

# The Extent to Which Arabic Language Teachers Focus on Developing Critical Thinking Skills at the Basic Education Level in Iraqi Schools

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**Abstract:** Critical thinking has consistently occupied a central position in educational discourse across historical periods, owing to its pivotal role in equipping learners with essential cognitive and learning skills. The significance of critical thinking stems from its capacity to develop students' abilities to analyze, evaluate, and make reasoned judgments, thereby preparing them to effectively address academic challenges and real-life situations. Accordingly, educators across different educational levels strive to adopt and implement instructional strategies specifically designed to cultivate and enhance critical thinking skills.

The systematic promotion of inquiry sustained investigation, and the rigorous interrogation of unexamined assumptions constitute a foundational mechanism for expanding students' cognitive horizons. Such an approach encourages learners to engage critically with a wide range of academic domains, thereby deepening their conceptual understanding and reinforcing their capacity for autonomous, lifelong learning. Given that learning is intrinsically a cognitive enterprise grounded in processes of thinking, the deliberate and explicit instruction of critical thinking assumes heightened significance. This importance is particularly pronounced in the context of Arabic language education, where teachers bear a central responsibility for cultivating learners' higher-order thinking skills through linguistically mediated analysis, interpretation, and evaluation.

The study population comprised all male and female Arabic language teachers at the basic education level in Iraq. To achieve the study objectives, a random sample of 510 teachers was selected from this population. The sample reflected diversity in gender, academic qualification, and type of secondary school certificate (scientific or literary).

**Research Instrument:** The California Critical Thinking Skills Test (CCTST, 2000).

The California Critical Thinking Skills Test was developed based on a comprehensive definition of critical thinking derived from a consensus among a group of experts in the field of psychology. The test aims to measure five core critical thinking skills: analysis, induction, inference, deduction, and evaluation.

The study revealed variation in the levels of critical thinking skills among participants, with mean scores ranging from 1.578 to 4.507. Nevertheless, all of these means were below the level considered educationally acceptable. This outcome is attributed to shortcomings in the curricula in promoting critical thinking, as well as to the difficulty of acquiring and practicing these skills.

**Keywords:** Arabic language teachers; critical thinking skills development; basic education stage in Iraqi schools.

## Chapter One

### First: Research Problem

Critical thinking has long been a focal point of educators across historical eras due to its fundamental importance in equipping learners with essential learning skills. The significance of this type of thinking lies in its ability to enhance students' critical thinking capacities, thereby preparing them for success in various aspects of life. Accordingly, educators at different educational levels strive to adopt instructional strategies aimed at developing this skill.

Encouraging a spirit of inquiry, continuous investigation, and the rejection of ideas without scrutiny plays a substantial role in expanding students' cognitive horizons. Such an approach motivates learners to explore broader academic domains, enriching their knowledge and developing their capacity for lifelong learning. Given that learning is essentially a process of thinking, the importance of teaching critical thinking becomes particularly evident, especially among Arabic language teachers, who bear a primary responsibility for fostering students' thinking abilities.

Critical thinking skills have gained increasing importance in our rapidly changing era, particularly among Arabic language teachers at the basic education stage. In light of accelerated changes and the influx of often contradictory information, teachers require a repertoire of skills that enable them to analyze information, evaluate it, and draw accurate conclusions. This study seeks to explore the extent to which Arabic language teachers possess these essential skills. Accordingly, the research problem of the present study can be defined through answering the following main question:

*To what extent do Arabic language teachers focus on developing critical thinking skills at the basic education stage in Iraqi schools?*

**To address this main question, the researcher seeks to answer the following sub-questions:**

1. To what extent do Arabic language teachers possess critical thinking skills as measured by the California Critical Thinking Skills Test (CCTST, 2000)?

2. Are there statistically significant differences at the level (0.05) in the level of critical thinking skills among Arabic language teachers at the basic education stage attributable to the gender variable (male/female)?
3. Are there statistically significant differences at the level (0.05) in the level of critical thinking skills among Arabic language teachers at the basic education stage attributable to the academic level variable?
4. Are there statistically significant differences at the level (0.05) in the level of critical thinking skills among Arabic language teachers at the basic education stage attributable to the type of secondary school certificate (scientific/literary)?
5. Is there a statistically significant correlation at the level (0.05) between the degree of acquisition of critical thinking skills and both the secondary school average and the cumulative university GPA of the study sample?

