Investigating Iraqi Students' Thinking Styles Based on Sternberg's Theory as a Model

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Abstract:

The current study aims at distinguishing the preferred thinking styles by Iraqi preparatory students in relation to learning English as a foreign language with regard to gender variable. In view of the goals, two hypotheses posed.

To test the validity of these hypotheses, a sample of (78) participants (43 male students & 35 female students) randomly chosen from the sixth preparatory stage in Mosul. The sample asked to manage a questionnaire designed by the researcher according to thinking styles of Sternberg's theory.

A statistical mean has utilized such as T-test to analyze the data gained out of the designed questionnaire.

The main findings revealed that:

1- Iraqi sixth preparatory students preferred some thinking styles such as: the legislative, oligarchic and external more than other thinking styles like: internal, monarchic and local.

2- No statistically significant differences of students' thinking styles preferences found between male and female students; in terms of their preferred thinking styles except in executive and judicial thinking styles for female students.

Keywords: (Thinking Styles, Teaching Styles, Academic Implementation).

التحقق من أساليب تفكير الطلبة العراقيين بالاعتماد على نظرية شتيرنبيرغ أنموذجاً

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الملخص :

يهدف البحث الحالي الى تمييز أساليب التفكير المفضلة لدى طلبة الإعدادية العراقيين فيما يتعلق بتعلم اللغة الإنكليزية كلغة اجنبية, وفيما يتعلق بمتغير الجنس. وفي ضوء الأهداف تم طرح فرضيتين.

لإختبار صحة هذه الفرضيات , تم اختيار عينة من (٧٨) مشاركا, (٤٣ طالبا و ٣٥ طالبة) , بشكل عشوائي من مرحلة السادس الاعدادي في الموصل. ثم طلب من العينة التعامل مع الاستبيان الذي صممه الباحث بناءً على أساليب التفكير لنظرية شتيرنبيرغ.

وأظهرت النتائج الرئيسية أن:

١– طلبة مرحلة السادس الاعدادي في العراق يفضلون بعض أساليب التفكير مثل: التشريعي (Legislative) , القلة (Oligarchic) والخارجية(External) أكثر من أساليب التفكير الأخرى مثل: الداخلية (Internal) , الملكية (Monarchic) والمحلية (Local).

٢– لا توجد فروق ذات دلالة إحصائية في أساليب تفكير الطلبة بين الطلاب والطالبات من حيث أساليب التفكير المفضلة لديهم باستثناء أساليب التفكير التنفيذي والقضائي للطالبات.

الكلمات المفتاحية:(أساليب التفكير ، أساليب التدريس ، التنفيذ الأكاديمي).

1– Introduction:

Thinking is an exceptional operation that human beings use all the time to make decisions for every day actions in the societies they engaged in. Appropriate thinking makes that possible for solving such problems may permanently face, to make suitable decisions, and achieve the aims behind giving life

purpose and implementation. Thus, it is an important action for gaining quality education, for effective development to live in a meaningful path.

In 1988, the first Sternberg's notion of mental self-government published. According to Sternberg (1997), there are different ways that governing a society, there are many ways of using our abilities. This type of governance is not just a coincidence; rather, it might be an outward mirror of the various ways that people can organize or rule themselves.

The present study is trying to investigate the Iraqi preparatory students thinking styles. This done through the following questions:

1- Are there any preferences of thinking styles than other ones used by Iraqi students?

2- Are there any certain significant differences of thinking styles in relation to gender?

2- The Study aims:

The present study aims at:

a. Distinguishing the preferred thinking styles by Iraqi students.

b. Examining to what extend the effect of the materials studied by preparatory students' preferences of thinking styles.

3- Hypotheses of the Present Study:

a. There are no statistically notable variations among Iraqi students' preferences of thinking styles.

b. There are no statistically notable variations for Iraqi students' thinking styles preferences in relation to gender.

4- Limits of the Study:

The present study is limited for Iraqi preparatory students (sixth grade: literary, biological & applied sections) of Mosul's city center for both banks (left & right) during the academic year 2019-2020.

5- Defining Thinking Styles:

De Bono (1991) provides his own definition that: thinking is the purposeful investigation of experience. The goal might be comprehension, decision-making, planning, problem solving, judgment, action, and so on.

Thinking styles come back to the roots of what called 'cognitive styles'. They closer associated with one another. Some academics conceive thinking and cognitive styles as the same like Hudson (1996).

Berkely (2002: 28) defines thinking as " the process that forms a series of sequential thoughts or images in the mind".

