Modern methods for training a chess player.

27 April 2006

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The formula of succeess: ELO 2200 + 2 years of training = International Master!

According to the patriarch of Soviet chess, Mikhail Botvinnik, four basic principles that form a chess player's strength are chess talent, a strong character, health and special preparation. However, in recent times some new methods for training chess players has emerged. These are identified by the extensive use of personal computers and chess software. Pitifully, exploiting software and other computer resources for the purposes of chess training is rarely explained.

Some brilliant results have been achieved in a children's chess club named after T.Petrosian in Moscow where I recently worked for six years implementing computers in training. I would like to share some examples and considerations from this training.

The special preparation of young chess players is being modified nowadays due to additional opportunities that could not be realized previously due to technological restrictions.

- First, an exceptionally powerful tool has appeared in the chess players' toolkit, the personal computer. It accomplishes many functions such as collecting, systematizing and storing various chess data (games, fragments, positions for analysis), as well as tactical analysis of selected positions of a highest quality.
- Second, the intensity of the exercises in the training and control tests that require solving has been increased.
- Third, the method of presenting training material is also broadened; its structural organization has been deepened in level of complicity and thematic orientation.

Due to my experience I have come to the conclusion that acquiring an IM norm can be a realistic task for many pupils even in their school years.

Computers are a most a creative tool and can drastically increase the intensity of the training process. However, working with a computer is not as simple a task as it might first appear. Therefor the active role and responsibility of a trainer now includes implementing the new study course, since it is the trainer who plans and organizes all the stages of the training process.

Obviously, chess software is the most important component. Happily, the club enjoys a long-standing business relationship with one of the world's best chess software manufacturers - Convekta Ltd. The training process in a club involves taking into account the individual learning requirements of each pupil. Usually only 3 - 4 players study in a class simultaneously.

Now I will dwell in detail on a training plan designed for young chess players who wish to attain an IM norm.

When starting a battle for this high title a chess player must realize that this road is long and thorny. From the very start the stages must be well defined and set, as well as the means of achieving the final and the intermediate aims. Only the correct definition of all the aims and tasks will allow successful progress over the various stages.

Training and trials, 'base line' before the initial ELO rating (2200) is achieved.

The very initial stage we call conditionally our 'base line'. The aim at this stage is to acquire a playing skill of approximately 2200 ELO. At this stage a chess player must have a successfully tested opening repertoire which includes 2 openings as White and 2 openings with the black pieces. The chess player must master tactics (60-70 per

cent of a success rate solving problems of an intermediate difficulty), acquire a firm knowledge of the basics of chess strategy, ie. How a position's evaluation is developed and what are its components, familiarize with about 15-25 common plans from the chess classic examples, know typical chess endings: evaluation, plan of play and standard tactical methods for approximately 250 endgame positions. It is necessary to acquire the skills of working with a computer and with chess software.

The training process is organized in accordance with school workload and physical condition of the pupils, each one has an individual schedule.

A series of competitions and training games is designed to facilitate better assimilation of what has been learnt.

After having achieved their "base line", the players start a 2-year training course aimed at them achieving an IM title. It is at this point that a clear record is set up regarding any relevant characteristics of each chess player. In order to improve the quality of the training process, a plan is drawn up which in our practice looks like this:

1. A trainer, together with pupil develops an individual diary for the training schedule. Here the immediate and long term aims are set
2. Using the pupil's diary, I develop a flexible schedule of individual training sessions and consultations. The unique chess software from Convekta Ltd offers an exciting range of activity for the players as well as being able to reveal each pupil's creative potential.

Since skilled chess players encounter various problems in all phases of the chess game - opening, middlegame and endgame, the program includes three parts:

- the preparative stage - acquiring the necessary skills and techniques to independently work with the database search system of Chess Assistant;
- learning and mastering certain parts of chess theory (chess tactics and combinations, vitally important methods of play in the endings using examples from creative studies, theory and practice of playing particular openings). Here studying the corresponding sections of chess theory based on the creative experience of particular players (A. Alekhine, M. Tal and others) is also included. All of this can be done by using the appropriate chess programs;
- training with playing programs aimed at mastering the acquired knowledge.

During my Higher Coaches school course I developed a training system with the aid of the chess software from Convekta Ltd. It turned out to be especially efficient for the players who failed to demonstrate their abilities and potential in a proper performance in competitions due to various reasons. This system was tested for the first time on Vladimir Yevelev (born 1983). I became acquainted with him in the beginning of 1998. He had an ELO rating of 2220 then., and I commented to him during our first meeting that he had much greater potential.