### Second: Significance of the Study

This study is distinguished by being among the first to employ the California Critical Thinking Skills Test—an internationally standardized instrument—to assess the level of critical thinking skills among Arabic language teachers. Owing to its validity and psychometric properties, this test provides accurate and reliable data on these skills. The findings of this study will make a substantial contribution to understanding the current state of critical thinking skills among this important group, thereby opening new avenues for research and development in the field of teacher training.

diverse domains of life. It encompasses a systematic and methodologically rigorous process of investigating phenomena, analyzing complex problems, and generating solutions grounded in reliable empirical and theoretical evidence. The significance of scientific research lies in its function as a critical foundation that enables societies to achieve sustainable progress, informed decision-making, and comprehensive development.

### 1. Research as a Means of Understanding the World and Surrounding Phenomena

Research represents the primary tool that enables human beings to understand the world around them. Throughout history, humans have relied on research to explore natural and social phenomena. Through scientific inquiry, cosmic phenomena such as gravity and electricity have been explained, and the laws of physics and chemistry—now forming the foundations of modern technology—have been discovered. Research is not limited to providing answers; rather, it raises new questions that stimulate intellectual curiosity and open new horizons of knowledge.

## 2. Addressing Global Problems and Challenges

Today's world faces complex challenges at environmental, health, social, and political levels. Scientific research constitutes the decisive instrument for confronting these challenges. For example:

- **In the health sector:** Research has played a pivotal role in the development of vaccines and medicines to treat diseases such as the novel coronavirus (COVID-19).
- **In the environmental field:** Research contributes to devising solutions to climate change, including the development of sustainable energy sources and technologies for pollution control.
- **In the social domain:** Research studies are employed to understand the root causes of poverty and inequality, thereby supporting the design of effective policies to address these issues.

## 3. Supporting Economic and Social Development

Countries that invest in scientific research achieve notable economic and social progress. Research enables nations to develop new technologies and innovative industries, thereby strengthening their economic capacity. For example:

- **Technology and innovation:** Modern technological industries, such as artificial intelligence and robotics, are the outcomes of advanced scientific research.
- **Agriculture and food security:** Agricultural research contributes to improving crop

productivity through techniques such as genetic engineering, helping to confront food security challenges.

## 4. Improving Quality of Life

Scientific research directly contributes to improving individuals' quality of life by providing innovative solutions to everyday challenges.

- **In the health sector:** Medical innovations grounded in research have reduced mortality rates and contributed to the improvement of public health.
- **In education:** Educational research offers innovative instructional strategies that help enhance students' performance and deepen their understanding.
- **In technology:** Everyday conveniences, such as smartphones and the internet, are the result of years of research and innovation.

## 5. Strengthening National Independence and Capacity

Scientific research grants countries greater independence in decision-making and policy development. Nations with a strong scientific base are capable of developing their own technologies without excessive reliance on others, thereby reinforcing national sovereignty.

- **Food security:** Research aimed at improving crop production leads to abundant and sustainable yields.
- **Technological security:** The development of local technologies reduces dependence on imported technologies.

## 6. Supporting Decision-Makers and Policy Formulation

Scientific research provides accurate and objective data that serve as a foundation for informed decision-making.

- **In health policy:** Research helps in understanding epidemics and diseases, thereby contributing to the development of effective response strategies.

- **In urban planning:** Research supports the design of smart and sustainable cities that meet the needs of populations.
- **In economic policy:** Research-based economic analysis offers decision-makers clear insights into the most effective policies for achieving growth.

## 7. Enhancing Critical and Creative Thinking

Engagement in scientific research plays a pivotal role in fostering both critical and creative thinking among researchers and students alike. Through the systematic examination and rigorous analysis of problems, individuals develop the ability to approach issues from multiple perspectives, critically evaluate evidence, and construct well-substantiated arguments grounded in logical reasoning and empirical support.

## 8. Achieving Sustainable Development

Research is an indispensable tool for achieving sustainable development across its three dimensions:

- **Economic:** Through the development of innovative technologies that increase productivity and create employment opportunities.
- **Social:** By studying societal problems, such as poverty and unemployment, and proposing effective solutions.
- **Environmental:** By devising solutions that reduce the depletion of natural resources and protect the environment.

