

Institution: Liverpool Hope University
Unit of Assessment: Psychology and Neuroscience
Title of case study: The contribution of academic research to developing training methods for chess trainers and chess players.
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>In 2012, Dr Chassy published a book presenting a training method to reach expertise in chess. The method presented in the book is informed by recent research in the domain including the research undertaken by Dr Philippe Chassy. The method exposes how to combine pattern recognition and activation of domain specific-problems so as to solve complex problems. The book is used by players and trainers alike in French speaking countries. Following the book's publication, Dr Chassy has been invited to lead a conference with trainers from the French Chess Federation.</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>The research stems from early work by Nobel Prize winner Herb Simon showing how knowledge rather than intelligence supports skill development and expertise acquisition. Dr Chassy has conducted his PhD (2003-2007) with Prof Fernand Gobet, a former co-worker of Prof Simon, on the influence of emotions on cognition in chess. Dr Chassy has later developed his own research strand by focusing on the factors influencing the quality of the decisions made by experts under time constraints. Dr Chassy developed a memory-based theory of intuition (Chassy & Gobet, 2011). Later, he has demonstrated how domain-specific knowledge underpins high-level thinking in experts (Chassy, 2013).</p> <p>Two essential pieces of research carried out at Hope University inform the methods developed by Dr Chassy. One crucial piece of research conducted at Liverpool Hope (Chassy & Gobet, 2013) was on the impact of domain specific knowledge on experts' ability to detect meaningful patterns. Beyond the fact that the research shows how quick decisions making is supported by pattern recognition in expert players, the article shows crucially the limit in perceptual load that players of various levels can handle at one time. It thus informs on the progressive difficulty that should be imposed in exercises in chess school. It enables the trainees to feel more confident since the difficulty of tasks is tailored to their level.</p> <p>The second research of interest is the fact that domain-specific memory templates provide access to high-level information such as strategies (Chassy, 2013). Linking low-level and high-level cognition is crucial in understanding expertise. By modelling how complex visuospatial structures underpin the use of strategic concepts, Dr Chassy has provided a theoretical framework to analyse how experts make quick decisions. It also reveals the mechanisms that potentially play a role in the mistakes that experts commit when intuitive decisions have to be made under huge time constraints. This piece of research will be used to adjust the details of the proposed method of training in the new book (Chassy, 2014).</p> <p>It is worth mentioning that the research strand on expertise development is being further developed. Dr Chassy is investigating the influence of knowledge on risk taking. The research will inform in how experts handle risky situations and what can be done to prevent mistakes.</p>
<p>3. References to the research (indicative maximum of six references)</p> <p>Publications relevant to expertise development</p> <ol style="list-style-type: none"> 1. Chassy (2014, in preparation). <i>Les apports cognitifs du jeu d'échecs</i>. Montpellier, France: Olibris. 2. Chassy, P. (2013). The role of memory templates in experts' strategic thinking. <i>Psychology</i>

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Research, 3, 276-289.

3. Chassy, P., & Gobet, F. (2013). Visual search in ecological and non-ecological displays: Evidence for a non-monotonic effect of complexity on performance, 80, e53420
4. Chassy, P., & Anić, D. (2012). *La psychologie du joueur d'échecs. Science et performance*. Montpellier, France: Olibris.
5. Chassy, P., & Gobet, F. (2011). A hypothesis about the biological basis of expert intuition. *Review of General Psychology*, 15, 198-212.
6. Chassy, P. (2009). Chess psychology. International conference on Chess: a game to grow up with. Torino, Italy.

Publications have been subject to editorial and peer review processes.

4. Details of the impact (indicative maximum 750 words)

Recently, Dr Chassy has published a book with International Grand Master Darko Anić¹ that presents a training method for chess players (Chassy & Anić, 2012). Informed by cognitive psychology in general and findings from Dr Chassy's research, the method shows how to improve performance. Some of the ideas underpinning the training method were stemming from on-going experiments that were published soon thereafter (e.g., Chassy, 2013). In the word of the publisher, Dr Olivier Letreguilly², the training method is appropriate for both trainers and players.

Dr Chassy has engaged into academic research on chess psychology and expertise ever since the start of his PhD in 2003 at Brunel University. After being awarded the PhD in 2007, Dr Chassy has started publishing in peer-reviewed journals (2008-2009). The impact of early studies from Dr Chassy is evidenced by the invitation to give a talk at the laboratory of neuroradiology of University Hospital Tubingen. The impact of the research carried out by Dr Chassy went beyond academic settings and reached real-world fields. An international conference was organized in 2009 about how chess can contribute to cognitive development; Dr Chassy was invited to present his research and conclusions. The conference was sponsored by the International Chess Federation which coordinates chess activities from local to world class levels.

The presentation at the conference has led Dr Chassy to receive a proposal for writing a book about chess training. The publisher, Olibris, is a professional publisher of chess books. Olibris is officially endorsed by the French Chess Federation. That is, among all the publishers of chess books, Olibris is the only one to be recommended by the French Chess Federation for players and trainers. The French Chess Federation is the institution that coordinates chess activities all over the countries and defines chess training programmes for official trainers. To write the book, Dr Chassy has teamed up with Darko Anić¹, an International Grandmaster (IGM). Anić's great expertise as a teacher and trainer is evidenced by the fact that he has for several years published training articles in the most important chess magazine. He owns a training centre that is renowned throughout the country and has been appointed for many years trainer of the Olympic team of France.

The book written in collaboration with IGM Anić has been published in 2012 with a huge impact on the chess community. Chess players and trainers have expressed their interest in the method proposed in the book and many of them changed their training practices and routines. A from a chess player⁴ acknowledges the impact of Dr Chassy research on her practice of chess. A further chess player has also written to acknowledge the positive effect of the book on his training. The

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benefit for trainers is to have a scientific framework on which to ground their training sessions. Players also have greatly appreciated and welcomed the book.

Following its impact on practice, the book has been noticed by chess institutions. Dr Chassy has received an invitation for a conference in October. The general director of the French Federation³ has informed Dr Chassy of the will of the federation to use him as a consultant for matters of training and impact of the game on psychological development. The Federation would like to coordinate training programs across the country. In this perspective Dr Chassy has been invited to participate in the development of the current training programmes. This letter is in resonance with the letter from the owner of the publishing company,² who states that the book published is a great tool for trainers and players alike. Very recently, the person in charge of coordinating the promotion of chess to the government, has contacted Dr Chassy to ask for a series of documents that will summarise the social and intellectual values of chess. The documents will be published on the website of the FFE during 2014.

The events planned for the near future acknowledge the influence of Dr Chassy's research. A conference on training will be held during the next France Chess Championship for Young players which will take place April 2014. Dr Chassy has been invited to explain his training methods and the scientific evidence underpinning it. In parallel, the co-author has been appointed Member of the Technical committee for training coordination at the national level. The influence of Dr Chassy's research and collaboration with chess professional is demonstrating impact at international and institutional levels.

5. Sources to corroborate the impact (indicative maximum of 10 references)

¹ International Grand Master Darko Anić. Member of the National Team of Trainers. French Chess Federation. Chess Institute of Cavalier Bleu

² Director of Publications. Olibris Publications.

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³ General Director of the French Chess Federation.

⁴ Available documents on request: letter from two players.