Sternberg identifies thinking styles as the chosen thought styles of the person when doing something, and explains how the person utilizes or employs the capacities he possesses which is not a skill but situated between character and capacity (Sternberg, 2002).

Jones (2006) disputes that thinking is a part of cognitive styles. Singh (2008) defines thinking styles as the preferred or preferred mode of thinking employing a certain brain hemisphere or mental capacity.

Depending on the previous definitions, it is clearly to say that thinking links different areas, containing cognitive, psychological, emotional and social domains. They are cognitive because of the processing of information; and emotional because one's emotions are interwoven with the individual's preferred way, such as welcoming or resisting aspects such as power, compatibility, structure, uncertainty, reflexivity and impulse (Volpentesta et al., 2009). Kim (2011) views that thinking styles are: the preferred method of mental representation and information processing, connected to personality's basic structural elements and the regular manner of connecting with the new setting and incorporating new knowledge.

6- Sternberg's Theory and its Principles:

6.1 Sternberg's Theory:

The fundamental principle of mental self-governance theory is that the modes we have are not coincidental. Instead, they are outward representations of what is going on in the human's mind. They reflect different methods in which human organize their

thinking. Therefore, ways of humans see government as the mirror of their minds (Sternberg, 1997).

There are several parallels between individual organization and societal organization. For just as a community self-government is necessary, and we must run our own affairs. We must set priorities much like a government does. We must designate resources, exactly like a government. We have to respond to world changes as the government does. Thus, there are hurdles to modify in government within ourselves (Ibid). The following is the proposed theory, which includes thirteen of thinking styles distributed in five dimensions: Functions, Forms, Levels, Scope and Leanings (Sternberg, 1988).

6.1.1 Functions

It contains three styles:

A. *Legislative:* People in this kind of style prefer to use their specific ways of dealing with things, and creating their personal rules. They prefer problems, which are not prefabricated and pre-structured.

B. *Executive:* People here prefer problems that are prefabricated or pre-structured.

C. *Judicial:* People prefer to asses rules and procedures, and they prefer problems in which actual problems and thoughts analyzed and assessed.

6.1.2. Forms

There are four thinking styles:

A. *Monarchic:* It is a motivated individual with a lonely mindset.

B. *Hierarchic:* People tend to accept complexity more than the monarchic, and identifies a need to look at problems from various angles, so that priorities are set correctly.

C. *Oligarchic:* People feel more motivated, usually contending objective of the same perceived value. These people are under pressure in the face of contending requests on their both time and resources.

D. *Anarchic:* People clearly seems like an accidental approach to problems; they prefer to oppose systems, especially strict ones, and struggle to contain them in whichever system they observe.

6.1.3. Levels

Two thinking styles in levels:

A. *Global:* Individuals favor comparatively broad and abstract issues. They do not like specifics or reject them, and like to see the forests instead of the trees.

B. *Local:* Individuals prefer specified issues that require dealing with specifics and real–world instances.

6.1.4. Scope

Scope including two thinking styles:

A. *Internal:* People in this kind of thinking styles like to work separately, they use to achieve their thoughts without depending on others.

B. *External:* It is opposite to internal thinking styles, people here like to do and apply their work or thoughts with others. They are interdependent.

6.1.5. Leanings

According to this dimension, two thinking styles identified:

A. *Liberal:* People, according to this style, like to be away from rules and procedures. They like to apply or doing things in different ways as others do, and far from traditions.

