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Investigating Iraqi Open Educational College EFL Students' Thinking Styles Based on Sternberg's Theory as a Model

Abstract

The main purpose of this research was to distinguish the preferred thinking styles by Iraqi Open Educational College EFL students in relation to learning English as a foreign language, and with regard to gender and studying level variables. Three hypotheses posed in light of the objectives.

A sample of 40 individuals, including 21 male and 19 female students from the second and fourth stage, randomly selected to investigate the veracity of these assumptions. The sample tasked with administering a survey that the researcher had created using Sternberg's theory of cognitive styles.

To analyze the data obtained from the developed questionnaire, a statistical test, such as the T-test, used.

The main findings revealed that:

- 1- Iraqi Open Educational College EFL students preferred some thinking styles such as Oligarchic, Legislative and Global more than other ones such as Internal, Monarchic and Local.
- 2- No statistically significant differences of students' thinking styles preferences between male and female students.
- 3- No statistically significant differences of students' thinking styles preference between the second and fourth level of stage students.

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التحقق من أساليب تفكير طلبة الكلية التربوية المفتوحة العراقيين بالاعتماد على نظرية شتينبيرغ أنموذجاً

م.م مروان رمضان عبد الله /المديرية العامة للتربية في نينوى

المستخلص:

كان الهدف الرئيسي من هذا البحث هو التمييز بين أساليب التفكير المفضلة لطلاب اللغة الإنكليزية كلغة اجنبية في الكلية التربوية المفتوحة العراقيين, وفيما يتعلق بمتغيرات الجنس والمرحلة الدراسية. ثلاث فرضيات طرحت في ضوء الأهداف.

عينة من ٤٠ فرداً، منهم 21 طالباً و ١٠ طالبة من المرحلتين الثانية والرابعة، تم اختيارهم عشوائياً للتحقق من صحة هذه الافتراضات. كلفت العينة بإدارة الاستبيان الذي صممه الباحث باستخدام نظرية شتينبيرغ لاساليب التفكير.

لتحليل البيانات التي تم الحصول عليها من الاستبيان المطور، تم استخدام اختبار إحصائي، مثل اختبار T.

وكشفت النتائج الرئيسية ان:

١- يفضل طلاب اللغة الإنكليزية كلغة اجنبية للكلية التربوية المفتوحة العراقيين بعض أنماط التفكير مثل: (القلة Oligarchic) , (التشريعي Legislative) و(الشامل Global) أكثر من غيرها مثل: (الداخلية Internal) , (الملكية Monarchic) و (المحلية Local).

٢- لا توجد فروق ذات دلالة إحصائية في تفضيلات أساليب التفكير بين الطلاب والطالبات.

٣- لا توجد فروق ذات دلالة إحصائية في تفضيلات أساليب التفكير بين طلاب المرحلة الثانية والرابعة.

1- Introduction:

Thinking styles is a study of how and why humans think and may characterize as interactive and reciprocal mental self-government psychology. Its main goal is to demonstrate how different thinking styles impacts learning preferences and how individual learning capacities should acknowledged and respected. Thinking styles are of particular interest to educators because they can assist teachers in improving instruction and evaluation. They connect to age, gender, experience, and self-esteem. In Thinking Styles, psychologist Robert Sternberg believes that potential

often goes unnoticed and uncultivated not due to a lack of skill, but due to opposing styles of thinking and learning.

Thinking is the fundamental trait that distinguishes persons from other beings, and it is a process aims at reaching the most accurate outcome. Individuals must think when eating, reading, learning, sleeping, or engaging in any other activity. According to Nickerson (1988), thinking is a process that includes problem solving, decision-making, and critical thinking as well as logical thinking. Individuals in developed civilizations employ these phases of the thought process in every discipline. This procedure is unique to each individual. This demonstrates how the idea of cognitive styles originates. Thinking patterns are desires to perform skills rather than abilities themselves. In addition, cognitive styles interact with socialization processes that change with job, context, and, most significantly, individual variances as they progress through life.

