REALITY AND RELATIONSHIP BETWEEN LOGICAL THINKING CAPACITY, CREATIVE THINKING AND ACHIEVEMENTS OF VIETNAMESE CHESS ATHLETES

Nguyen Ngoc Tuan[1]

Abstract:
Through theoretical and practical research, the thesis has evaluated the current status of logical and creative thinking capacity; at the same time determined the relationship between the two competencies above and the performance of Vietnamese chess players.

Keywords: Logical thinking, creative thinking, relationship, Vietnamese chess.

INTRODUCTION

According to the research results of domestic and international authors, in order to assess the capacity of logical and creative thinking, it is necessary to evaluate from a psychological and professional perspective. Among the methods of assessing the thinking capacity of chess players, the psychological test and the pedagogical test are the most accurate and commonly used assessment methods.

In chess, thinking ability is an important factor that directly affects a player's performance. Therefore, it is imperative to assess the status of logical thinking, creative thinking and determine the relationship between these two competencies and the chess player's performance which is a basis for performance predictions and giving directions in the training strategy contributing to improving the competitive performance of chess athletes.

RESEARCH METHODS

To solve the above-mentioned research tasks in the research process, the research methods used research methods including: Methods of document analysis and synthesis; Interview method; Psychological test method; Method of pedagogical examination; Statistical mathematical methods.

RESULTS AND DISCUSSION

Using the method of interviewing experts, the thesis has identified the criteria, tests to assess the status of logical thinking and creative thinking skills of Vietnamese chess players, with the number of expert opinions evaluated from authorities. The weight or height accounts for a high proportion (from 35/46 to 76.09% to 45/46 to 97.83%), including:

Logical thinking competence: Test of Raven's continuous frame (points) has determined the message and the reliability of Vietnamese chess players level 1 and the grandmaster (Nguyen Hong Duong, Doctoral Thesis in Education Studies, 2008).

Creative thinking capacity: The ability to transfer knowledge, skills and techniques into new situations (points); Ability to recognize new functions (in nature) of familiar objects (points); Ability to recognize the structure of familiar objects, to choose the best way to solve problems with many solutions (points); The ability to find and decide unique solutions (points); Being well-organised, meticulous, consistent to achieve the purpose (points). We conducted to determine the reliability of the scale (checkers) with testing object (126 chess level 1 players and grandmasters, including 69 male and 57 female athletes) by SPSS 20

(1) PhD, Bac Ninh Sports University; Email: tuan.dhtdttbn@gmail.com

software. The statistical results show that the tests are reliable (Cronbach's Alpha) with the correlation coefficient r reaching 0.771 (r components from 0.710 ÷ 0.782) needed to use.

1. Analysis of the status of logical thinking capacity of Vietnamese chess players

To assess the logical thinking capacity of Vietnamese chess players, we use Raven's Continuing Frame Test. The results of comparing the current situation of logical thinking capacity of Vietnamese chess players in terms of gender and class of athletes are presented in Table 1.

Table 1. Current status of logical thinking capacity of Vietnamese chess players

Test	Testing object	Logical thinking capacity		t	p
		$\bar{x}$	±δ		
Raven's Continuing Frame Test (point)	Female (n=57)	51.81	3.53	6.71**	<0.01
	Male (n=69）	54.93	1.43		
	Level1 (n=69)	52.54	3.54	4.27**	<0.01
	Grandmaster (n=57)	54.70	1.60		

*(Note: * denotes p<0.05; ** denotes p<0.01)*

The results of Table 1 show that the test results of evaluating the logical thinking capacity show a statistically significant difference ($t_{calculation} > t_{table}$) between the female athletes and the male chess athletes (t = 6.71, p <0.01); along with the difference between level 1 players and the grandmasters (t = 4.27, p <0.01). The comparison results show that, according to the gender perspective, the logical capacity of male chess players in Vietnam is better than female athletes, according to class, grandmasters have better logical thinking than level 1 athletes.

2. Analyzing the status of creative thinking capacity of Vietnamese chess players

We used the professional multiple choice test to assess the practical level of creative thinking capacity of athletes. The results of creative thinking capacity of Vietnamese chess players are presented in Table 2.

Table 2. Reality of creative thinking capacity of Vietnamese chess players

Test	Testing object	Creative thinking capacity		t	p
		$\bar{x}$	±δ		
Checkers (point)	Female (n=57)	6.53	0.93	4.73**	<0.01
	Male (n=69）	7.32	0.94		
	Level 1 (n=69)	6.54	1.00	5.68**	<0.01
	Grandmaster (n=57)	7.46	0.77		

*(Note: * denotes p <0.05 **; denotes p <0.01)*

Table 2 shows that there is a statistically significant difference ($t_{calculation} > t_{table}$) on the test results of assessments of creative thinking ability between the female and male chess athletes (t = 4.73, p <0.01); Besides, there is a difference between the 1st level athletes and the grandmasters (t = 5.68, p <0.01). The test results also show that, according to gender, the male athlete's creative thinking capacity is better than female athletes', while in terms of class, the creative thinking of grandmasters is better than that of level 1 athletes.

