teacher can show the final positions of the games Von Popiel-Marco (Monte Carlo 1902) and Kortchnoi-Van der Stricht (Plovdiv 2003). Games like these can be found in databases or via Google.

Return the Pieces

'Return the pieces' is a little game with which you can train your knowledge of the movements of the pieces. It's also a good way to train yourself to achieve as much as possible in as few moves as possible. You put the eight pieces for White and Black in mirrored positions on the first and eighth rank. Not a single piece is on its normal starting square. There are 960 possible starting positions. The players make moves in turns. Each player can only make moves on his own half of the board. In a mirrored position, you are not allowed to play with the same piece as the other player did on the move before – otherwise it would be easy to make a draw. The aim is to get the pieces in the normal starting position as quickly as possible.

Reversing roles

Lessons should be as varied as possible, and pupils should be as active as possible. It is useful if some of the stronger pupils give short lessons to the class now and then. They will learn a lot from preparing lessons. They can, for instance, give a lesson about a rook ending. There is plenty to be found in books and on the Internet.

The teacher can then play the exemplary, constructive, critical pupil.

Role model

A role model is someone who inspires others by certain qualities, or by his behaviour. He may be the champion of the street, or a World Champion. Pupils can, e.g., make an assignment or give a talk about a top chess player who appeals to them. Girls may enjoy examining the careers of the Polgar sisters more deeply. On the Internet (Wikipedia, Google, YouTube) you can find plenty of information. It is useful if a teacher does not just wait for the end product, but guides pupils while they are working on the project.

Rook endings

Rook endings occur often on the board. In the Steps Method, several chapters have been dedicated to them. It is useful to let children train at an early stage with the endgame king + rook versus lone king. The teacher first shows an example, and explains a few principles. Then the children start training. You can add a competitive element by letting the children play the rook side in turns, and count how many moves they need to give mate. Sometimes, a stalemate position occurs. Then the teacher can demonstrate the magic of the waiting move.

On the websites Ideachess.com and Lichess.org you can train this endgame.

It is useful to teach pupils a few basic procedures in rook endings that occur often. Obviously, you have to treat the simple techniques first, like the 'Lawnmower Mate' and mate with king + rook versus lone king. Explanations of more difficult procedures, like the Philidor and Lucena positions, can be found on various websites.

Round Robin

This is a form of tournament in which every player faces another player once. Examples are four-player events or ten-player events. The pairing can be done via a drawing of lots, and you can make use of existing schemes you can find on the Internet.

An alternative is the Scheveningen system, where one player remains seated in a fixed place at a table with a number of chessboards. The other players move up one board with every new game.

Routines

A routine is a frequently applied skill. To play good chess, you have to apply a lot of knowledge and insights. To be able to make good use of those, you have to turn them into routines. First, you have to understand something and realize the use of it (for example, of first looking at your opponent's options). After that, you're going to train it (for example, during a game analysis you keep asking yourself what your opponent can do every time). When you keep doing this, it becomes a routine you will then apply automatically.

In daily life, you are already doing this with a lot of things, like cycling, putting on your clothes, eating, and what have you. Well, what do you have – any more examples?

Rules of behaviour

The aim of a chess lesson is to learn chess. For this purpose, it is necessary that there is order during a lesson. To guarantee order, everybody has to adhere to a couple of game rules. A teacher can establish these rules beforehand with his pupils. Anyone who breaks the rules should leave the lesson room. Pupils who disturb the lesson make it impossible for others to learn anything. The formula is simple: $7 \times 1 > 8 \times 0$. When seven pupils learn something, you achieve more than when eight pupils learn nothing.

Rules of thumb (chess-technical)

Rules of thumb are general rules which are often of good use to you when you are playing chess. You cannot calculate all the moves – you would go totally crazy. After three moves in the opening, there are already more than two million options. Chess thinking consists for a large part of the recognition of patterns (e.g., a back-rank mate or a tactical motif, such as a double attack), reasoning by applying rules of thumb, and, finally, calculation (if this, then that).

One rule of thumb is, for instance, that you have to try to open lines for your rooks. Those open lines are just like highways: you can move your pieces very fast on them, and go straight for your goal. Another rule of thumb is that most of the time pawn captures have to be made towards the centre.

A rule of thumb can also be a question, for example: 'What happens if I reverse the order of moves?'.

In a lesson group you can name a number of rules of thumb. You can, for instance, play with the class against a chess computer program (at a low level) and, on every move, see if you can derive a rule of thumb from the position. The teacher can note down these rules of thumb, and

present them later on a small poster.

You can also print a number of diagrams and add rules of thumb to them, verbalized. On Chessimo.com there are, for example, 101 such tips.

To stimulate methodical thinking, the teacher can give his pupils the following rules of thumb for setting up their game: in the opening, develop your pieces; in the middlegame, collect small advantages; in the endgame, simplify and give mate.

Rules of thumb (psychological)

There are chess-technical rules of thumb and psychological rules of thumb. The latter are to do with your way of thinking, your feeling, and your behaviour. The teacher can mention a few examples. One rule of thumb is, for instance: 'If I am nervous, then perhaps my opponent is even more nervous.' Or: 'If I don't see any good moves, then I will talk to my pieces. I will ask them on which squares they will be the most active.'

It makes no sense to overburden children with a lot of such rules of thumb during a lesson. It is handy to name a rule of thumb if it is relevant in a game. The teacher can then ask what a pupil could have done better. This can lead to a discussion, after which the teacher formulates the rule of thumb in question. Children learn during such a conversation that you don't have to feel ashamed of mistakes. Everybody makes mistakes, and you can learn from mistakes.

Running chess

This is also called 'condichess'. Children play a game, and when they have made (and notated) a move they make a run around the school. When they are back, the opponent has to move. The faster you run, the less time your opponent gets, but when you're tired your thinking will be less good.

Sacrifices

A sacrifice is when you give away material to achieve an advantage. Queen sacrifices especially appeal to the imagination. The game Tal-Kortchnoi (Riga 1958) even featured a double queen sacrifice. And Carlsen finished his World Championship Match with Karjakin with a queen sacrifice.

Practice books often contain tactical sacrificial combinations.

Every now and then, a teacher can show a game with a beautiful sacrifice, in the meantime telling something about chess history and chess culture. A game that lends itself well for this is Liu Wenzhe-Hein Donner (Buenos Aires 1978). A wonderful example of 'fatal attraction' is the game Edward Lasker-George Thomas (Londen 1912). A beautiful queen sacrifice occurred in the game Alexander Steinkühler-Joseph Henry Blackburne (Manchester 1863). You can find such games in the ChessBase database, or, for example, in the online database Chessgames.com. You can download games from this online database as a PGN-file.

Vladimir Vukovic has written a book called *The Chess Sacrifice*. In 2020, Merijn van Delft published a book called *Mastering Positional Sacrifices* with New In Chess.

Sample games

It is useful to regularly discuss sample games. They have to correspond to the level of the pupils. With the help of sample games you can explain how a game should be built up and how plans should be made. All aspects of chess will pass the review – not as loose elements, but in the coherent context of a game.

You can extract sample games from the collection of your own games, from books, or, for example, from websites. The book *Comprehensive Chess Course Vol. 2* by GM Lev Alburt, for example, contains a lot of thematic short games. And there are many more such books. You can briefly explain various moves, and ask the pupils to find a few moves themselves at crucial points. You don't have to discuss games in their entirety; you can also opt for only the opening, the endgame, or part of the middlegame. Also, you can use miniature games (less than 20 moves).

School chess club

Many schools have their own school chess club. They often meet once a week. Often, children receive instruction for half an hour and play a competition in the other half hour. If there are no instructors present, then it is also an option to spend half an hour after school on playing a competition, supervised by a parent.

Not much is needed to start a school chess club: just a classroom and chess sets. At larger school chess clubs, a lot more is going on. There are lessons and competitions at diverse levels. Ranking lists of the competitions are kept up to date. Sometimes, school teams play against teams from other schools. Every now and then, a good chess player gives a simultaneous display.