The current study is attempting to explore the Iraqi Open Educational College EFL students' thinking styles according to Sternberg's theory. This may accomplish by posing the following questions:

- 1- Are there any thinking styles that Iraqi Open Educational students favour above others?
- 2- Are there any significant distinctions in thinking patterns based on gender?
- 3- Are there any significant differences of thinking styles based on the stage level?

2- The Study Objectives:

This research aims at:

- a. Identifying Iraqi students' preferred thinking methods.
- b. Examining the extent to which the contents studied by students of Open Educational College have an influence on their preferred thinking styles according to gender and studying stages.

3- Hypotheses of the current research:

- a. The preferred thinking methods of Iraqi students are not statistically different from one another.
- b. There are no statistically significant gender variations in the preferred thinking patterns of Iraqi pupils.
- c. According to study levels, there are no statistically significant variations in the preferred thinking styles of Iraqi students.

4- Limits of the study:

The current study limits to search the Iraqi Open Educational EFL Students thinking styles at the (2nd and 4th) studying stages, department of English, during the academic year 2022-2023.

5- Determining Thinking Styles:

Thinking style refers to a person's innate propensity for information processing, which embodies both the aspects of thinking processes and different forms of thinking. In all aspects of social interaction, it is crucial to comprehend a person's thinking style. There are many different models of thinking styles; some focus on a thinker's personality traits, others seek to explain how they receive, interpret, and align experiences, and still others are concerned with the sensory perceptual medium that a thinker prefers to use when doing these things.

A person's manner of thinking supposedly learned during their many developmental phases. The way a person thinks and behaves, as well as how he handles information and uses it to address issues, are all clearly related to how he deals with knowledge and information. To deal with the knowledge that is accessible regarding the issues and attitudes they encounter, people utilize a set of approaches and tactics called thinking processes. (Murad, 1989)

Cognitive styles have their roots in thinking styles. They have a closer familial connection. Like Hudson (1996), some scholars believe that thinking and cognitive

styles are interchangeable. De Bono (1991), proposes that thinking is the purposeful investigation of experience. The goal might be comprehension, decision-making, planning, problem solving, judgment, action, and so on. According to Singh (2008), thinking styles is the manner in which one chooses to think employing a specific brain hemisphere or mental capacity.

Kim (2011) views that thinking styles are: the preference for representation and processing data in the mental system, tied to the basic components of personality, the reliable method of engaging with the surroundings and adjusting to new facts. Thinking styles according to Zhang and Sternberg (2002), are: the preferred method through which a person manages and processes knowledge and cognition.

6- Sternberg's Theory and its Principles:

6.1 Sternberg's Theory:

The model of thinking styles (Sternberg, 1988, 1997) viewed as the most inclusive among the numerous styles models (Zhang & Fan, 2001). It often referred to as the theory of mental self-government.

The notion of mental self-government, which Sternberg proposed as his style theory, published in 1988. Sternberg argued that there are several methods of regulating human actions, just as there are numerous methods of controlling a community, using the word "government" as a metaphor. Sternberg referred to these various methods of organizing our activities as *thinking styles*. We decide to employ our preferred ways of thinking to manage our activities. In addition, styles are not inherently "good" or "bad," but rather their usefulness depends on the situation and the work at hand. Finally, thought patterns socialized, at least in part, and may improve. The theory presents 13 thought patterns that correspond to five dimensions. These styles shown in the following table:

Sternberg's Thinking Styles of Mental Self-Government Theory

Dimension	Thinking Styles	Clarifying of the style
Function	Legislative	One likes to select their own activities and work on projects that call for innovative solutions.
	Executive	One prefers to carry out jobs that have predetermined rules and explicit directions.
	Judicial	One chooses to conduct things that allow for self-evaluation, such as assessing and judging the performance of others.
Form	Hierarchical	One chooses to divide their attention across a number of tasks that prioritized based on how much they value each task.
	Monarchical	Preferring to work on projects that allow one to full concentrate on one subject at a time.
	Oligarchic	A preference for multitasking without prioritisation in order to achieve various goals.
	Anarchic	Choosing to work on projects that would provide one freedom in what, where, when, and how they are completed.
Level	Global	A preference for paying closer attention to general concepts and the big picture of a problem.
	Local	Working more efficiently on projects that need for attention to specifics.
Scope	Internal	One likes for working on projects that enable him to function independently.
	External	Working more favourably on projects that provide teamwork with others.
Leaning	Liberal	Choosing to work on projects that have novelty and unpredictability.
	Conservative	A preference for activities that allow one to follow the established norms and processes when executing jobs.