B. *Conservative:* Individuals tend to abide by current laws and procedures, minimize transition, eliminate uncertain circumstances where possible, and tend to common job and professional situations. Figure 1 will show Sternberg's classification of thinking styles:
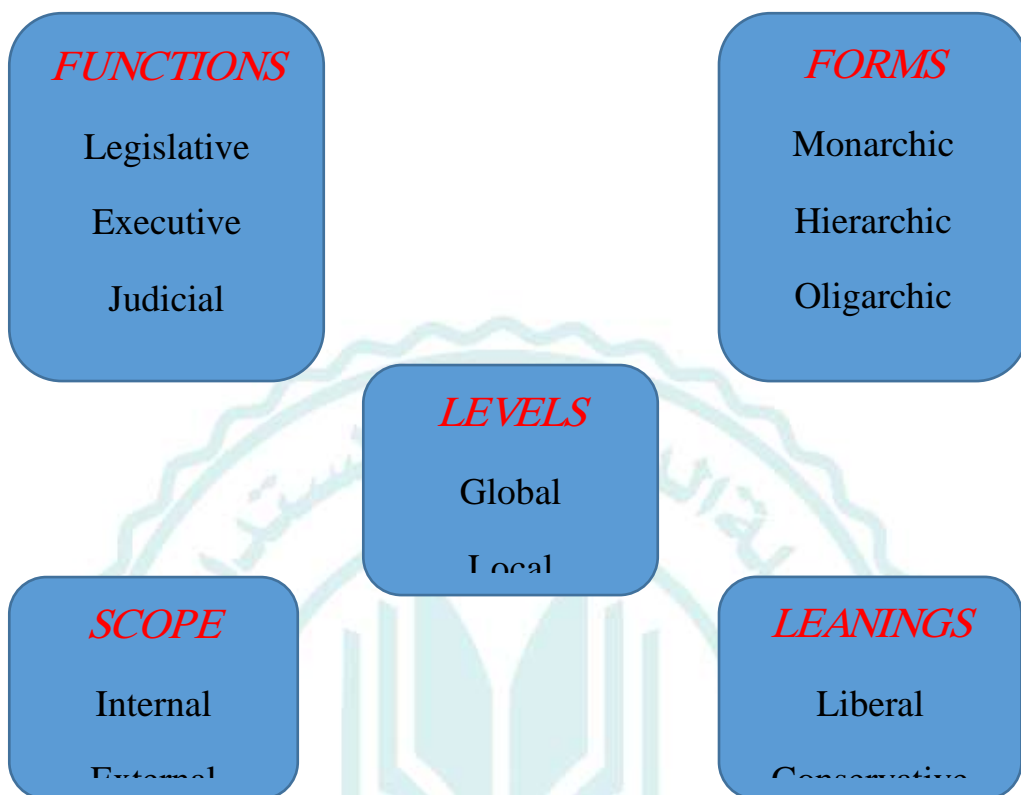
Figure (1): Sternberg's Classification of Thinking Styles (1988)

6.2 Principals:

Sternberg (1997: 79-98) has introduced 15 main thinking styles' principles as follows:

1- Styles are preferences on how to employ talents, not actual skills.

2- When styles and skills complement one other, a synergy that is greater than the total of its parts results.

3- Life decisions must complement one's strengths and style.

4– In contrast to having just one style, people have profiles of styles.

5– Between jobs and circumstances, styles differ.

6– Strengths of preferences vary amongst individuals.

7– People vary in their stylistic adaptability.

8– Socialization of styles.

9– Styles can change throughout the course of a lifetime.

10– Styles are quantifiable.

11– Styles may taught.

12– Styles that deemed valuable one period might not be at another one.

13– Styles that are popular one place could not be popular at another one.

14– Fit is more important than whether a style is ordinary, good, or bad.

15– We combine skill levels with stylistic suitability.

7– **Relationship between Thinking Styles and Teaching/ Learning Process**.

Educationally, it well known that effective learning takes place when the entire brain taking part through the learning process. When educational tasks are taking up, cognitive functions consumed created to fit the preferred way of thinking of the learner's thinking. It explained with respect to Herrmann's model of brain, (1995); which supposes that all four-brain

quadrants targeted by teaching/learning activities. This model also applies to the comprehending the intellectual diversity and its essential task plays an important role in successful education, and is support for the development and delivery of teaching and learning each four quadrants function (De Boer & Steyn, 1999).

A difference in teacher design and execution can help improve the full potential of the learner. It will not only expand learner's learning styles preferences, but will also develop lesser-preference areas and learner avoidance.

The principle of Herrmann (1996) depends on the left/right, the trinity and physical links between the two hemispheres left and right and between the top and bottom parts of the human brain to construct the whole mind style. He has mentioned that while every hemisphere is physical connections are specialized in a different way and integrated safe activity in the brain (Herrmann, 1996).

Gazzagnia (1998: 51) mentioned that:

"The two hemispheres control vastly different aspects of thought and action. Each half has its own specialization and thus its own limitations and advantages. The left-brain is dominant for language

and speech. The right excels at visual-motor tasks."

Herrmann (1995) states that the four quadrants of his model demonstrate the mental models of the human brain. He pointed up four quadrants' preferences. Quadrant A preference means that a person prefers activities containing logical, analytical and realistic data. Quadrant B preference is a linear activity form. Individuals with quadruple preference prefer information that is structured and detailed. In their actions, they are conservative and they want to keep things, as they seem to be. C-quadrant preference indicates to a preference for information, which related to personal feelings and entails emotion. The D-quadrant preference is practically a systematic and thought-based approach.