Also, sometimes children go to youth tournaments on Saturdays. To participate in such a tournament, you don't have to be a member of a chess club. You pay some money and enrol in a group of your level. The websites of national and regional chess federations or chess clubs feature announcements of youth tournaments. The chess teacher can give his pupils a calendar with information about youth tournaments.

School chess shirts

If pupils like it, they can all go to a tournament they take part in dressed in school shirts. A school chess shirt is even better.

School chess tournaments

In many cities and villages, annual primary school chess championships are organized. The best teams participate in regional championships, and possibly even in the national championship. A tip for participants is not to learn too many things right before a tournament. It is more useful to repeat tactics. Games on this level are often decided by tactics. If coaches keep working on children with all sorts of well-meant advice, this can cause tension and can be counter-productive. If children pile up tension on themselves, it can be useful to repeat a couple of rules of thumb, like: 'Always first look what your opponent can do' or 'Think of CIEPC if one of your pieces is under attack'. CIEPC is short for: Capture, Interpose, Evade, Protect, Counterattack.

It can always happen that a player drops out due to illness. Therefore taking along a substitute player is useful. If a team is not actually going for first place, it can make sense to take along two substitutes. In this way, more children get the chance to gain chess experience.

School themes

Schools often have a term theme. This can be many things; for instance, economy, poverty, art, or anything else. Chess lessons can connect to such a theme. Economy is when you develop pieces in an efficient and effective way. Many things are possible, if you give free rein to your thoughts.

If the theme is art, for example, you can tell something about creative chess, and show a baby study. This is a study with maximally five pieces on the board, for example a study by Réti. After all, chess is not only a game, a science and a sport, but also an art.

Art may be defined as a human creation which you can enjoy, and which can stimulate your thinking. Music, singing, drawing, painting, photography, dance, architecture, literature and poetry, film, posters are art forms. Many things can be found on the Internet, if you Google 'chess' and one of the art forms. The teacher can show websites, and tell pupils to make a form of chess art of their own choice, like a poem, photos or posters.

Scrabble chess

You can play Scrabble with chess terms on a Scrabble board. You can also do this in class, while the teacher writes the words on the blackboard – or you make groups, and the group that makes the most words, wins.

Search strategy

A search strategy is a goal-oriented way of analysing a problem and trying to find a solution. You can use algorithms to achieve this. These are fixed solving procedures to get you from a given starting situation to an intended purpose.

If a piece (or square) is under attack, you can use CIEPC: Capture (the attacker), Interpose, Evade, Protect, Counterattack.

If it's your move, you can go through the small list called DCCAP: Danger (what can your opponent do?), Check, Capture, Attack, Plan.

International master and chess trainer Alexander Mikhalevsky provides his pupils with three questions they have to ask themselves again and again: 1) What does my opponent want? 2) Where should I put my pieces? 3) Which pieces should I exchange? FM Amatzia Avni describes this in his book *The Grandmaster's Mind*.

Initially, you will apply such search strategies explicitly and verbally, later you will automatize them. The alternative for a search strategy is trial and error – random tries. A search strategy is a tool. It doesn't rule out that you can also start some creative daydreaming, and arrive at a solution unconsciously, by making associations.

Secrets of the Soviet Chess School

The Soviet Union produced an enormous amount of strong chess players – also world champions like Karpov and Kasparov. Fred Waitzkin is the author of the book *Searching for Bobby* Fischer. He mentions three reasons for the flourishing chess culture in the Soviet Union: hard work, commitment to what you are doing, and an abundance of training facilities.

Self-management

This means: keeping yourself in control. You can learn this. The basis is self-knowledge. You can learn from every mistake you make. You can write down a mistake from a chess game. If you write down what you should have played instead, then you have a rule of thumb that gives direction to your behaviour. View leads to grip. Naturally, this does not always work from one day to the next, but if you don't train, you won't make any progress.

You can learn from other sports. Volleyball players take a time-out now and then to come to their senses (or to unsettle their opponents). A chess player can also take a time-out. If he is unpleasantly surprised by his opponent's move, he can, for instance, get up to have a drink, and then take his time to investigate the new position well.

Self-study

Some pupils enjoy chess so much that they want to do more with it. It is important for them to know which study material is useful for them. A teacher can help them with that.

Pupils can also go on their own search for chess information, for instance on the Internet and in the library. A teacher can advise them that they should only read the things they like. The reason is that what you like connects to your level and to your interest.

Pupils can train self-study during a chess lesson. For instance, the teacher lets them study a certain website on their own, or in duos, for fifteen minutes. After these fifteen minutes, the pupils tell him what they have done and what they have learned. The teacher can ask additional questions ('What surprised you?') and give tips ('First look at the table of contents').

Self-study programme

Some children want to become good at chess. They won't succeed in that with just one hour a week of chess at school. The teacher can make a simple study programme for a pupil, which may contain a few things they have to do every day, like solve diagrams, play a game, watch a video, etcetera. The benefit of such a programme is that the child gets to know what is useful. By systematic learning he or she can then improve quickly.

Self-study questionnaire

The teacher can present his pupils with a number of propositions about chess study and ask them to reply yes or no. He can explain the answers later. Of course, any discussion will be fine.

Here is a number of possible questions: 1. A chess player must be a good loser; 2. You should not learn openings by heart, but try to understand them; 3. If you are afraid, you will see more possibilities in a position; 4. You have to alternate easy tactical exercises with difficult ones; 5. It is useful to experiment in games; 6. It's better to do a little training every day than a lot of

training once a week; 7. A rule of thumb is a rule you can apply in many situations; 8. CIEPC is a rule of thumb; 9. The result of a game is more important than what you learn from it; 10. Before you make a move, look at your opponent's options; 11. During a chess lesson you can't make jokes; 12. It's better to analyse with a computer chess engine than with your opponent; 13. Opponents never suffer from stress and never make any mistakes; 14. You can learn from a training partner; 15. If you give a lesson yourself, you also learn from that; 16. It is useful to imitate competition conditions when you are making exercises.

Self-talk

In the Dutch movie *Lang leve de koningin* (= *Long Live the Queen*), Sara talks to the chess pieces. She verbalizes what is going on in a position, and in this way gets a better view on her options and limitations. Grandmaster Jonathan Rowson also describes in his books that it is useful to talk to your pieces. Verbalizing what is going on provides a better view of a position, and, therefore, more grip.

Self-talk helps you to control your thoughts and emotions, and to give direction to them. You can apply it when you are solving chess positions. You can also apply it when you have a psychological problem – if, for instance, you have a bad position in a game, or if your opponent's behaviour is annoying. Then you can, for instance, say to yourself: 'If I make a mistake, he can do so too.' Or: 'If he annoys me, I can go and get the arbiter.' Or: 'If I don't believe in solutions, I won't find them.' Of course, you are not allowed to talk during a game, but you can do this in silence.

Via 'talk chess' you can train self-talk. You can play a training game against someone and both 'think out loud' during it – putting your thoughts into words. You can also train self-talk by playing against a chess computer program together.

Prof. A.D. de Groot wrote the book *Thought and Choice in Chess*. In this doctoral research project (done in Dutch in 1946) he was the first to draw the conclusion that pattern recognition is the basis of chess thinking. He investigated this, among others, by means of 'talk protocols' where he asked strong chess players to put their thoughts into words. Scientifically speaking, there are restrictions to such protocols, for example because not all chess players are equally good at formulating their thoughts. Also, chess players are often not consciously aware of any possible unconscious aspects of their thinking. Still, 'talk chess' is useful because it forces players to think about their play, and because it gives trainers clues for the supervision of their pupil.

A mantra is also a form of self-talk (see elsewhere in this chapter).

Sense of danger

Many games are lost because one of the players does not pay attention to his opponent's possibilities. Sense of danger can be trained. Before you make a move, always first look what the best moves of your opponent would be if it were his turn. Then, think what the best move for yourself will be. Then, think how your opponent can react (can he give check, capture, or attack anything?). You can train this thinking method by solving tactical exercises with pupils, and ask

them all to think out loud in this way. By asking questions, giving clues and correcting them, you will teach your pupils to think more systematically all the time. If you do this a number of times, you will develop good thinking routines in them.