The following figure represents Sternberg's thinking styles:

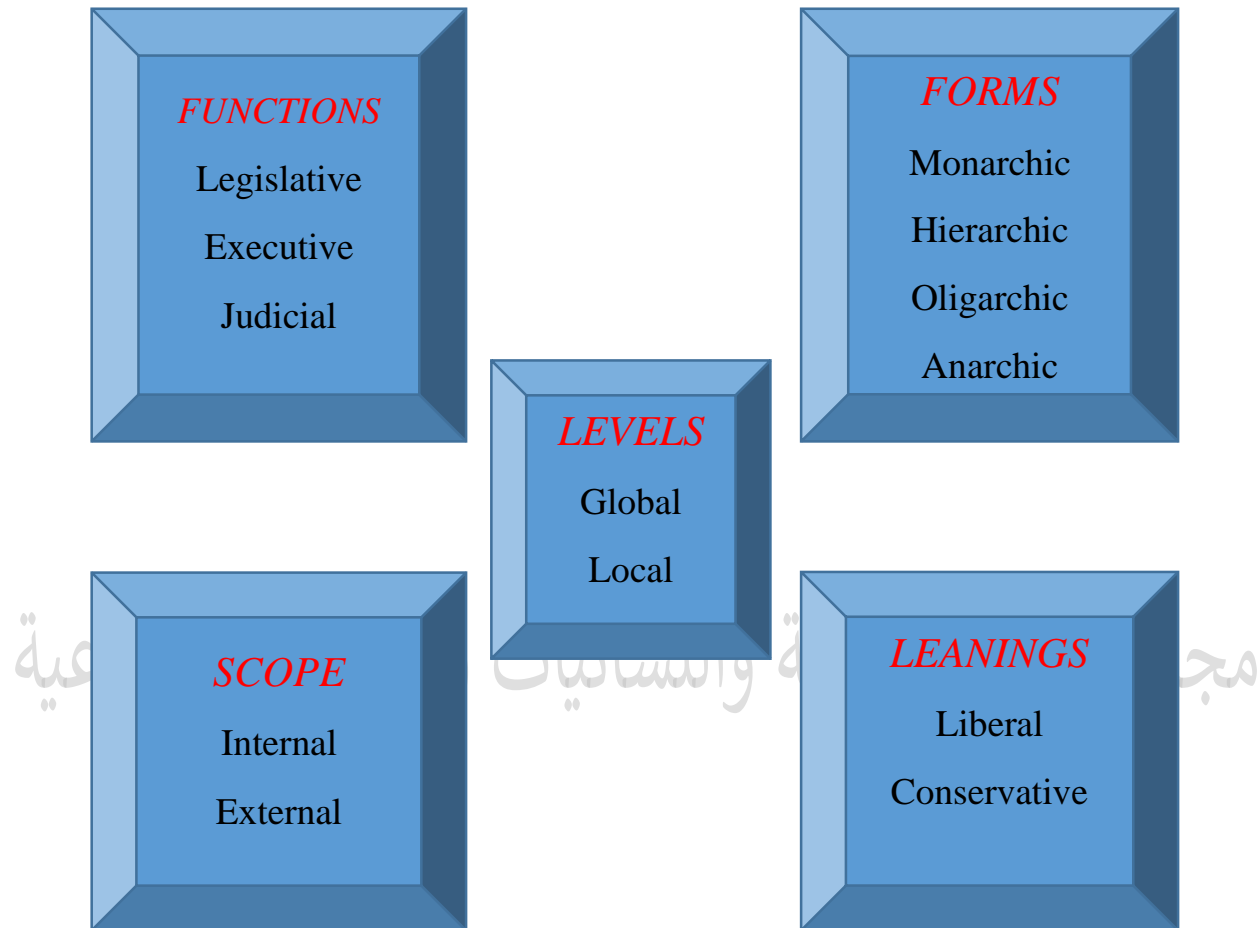


Figure (1): Sternberg's Classification of Thinking Styles (1988)

6.2 Principals of Sternberg's Theory:

Sternberg (1997: 79-98) views 15 of his main thinking styles principles as following:

- 1- Styles are preferences for how to use skills, not skills themselves.
- 2- Styles and skills that complement one another produce a cohesiveness that is greater than the sum of its parts.
- 3- Both styles and talents must match while making decisions in life.
- 4- Instead of just having one style, people have outlines of styles.