## 9. The Role of Research in Education

Scientific research enriches the educational process by strengthening the link between theory and practice.

- It contributes to the development of curricula, making them more interactive and better aligned with real-world contexts.
- It enhances students' roles as innovative researchers, thereby better preparing them to meet future challenges.

## 10. Building a Knowledge Society

Scientific research constitutes the cornerstone of building a knowledge-based society, wherein knowledge and information function as primary drivers of progress and innovation. Within such societies, the production, dissemination, and effective utilization of knowledge contribute to enhancing individual well-being while simultaneously strengthening a society's capacity for global competitiveness and sustainable development.

Scientific research is not merely a limited academic activity; rather, it is a fundamental pillar in the construction of modern civilizations. Through research, we are able to engage with the present and anticipate the future. It is not only a tool for problem-solving, but also a means of improving our lives and advancing humanity as a whole. Every innovation we use today was once an idea under investigation, and every future advancement depends on sustained research efforts that build upon the foundations we establish today.

*Scientific research is not a luxury but a necessity; without it, humanity remains trapped in a cycle of ignorance, while through it, humanity advances toward horizons of knowledge and innovation.*

### Third: Objectives of the Study

1. To understand the extent to which teachers guide and direct students toward developing critical thinking skills in Arabic language subjects.
2. To evaluate current educational programs and curricula in terms of their inclusion of activities and exercises that promote the development of critical thinking.
3. To examine the impact of developing critical thinking skills on students' ability to analyze information and make informed decisions.
4. To assess how the development of critical thinking skills influences the improvement of students' academic performance and learning outcomes.

### Fourth: Research Hypotheses

## Main Hypothesis

There is a significant effect of Arabic language teachers' focus on developing critical thinking skills among students at the basic education stage in Iraqi schools.

## Sub-Hypotheses

1. There is a significant effect of Arabic language teachers' focus on critical thinking skills as measured by the California Critical Thinking Skills Test (CCTST, 2000).
2. There are statistically significant differences at the level (0.05) in the level of critical thinking skills among Arabic language teachers at the basic education stage attributable to the gender variable (male/female).
3. There are statistically significant differences at the level (0.05) in the level of critical thinking skills among Arabic language teachers at the basic education stage attributable to the academic level variable.
4. There are statistically significant differences at the level (0.05) in the level of critical thinking skills among Arabic language teachers at the basic education stage, attributable to the type of secondary school certificate (scientific/literary).
5. There is a statistically significant correlation at the level (0.05) between the degree of acquisition of critical thinking skills and both the secondary school average and the cumulative university GPA of the study sample.

## Fifth: Delimitations of the Study

The present study is delimited as follows:

- The research instrument, namely the *California Critical Thinking Skills Test* for the university level (2000 form).
- Teachers of the Arabic language at the basic education stage in schools in Iraq.

## Sixth: Definition of Terms

### Development of Critical Thinking Skills

- **Conceptual (Operational) Definition:**

The development of critical thinking skills refers to the process aimed at enhancing students' ability to analyze information, evaluate evidence, and apply logical reasoning to arrive at rational and coherent conclusions, while avoiding biases and unfounded assumptions. These skills include the ability to compare, interpret, infer, evaluate, and make decisions based on clear and sound rational evidence (Al-Dosari, 2022, p. 22).

- **Procedural Definition:** This refers to the percentage or arithmetic mean indicating the extent of improvement in students' performance on activities related to critical thinking, as measured by standardized critical thinking assessment tools (such as the California Critical Thinking Skills Test) (Awad, 2019, p. 24).

### Basic Education Stage

- **Procedural Definition:**

The basic education stage is the educational phase extending from the first to the tenth grade, and it aims to provide students with fundamental knowledge and skills across various academic disciplines, in addition to fostering moral, ethical, and social values (Al-Salahat, 2015, p. 27).

- **Statistical Definition:**

This refers to the age group or the number of students enrolled in grades one through ten, distributed according to variables such as gender or geographical region, as reflected in the statistical reports of the Ministry of Education (Abdullah, 2019, p. 30).