A variant on this method is to think what your opponent could achieve if he were allowed to play two moves in a row. This way, you force yourself to look at the weaknesses in your position. Conversely, you can also consider what you would play if you were allowed to make two moves in a row.

Silence

Ask children if they can read in silence. If yes, then they can also play chess in silence. It is important that it's quiet during a chess lesson and during games. This will allow the players to concentrate well. It is important to make this clear to children. If anyone does not want to adhere to this rule, then it will be better if he or she leaves the classroom. Desperate diseases require desperate remedies. Therefore, you have to maintain the rules strictly.

Simultaneous exhibitions/displays

A simultaneous exhibition (or 'display') is a form of competition in which a stronger chess player takes on several opponents at the same time. Mostly, the simul giver plays with the white pieces on all the boards. His opponents are seated in a circle, and in one round he moves from board to board. When the simul giver arrives at a board, his opponent has to make a move. Sometimes an opponent is allowed to skip a few turns if he doesn't yet know what to play.

One variant is a clock simul. Here, the simul giver and his opponents get a certain amount of time on the clock. When a player has made a move, he pushes his clock. The simul giver is walking criss-cross from one board to the other. It can happen that it is his turn to move on several boards at the same time.

Another variant is a consultation simul. Here, the simul giver plays against duos or trios. The players consult with each other about the best move. By verbalizing what they think, and consulting with each other, they will learn to improve their chess thinking. The teacher can, for instance, play a clock simul against six trios in an hour. The teacher and his opponents get 30 minutes each on the clock. If one child of every trio notates the game, the games can be discussed later.

It's also nice to give a blitz chess simul with commentary. Here, a strong player gives a simul to four opponents. The simul giver and his opponents each get five minutes time on the clock. Another strong player gives commentary to the audience while the simul is going on. The simul giver may also give commentary himself. It's fun, and instructive, if he thinks out loud.

Players can also play against each other on more than one board at the same time. You can, for instance, play four games at once and put the clocks on twenty minutes thinking time. This is called Basque Chess.

Skills

Skills is when you are able to perform tasks. You develop skills in a certain order: Unconsciously Unable (you don't know that you can't do something), Consciously Unable (you realize that you can't do something), Consciously Able (you learn something and apply it consciously) and Inconsciously Able (you apply a skill automatically). For example: you have no idea that something like a double attack exists; you learn that the double attack can be a mighty weapon on the battlefield of the chessboard; you train positions with double attacks; you recognize at a single glance threats and chances of double attacks in a game.

Skype

Chess lessons are given in classrooms in most cases. A small group of pupils can sit at a table with a teacher. A training session via Internet and Skype is also possible. For example, a school team can do a training session with a trainer via Internet. You can make use of the program Playchess or Lichess. You can hear and see the trainer via Skype, while you see the moves on a chessboard on the screen.

Small plan

There are no flawless games. Also, you cannot think of a plan starting from move 1 to mate your opponent – unless you play for a trick and your opponent makes a grave mistake. Chess is a struggle. The best strategy is to collect advantages, like occupying an open file, gaining space, saddling your opponent with a bad pawn structure, etcetera. You can collect such advantages by making small plans of a few moves' length.

Soccer chess

During a soccer game, the audience often cheers on the players loudly. Also, supporters are shouting all kinds of hints. In chess, this is not allowed. The audience must be quiet and must refrain from giving commentary.

Soccer chess is very different. Two children play blitz chess, the others look on and cheer the players on by giving hints. Whether this helps is questionable, since it may be that the audience doesn't understand what is going on in a position. Also, for the players it is not always easy to surmise whether the suggestions from the audience are correct. In this contest, the teacher notates the game. Afterwards, the teacher discusses the game with the pupils on a demonstration board, or with Fritz and on a digital blackboard.

You can also put this on video and publish it on a website. The teacher can put the game in a PGN-file and add verbal comments. Such a commented game can also be put on a website.

Socratic method

Pupils will understand and remember information and solving methods best if they have discovered them themselves. The Socratic method comes down to asking the question: why? By asking questions, the teacher can point out various aspects of a chess problem to his pupils, encouraging them to analyse it themselves, and find the solution by themselves. Step by step, you can investigate various aspects in this way, and get to the bottom of a position.

Solitaire chess

This is an excellent little game to learn good reasoning. Various pieces of one colour are standing on a small playing board. On each move, a piece has to capture another piece. In the end, only one piece remains. The game contains a number of different starting positions with an increasing degree of complexity. Pupils can also create such positions themselves.

Spacebar chess

This is nice for very young children, even from two years onwards. The chess program Fritz makes a move itself if you tap the spacebar. This way, you can play a game even if you cannot play chess yet. Just like the real thing!

Special needs groups

Chess can contribute in diverse ways to the self-development of children with all sorts of limitations. The Belgian chess player Tieme Verlinde has devoted his final project at university to this subject. This is described in Dutch in an article by the author of this book on the website of the Max Euwe Centre. The title of the article is: ‘Schaken bevordert emancipatie van mensen met een beperking’ (= Chess promotes the emancipation of people with a limitation).

On the Chesstalent.com website there are links to videos about ‘special needs groups’ that the author of this book made during various London Chess Conferences.

Spice nuts chess

The December month is a perfect period for spice nuts chess. This is a nice little game for beginners to train the movements of the pieces. Both sides have one piece on the board, and the teacher puts spice nuts on a number of squares. The goal is to capture as many spice nuts as possible – and capturing means eating them.

Sponsoring

Sometimes a school chess club can benefit from sponsoring. A private person or a company may put up prizes, or pay for chess clocks and learning materials. Sometimes the club is asked to do something in return, like mentioning the company’s name. Some companies offer their staff the option to propose a project for sponsoring – for instance, a school chess club. If you think about it a little, you are bound to discover more options.

Sportsmanship

Sportsmanship is a theme which you can put up for discussion with pupils in a class. You can ask, for example: ‘Why is it stupid to call your opponent a duffer?’ This is about things like respect, arrogance, and underestimation of the opponent. You could also ask: ‘And what do you suppose a grandmaster will think of *your* level?’

During such a conversation, you can also mention psychological tricks. What are these? Is there anyone who has experience with them? Psychological tricks are ways to unsettle the opponent’s thinking. If one of the players acts as if he has made a blunder, his opponent may

perhaps become over-confident. Or, by mentioning his rating, he may try to give his opponent a fright. The most important thing is that you understand that these are psychological tricks. The best way to deal with such behaviour is to ignore it. Just play the best moves you can think of. Then you will radiate self-confidence, and your opponent may become nervous. And then he will get a taste of his own medicine.

Springboard and signpost

A teacher can repeat ready-made knowledge. But it is better if he puts himself up as a springboard and a signpost for his pupils. He can teach his pupils how they can learn in a good (enjoyable, efficient, effective) way by drawing their attention to videos, books and all kinds of other things. If children are enthusiastic, then they will also get to it after school hours. They will learn in a playful way and will then develop further on their own strength.

Steps Method

The Steps Method is an excellent method both for learning chess and for giving chess instruction. The method consists of a number of Steps, each of them spread over a number of chapters. For very young children there are two First Steps with simple exercises, few pieces and large diagrams.

Each chapter is divided into orientation, relevant foreknowledge, instruction, processing and testing. Besides exercises, a summary (‘mnemonic’) for pupils is given in every chapter.

The method contains manuals for instructors with didactic advice about, among others, learning processes, feedback, motivation, transfer of knowledge, learning skills, differences between children, asking questions, tools, design of the lesson situation, variety in lessons, the importance of games, pupils’ own contribution, empathy, emotional aspects, game analyses and language use of the teacher.

If you arrange the remarks in catchwords on a list, you will have a practical checklist for the organization and evaluation of your lessons.

The design of the lessons gives teachers with limited experience something to go on. The authors, IM Cor van Wijgerden and Rob Brunia, emphasize the importance of developing motivation and making yourself familiar with the subject matter by means of exercises and games.

This originally Dutch method is available in book form as well as on CD-ROM in various languages. The method is suitable for group instruction, but also for self-study. Information: www.stappenmethode.nl.