- 5- In different jobs and circumstances, styles vary.
- 6- People vary in how flexible their personal styles are.
- 7- People's stylistic adaptability varies.
- 8- Styles socialized.
- 9- Over a lifetime, styles can change.
- 10- Styles may be measured.
- 11- Styles may taught.
- 12- Styles that were regarded significant at a time might not be so another.
- 13-Styles that are valued in one location might not be in another.
- 14- Styles are a matter of fit, not whether they are generally good or bad.
- 15- Style fit and skill levels are often confused.

7. The Impact of Thinking Styles on Teaching/Learning

Process:

Effective learning occurs when the entire brain is engaged in the learning process, as has been thoroughly demonstrated in educational literature. Cognitive processes accommodated when educational activities created to match a learner's preferred method of thinking. It described in light of the Herrmann's (1995) brain model, which holds that teaching and learning activities seek to affect all four-brain quadrants. This paradigm may use to plan and implement teaching and learning in each of the four quadrants, as well as to understand intellectual variety and the crucial role it plays in effective teaching and learning (De Boer & Steyn, 1999).

The idea behind Herrmann's hypothesis (1996) relies on the left/right, the trinity, and physical connections between the top and bottom halves of the human brain as well as between the left and right hemispheres. Accordingly, the physical connections between each hemisphere of the brain are each uniquely specialized and coordinated to support safe brain function. Gazzagnia (1998), stated that the two hemispheres have an extensively diverse influence over several areas of mind

and behaviour. Every half has a unique specialization, with all of its drawbacks and benefits . Speech and language dominated by the left side of the brain. Performing visual-motor activities well on the right.

According to Herrmann (1995), the four quadrants of his model correspond to the four parts of the human brain responsible for thinking. He indicated the four selections for each quadrant. A preference for tasks using logical, analytical, and realistic facts indicated by a quadrant (A) preference. A linear activity form is preferred in quadrant (B). Information that is organized and thorough preferred by those with quadruple preference. They are conservative in their behaviour and like to retain things, as they appear to be. A preference for information that is personal and involves emotion referred to as a (C) quadrant preference. The (D) quadrant preference is essentially an organized, thought-based strategy.

The Herrmann model makes it possible to understand intellectual complexity and the crucial role of effective teaching and learning, as well as to organize and carry out teaching and learning practices throughout all of the brain's quadrants. According to the specialized functions of the brain, the Herrmann model appears to be the sole instrument that identifies a person's preference for thinking in four different situations (Herrmann, 1995).

Accordingly, cognitive abilities learned when learning activities created in accordance with the learner's intended thinking/learning process and are best utilised if they are structured to relate cognitive functions to all four quarters of Herrmann's model. That is to say, effective learning may occur when all of the brain's cognitive functions engaged. The following figure represents Herrman's model of brain (1995).