## Chapter Two: The Theoretical Framework and Previous Studies

### Previous Studies:

#### Study by Al-Kilani (2005)

A study conducted by Al-Kilani in 2005 on a sample of 54 male and female principals of public secondary schools enrolled in the Master's program in Educational Administration at Yarmouk University revealed that the

level of critical thinking among the vast majority of participants (51 individuals) was moderate, while only a small proportion (3 individuals) demonstrated a high level of critical thinking. The study findings further revealed a positive association between individuals' levels of critical thinking and their academic qualifications, indicating that higher academic attainment is associated with more advanced critical thinking skills.

#### **Study by Facione et al. (2005)**

An exploratory study conducted by Facione and colleagues (2005) on a sample of 587 university students identified seven key factors that motivate students to engage in the use of critical thinking skills within their university studies. These factors include: truth-seeking, self-confidence, open-mindedness, intellectual curiosity, analytical ability, cognitive maturity, and organized thinking.

#### **Study by Stroud (1995)**

Stroud's study (1995) demonstrated that American teachers' in-depth knowledge of their national history positively influences their ability to teach students the critical thinking skills necessary for analyzing historical events. This conclusion was reached through a case study of four expert teachers of American history, in which the researcher examined the relationship between teachers' content knowledge and their design of instructional activities that promote critical thinking.

#### **Study by Newell (1996)**

In a pioneering study conducted by Newell in 1996, the researcher sought to develop critical thinking skills among kindergarten children. Newell identified a set of core critical thinking skills, such as interpretation, analysis, evaluation, and self-regulation, and emphasized the importance of providing a stimulating educational environment to foster the development of these skills in young children.

#### **Study by Al-Halfawi (2007)**

The study conducted by Al-Halfawi (2007), which sought to assess the level of critical thinking among students in Jordanian universities, produced several noteworthy findings. The results indicated that students in advanced academic years, those enrolled in scientific faculties,

and female students generally demonstrated higher performance across most dimensions of critical thinking. Conversely, male students outperformed their female counterparts on the inference test, while no statistically significant gender differences were observed in the interpretation and argument evaluation tests.

#### **Study by Afana (2008)**

Afana's study (2008) revealed that the level of critical thinking skills among students of the Faculty of Education at the Islamic University of Gaza was below the desired level. The study found that students in scientific specializations and postgraduate students exhibited higher levels of critical thinking skills compared to others. It also indicated a positive relationship between academic achievement and the level of critical thinking skills.

#### **Study by Lee (1998)**

Lee's study (1998) affirmed that the primary objective of education in the new millennium is to develop students' capacities for critical thinking and analytical reading. The study called upon universities to strengthen scientific research and to organize workshops focused on cultivating students' critical thinking skills. The study further indicated that university curricula can play a significant role in fostering the development of critical thinking skills through the systematic application of Bloom's taxonomy of educational objectives and by actively encouraging students to differentiate between factual information and opinion.

#### **Study by Ruland (2000)**

Ruland's study (2000) sought to examine the nature of the relationship between components of the classroom environment and the level of critical thinking ability. The study sample consisted of 342 male and female first-year students enrolled in the College of Arts in New York City. The researcher employed the Watson–Glaser Critical Thinking Appraisal as a pre-test at the beginning of the academic term. The participants then enrolled in four courses designed according to a dialogic, debate-oriented methodology aimed at developing critical thinking. Upon completion of these courses, the same instrument was administered as a post-test. The results demonstrated that elements of the classroom

environment constitute a strong predictive variable in the development of critical thinking skills.

### Study by Temple (2000)

Temple (2000) conducted a study to examine the effectiveness of the Reading and Writing for Critical Thinking (RWCT) project, which was developed in 1997. Approximately 15,000 teachers of the lower basic education stage from twenty countries across Europe and Asia participated in the implementation of the project, which was carried out over a period ranging from 12 to 15 months. Temple adopted a comprehensive set of teaching–learning strategies encompassing prediction, hypothesis testing, activation of prior knowledge, the systematic promotion of classroom dialogue, writing-to-learn practices, varied response modalities, and cooperative learning structures. The findings revealed substantial positive shifts, as reported by teachers, in students' learning processes and behaviors. These shifts were evidenced by heightened learning motivation, more effective and meaningful classroom communication, increased engagement in creative and higher-order cognitive processes, expanded opportunities for self-directed and collaborative learning, and a broader diversity and sophistication in students' responses to instructional questions.