The Chess Tutor method is a renewed version of the Steps Method, with more exercises, games and play-out positions (with the help of an engine). See http://nl.chesstutor.eu.

A great frustration for IM Cor van Wijgerden is that his Steps Method is often used too rigidly as a ‘diagrams method’. Even though the thematically arranged diagrams are the knowledge core of the Method, its application encompasses a much broader philosophy and didactic approach.

The Steps Method was developed by IM Cor van Wijgerden (1950) and the now deceased pedagogue Rob Brunia. Van Wijgerden was appointed as the national chess coach by the Dutch

federation KNSB in 1981. From that moment on, he has been developing study material for talented young players. Among his pupils were several talented players who later became strong grandmasters, like Jeroen Piket and Loek van Wely.

In the Netherlands, many clubs have separate youth sections. Also, there are many school chess clubs. Often these youth clubs are supervised by volunteers, who have little chess knowledge and little didactic experience.

When local chess clubs started asking him for study material, Van Wijgerden decided, in 1987, to start a cooperation with the pedagogue Rob Brunia, who had a lot of experience with training young chess players. In 1990, the first five Steps and their manuals were ready. The method is based on a clear structure, and inexperienced instructors can learn to teach it from a manual.

Soon, the Dutch chess federation KNSB opted for this method as its official teaching method.

The method is aimed at players ranging from beginners to 1800 Elo. Each Step covers one year in lessons. When it turned out that there were level gaps between the original five Steps, ‘extra’ and ‘plus’ Steps books were made. Later, Step 6 also appeared.

In each Step, attention is given to tactics and strategy, opening, middlegame and endgame. Step 1 presents the rules and basic skills, Step 2 contains combinations up to a depth of three ply (half-moves) as well as a few opening rules, Step 3 offers combinations, elementary positional rules and elementary endgames. Step 4 presents combinations with a preparatory move, attacks on the king and endgame strategy. Step 5 treats combinations, positional play and the endgame. Step 6 is about tactics, opening strategy, the middlegame and the endgame.

Pupils first get to see examples with explanations, and after that they do exercises on a certain subject. This way, they receive training in pattern recognition and searching strategy, and as a result they will develop tactical skills.

Practice shows that there is often a gap between knowledge (knowing what) and skill (knowing how).

Therefore, Van Wijgerden advises to not present new subjects too quickly. He thinks it is much better to analyse their own games with children and give them feedback about previously treated subjects.

Via mistakes in games and revision exercises, teachers can find out which subjects need to be repeated in lessons.

It is best if exercises are made in different ways – not only by solving diagram positions, but also by letting children play out positions against each other. While they are doing this, children play small games, and they develop a better awareness of their opponents’ options.

Van Wijgerden cautions against giving too much information. He says that generally, as a maximum, 25 percent of a lesson should be new information. The rest of the time should be spent on playing and analysing. Variety is important, to motivate children and to enable them to get a better grip on the game. The teacher can, for example, also play out a position against the children via a simul. This can give him an idea of the kind of mistakes the children make, and he can decide to explain certain themes once again.

Often it turns out that there is a big gap between knowledge (Step 5 level) and mistakes (Step

2 level). The reason for this is clear: because a lot of knowledge is transferred without analysing children's games, knowledge has not been converted into skills.

Good chess instruction, Van Wijgerden says, is based on empathy (enjoying the game together with the pupils) and good communication. A teacher has to have patience (not getting tired of explaining). He has to take the level and the viewpoint of the pupil as a starting-point for discussing the positions. Monologues are altogether wrong – what matters is that you have an exchange of thoughts.

A positive approach is also important: lay the emphasis on successes, let the children enjoy the fact that they are making progress.

The core of the Steps Method is tactics. Van Wijgerden believes in a thematic approach. He speaks out against the use of making random tactical exercises on diverging themes via servers or books.

He claims that solving tactical exercises on specific themes helps with the development of search strategy skills. The route to follow here is orientation (what is characteristic for a position?), finding candidate moves, checking those, and evaluating the outcome. Thus, the search strategy will lead to a solving strategy: how can you find the most effective move?

Van Wijgerden claims that by using this method, chess players will start thinking systematically, and will automatize skills. The alternative is 'trial and error'.

Van Wijgerden opines that telling beautiful stories can be a great input in chess lessons. He admits that he himself is not very talented in this field, but he encourages every chess teacher to tell beautiful chess stories.

IM Thomas Willemze has been a talent coach for the Dutch chess federation KNSB for several years. He recommends the Steps Method. As a six-year-old boy, in 1988 in Leiden, he was a member of one of the local training groups of Rob Brunia, the co-author of the Steps Method. Other members were, among others, the future GM Jan Smeets, IM Alexander van Beek and FM Frank Erwich.

Willemze grew up with the method, which certainly contributed to the fact that he developed into a tactical player. 'But I was probably so inclined by nature, and our trainer Brunia was also a tactical player. Apart from any method, your trainer's style is also of influence.'

Willemze thinks it is a good thing that the Steps Method later evolved into the Tutor method, with which you can play out positions and games with the help of an engine.

Pattern recognition is the basis of chess, and according to Willemze this is strongly stimulated by the Steps Method.

Willemze speaks out against the misapprehension that the Steps Method would be boring. The diagrams provide a knowledge base. The manuals provide trainers with a lot of advice as to how they can present this knowledge in their lessons, and how they can promote their pupils' skills. This can be done by making exercises, playing games, analysing games, varying, and having fun. Analysing own games is the essence of the lessons, it is the best way to integrate your knowledge.

Of course, it is necessary for teachers and trainers to read and use the information in the

manuals, Willemze claims. Solving diagrams should only be part of the lessons; it provides a fundament.

A great advantage of the structured method, Willemze says, is that less experienced trainers and teachers are given a good basis with guidelines for teaching. ‘But you have to prepare your lessons well, and in a creative style, in correspondence with the level of the class you are teaching. The method is not boring, but the teacher may be.’

Willemze himself has also taught beginners at schools with the Method: ‘Avoid too large groups, and refuse unmotivated children. Don’t allow the level to diverge too much. My method is 30 minutes playing and 30 minutes teaching per hour. The lessons consist of explanation and exercises, the analysis of own games, and a variety of activities.’

Stopwatch

A stopwatch is a useful tool for chess trainings. Children perform best if they concentrate well. You can improve their concentration if you add a competitive element to exercises. When children are solving tactics exercises, you can, for instance, give them 30 seconds to first try and solve an exercise by themselves. After that, you discuss the answers. You give points for correct answers to exercises.

It’s the same with game discussions in quiz form: you give short explanations for part of the moves, and then first let the children discover thematic moves on their own. Here, you can vary the time span you allot to the children and the number of points for correct answers, depending on the degree of complexity of the questions. It is always good to include a few easy questions in the quiz so that children will have success experiences in any case.

Strategy

Strategy is when you make a plan with a long-term goal. Tactics are small plans with direct goals.

Very generally, the strategy in a chess game is: develop your pieces in the opening, collect advantages in the middlegame, convert the advantage in the endgame and give mate.

A strategic goal is, for example, the creation of a passed pawn, or the placement of a knight on a strong square on the sixth rank (an outpost).

Sixteen important strategic goals are given in the ‘Elements of Steinitz’. These are mentioned in the Analysis Questionnaire on the website Chesstalent.com (see button free items).

With the help of model games, a teacher can discuss a strategic plan in a game. A model game is a game in which a certain theme plays a clear role.

A plan consists of a number of aspects: a goal, tools (material), method, time, circumstances (chances and obstacles). This is how it is in normal life, and it’s not any different in chess.

During the discussion of a model game, the teacher explicitly names the aspects. The pupils also name aspects when they see them.

Next to the demonstration board, a teacher may hang up a poster with the ‘Elements of Steinitz’. He can also give the pupils a copy (abridged if necessary) of the Analysis

Questionnaire, or only the Steinitz list, or a list of tactical tools.

During the discussion of games with a strategic plan, the teacher puts emphasis on elements of the plan. For instance, he does not plumb deep into all kinds of opening finesses.