WHOLE BRAIN MODEL

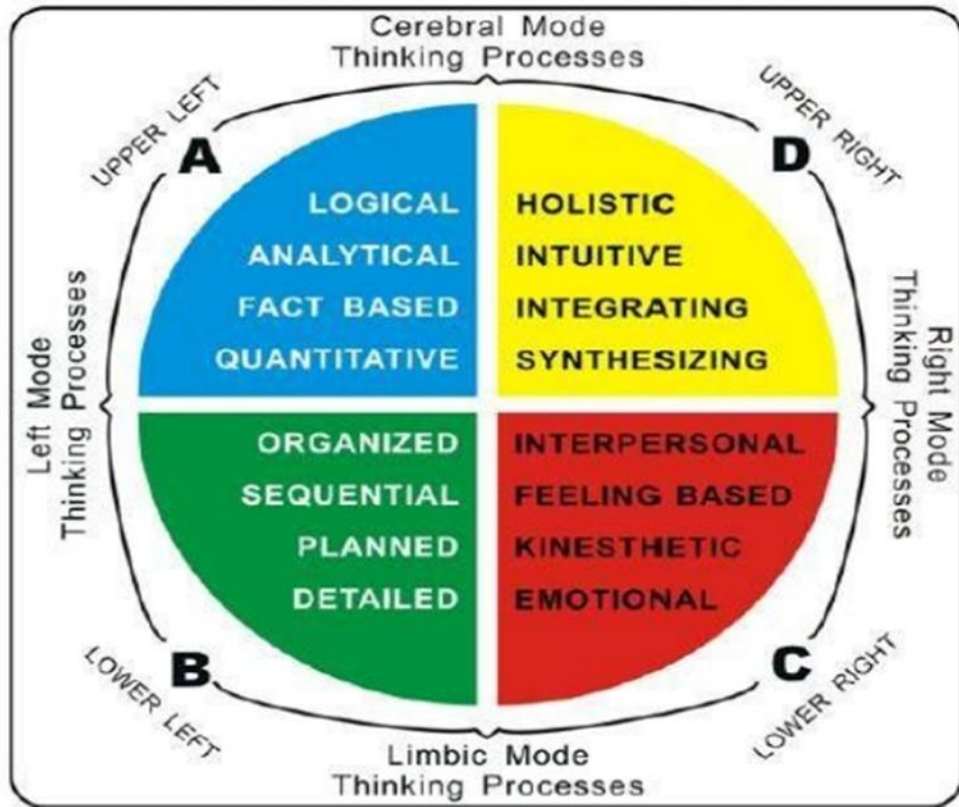


Figure (2): The Model of the Whole Brain Teaching and Learning

(Herrmann, 1995: 155)

8- Thinking Styles and Academic Implications:

Through the years, educational specialists have quietly discussed academic accomplishment. Positive thought patterns have linked to higher academic accomplishment Sternberg and Grigorenko (1997).

According to Sepahvandi (2000), a student's capacity for problem solving within the boundaries of the curriculum constitutes academic accomplishment. Other research indicated that some thought patterns contributed favourably to academic success while others did not, (Zhang, 2001). Pashaei et al., in Fatemi and Heidari (2016: 1354) views that academic accomplishment greatly influenced by a variety of variables, such as cognitive capacity, personality qualities, and family.

Al-Jorani (2024:923), mentioned that “Cognitive linguistics is based on the idea that language is an indispensable part of cognition”. Language does not only convey meaning but it also reflects the “cultural, psychological, and communicative factors which can only be understood in the context of a realistic view of conceptualization and mental processing” (Mathewson, 2004, p.2).

9. Methodology:

9.1 The Procedural Design:

A questionnaire utilized in the current study to figure out the preferred thinking patterns of the open educational college students.

9.2 Population:

The Population of the current study included the second and fourth EFL department students of the Open Educational College, Nineveh Centre/ Iraq during the academic year 2022-2023.

9.3 The Sample:

The researcher at the present study selected 40 students randomly from the population.

9.4 Instrument: The Questionnaire:-

The researcher has created a questionnaire in accordance with Sternberg's (1997) theory of thinking styles in order to fulfil the objectives of the study. The questionnaire had two primary components when created: First, the fundamental five aspects of thinking styles (Functions, Forms, Levels, Scope, and Leanings). Second, the 13 thinking paradigms (legislative, executive, judicial, monarchical, hierarchical, oligarchy, anarchic, global, local, internal, external, liberal, and conservative).

Five points on a scale with the options: Always, Often, Sometimes, Rarely, and Never used to gauge the pupils' preferred thinking styles.

10. The Results

The current study builds on the following three hypotheses:

The First Hypothesis:-

" The preferred thinking methods of Iraqi students are not statistically different from one another."

