

## Program using Cort to teach thinking and its impact on Cognitive flexibility And some advanced tennis skills

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### Introduction:

Thinking is one of the important variables in the field of learning because the development of effective learning leads to the acquisition of procedural knowledge and not just rigid templates that lack the flexibility to be used in other life situations through the practical use of the contents of the course for students (16)

Cognitive flexibility is the focus of creative skills, considering that creativity is not only the ability to generate new ideas but also the ability to face new life problems and how to deal with them in creative ways. By drawing on two main components of thinking: previous experience, which establishes the raw material for creative thinking, and the ability to extract these experiences and collect them creatively (13)

The Cort thinking program is an abbreviation of the cognitive research

institution founded by Edward Debono cognitive research trust.

The Cort program constitutes a scientific framework specific to his philosophy, themes and methods that distinguish and it has proved a remarkable success through flexibility and clarity and ease of application and distinctive capabilities that gain student skills expansion areas of cognition and problem solving, ask questions and self-confidence in behavior and decision-making The program includes many examples and attitudes of working life that achieve the requirement of excitement and attention among students (8),(9).

Many studies have proven the effectiveness of court program to teach thinking in learning different scientific subjects and developing thinking skills such as **Abdul Aziz Jaber Al-Salami Studies (2013) (1)** on the achievement

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and creative thinking in the Prophetic tradition subject for sixth grade students. **Hussien Rabbie Hammade (2013) (10)** on Achievement and deductive thinking in science subject for sixth grade students. **Atta Mohamed Ismail (2010) (3)** on the achievement and creative thinking in **Arabic sally Thornson (2009) (17)** on the level of performance and achievement of primary school students. **Johnson (2005) (11)** on the ability of student teachers to learn and perform successful teaching skills, as far as the researcher knows the previous studies didn't question the effect of program using court on cognitive flexibility and some advanced skills in tennis

#### **Research Objective:**

The research aims to identify the effect of a program using Cort to teach thinking on the cognitive flexibility and some advanced skills (The drop shot-The Smash-the Volley- the Lob) in tennis for students of tennis specialization in the Faculty of Physical Education for Girls Zagazig University.

#### **Research hypotheses:**

- There are statistically significant differences between the averages of the pre and post measurements of the control

group in the cognitive flexibility and learning some advanced skills (The drop shot-The Smash-the Volley- The Lob) in tennis in favor of post measurement.

- There are statistically significant differences between the averages of the pre and post measurements of the experimental group in the cognitive flexibility and learning some advanced skills in tennis under research in favor of post measurement.

- There are statistically significant differences between the two post measurements of the control and experimental group in cognitive flexibility and learning some advanced tennis skills under consideration in favor of the experimental group.

#### **Research procedures:**

#### **Research Methodology:**

The researcher used the experimental method of pre-post measurements for two groups, one experimental and the other is a control group, as to suit the purpose of the research.

#### **Research Society and Sample:**

Representing the third year students of the Faculty of Physical Education for Girls -

Zagazig University for the academic year 2017/2018 tennis specialization, consisting of (80) female students.

**The research sample:**

Two groups, one experimental and one control each, (20) students were selected randomly.

The researcher calculated the equilibrium distribution of the members of the research sample, where the values of skewness coefficients ranged between ( $\pm 3$ ), which indicates that the research sample falls under the equilibrium curve in all variables under consideration.

The researcher also found parity between the two research groups (experimental - control), so as to ensure the equality of the two groups in all the variables under consideration.

**Tools and means of data collection:**

**Skillful Tests:**

- Test the accuracy of The drop shot
- Test the accuracy of The Smash
- Test the accuracy of the Volley

- Test the accuracy the Lob.

**Cognitive Resilience Scale:**

Prepared by Spiro et al. which is designed to measure the flexibility of learners from 18 to 21 years by showing a marker for each examined student located on a scale stretching from rigid to flexibility and consists of 30 paragraphs divided into 15 pairs of two-poles, and deals with 15 dimensions of cognitive flexibility and is capable of differentiating between the rigid and flexible view in education.(13)

**educationl programs:**

The program aims to use Cort to teach thinking used in the development of cognitive flexibility and some advanced skills in tennis for students of the third year tennis specialization Faculty of Physical Education for Girls Zagazig University.