## Theoretical Framework

### First: Definition of Critical Thinking

A comprehensive examination of definitions of critical thinking in the educational literature reveals considerable diversity. This diversity stems from the multiplicity of researchers' theoretical perspectives, each of which addresses different dimensions of critical thinking skills. Despite such variation, the plurality of definitions constitutes a form of intellectual richness, as it encourages further inquiry and scholarly debate, thereby contributing to the expansion of knowledge in this field.

John Dewey (1938) defined critical thinking as a reflective and analytical process closely associated with the evaluation of beliefs and knowledge. Dewey emphasized the necessity of grounding judgments in logical foundations through reliance on evidence and justification. Accordingly, critical thinking, from Dewey's

perspective, is intrinsically linked to the evaluation of values and the making of evidence-based decisions (Al-Rabadi, 2024).

Norris (2005) views critical thinking as a process involving a range of considerations that prompt learners to explore diverse perspectives—whether those of others or alternative viewpoints—to construct a personal standpoint grounded in critical analysis of these views.

Beyer (2008) argues that critical thinking is a complex process that goes beyond the mere aggregation of basic thinking skills. According to Beyer, it comprises a set of interrelated processes that may be employed individually or collectively to verify the validity and effectiveness of ideas and claims. Critical thinking, as Beyer describes it, begins with a given claim or conclusion and proceeds to analyze and evaluate it by posing questions regarding its validity, credibility, significance, and accuracy. To support this process, critical thinking employs a variety of methods and strategies that facilitate the formation of logical judgments. Beyer further emphasizes that critical thinking is not synonymous with decision-making or problem-solving (Habib, 2022).

Prominent scholars such as Ennis (2008), Paul (2005), and Sternberg (2004) offer complementary definitions of critical thinking. Ennis conceptualizes it as a reflective and inferential process aimed at decision-making, while Paul underscores its role in correcting misconceptions and attaining reliable knowledge. Sternberg, in turn, identifies a broad range of cognitive processes encompassed by critical thinking, including problem-solving, decision-making, and the acquisition of new concepts.

In light of the wide diversity of definitions of critical thinking, a group of leading experts convened under the auspices of the American Philosophical Association between 1990 and 1992. This group comprised distinguished scholars from various academic disciplines and employed the Delphi method to reach a unified definition of critical thinking at the university level, to facilitate its instruction.

The principal investigator in the Delphi study played a pivotal role in this process by collecting experts' opinions, synthesizing them, and redistributing them for

further feedback. Through this central role, the researcher was able to manage the dialogue among experts and compile the most comprehensive possible body of information and evidence (Facione & Facione, 1998).

After two years of investigation, the expert panel arrived at a comprehensive definition of critical thinking, as reported in Facione's study (1998). The study defined critical thinking as a purposeful, self-regulated mental process aimed at interpreting, analyzing, and evaluating information, and at reaching logical conclusions. Critical thinking also entails examining the evidence, concepts, and methods used to derive these conclusions. The critical thinker is characterized by a set of dispositions that enable objective analysis and evaluation of information; such an individual is inquisitive, well-informed, logical, and flexible in thinking, as well as clear-minded, systematic, and persistent in the pursuit of knowledge. Cultivating these dispositions in individuals contributes to the development of rational and democratic societies (Facione, 1998).

## Second: Critical Thinking Skills

Based on the Delphi experts' definition of critical thinking, Facione and Facione (1998) identified five core critical thinking skills, as follows:

### 1. Analysis Skill

Analysis is the process of decoding complex relationships among the various elements of a text or an idea. It aims to uncover implicit and intended meanings and to identify the connections among statements, concepts, and judgments. Accordingly, analysis requires a set of specialized skills, including the ability to examine viewpoints and evaluate arguments.

### 2. Induction Skill

This skill aims to ensure that the conclusions reached are grounded in valid and robust foundations. In other words, the premises from which reasoning proceeds must be sound for the resulting conclusions to be valid. Examples of this skill include scientific proofs and statistical experiments, even when they are probabilistic in nature, as well as judgments

formed on the basis of observation and prior experience.