The results shown in table (1):

Table (1): Students' Thinking Styles Preferences Based on Sequence

Thinking Styles	Mean	Std. Deviation	%	New No,
Legislative	17.9250	1.81712	89.63%	2
Executive	17.0500	2.19498	85.25%	7
Judicial	14.9250	2.58583	74.63%	9
Monarchic	14.0250	2.08151	70.13%	12
Hierarchic	17.4500	2.08720	87.25%	5
Oligarchic	18.1750	1.82416	90.88%	1
Anarchic	17.6500	2.00704	88.25%	4
Global	17.7500	2.42582	88.75%	3
Local	13.8000	2.51355	69.00%	13
Internal	14.5250	2.07534	72.63%	11
External	14.7000	2.06559	73.50%	10
Liberal	16.5000	2.42846	82.50%	8
Conservative	17.3000	2.24408	86.50%	6

Table (1) views the most three preferred styles of Iraqi Open Educational EFL students are First, Oligarchic thinking style of the second dimension; Forms. Second, Legislative of the first dimension; Functions. Third, Global thinking style of the third dimension; Levels.

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

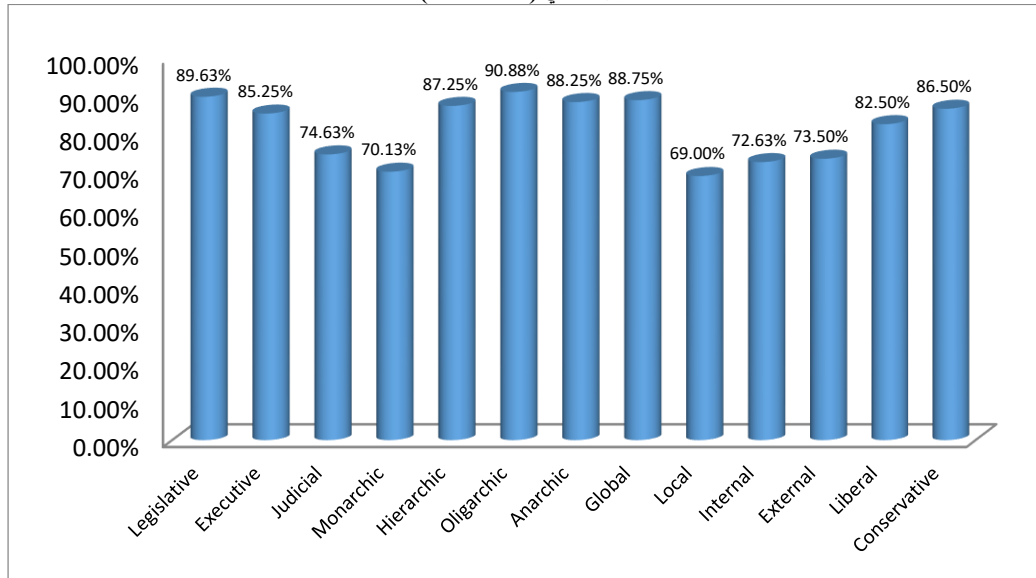


Figure (3): Students' Thinking Styles Preferences Based on Sequence

The second Hypothesis:

" There are no statistically significant gender variations in the preferred thinking patterns of Iraqi pupils."

The results shown in table (2):

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

Thinking Styles	Gender	N	Mean	Std. Deviation	T
Legislative	M	21	17.8095	1.80607	0.418
	F	19	18.0526	1.87005	
Executive	M	21	17.1905	1.86062	0.421
	F	19	16.8947	2.55810	
Judicial	M	21	14.8571	2.86855	0.172
	F	19	15.0000	2.30940	
Monarchic	M	21	13.9524	2.03657	0.229
	F	19	14.1053	2.18314	
Hierarchic	M	21	17.9048	2.02249	1.470
	F	19	16.9474	2.09427	
Oligarchic	M	21	18.0476	2.03657	0.460
	F	19	18.3158	1.60044	
Anarchic	M	21	17.8095	1.83355	0.524
	F	19	17.4737	2.22032	

Global	M	21	18.3810	2.35534	1.777
	F	19	17.0526	2.36816	
Local	M	21	14.4762	2.99364	1.896
	F	19	13.0526	1.61499	
Internal	M	21	14.6190	1.98686	0.298
	F	19	14.4211	2.21900	
External	M	21	14.8571	2.10442	0.501
	F	19	14.5263	2.06474	
Liberal	M	21	16.9524	2.43877	1.247
	F	19	16.0000	2.38048	
Conservative	M	21	17.3810	2.53922	0.237
	F	19	17.2105	1.93158	

T (tab): 2.025, 0.05, 38

Table (2) views that there are no statistically significant differences of the p referred thinking styles between male and female.