The first step was for Vladimir himself to compile a dossier on himself, this was to include a history of his chess experiences and his own comments. Next a working program was developed where the immediate, short term & long term aims and tasks were defined. The most important short-term goal was to achieve a performance level that made it possible to fulfill the FIDE requirements for the IM title in competitions. To this aim, we designed the schedule and its content and also arranged participation in various competitions, the work began.

Vladimir recollected later: "Luckily, I had only one option then - to trust this guy's experience and to use his methods. I never thought about these questions before. Partially, the training process included participation in some active chess tournaments with the time controls of 15, 10 and 5 minutes per game".

It was easy to work with Vladimir - there was less chess software about then, but what we had was simple to use and perfect in its quality.

Weekly plan of individual studies in a computer class 1998

Weekday	Hours	Theme and subject

Monday		
	2	— studying openings with Chess Assistant
	0,5	— rest
	1	— solving the tactical positions with CT-ART 4.0
	1	— studying strategic problems with Strategy 3.0
Tuesday		
	2	— solving studies from CT-ART 4.0 (section Chess Tactics in Ending)
	0,5	— rest
	1	— playing chess against Houdini 3 Aquarium
	1	— solving tactical tasks with CT-ART 4.0
Wednesday		
	1	— studying strategic problems with Strategy 3.0
	1	— solving strategic examples and tasks using Strategy 3.0
	0,5	— rest
	1	— playing chess with Houdini 3 Aquarium
	1	— solving tactical positions with CT-ART 4.0
Thirsday		
	2	— studying openings with Chess Assistant
	0,5	— rest
	1	— solving studies from CT-ART 4.0 (section Chess Tactics in Ending)
	1	— solving the tactical positions with CT-ART 4.0
Total	16	

It is best when planning individual sessions to take into account the individual style of the player, his/her tournament performance and perspective tasks. We put the chess software to use by doing the following with it:

- solving combinations;
- solving studies (endgame-like positions with tactical content);
- solving strategic tests;
- studying typical middlegame positions;
- studying typical schemes of attack against the advarsary's king;
- studying typical methods of play in opening;
- elaborating on an opening repertoire and developing plans for the transposition into the middlegame.

The complexity of the tasks are arranged by strength and increase from 10 points (novice) to 90 points (master/GM level).

When starting this work back in 1998, our basic plan of chess learning sessions on the computer (one week, 4 academic hours per day) was as per the one presented above.

Subsequent tasks were formulated for Vladimir during the various stages of the training process over the next 2.5 years:

- Short-term tasks - obtain the FIDE master title and achieve an ELO rating of 2300; One training year (01.1998 - 01.1999). The list of training sessions and tournaments scheduled is given below (table 2).
- Intermediate tasks - achieving an ELO rating of 2400; the second year of training (01.1999 - 01.2000) and obtaining the IM title.

Schedule of V. Yevelev's training (1998)

January		February		March		April		May			July		August		September		October		November		December	
1		1		1		1		1			1		1		1		1		1		1	
2		2		2		2		2			2		2	*	2		2		2		2	
3		3		3		3		3	*		3		3		3		3		3		3	
4		4		4		4		4			4		4		4		4	*	4		4	
5		5		5		5		5			5	*	5		5		5		5		5	
6		6		6		6		6			6		6		6		6		6		6	*
7		7		7		7		7			7		7		7		7		7		7	
8		8		8		8		8			8		8		8		8		8		8	
9		9		9		9		9			9		9	*	9		9		9		9	
10		10		10		10		10	*		10		10		10		10		10		10	
11		11		11		11		11			11		11		11		11	*	11		11	
12		12		12		12		12			12		12		12		12		12		12	
13		13		13		13		13			13		13		13		13		13		13	*
14		14		14		14		14			14		14		14		14		14		14	
15		15		15		15		15			15		15		15		15		15	*	15	
16		16		16		16		16			16		16	*	16		16		16		16	
17		17		17		17		17	*		17		17		17		17		17		17	
18	*	18		18		18		18			18		18		18		18	*	18		18	
19		19		19		19	*	19			19		19		19		19		19		19	
20		20		20		20		20			20		20		20		20		20		20	*
21		21		21		21		21			21		21		21		21		21		21	
22		22		22		22		22			22		22		22		22		22	*	22	
23		23	*	23		23		23			23		23		23		23		23		23	
24		24		24		24		24	*		24		24		24		24		24		24	
25		25		25		25		25			25		25		25		25	*	25		25	
26		26		26		26	*	26			26		26		26		26		26		26	
27		27		27		27		27			27		27		27		27		27		27	*
28		28		28		28		28			28		28		28		28		28		28	
29				29	*	29		29			29		29		29		29		29	*	29	
30				30		30		30			30		30		30		30		30		30	
31				31				31	*		31		31				31				31	

Legend

■ (black)	Tournament games; time control 2 hours per game and more
■ (dark gray)	Active chess tournaments, 10 minutes per game, Central chess club - Wednesday
■ (light gray)	Tournaments, 5 minutes per game, Chess Club - Friday, Saturday
*	Active chess tournaments, 15 minutes per game, Central chess club - Sunday
(white)	Working with Convekta Ltd programs together with coach and at home

Then, following his father's advice, Vladimir Yevelev finally read an exciting book by A. Nimzowitsch called 'My system'. He was astonished by the fact that the classicist's ideas are perfectly embodied in the chess programs Strategy 3.0 and Chess Middlegame Collection by Convekta Ltd. He succeeded in exploiting these ideas when he fulfilled his final IM norm.