There are countless game collections and instruction books that contain good model games. IM Herman Grooten has written the book *Chess Strategy for Club Players*. Various books by Max Euwe, for instance, are also useful. Naturally, a teacher can also make instruction material himself.

Obviously, it is important that the teacher adjusts the degree of complexity of the games, and the way he discusses them, to the level of the pupils.

Stress management

Some youth players suffer from fear of failure. They are tense, and because of this they cannot properly process information. As a result, they make mistakes during a game.

The teacher can explain that it is possible to get rid of your stress. You can tell yourself that the most important thing is to play a good game, one that you can learn from and derive pleasure from. Your chess will then improve, and then it will become increasingly easier to win. You can also tell yourself to think systematically: first think what your opponent can do, then think of a few good candidate moves for yourself, and choose the best from among them. If one of your pieces is under attack, don't panic, but instead apply the CIEPC rule. If it's your move, then use the DCCAP rule.

Of course, you won't succeed in all this right away. You will learn by doing. By working on a different mindset, youth players will operate in a more task-oriented way as they go along.

Structure and culture

Stimulating chess at school has two aspects: structure and culture. Structure means that you organize lessons and activities carefully. Culture means that everyone is working on it with enthusiasm. You won't easily succeed in achieving both aspects. You have to think about them. And as a teacher and organizer you will have to put your shoulder to the wheel. It is important to listen carefully to all the people involved, inform all of them well, and involve them in the activities.

Studying commented games

Commented games are games in which moves are explained with text and variations (= alternative moves). The study of such games is very instructive.

Comments on games can be either very extensive or brief, only describing a few points of attention.

Verbal explanations offer more opportunities to get a good understanding of what is going on in a position. Furthermore, it makes it easier to derive general rules (of thumb) and insights from a game.

You can find commented games in books, on websites and in magazines.

For advanced, motivated pupils, the book *Judgment and Planning in Chess* by Max Euwe is

interesting. You don’t have to read all the chapters. You might start with the chapter on the attack on the king.

Success experiences

Fun, learning and performing can go hand in hand if pupils gather success experiences. This means that they succeed in something, which gives them the feeling that they are capable of doing something. Pupils will be able to gather success experiences if they do things they can handle. When asking questions, the teacher can pose more difficult questions to the strongest pupils, and pose easier questions to the weaker ones. This way, everybody will be able to score. It is important to explain to children that they don’t have to compare their own achievements with those of others. The question ‘Am I better than yesterday?’ is much more significant.

Summarizing

The teacher can conclude a lesson with the question: ‘What have we learned?’. This doesn’t have to be exhaustive, but it is instructive to verbalize a few things one more time. The essence of the lesson comes into the limelight again. Pupils think actively, and thus fix the subject matter better in their memory. The teacher can make a few notes and make, for example, a monthly A4 sheet with the most important positions, rules of thumb and discussed experiences.

Super Mario Chess

Normally, chess games are played with Staunton pieces. However, young children also enjoy playing with, for instance, Super Mario Chess pieces or Lego chess pieces. And there are many more special chess pieces. By Googling you can find plenty of nice videos. Also pieces in many different colours can be obtained from chess dealers. Uniform chess sets are useful for chess tournaments. But why should you always be playing with white and black pieces? If you like pink, then don’t let anybody tell you you can’t play with that colour. And then your granddad can play with the blue pieces.

Surprising moves

A surprising move is a move your opponent (or you yourself) doesn’t expect. It is a fierce weapon in the chess battle. Chess thinking is largely based on pattern recognition. If you don’t recognize a certain pattern, then chances are that, for example, you will fall for an opening trap. Sacrifices are often surprising because players don’t take exchanges into account where it looks as if the opponent gives away material.

A teacher can ask pupils to hand in their game scores from a competition round and mark the most surprising move. He can make a quiz with these surprising moves and present it in the next lesson. Of course, pupils can also make such a quiz themselves.

The Israeli psychologist FM Amatzia Avni has written the book *Surprise in Chess*. In it, he gives an exposition of many different kinds of surprises in chess games. He also gives a number of psychological explanations as to why people let themselves be surprised. The sample games in the book are mostly of master level. Nevertheless, a teacher can derive a few interesting positions

from it for his pupils.

Tactics

If you want to become a tactically strong player, you have to train (virtually) every day. Tactics exercises should be part of your daily routine.

Tactics are combinations of moves with which you achieve an advantage, like for instance winning a piece, winning a pawn, gaining the initiative, gaining space, and the like. Examples of tactics are: a double attack, a discovered attack, attacking a pinned piece, and a sacrifice.

Strategy is a plan aimed at a long-term improvement of your position.

Strategy and tactics are closely connected: by a tactic, you can improve a position, and a good position offers tactical opportunities.

If you build up a healthy position, you will automatically get tactical chances.

If you don't look, you won't see anything. So, you should always look at a position through tactical as well as positional glasses. Name the characteristics of a position, and look where it is possible to give check, to capture, or to attack something.

Many games are decided by tactical mistakes. It makes much more sense for youth players to train tactics than to learn opening finesses which they don't know how to handle anyway, because the level of their insight and knowledge is still insufficient.

The best way to arm yourself against tactical chances for your opponent is to think what he might be able to do in the coming moves.

Chess thinking is largely based on pattern recognition. Therefore it is useful to make tactical exercises on a daily basis. Besides this, it is useful to make a database with tactical mistakes and discoveries in your own games.

On the one hand, tactics is about recognizing patterns and the characteristics connected with them (possibilities and limitations). On the other hand, it is about searching systematically for opportunities.

By verbalizing what is going on in a tactical position, you can train goal-oriented search strategies.

Knowledge and ability: you may understand tactical motifs, but if you don't train them regularly then you will recognize tactical motifs much less frequently during games. You have to keep training tactics, otherwise your tactical skill will decrease quickly. That is how our memory works. Compare it to a language you haven't spoken for a long time, or muscles you haven't used for a long time.

By playing gambits, like for instance the King's Gambit, you will soon find yourself in positions in which a lot of tactical motifs play a role. With black, the Budapest Gambit (1.d4 ♘f6 2.c4 e5) is an opening which can quickly lead to tactical play.

Each opening has its own tactical traps. It is useful to study these if you start playing a certain opening.

Alternate repetition (familiar theme but new material) with new, more difficult positions. You can make selections from books, software, magazines, videos, websites, databases, etcetera. It

helps if you select positions you like. The best way to learn is by having fun doing it.

It makes sense to alternate various tactical subjects. On the one hand, you want to familiarize yourself with a tactical subject systematically, and train it. On the other hand, in an actual game it is not always clear either which tactical issues are playing a role.

Take a maximum time span (five minutes, for instance) to solve a position. After that, if you don't succeed, just study the correct solution. You can learn a lot by investigating, even if you don't find the correct solution. You have already made one step if you understand the correct solution, even if you haven't found it yourself.

It's better to train tactics for 10 minutes with good concentration than for 20 minutes without concentration.

Always repeat the exercises you have made at the end of a training session. Thus, you will fix the treated motifs better in your memory.

If solving tactical exercises is presented as a contest, this will promote concentration. The teacher can present a tactical problem on a digi-board or a demo-board, and give the pupils a fixed amount of time to solve them. Pupils can write down their answers on a small answer form and earn points with them.

Analyse your games first with your opponent and, after that, also by yourself. Then enter them into a database. With a Stockfish or Houdini engine, you can check whether you have made any tactical mistakes. Make diagrams of these mistakes in PGN or jpeg (button 'save position' in Fritz) and save them in a database. You can work through this database regularly.

In all phases of the game there are tactical opportunities. Endgame positions with a maximum of six pieces you can enter in the free online Nalimov endgame database. There you can see at a glance whether a position is won, drawn or lost.

The Steps Method is an excellent way to learn and train tactics. This certainly applies also to the advanced form, the Chess Tutor method. The advantage of this method is that a subject is explained well, and that there are a considerable number of exercises for each subject.

On the Internet, you can find many videos with tactical positions.

If your game is positionally lost, your opponent may become over-confident. With tactical combinations you can often create chances. A game is never over until the final move has been made.