3. The relationship between logical thinking, creative thinking and the performance of Vietnamese chess players

To find out the correlation between logical thinking ability, creative thinking and the performance of Vietnamese chess players, the thesis determined to conduct an analysis of the correlation coefficient r (Pearson Correlation),

in which the results of competitions are quantities x, the total point of the thinking ability test is the quantity y.

Testing subjects: Among 126 chess players, we selected 85 people who competed in the standard, rapid and lightning chess content at the National Youth Chess Championship 2018. At the same time, in each content of the competition number of groups of female, male, level 1 and grandmaster is not the same.

3.1. Correlation analysis of logical thinking ability and the performance of chess players

The results of analyzing the correlation between logical thinking ability and the performance of Vietnamese chess players are presented in Table 3.

Table 3. Analysis of correlation between logical thinking ability and the performance of chess players

Object	Standard chess performance			Rapid chess performance			Lightning chess performance		
	r	p	m_i	r	p	m_i	r	p	m_i
Female	0.32*	0.05	41	-0.06	0.69	41	0.04	0.8	41
Male	0.37*	0.02	41	0.14	0.38	43	0.19	0.23	43
Level 1	-0.28	0.09	37	-0.11	0.51	39	0.05	0.78	39
Grandmaster	0.25	0.1	45	0.12	0.43	45	0.22	0.14	45

*(Note: * denotes p <0.05; ** denotes p <0.01)*

Table 3 shows that, among the three competitions, only the standard chess achievement and the logical thinking ability of the two female groups and the male athletes clearly show the correlation: the female athletes group has a correlation coefficient between standard chess achievement and logical thinking ability is r = .32 (p <0.05), while male athletes have a correlation coefficient of r = .37 (p <0.05). The standard chess competition performance and logical thinking ability of other research groups are not significantly correlated (p> 0.05).

3.2. Correlation analysis of creative thinking ability and the performance of chess players

The results of analyzing the correlation between creative thinking ability and the performance of Vietnamese chess players are shown in Table 4.

Table 4. Analysis of correlation between creative thinking capacity and the performance of chess players

Object	Standard chess performance			Rapid chess performance			Lightning chess performance		
	r	p	m_i	r	p	m_i	r	p	m_i
Female	-0.09	0.57	41	0.04	0.79	41	-0.1	0.53	41
Male	0.01	0.97	41	0.26	0.09	43	.34*	0.03	43
Level 1	-0.09	0.6	37	0.07	0.69	39	0.2	0.22	39
Grandmaster	0.08	0.58	45	.38**	0.01	45	0.21	0.16	45

*(Note: * denotes p <0.05 **; denotes p <0.01)*

From Table 4, the male athletes have a correlation coefficient between the achievement of lightning chess and creative thinking ability is r = .34 (p <0.05), while the grandmaster group also shows the correlation between the rapid chess performance and creative thinking capacity r = .38 (p <0.01). In addition, the performance of the remaining groups does not have a significant correlation with creative thinking ability (p> 0.05).

Le Quang Liem is a chess player in Vietnam. In the current ranking of FIDE, Quang Liem is the number 1 player in Vietnam. He is the world champion of Blitz chess in 2013, reigning champion of Asia, champion of the Aeroflot Open Chess Championship twice and champion of HDBank International Chess Tournament three times (photo source: http://www.vietnamchess.vn/)

CONCLUSION

Through practical research, the thesis has the following conclusion:

1. Through an assessment of the current state of logical and creative thinking capacity of Vietnamese chess players, it shows that there is a difference in the capacity of logical thinking and creative thinking among Vietnamese chess players with same gender and class ($t_{calculated} > t_{table}$) at probability threshold $P < 0.01$). In particular, male athletes compared with female athletes, grandmasters compared to level 1 athletes all show better thinking ability.

2. The research results also confirm the logical and creative thinking ability of Vietnamese chess players and the achievement of standard chess, rapid chess and lightning chess clearly show the correlation at necessary threshold statistics.

REFERENCES

1. Dam Quoc Chinh, Dang Van Dung, Nguyen Hong Duong (1999), *Chess Curriculum*, Gymnastics and Sports Publishing House, Hanoi, page： 16-25, 56-58, 61-62, 79-81, 111 -116, 345-349.

2. Dang Van Dung (1999), "Application Research of Test to assess the training level of chess players of different levels in Vietnam", *Master's thesis in education and schooling*, College of Physical Education and Sports I, p. 9-11, 34-41, 65-70.

3. Nguyen Hong Duong (2008), "Determining the basic technical factors that constitute the thinking capacity and the system of exercises to improve the thinking capacity of male chess athletes in Vietnam", *Doctoral thesis Gymnastics and Sports Science Institute*.

4. Nguyen Xuan Sinh (1999), *Scientific research method of Gymnastics*, Gymnastics Publishing House, Hanoi, p. 356 - 368.

5. Tran Trong Thuy (1992), *Psychological diagnosis science*, Education Publishing House, pp: 4-29, 34-46.

6. Nguyen Duc Van (2001), *Statistical Methods in Physical Training*, Sports Publishing House, Hanoi.

(Received 23/10/2019, Reviewed 4/11/2019 Accepted 25/11/2019)