**Identification of educational content:**

Identify the educational content in technical performance and common mistakes of some advanced skills in tennis, namely (front

overwhelming strike - front falling strike - front flying strike - front raised strike).

**pre measurements:**

The researcher conducted the pre measurements in the period from Monday 23/10/2017 to Thursday 26/10/2017

**Application of the educational program:**

The educational program was implemented using Cort to teach thinking on the experimental group in the period from Monday 30/10/2017 until Thursday 7/12/2017,

**post measurements:**

After the completion of the application of the educational program post measurements were conducted

for both research groups (experimental – control) during the period from Thursday 7/12/2017 to Monday 11/12/2017 in the same order and conditions of the pre measurements.

**Statistical methods used:**

To process the data statistically, the researcher used the following statistical methods:

- arithmetic mean - standard deviation – median - Torsion coefficient - Simple correlation coefficient – "T" test.

**Presentation and discussion of results:**

**First: Presentation and discussion of the results of the first and second hypothesis:**

**Table (1)**

**The significance of differences between the pre and post measurements of the control and the experimental group In cognitive flexibility and some advanced skills in tennis n1= n2=20**

Variable	Measurement Unit	Control group				Experimental Group					
		pre measurement	Post Measurement	"T"Value		pre measurement	Post Measurement	"T"Value			
The drop shot	Degree	0.6	0.01	1.22	1.01	*2.670	0.67	1.1	1.84	0.29	*4.483
The Smash	Degree	0.19	0.62	0.62	0.02	*2.370	0.28	0.40	0.87	0.39	*4.318
the Volley	Degree	0.04	0.40	1.09	1.00	*2.098	0.32	1.33	1.77	0.07	*4.367
The Lob	Degree	0.74	0.11	1.34	1.12	*2.232	0.06	1.76	1.98	0.62	*3.317
Cognitive flexibility	Degree	02.22	2.40	04.87	1.34	*3.980	02.89	1.41	08.40	1.34	*12.409

"T" table value at 0.05 and 19 free degrees= 2.093  
\*indicating at 0.05

It is clear from table (1) that there are statistically significant differences at the level of 0.05 between the pre and post measurements of the control group in the cognitive flexibility and learn some advanced skills (The drop shot-The Smash-the Volley- The Lob) in tennis in favor of post measurement.

The researcher attributes this improvement in the cognitive flexibility and learning some advanced skills (The drop shot-The Smash-the Volley- the Lob) in tennis of the control group members to the effective role of the teacher through the use of command learning method, which depends on the practical model and verbal explanation of the technical stages of the skill in question. And provide feedback and continuous evaluation during the learning stages, which contributed to learning the skills under discussion.

This finding is consistent with what **Samia Farghaly, Nadia Abdelkader (2002), Fayez Murad, and Amin**

**Abdelhafeez (2003)** have indicated that in the command learning method, a simplified verbal explanation is provided by the teacher so that the student to simulate what he has seen. Which gives the opportunity to the student to learn through presenting a Practical skill model It is also a direct methods where it works to quickly deliver information, and the acquisition of skills from the teacher to the learner.(163: 14),(14:163),(7:176).

**Thus, the validity of the first research hypothesis is achieved, which states:**

"There are statistically significant differences between the median of the pre-and post-measurements of the control group in the cognitive flexibility and learning some advanced skills (The drop shot-The Smash-the Volley- the Lob) in tennis in favor of post measurement.

**Second: Discussion of the results of the second hypothesis:**

It is clear from table (1) that there are statistically

significant differences at the level of 0.05 between the pre and post measurements of the experimental group in the cognitive flexibility and learn some advanced skills (The drop shot-The Smash-the Volley- The Lob) in tennis in favor of post measurement.