The teacher can do tactical exercises with children. He can also show them a number of websites, like Chesstempo.com, and tell them to make exercises by themselves (or in duos). In the meantime, he can walk around, answer questions, and give tips. An advantage of this method is that it gives the teacher time to have individual contacts with pupils.

In order to motivate pupils, you can ask them why they should actually train tactics. Maybe they will tell you that this enables them to spot opportunities for the opponent, or recognize opportunities for themselves, and are thereby able to be more creative in their play. If they tell you this, then they have understood the need.

Talk game

During a talk game, players tell each other the reasons for the moves they make. This is a good

way to help beginners improve their chess. There are different varieties. For example, players can also tell why they think their opponent is playing a certain move. In a class, two children can play a game against each other on the demonstration board. The teacher names a different child each time, who tells the class why he or she thinks that this specific move has been played. Then the class can react to this. By naming the reason(s) for a move, you learn to put your thoughts into words. This will improve your insight.

Children can play against a computer together, consulting with each other before they play a move. Another form is walkie-talkie chess. With this game, children sit in different classrooms and play games against each other. The children in the groups consult with each other on the best move, and with the walkie-talkie they pass on the chosen moves to the other group.

Talks

Talks are a good method to bring variety into a lesson and to put up all kinds of subjects for discussion. Pupils will be actively involved in the lesson, and will be co-responsible for its course. Pupils can give a talk on their own, but also as a duo or a trio.

A talk doesn't have to be long – two minutes is already fine. It shouldn't be longer than seven minutes or so, because after that the attention of the audience will slacken. Moreover, it's important to be able to present a subject concisely, enabling other pupils to do their own thing with it.

If possible, accompany a talk with a visual presentation, for example with PowerPoint on a digital blackboard.

It is useful if a teacher gives an explanation about the design of a talk beforehand: 1. Choose a subject; 2. Search for information; 3. Present illustrations or a video; 4. Tell something while you show this; 5. Write down catchwords (not huge amounts of text); 6. Involve the audience by asking questions.

Themes can be very divergent. Young children of around seven will, for example, tell about 'mate' and show three positions. Older children will, for example, talk about the website Chessimo and discuss a few of the 101 positional tips given there. During and after the talk, the teacher can give additional information.

There are plenty of subjects. Children can find ideas by, for instance, looking at links on chess websites, or entering the word 'chess' in Google. The teacher can suggest subjects he wants to treat in the lesson.

With a simple camera put on a tripod, the teacher can record talks on video. He can put them on a CD-ROM or a DVD and can hand these out to the children. It is also possible to put a talk on YouTube, with a link on a chess website. It is, however, necessary to first consult the children who are involved, as well as their regular teacher and their parents about this.

Tangible

It is useful to pass on information to children in a tangible form. Then they will literally have something in their hands. That's nice, and they will devote more attention to it.

You can, for instance, discuss a few games with children and derive rules of thumb from them. You can write those down, and make an A4- format poster of the list, combined with positions and text.

The winner of a competition is presented with the ranking list, under applause. Other children can also get a copy afterwards.

If there is a youth tournament somewhere, you can point your pupils to its website. It is useful to give interested children a folder.

Children like to get a CD-ROM or DVD with a video of the talk they have given.

Teaching sequence

In general, subject matter is best presented by going from easy (elementary) to difficult (complex). But chess is also a wondrous adventure. Children can nose around on websites, in books, etcetera. As a guideline, you can tell them to check out what is interesting and fun, and skip the rest.

The sequence of the components in a lesson is important. It is best for the teacher to start by transferring knowledge (for example, giving information about a tactical motif, or analysing a game) and after that let the pupils train and play games. This is a kind of ‘first activity, then relaxation’ sequence.

Technique

Technique is standard procedures for certain positions. A simple example is mating with king and queen versus lone king.

Telling stories about games

Pupils can tell a story about their game, mentioning a few things that they find special. By telling a story you process information actively. You abstract your experiences by generalizing them. Stories are easier to remember than facts. The same applies to social-emotional issues. Let a child tell about its experiences, ask questions and draw conclusions. You can google ‘narrative psychology’.

Testing

When you teach, it is convenient if the levels of the participants do not diverge too much. If this is the case, however, you can teach ‘in layers’, i.e. at various levels at the same time. For example, you discuss a game, explaining to one child that a bishop moves diagonally, while you ask others whether they can attack two pieces with one piece in one move.

It is better to create a reasonably homogeneous lesson group as regards chess level. To achieve that, you can test the pupils on their knowledge and skills. A chess teacher can make his own chess test by selecting, for example, several diagrams from every Step in the Steps Method.

There can be a few pitfalls when you draw conclusions from a test. When making a test, a child can, for instance, be tired, or suffer from fear of failure. Maybe one of the children has had many chess lessons already, but he or she doesn’t have a lot of talent. Another child has just

made its entrance into the world of chess, and you can see in their shining eyes that they find it wonderful. There can be ‘false positives’ (incorrectly tested as sufficient) and ‘false negatives’ (incorrectly tested as insufficient).

It is better to test children in various ways and at various moments. Besides testing the children, the teacher can, for instance, also let them play games and observe those. You can simply have a conversation with a child and ask what he or she already knows. This also enables you to get an impression of their motivation. Motivation is an important indicator for the developing potential of a child.

At schools that have chess as a compulsory subject, teachers have to give report assessments. Such assessments can be given on the basis of various measurements. You can give the pupils tactics exercises, or organize a game discussion in quiz form and keep score lists. The ranking list of a competition gives an indication of a pupil’s playing strength. But keep asking yourself how ‘clean’ your assessment is. One child may suffer from fear of failure, while another may be a perfectionist. Some children need a little more time to plumb the depths of a problem. Moreover, a test only gives a random indication. Sometimes children need an incubation period, in which they are busy making themselves familiar with new insights. At the end of such a period, a child may suddenly make a jump in development.

If you see chess instruction as an education tool for personality development, then you will also have to do with social, emotional, cognitive and meta-cognitive aspects. If you want to measure all of these, you will stumble on practical and methodological limitations. The good news is that, being a teacher, you’re not a fool. If you are empathic, you observe children carefully, and talk with them, you will also get a pretty good impression of their development.

Professor Han van der Maas has developed the Amsterdam Chess Test.

Thematic moves

Chess has a number of thematic moves, for instance: a swindle, a quiet move, a waiting move, a minor promotion, and various kinds of sacrifices. A teacher can collect examples of these and present them as positions in quiz form.

Theme lesson on the Max Euwe Centre

The teacher can make a theme lesson together with his pupils, for example about the only World Champion from the Netherlands, Max Euwe. Together with Albert Loon, Euwe wrote the booklet *Oom Jan leert zijn neefje schaken* (= *Uncle Jan Teaches His Nephew To Play Chess*). But he also wrote several other chess instruction books. Pupils can go out on a search for his books in the library, or Google his name. Then, all the pupils can tell about the information they have found about Euwe. This might be in the form of a story, or a photo, or a game position.

The Max Euwe Centre is a museum. The centre has its own website: www.maxeuwe.nl.

Thinking tools

Calculating what all your pieces can do (and then what your opponent can do, and then what you can do again) is not the cleverest way to play chess. It is better to think systematically. First look

at the characteristics of the position: what can your opponent do, what can you do?

Novice chess players can give direction to their thinking by first going through the small list Danger, Check, Capture, Attack, Plan (DCCAP). If one of your own pieces, pawns or squares is under attack, then there is the mnemonic Capture, Interpose, Evade, Protect, Counterattack (CIEPC). If the king is under attack, then only CIE applies.

The more patterns you recognize (with their characteristics), the better. Patterns help you recognize rules of thumb you can apply.

With these thinking tools you can get an idea of the possibilities and the limitations in a position. While you are thinking, a few candidate moves will force themselves upon you. Then you start calculating these (if this, then that).

By analysing games and discussing positions (in words and variations), pupils will have an ever-increasing amount of tools at their disposal.

By playing frequently and discussing the games played, pupils will learn to integrate their thinking tools better and better. Chess is not an easy game; everything is connected to everything.