### 3. Inference Skill

This skill centers on a series of sequential cognitive processes that begin with formulating hypotheses and generating arguments, followed by the search for evidence to support or refute them. It also involves the ability to identify causal relationships among events and ideas and to arrive at logical conclusions based on the available evidence.

### 4. Deductive Skill

This skill refers to the ability to construct logical arguments leading to new conclusions. It involves analyzing and evaluating available information and then building a coherent chain of logical reasoning to reach plausible outcomes. It also encompasses subsidiary skills such as examining evidence and evaluating alternative explanations.

### 5. Evaluation Skill

This skill aims to assess the validity and objectivity of ideas and beliefs. It enables individuals to distinguish between fact and opinion, and between strong and weak arguments. It includes evaluating the evidence that supports these ideas as well as assessing the logic employed in constructing arguments.

## Third: Characteristics of the Critical Thinker

In his seminal review of the defining characteristics of critical thinkers, Ferret (1997) synthesized a set of core dispositions that distinguish critical thinking. He emphasized that critical thinkers demonstrate sustained intellectual curiosity and a pronounced disposition toward inquiry, which compels them to formulate incisive and reflective questions about phenomena they encounter. Moreover, such individuals engage in careful and systematic examination of information and ideas, evaluate them against self-imposed and contextually grounded criteria, and exhibit a readiness to reconsider and revise their judgments in light of emerging evidence. Moreover, the critical

thinker consistently seeks to ground arguments in sound logical foundations.

#### **Fourth: The Importance of Teaching Critical Thinking**

Critical thinking enhances teachers' effectiveness in designing stimulating instructional activities and in encouraging students to practice a range of thinking skills, such as problem-solving, creativity, and analysis. At the same time, it contributes to the development of the learner's integrated personality by fostering capacities for self-directed learning, decision-making, problem-solving, and effective interaction with society. Moreover, critical thinking deepens students' understanding of history and diverse cultures and leads to an overall improvement in academic achievement.

Furthermore, the integration of critical thinking within instructional practices fosters a classroom climate that is inherently conducive to meaningful dialogue and reflective discussion. Such an environment not only encourages the open exchange of ideas and reasoned argumentation but also contributes to the cultivation of robust national and humanistic values, enabling students to develop a deeper sense of social responsibility, ethical awareness, and civic engagement. As noted by Ramer (1999) and Guzy (1999), critical thinking transforms the learning process from the mere

acquisition of information into an active cognitive endeavor that results in a deeper understanding of academic content (Ramer, 1999; Guzy, 1999).

It can therefore be argued that critical thinking has become one of the central pillars of contemporary educational objectives worldwide. The educational system in Jordan has aligned with this global trend by incorporating goals aimed at developing learners' skills in ways that contribute to building a balanced personality capable of confronting problems and identifying appropriate solutions.

### **Chapter Three: Research Methodology and Procedures**

#### **Research Procedures**

##### **First: Population and Sample of the Study**

The study population consisted of all male and female teachers of the Arabic language at the basic education stage in Iraq. In order to achieve the objectives of the study and ensure adequate representativeness, a random sample was drawn from this population, comprising 510 teachers. The sample reflected diversity in terms of gender, academic qualification, and type of secondary school certificate (scientific or literary), as illustrated in Table (1).

**Distribution of the Study Sample According to the Variables of Educational Level, Type of General Secondary Certificate (Scientific/Literary), and Gender (Male/Female)**

**Table (1)**

<b>Specialization</b>	<b>Males</b>	<b>Females</b>	<b>Total</b>
Scientific	17	54	71
Literary	13	45	58
<b>Total</b>	<b>30</b>	<b>99</b>	<b>129</b>
Scientific	3	55	57
Literary	8	84	92
<b>Total</b>	<b>11</b>	<b>139</b>	<b>150</b>
Scientific	19	21	40
Literary	52	49	101
<b>Total</b>	<b>71</b>	<b>70</b>	<b>141</b>
Scientific	10	21	31
Literary	26	33	59

The study sample exhibits significant demographic diversity, encompassing the variables of gender, academic qualification, and type of general secondary certificate (scientific/literary). This diversity constitutes a positive factor that enriches the statistical analysis and allows for the examination of potential differences among participants according to these variables. Such variation contributes to a deeper understanding of the nature of the phenomenon under investigation across different educational contexts and enhances the comprehensiveness and realism of the study's findings.