The researcher attributes this improvement in cognitive flexibility and learning some of the advanced tennis skills under study by the experimental group to the use of court thinking teaching program. The purpose of thinking lessons is to develop thinking as a skill that can be applied in any situation, and the basics of work using the Kurt program are enrichment, motivation, diversification, excitement, achievement, enhancement, speed, selection and taking into account the age stages and capabilities of individuals (15:547). The program also enables students to be intellectuals, active, interactive and entertained at the same time as well as to

develop the practical skill required for real life (6: 10-11).

This finding is consistent with the studies of **Abdul Aziz Jaber Al-Selmi (2013)(1)**, **Hussein Rabie Hammadi (2013)(10)**, **Atta Mohamed Ismail (2010)(3)**, **Sally Toms (2009)(17)**, **Johnson (2005)(11)**. In terms of the effectiveness of the Court program to teach thinking in learning different scientific subjects and the development of thinking skills.

**-Thus, the second research hypothesizes validated, which states:** "There are statistically significant differences between the median of the pre and post measurements of the experimental group in cognitive flexibility and learning of some advanced skills (The drop shot-The Smash-the Volley- The Lob) in tennis in favor of post measurement.

**Third: Presentation and discussion of the results of the third hypothesis:**

**Table (2)**  
**Significance of differences between the two post measurements of the control and experimental group in cognitive flexibility and some advanced skills in tennis N =1=N2=20**

Variable	Measurement Unit	Control group post measurement		Experimental group Post Measurement		"T"Value	Improvement ratio %
		S	P	S	P		
The drop shot	Degree	1.22	1.01	1.84	0.29	2.071	00.81
The Smash	Degree	0.63	0.12	0.87	0.39	2.063	38.09
the Volley	Degree	1.09	1.00	1.77	0.07	2.480	62.38
The Lob	Degree	1.34	1.12	1.98	0.62	2.179	47.76
Cognitive flexibility	Degree	04.87	1.34	08.40	1.34	8.234	6.02

"T" table value at 0.05 and free degrees 38 = 2.02  
 \*indicating at 0.05

It is clear from table (2) that there are statistically significant differences at the level of 0.05 between the two post measurements of the experimental and control groups in the cognitive flexibility and learning some advanced skills (The drop shot-The Smash-the Volley- The Lob) in tennis in favor of the post measurement of the experimental group.

The researcher attributes this improvement in cognitive flexibility and learning some of the advanced tennis skills under study by the experimental group to the use of the cort program to teach

thinking. The thinking skills that Cort students practice provide them with tools that improve their academic performance and real-life skills. The Thinking Skills program can help students build their thinking to the point where they can enhance their thinking in other subjects well. Having Long-term academic characteristics of students and improves academic performance. (5:15), (12:17)

This finding is consistent with the studies of **Abdul Aziz Jaber Al-Selmi (2013)(11)**, **Hussein Rabie Hammadi (2013)(10)**, **Atta Mohamed Ismail (2010)(3)**, **Sally**

**Thornson (2009)(17), Johnson (2005)(11).** In terms of the effectiveness of the Cort program to teach thinking in learning different scientific subjects and the development of thinking skills.

**Thus, the third research hypothesis is validated, which states:** "There are statistically significant differences between the mean measurements of the two control and experimental groups in cognitive flexibility and learning some advanced tennis skills under consideration for the experimental group."

**Results:**

- The use of a program using Cort to teach thinking had positive impact statistically at a level of 0.05 on the cognitive flexibility and the level of performance of some advanced skills (The drop shot-The Smash-the Volley- The Lob) in tennis for the third year female students tennis specialization at the Faculty of physical Education for Girls Zagazig University.

- a program using Cort to teach thinking is more effective than the method of learning by orders to positively affect the cognitive flexibility and the

level of performance of some advanced skills (The drop shot-The Smash-the Volley- The Lob) in the tennis of the third year students of the Faculty of physical Education for Girls Zagazig University.

**Recommendations:**

- The need to use a program using Cort to teach thinking as one of the modern teaching methods to learn and master some of the advanced skills (The drop shot-The Smash-the Volley- The Lob) in tennis the third year female students tennis specialization at the Faculty of physical Education for Girls Zagazig University.

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