Three Golden Rules of the Opening

These rules are: 1) Pawn in the centre; 2) Develop pieces (knights, bishops); 3) King safety (castling). It is useful for children to apply these principles in their games. It will teach them to build up their game in a good way. Other opening systems are something to worry about later. Many children do not apply these principles in their games. They bring out their queen, hoping to be able to deliver a Scholar's Mate, or make a lot of pawn moves for lack of a plan. The teacher always has to point at these opening principles during game discussions. He can also walk around while competition games are being played, and order all the games in which pupils sin against the principles to be started anew. He can do the same with games played on a wrongly-placed board.

Time-out

A time-out can be very useful for chess players. If you can't think of anything in a position for the moment, you should take a time-out. For instance, you can stand up and get something to drink in order to calm down. If one of the children is disturbing the lesson, you can also give it a time-out. That is not a punishment. No – you are putting yourself in his shoes and telling him you're giving him an opportunity to come to his senses in the corridor.

Time use and time control

Many children play chess very fast. During tournaments, for instance, they have already finished after five minutes of play, while the players get 20 minutes each on the clock. It is no use telling them they have to take more time to think. They will forget all good pieces of advice in the heat of the battle. Moreover, they don't have too much to think about: either they see good moves, or they don't.

Children will, however, take more time to think if they have something to think about. They

can, for instance, apply the CIEPC rule if they know it. Also, they will take more time if they have learned that it makes sense to first think what the opponent can do. And it is also useful to first choose various candidate moves for yourself, and calculate them to the end.

For strong school chess players, a 20-minute time control is probably too short. A good advice is to write down your moves as much as possible. You can analyse your notated games afterwards, and you will learn a lot from that. When they don't get a lot of time to think, strong school chess players sometimes don't want to keep score of their games. It is useful to explain to them that it is nevertheless convenient to have game scores at your disposal during lessons. You can, for instance, agree that they write down their moves in the first ten minutes. They can write down the move after they have made it, while it is the opponent's turn. Moreover, notating moves is a skill that takes less time the more you have trained it.

The best solution for such strong school chess players is, of course, to play as many tournaments as possible with longer time controls.

Too difficult

If pupils find a chess book or other information too difficult, then the teacher can give them a good piece of advice: skip that information. Chess should be fun. It won't be fun if it is too easy or too difficult. You are not obliged to read a book entirely from the first to the past page. You can leaf through it, and only look at subjects you find interesting.

Certain components of a lesson may be too difficult for pupils. Then the teacher should avoid those subjects, or he should make them easier to understand by explaining some things, or by enabling the pupils to discover the solution by asking them questions.

Tournament analyses

There are children who notate (part of) their games during a school chess championship. The organization can invite a strong player to discuss games with children in between rounds. This strong player may be a member of the same club, but he can also be a teenager who took part in the tournament when he was younger. Such game analyses are enjoyable for the players involved, but also for many other children. By watching, they will learn in a playful way. Of course, the person who makes the analyses can involve the audience by asking questions.
The organization can also let one or more games be played on a digital blackboard. The moves played can be showed in another room, via a computer and a digital blackboard, or via a PC and a demonstration board. A commentator can discuss the games live in front of an audience.

Tournament calendar

In a certain region, there are often various youth tournaments throughout the year. Youth players are not always aware of this. The chess teacher can gather information, and, on a website or an A4 sheet, he can compile a youth chess calendar with relevant information. The teacher can give a print of the calendar to the children. It is useful to also email this information to parents, or give it to them personally, as children tend to forget to give folders to their parents.

Tournaments

Many chess clubs organize a chess tournament once a year, or more often. There are youth tournaments and tournaments for adults. Stronger youth players can also participate in tournaments for adults.

There are tournaments with different time controls. In blitz tournaments, players get five minutes per player per game. In rapid tournaments, the time control is mostly 20 or 25 minutes. It also occurs that players get 18 minutes plus five seconds after every move. There are weekend tournaments with six games played in one weekend, in which the players get two hours each per game. There are also nine-day tournaments, in which the players get two hours for the first 40 moves, and then an hour for the rest of the game.

Besides club tournaments, there are also regional and national championships. For school chess players, there are also local, regional and national championships.

You can enrol individually for club tournaments – even if you are not a member of an official chess club.

Training the movements of the pieces with Fritz

There are many different ways to train the movements of the pieces. Obviously, it is perfectly possible to do this with the help of the Steps Method. The Fritz chess program also offers this possibility. When you press the space bar, the program makes a move. Young children can imitate this move on a board with pieces. This way, they see what the pieces can do, and can imitate it. You can even play a real game this way! Naturally, it will be good if the teacher watches and, wherever necessary, explains or corrects something.

Sometimes young children, who have just learned to read, also find it exciting to play through a notated game on a board together with a teacher. The teacher mentions the moves, and the children look at the coordinates on the board and carry out the moves.

Tricks

Tricks are ways to mislead your opponent. There are good tricks and bad tricks. A bad trick is a trick which makes your own position worse if your opponent doesn't fall for it. A good trick is a trick your opponent may or may not fall for, but which doesn't make your position worse.

Unbalanced material

If children's levels differ strongly, then the strongest player can play with a handicap, by playing with unbalanced material. For example, the strongest player has a queen or a rook less. In chess terms we then say that this player is 'giving odds'. Another idea is to play with different amounts of time on the clock, for example three minutes versus ten.

Unlearning

Sometimes, learning also involves unlearning – for example, if you play too fast. The most practical way to unlearn something is by replacing it: by learning something else in its place. You cannot play too slow and too fast at the same time. If you play too fast, you can teach

yourself, for example, to first answer five questions in your head before you play a move. With this, you build up a different routine. If it's your turn to move, you can, for example, ask yourself DCCAP: Danger, Check, Capture, Attack, Plan. You can replace fear of failure by opting for a constructive attitude: 'I am playing to investigate all the things I can think of.'

Values of the pieces

It is useful to show a table of values of the pieces to beginners, for example with a small poster. A pawn is 1 point; a knight, 3; a bishop, 3; a rook, 5; a queen, 9; and the king, infinite (question to children: why, actually?). Later it will become clear that the value of pieces depends on the position. It can be a good exercise to look for positions in which a piece is worth much more, or maybe much less, than normally.

Variety

Variety keeps lessons lively. You can treat one and the same subject in different ways. It is useful to analyse games. This can, for instance, be done by discussing the children's own games, by playing together against a computer program, or with Banterblitz. With Banterblitz, a teacher tells what he is thinking during a blitz game, and he can also ask questions to the onlookers.

Verbalization

Verbalization means: putting things into words. By putting into words what you think, you force yourself to look better at a position. Language carries thinking. The teacher can explain characteristics of positions in words. Strong players are more inclined to think in position images and variations. They have already automatized a lot of knowledge and skills, they are 'Unconsciously Able'. Beginners are 'Consciously Unable', it will help them if the teacher explains all sorts of ideas in words.

View

Take care that pupils have a good view of the demonstration board and of the teacher during a lesson. If you discuss a game on a normal board in a small group, then take care that pupils look at the position from the side of either the white or the black player. If they look at the board from the side, they cannot observe well.

Visualization

Visualization is foreseeing in your mind what can happen in a game. This means that you calculate a few candidate moves to the end, and assess the positions that emerge.

Visualization is a skill which you can develop by training.

You can train your visualization if you keep trying to think ahead as far as possible when you are playing a game or assessing a position.

It is useful to train visualization when you are young. What the exact most suitable age is, is hard to tell; it differs per person. The best way is to start with simple positions.

Visualization works best if you concentrate well. Then you train working with a serious

attitude at the same time.