Herrmann model enables recognizing intellectual complexity and the essential function of not only efficient teaching/learning, but it can also be a method to plan and execute teaching/learning practices through all of the brain quadrants. The Herrmann model seems to be the only tool, which specifies the preference of a

person for thinking in four separate situations, depending on the specific function of the brain (Herrmann, 1995).

Accordingly, cognitive abilities acquired when teaching tasks developed in connection with the desired thinking/learning

process of the learner and ideally used if learning tasks designed to link cognitive functions to all four Herrmann's model. That is to say, that efficient learning could be when all the quarters of the brain participated in the learning process (Knowles 1990, Buzan 1991, Jensen 1996 & Ornstein 1997). The following figure shows the Herrman's model (1995).
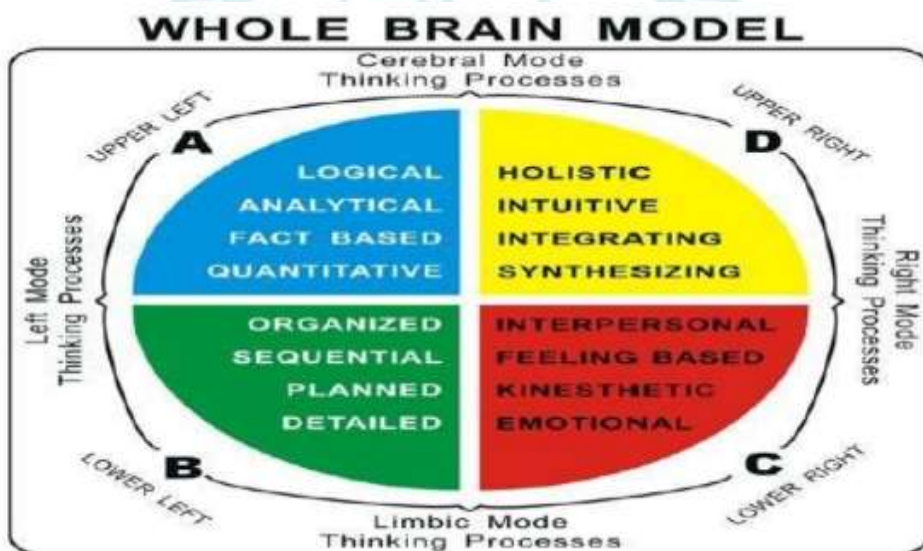

Figure (2): The Hermann's Model of Whole Brain

(Herrmann, 1995: 155)

8- Thinking Styles and Academic Implications:

Academic achievement quietly considered by educational experts through the previous decades. Researchers like Sternberg and Grigorenko (1997) have improved that a positive thinking styles' role in academic achievement.

Sepahvandi (2000) mentioned that academic achievement is the student's ability for solving the pre-defined curriculum content's problems.

Some other studies showed that some thinking styles played a positive role in academic achievements, and some others did not, Zhang (2001). So that means, not all thinking styles play a positive role in relation to academic achievements. The ones that positive play an important and essential role to develop the learner's consciousness to academic achievements.

Pashaei et al., cited in Fatemi and Heidari (2016: 1354) mention that academic accomplishment greatly influenced by a variety of variables, including cognitive capacity, personality qualities, and family.

Annamma M. & Karan P. (2017:48) Mention that: "Academic achievement in general at all stages of education is a matter of deep concern for educationalist as well as for others. In fact, the whole programmed of education is general to achievement of high scholastic and standard of the educational system is carefully panned with this target in mind".

9. Methodology:

9.1 The Procedural Design:

The researcher at the present study used a questionnaire to investigate the secondary school students' preference of their thinking styles.

9.2 Population:

The Population of the current study included the sixth preparatory students of Mosul city/Iraq during the academic year 2019−2020.

9.3 The Sample:

For the current study, (78) students have randomly chosen (43 male) and (35 female) from the population.

9.4 Instrument: The Questionnaire:−

To meet the purpose behind the study, the researcher has designed a questionnaire according to the Sternberg's thinking-styles theory (1997). The construction of the questionnaire consisted of two main parts: First, the basic five dimensions of thinking styles (Functions, Forms, Levels, Scope and Leanings). Second, the thirteen thinking styles (Legislative, Executive, Judicial, Monarchic, Hierarchic, Oligarchic, Anarchic, Global, Local, Internal, Liberal and Conservative).

To measure the students' preferences of thinking styles, five points of scale used (Always, Often, Sometimes, Rarely and never).

10. The results:

The present study built on two hypotheses:

The First Hypothesis:−

"There are no statistically notable variations among Iraqi students' preference of thinking styles".