V. Yevelev's long-term goal was to achieve all the IM norms and obtain an ELO rating of 2450 during the last half-year of training (01.2000 - 06.2000).

The dynamics of his changing ELO rating during two and half years was as following: 2220-2280-2327-2346-2352-2452.

The diagram below of V. Yevelev's rating displays (fig.1) pre-planned goals (dotted line) and achieved increase of rating (solid line).

In the period from June 1999 to January 2000, the plateau in his ELO graph is explained by a temporal abstainance from tournaments; here he concentrated his efforts mainly on analytical work and on the training process.

Similiar tasks were put to Arthur Gabrielian (born 1982, now an IM). Taking into account his age, personal characteristics and features of temperament, we may say that the speed of his growth and the intensity of his studies were somewhat raised.

During two years of training with chess software Arthur's rating shot up to 2482! Training become more interesting for the chess players who entered the club later, it also became more sophisticated as Convekta Ltd started flooding the market with new software. By now the number of chess programs to pick from grew to around 20.

Below the characteristics of learning with the programs of Convekta Ltd are given (table 4), these ones being used in the training process this present day.

Characteristics and phases of exploiting chess software in the training process 1997-2004

Programs	Skill level (ELO)	Number of positions / lessons (main & auxillary)	Opening	Middlegame	Endgame
Programs for experienced players					
Chess Assistant	1600-2700	Database of 5 680 000 games + the best playing program Houdini 3	✔	✔	✔
Chess Openings Encyclopedia 2012	1600-2300	4 800 000 games with human and computer evaluations	✔		
CT-ART 4.0	1400-2400	2200+1800 positions		✔	✔
Strategy 3.0	1600-2400	250 examples & 1100+450 exercises		✔	✔

Encyclopedia of Opening Blunders	1400-2400	1255 exercises	✔		
Encyclopedia of Middlegame I Openings and Encyclopedia of Middlegame I Structures	1600-2400	600 examples & 1000+400 exercises	✔	✔	
Encyclopedia of Middlegame II	1600-2400	500 examples & 600+140 exercises	✔	✔	
Encyclopedia of Middlegame III	1600-2400	550 lections & 500 examples & 140 exercises	✔	✔	
Encyclopedia of Middlegame IV	1600-2400	560 lections & 530 examples & 380 exercises	✔	✔	
Chess Tactics for Beginners 2.0	1400-1800	2200 exercises		✔	✔
Chess Tactics for Club and Intermediate Players	1700-2200	1550 exercises		✔	✔
Complete Chess Course	1500-2000	450 examples and 750 exercises	✔	✔	✔
Theory and Practice of Chess Endings	1700-2300	700 lections & 300 exersices & 180 examples			✔
Chess Endgame Training	1700-2300	2500 exercises			✔
Mate Studies	1600-2200	5000 problems			✔
Chess Tactics in Grunfeld Defense		100 examples and 300 exercises			
Chess Tactics in Kings Indian Defense		184 examples and 437 exercises			
Chess Tactics in Sicilian		200 examples and 700 exercises			

Defense				
Chess Tactics in Open Games		630 exercises		
From Beginner to Club Player		500 teaching examples and 700 exercises		
Chess Guide for Club Players		400 examples and more than 200 exercises of varying difficulty		
Elementary Combinations		more than 5000 exercises for beginners		
Easy Ways of Taking Pawns and Pieces		more than 5800 exercises		
Simple Defense		more than 3000 exercises		
CT-ART for Beginners		150 teaching examples and 1500 exercises classified according to more than 30 tactical methods and motifs		
Total Chess Tactics		more than 2550 tactical exercises classified by theme and difficulty		
CT-ART. Mating Combinations		1200 examples and 700 exercises		
How to Win Miniatures at Chess		more than 6500 mate exercises		
Combinations for Club players		more than 2000 exercises		
Chess Combination Encyclopedia		over 4000 training examples and exercises		
Opening Lab		more than 350 exercises		
Combinations for Club Players		more than 2000 exercises		
Total Chess Tactics		more than 2550 tactical exercises		
Attack on the King I		33,000 exercises from masters' games		
Attack on the King II		more than 2500 exercises		

Qualification requirements for the chessplayer

The 2 year training schedule's tasks are more complex than those of the 'base line' stage. It's main goal is to achieve an ELO rating of approximately 2400, which corresponds to IM level.