There are various visualization exercises the trainer can present as a little competitive game. During a training, from a position on the board, the trainer slowly mentions a number of half-moves. The amount of these depends on the level of the group. Next, the training participants have to make a half-move on the board by turns. Every good half-move is worth a point. If you make a mistake, you're out. In another exercise, the trainer names a number of squares on which pieces and pawns are placed in an endgame. This exercise can be done 'blindfolded', i.e. without a board or with an empty board. Next, the trainer asks on which square a certain piece should be placed. Of course, the degree of complexity can be varied by choosing either more or less pieces and pawns, or either more or less complex positions. Chess players can also train their visualization by reading a game score and playing through the game in their minds, or playing it on the board. With advanced players, the trainer can mention a series of moves from the starting position and then ask them to assess the position. This will be more complicated if more than one variation is possible. A trainer can remove all the pieces from the board, and then the pupils have to put the pieces back on the right squares. The extent to which they succeed in this provides an answer to the question how well the pupils understand the position – unless they have a photographic memory.

Research has shown that chess masters only need to look for five seconds at a position with a logical build-up to be able to reproduce it. Bad chess players cannot do this. If the pieces are standing on the chessboard in a completely random way, then both groups will be unable to reconstruct the position. The explanation for this phenomenon is that strong chess players recognize certain patterns in a position. They don't remember separate pieces or pawns, but clusters (chunks) of information. For example, they don't see five loose pieces of wood, but a kingside-castled set-up. Since, moreover, they are able to ascertain the logic (as well as striking deviations) in a position, they only have to remember a few characteristics.

One idea is to try to play a game of blindfold chess with friends every now and then. The more you train, the better you will become at it. You will learn it especially well if you start at a young age. A variant is when one player plays blindfolded and the other on a board. In a training group you can make a contest of it, and look who can make the most correct moves blindfolded.

Waiting time

A teacher regularly asks questions to the class – sometimes to individual pupils, sometimes to the class in its entirety. By doing this, he checks whether the subject matter is understood, and stimulates active knowledge processing.

A pupil needs time to give an answer to a question. If the teacher expects an answer too soon, the quality of the answers will become less, and pupils will be less inclined to give answers.

Watching videos

Watching videos is a nice way to learn chess. On the Internet, you can find English-language movies like *Chess Fever*, *Knights of the South Bronx* and *Searching for Bobby Fischer.* Watching videos can be an attractive way to study. There are many Internet sites with videos in

which games, tactics, strategic positions, openings, opening traps, endgame positions, problem chess and endgame studies are discussed on a board on many different levels. The onlooker can activate himself by stopping the video now and then and considering what his next move would be. You can also do that with a partner and award yourself points for good moves.

Weapons

Chess is a war game. It is about attack and defence. Which weapons do you have at your disposal for this battle? Make a list with tactical motifs and rules of thumb, and search for positions to go with them. You can also do it the other way round: collect positions where 'something' is going on, and formulate in words what is going on.

Website 'Jeugdschaakpagina' by Jeroen Vuurboom

The Dutch chess teacher Jeroen Vuurboom presents explanations about chess on his free-of-charge website 'Jeugdschaakpagina' (= Youth chess page'). The lessons are built up in a systematic way. You can play through many positions in a game viewer, where moves are alternated with verbal comments. A teacher can discuss the subjects in a lesson, and pupils can then go through the information one more time by themselves.

The website can also be used by non-Dutch-language chess players. The exercises are self-evident.

Which position doesn't belong?

As a quiz, a teacher can give a number of sheets to his pupils with four chess positions on them. Three of these positions contain a certain tactical motif, and one position contains a deviating motif. For instance, in three positions there is a pin, and in one there is a discovery attack. The sheets are assessed by the pupils, and, after some time, discussed. This can be done either individually or in small groups.

Why?

It is useful to ask yourself this question again and again before you make a move. It is also useful to ask this question if you apply something you've learned in a lesson, or a method.

Why do you play chess?

If a teacher asks his pupils why they play chess, they may reply that they think it is 'nice'. Continuing to ask questions may yield the reply that children, for instance, find it nice to do something they are good at – or that they think it is nice to solve problems or make plans. Pupils may also find it nice to do something together with friends, or to make friends by playing chess. If a teacher wants to stimulate his pupils, then it is useful for him to take their motives into account. It also makes sense to ask pupils how they think the chess lessons can be made even more enjoyable and instructive.

For many people, chess is a nice game. Besides this, it is good for your personal development: cognitive (e.g. reasoning), emotional (e.g. coping with defeat), social (e.g. cooperating) and

meta-cognitive (thinking about your thinking). A teacher can tell this to his pupils and, together with them, think of a number of benefits, and place those in one of the above-mentioned categories.

Why is a chess move beautiful?

In chess problems, usually the problem solver has to find the best move in a position. Another variant is to give a beautiful move and ask why this move is actually beautiful – or, at least, effective. In connection to this, the teacher may start a discussion about what makes a chess move beautiful. And if he can name notions like ‘unexpected’ or ‘attacking by withdrawing a piece’, perhaps he can also devote a word or two to human thinking processes – depending on the level of the pupils, of course. Many primary school children think very concretely. You have to be able to explain the comment that people look forward, not backward, most of the time when they are attacking.

Writing poems

Multiple World Champion Mikhail Botvinnik advised chess players to analyse and publish their games. You shouldn’t be ashamed of anything, and you should view mistakes as possible learning moments. By analysing and publishing your games, you force yourself to reflect on your own functioning. Also, you give other people the opportunity to give feedback, and you will learn from that in turn.

It is possible that Botvinnik never thought of presenting his own performances and experiences in verse, or as a rap song. Writing poems can be a great method in lessons. For example, pupils can choose whether they want to make tactical exercises as a test, hand in a game analysis, or write a poem.

Year plan

In a year plan, a teacher writes down what he is going to do in class during the year, how he is going to do it, and what he wants to accomplish. He names subjects and didactic methods, and looks for a balance that corresponds to the level of the class. You shouldn’t implement such an annual plan too rigidly. There has to be space to react to spontaneous opportunities that present themselves. Furthermore, there has to be space for the pupils’ own contributions (e.g. giving talks, and subjects that are raised during the question round).

Your opponent’s face

Think about your opponent. Is he strong? Colour his nose red in your mind. Can he make mistakes? Colour his ears blue. Why should you be afraid of your opponent? It doesn’t matter which colours you use, as long as you think about him and draw conclusions about how you deal with him. You can do this before, during and after a game.

YouTube

Watching videos is fun, and sometimes instructive too. On YouTube you can find many chess

videos: instruction videos, nice small films, documentaries. Just type ‘chess’. Of course, you can also type the name of a certain chess player or an opening. Chess teachers will find a lot of information if they enter the search terms ‘chess’ combined with ‘psychology’.

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Bibliography

Below is a list of recommended books on the subjects I have touched upon in this book, followed by a list of six chess websites hosted by the author of this book.

An extensive list of sources that have been mentioned in the text, as well as other useful websites in this context, can be found on one of my websites, www.chesstalent.com.

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CHILDREN LOVE CHESS DESPITE THE FACT THAT IT IS GOOD FOR THEM

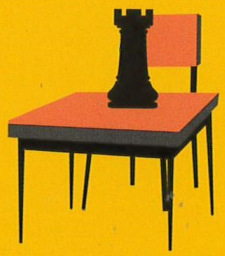
Chess has the rare quality that children love it despite the fact that it is good for them. Playing chess is just like life: you have to make plans, take decisions, be creative, deal with challenges, handle disappointments, interact with others and evaluate your actions.

Psychologist and chess teacher Karel van Delft has spent a large part of his life studying the benefits of chess in education. In this guide he provides access to the underlying scientific research and presents the didactic methods to effectively apply these findings in practice.

Van Delft has created a dependable toolkit for teachers and scholastic chess organizers. What can teachers do to improve their instruction? How (un)important is talent? How do you support a special needs group? How do you deal with parents? And with school authorities? What are the best selling points of a chess program? Boys and girls, does it make a difference? How do 'chess in schools' programs fare in different countries?

This is not a book on chess rules, with lots of moves and diagrams, but it points the way to where good technical chess improvement content can be found. Van Delft offers a wealth of practical advice on how to launch and present a chess program and how to apply the most effective didactics in order for kids to build critical life skills through learning chess.

KAREL VAN DELFT is a Dutch chess teacher and chess organizer. He holds a Master's degree in Psychology of the University of Amsterdam and has lectured and published widely on the subject of the benefits of chess in education.



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