The calculated T-test less than the tabulated at level of significance (0.05) and the degree of freedom (38) with tabulated value (2.025). So, this hypothesis is accepted.

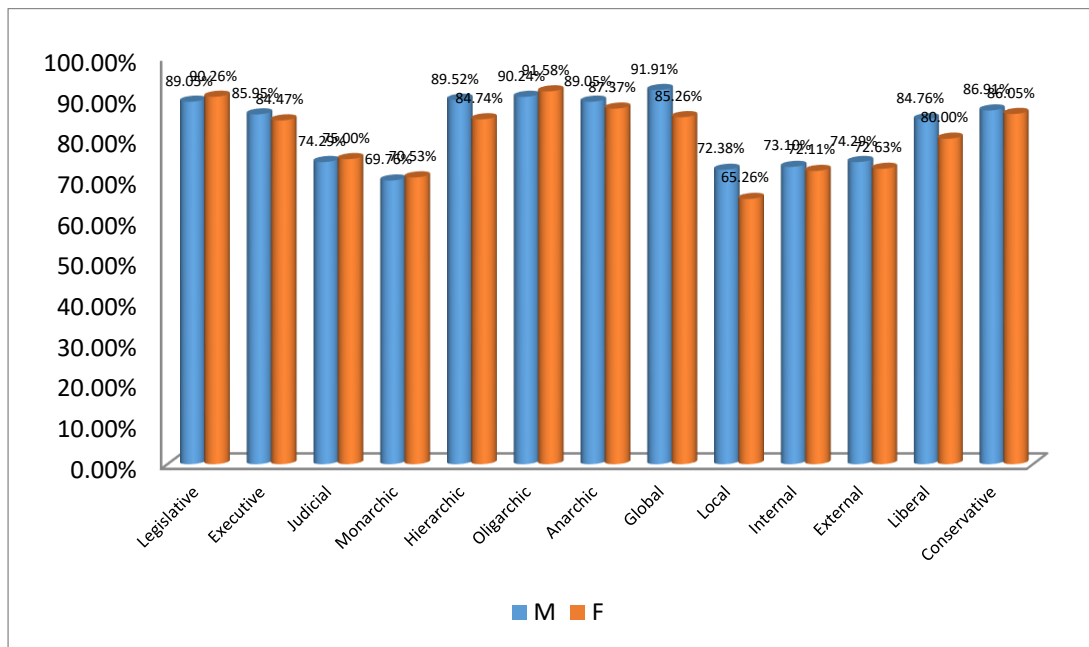


Figure (4): Students' Thinking Styles Preferences according to Gender

The Third Hypothesis:

" According to study levels, there are no statistically significant variations in the preferred thinking styles of Iraqi students. "

The results shown in table (3):

Table (3): Differences of Students' Thinking Styles Preferences in Relation to Gender

Thinking Styles	Classroom	N	Mean	Std. Deviation	T
Legislative	second	28	18.0000	1.76383	0.394
	fourth	12	17.7500	2.00567	
Executive	second	28	17.4643	2.09907	1.882
	fourth	12	16.0833	2.19331	
Judicial	second	28	15.2143	2.78032	1.083
	fourth	12	14.2500	2.00567	
Monarchic	second	28	14.1429	2.06764	0.542
	fourth	12	13.7500	2.17945	
Hierarchic	second	28	17.4643	2.04545	0.065
	fourth	12	17.4167	2.27470	
Oligarchic	second	28	18.4286	1.81411	1.357
	fourth	12	17.5833	1.78164	
Anarchic	second	28	17.4286	2.11570	1.068
	fourth	12	18.1667	1.69670	
Global	second	28	17.6429	2.52710	0.422
	fourth	12	18.0000	2.25630	
Local	second	28	14.0000	2.37268	0.765
	fourth	12	13.3333	2.87096	
Internal	second	28	14.7500	2.13654	1.049
	fourth	12	14.0000	1.90693	
External	second	28	14.6429	2.12941	0.264
	fourth	12	14.8333	1.99241	
Liberal	second	28	16.5714	2.51556	0.281
	fourth	12	16.3333	2.30940	
Conservative	second	28	17.4643	2.28493	0.703
	fourth	12	16.9167	2.19331	