The results shown in table (1):

Table (1): Students' Thinking Styles Preferences for all Male and

Thinking Styles	Mean	Std. Deviation	%	New No.
Legislative	16.6154	1.33125	83.08%	1
Executive	15.9231	1.61783	79.62%	6
Judicial	16.0385	1.65492	80.19%	4
Monarchic	15.4487	1.41097	77.24%	12
Hierarchic	15.5641	1.60024	77.82%	9
Oligarchic	16.5513	2.17809	82.76%	2
Anarchic	15.7564	1.69940	78.78%	8
Global	15.7949	1.42664	78.97%	7
Local	15.3718	1.27013	76.86%	13
Internal	15.5000	1.79284	77.50%	11
External	16.0513	2.08829	80.26%	3
Liberal	15.5513	1.85618	77.76%	10
Conservative	15.9744	1.61144	79.87%	5

Female Based on Sequence

Table (1) shows that the three most preferred thinking styles of Iraqi students are: First, Legislative thinking style of the first dimension: Functions. Second, the Oligarchic thinking style of the second dimension: Forms. Third, the External thinking style of the fourth dimension: Scope.

The less preferred thinking styles of Iraqi students are: First, the Internal thinking style of the fourth dimension: Scope. Second, the Monarchic thinking style of the second dimension: Forms. Third, the Local thinking style of the third dimension: Levels. Hence, the first hypothesis is accepted.

The Second Hypothesis:–

"There are no statistically notable variations for Iraqi students' thinking styles preferences according to gender".

The results shown in table (2):

Table (2): Differences of Students' Thinking Styles Preferences According to Gender

Thinking Styles	Gender	N	Mean	Std. Deviation	T
Legislative	M	43	16.5116	1.31606	0.758
	F	35	16.7429	1.35783	
Executive	M	43	15.5814	1.54662	2.113
	F	35	16.3429	1.62595	
Judicial	M	43	15.6977	1.72565	2.058
	F	35	16.4571	1.48211	
Monarchic	M	43	15.6744	1.61424	1.581
	F	35	15.1714	1.07062	
Hierarchic	M	43	15.6512	1.64583	0.530
	F	35	15.4571	1.55947	
Oligarchic	M	43	16.2558	2.24768	1.335
	F	35	16.9143	2.06328	
Anarchic	M	43	15.6047	1.70628	0.873
	F	35	15.9429	1.69676	
Global	M	43	15.9070	1.61561	0.767
	F	35	15.6571	1.16171	
Local	M	43	15.3023	1.37208	0.533
	F	35	15.4571	1.14642	
Internal	M	43	15.4651	2.00415	0.189
	F	35	15.5429	1.52128	
External	M	43	15.8605	2.05382	0.893
	F	35	16.2857	2.13612	
Liberal	M	43	15.5581	1.65187	0.036
	F	35	15.5429	2.10522	
Conservative	M	43	15.7674	1.65956	1.262
	F	35	16.2286	1.53557	

T (tab): 1.994, 0.05, 76

Table (2) shows that there are no statistically significant differences of the preferred thinking styles between male and

female except in Executive and Judicial thinking styles of the first dimension: Functions for female.

The calculated T-test higher than the tabulated at level of significance (0.05) and the degree of freedom (76) with tabulated value (1.994). So, this hypothesis is accepted.

11. Discussing the Results:

1- It can be clearly noticed that Iraqi students at sixth preparatory stage prefer to use some kinds of thinking styles such as: the Legislative thinking style of the first dimension: Functions, the Oligarchic thinking style of the second dimension: Forms, the External thinking style of the fourth dimension: Scope. Another point, which can be obviously noticed that Iraqi students at sixth preparatory stage may not like such thinking styles, namely, The Internal thinking style of the fourth dimension: Scope, the Monarchic thinking style of the second dimension: Forms, the Local thinking style of the third dimension: Levels. Thus, the answer to the first research question (Are there any preferences of thinking styles than other ones used by Iraqi students?) Which already address (No).

2- No statistically significant differences were found in the students' preference of thinking styles between male and female except in some kinds of thinking styles such Executive and Judicial of the first dimension Functions, for female. So, the

answer to the second research question (Are there any certain significant differences of thinking styles according to gender?) Which already address (No).

12. Conclusions:

Depending on the findings, the current study offers an obvious evidence that Iraqi students preferred using some thinking styles like (Legislative, Oligarchic and External) more than other ones such as (Internal, Monarchic and Local).

No statistically significant differences of students' thinking styles preference between male and female students in terms of their preferred thinking styles, except in Executive and Judicial thinking styles for female.

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