A young chessplayer must incorporate 3-4 openings into his/her repertoire as White and an equal number as the player of Black. They must master the tactics (90 per cent correctly solving tests of a high complexity with the theme of the tests unknown). Also to understand a wide palette of strategic devices - how the relationships of the elements of a position evaluation vary depending on the pawn configuration or on the alignment of forces on the board; know more then 100 typical plans from classical games; master elementary knowledge on chess endings: evaluation, plan of play, standard tactical methods from approximately 600 endgame positions; master methods of play in endings and the so-called 'simple' positions. He/she must acquire good skills at using the PC and with the chess DBMS (Data Base Management Systems), and with new learning and playing programs.

Let us dwell on the planning and preparation of the training schedule.

When planning the individual work loads, it is important to take into account the style, tournament performance and perspective aims of each player. Cchess software can be used for the following:

- training and perfection of the calculating abilities of the chess player;
- solving combinations;
- solving studies (endgame-like positions with tactical content);
- solving test strategic examples;
- studying typical positions of the middlegame;
- studying typical schemes of attack against the adversary king;
- studying typical methods of play in opening;
- elaborating on the opening repertoire and developing a plan for the transition into the middlegame.

The training process includes playing in tournaments for testing the practical readiness and the opening repertoire of the players. Participation in the quick and rapid play tournaments with shortened time controls - 10, 15 or 25 minutes per game were found extremely useful for this.

Ongoing control and evaluation of results during the course are necessary. The two year training period must include intermediate control stages. It is well known from practice that intense intellectual studying gives a practical result after approximately 5 - 6 months. Therefore, I suggest breaking the two year training period into 4 parts. The working results of each stage must be cross-checked practically by participation in competitions. Further evaluation of the player's practical preparedness may be provided by solving test tasks on PC using the programs "CT-ART 4.0", "Strategy 3.0", "Encyclopedia of Middlegame I, II, III, IV and V", "Encyclopedia of Opening Blunders" and "Chess Endgame Training". A desirable picture of how the test results may score is given in the table below.

Test results during the various stages of training

Programs	I stage	II stage	III stage	IV stage
"CT-ART 4.0"	60	70	80	90
"Strategy 3.0"	40	55	70	85
"Encyclopedia of Middlegame I Openings" and "Encyclopedia of Middlegame I Structures"	30	50	65	85
"Encyclopedia of Middlegame II"	30	50	65	85
"Encyclopedia of Middlegame III"	30	50	65	85
"Encyclopedia of Middlegame IV"	30	50	65	85
"Chess Endgame Training"	30	55	70	90

"Encyclopedia of Opening Blunders"	60	70	80	95

The following tendency has been detected: there is no sharp improvement of tournament results during the 1st year of training; the 2nd year produces dramatic improvement to these results and a consequential increase of ELO rating. The 1st year is used for the accumulation of knowledge and perfection of the acquired skills, while the greatest growth in tournament results takes place in the 2nd year of training.

The current situation and success of the course

At the present time more than 20 students have undergone this training course. 8 pupils are on the 'base line' stage and 15 are on various stages of the 2 year training cycle. Three, Vladimir Yevelev, Arthur Gabrielian and Nikolai Kurenkov - have completed the course and have obtained the IM title. **The success formula has been corroborated: 2200 ELO + 2 year training period with Convekta Ltd programs = IM.**

Conclusions

This ends my story about implementing modern learning methods by exploiting computers in the T.V. Petrosian Club. However, a few questions arise from all of this, some speculations about the future in the light of modern tendencies.

An opinion has emerged in some published sources about the absence of alternatives to using a computer for learning chess. For me this is no problem. Implementation of computers in the learning process becomes most efficient when combined with traditional basic methods of training. Considerations of the cost of the chess software are quite insignificant when being compared with the cost of just a one hour consultation from a leading trainer.

New technologies develop sweepingly, and since the first version of this article, Convekta Ltd has produced more new programs (Chess Tactics for Intermediate players, Advanced Defense, Chess Tactics in Open Games, Chess Tactics in Kings Indian Defense,Chess Tactics in Grunfeld Defense etc.). Obviously, while attempting to perfect the already existing structure of the training course, the newest auxiliary learning devices must be taken into account. A complex approach to teaching chess is the best solution, as past practice in the T.V. Petrosian Club confirms.

The chess world faces big changes. Whether we want it or not, teaching chess will soon acquire a completely new form that we may only imagine. A lone figure of a teacher beside the chessboard passes away…