T (tab) : 2.025 , 0.05 , 38

Table (3) views that there are no statistically significant differences of the preferred thinking styles between the students of the second and fourth level of study.

The calculated T-test less than the tabulated at level of significance (0.05) and the degree of freedom (38) with tabulated value (2.025). So, this hypothesis is accepted.

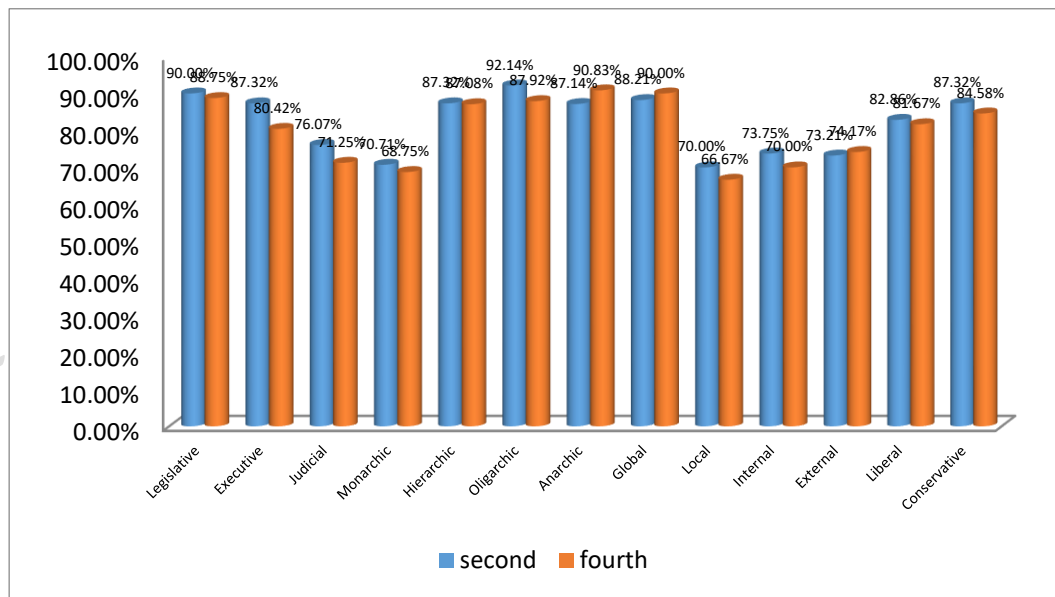


Figure (5): Students' Thinking Styles Preferences according to Study Level

11. Discussion of the Results:

1- It can be clearly noticed that Iraqi Open Educational College EFL students prefer to use some kinds of thinking styles such as the Oligarchic thinking style of the second dimension; Forms, the Legislative of the first dimension; Functions, the Global thinking style of the third dimension; Levels. Another point, which can be obviously noticed that Iraqi students 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 thinking styles that Iraqi Open Educational students favour above others?) which is already addressed is (No).

2- No statistically significant differences found in the students' preference of thinking styles between male and female. So, the answer to the second research question (Are there any significant distinctions in thinking patterns based on gender?) Which already addressed is (No).

3- No statistically significant differences found in the students' preference of thinking styles between the second and fourth level of stage. So, the answer to the third research question (Are there any significant differences of thinking styles based on the stage level?) Which already addressed is (No).

12. Conclusions:

Depending on the findings, the current study offers an obvious evidence that Iraqi Open Educational College EFL students preferred using some thinking styles like (Oligarchic, Legislative and Global) 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.

No statistically significant differences of students' thinking styles preference between the second and fourth level of stage students.

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