**Second: Research Instrument  
California Critical Thinking Skills Test (CCTST, 2000)**

The California Critical Thinking Skills Test (CCTST) was developed based on a comprehensive definition of critical thinking derived from a consensus among a group of experts in the field of psychology. The test is designed to measure five core critical thinking skills: analysis, induction, inference, deduction, and evaluation.

**Procedures for the Arabic Adaptation and Administration of the California Critical Thinking Skills Test in the Iraqi Context**

The process of adapting and administering the California Critical Thinking Skills Test for the Iraqi

context was carried out in accordance with the following procedures:

- The test items and instructions were translated from English into Arabic, followed by a back-translation from Arabic into English. A comparison was then made between the original and translated versions. In addition, the Arabic version was reviewed and linguistically validated by an expert in the Arabic language.
- **Face validity:** The Arabic version of the test was presented to a panel of experts to ensure the clarity of its items and their suitability for the Iraqi context. An agreement rate of 80% among the experts was adopted as the criterion for item acceptance. After the necessary

modifications were made, the test was deemed ready for use.

- **Pilot (empirical) validity:** The test was administered to a small sample of teachers to assess the clarity of the items, their linguistic soundness, and to determine the appropriate time required to complete the test. Based on the results of this pilot application, the test duration was set at 46 minutes.

**Third: Reliability of the Test in Its Adapted Form**

To estimate the reliability of the test, the test–retest method was employed on a sample of 25 Arabic language teachers, with a two-week interval between the two administrations. Pearson’s correlation coefficient was calculated to determine the degree of consistency between the scores obtained in the two applications. The results of this analysis are presented in Table (2).

**Table (2)**  
**Reliability Coefficients of the California Critical Thinking Skills Test**

Skill No.	Skill	Number of Items	Reliability Coefficient
1	Analysis	6	0.84
2	Induction	6	0.83
3	Deduction	4	0.73
4	Inference	12	0.88
5	Evaluation	6	0.81
<b>Total</b>		<b>34</b>	<b>0.86</b>

**Scoring of the Test**

The California Critical Thinking Skills Test consists of 34 multiple-choice items, with each item offering four to five response options. One point is awarded for each correct response, while no points are given for incorrect answers. Accordingly, the total test score ranges from 0 to 34.

The distribution of scores across the critical thinking skills is as follows:

- Analysis skill: 6 points
- Induction skill: 6 points
- Deduction skill: 4 points
- Inference skill: 12 points
- Evaluation skill: 6 points

**Administration of the Test to the Study Sample**

The California Critical Thinking Skills Test was administered collectively to Arabic language teachers at the basic education stage, in accordance with the guidelines provided in the original user manual. The researcher personally supervised all stages of test administration for the study sample.

**Fourth: Statistical Methods Used in the Study**

To achieve the study objectives, a set of statistical methods was employed. Arithmetic means and standard deviations were calculated to answer Questions (1–4), given the comprehensive nature of the research sample. As for Question (5), it was analyzed using multiple regression analysis.

**Chapter Four: Results of the Study and Their Discussion**

**First: Results Related to the First Research Question**

What is the level of critical thinking skills among Arabic language teachers at the basic education stage in Iraq?

In order to answer the main research question, the researcher addressed the following sub-questions. Regarding the first sub-question—*To what extent do Arabic language teachers at the basic education stage possess critical thinking skills according to the California*

*Critical Thinking Skills Test?*—the researcher calculated the arithmetic means and standard deviations of the study sample's scores on the Critical Thinking Skills Test to determine their level of mastery of these skills. The results of this analysis are presented in Table (3).

**Table (3)**  
**Results of the Analysis of Basic Critical Thinking Skills**

Basic Critical Thinking Skills	Number of Items	Arithmetic Mean	Standard Deviation	Rank	Educationally Acceptable Arithmetic Mean (80%)
Analysis skill	6	2.288	1.768	Third	4.8
Induction skill	6	2.376	1.457	Second	4.8
Inference skill	4	1.578	1.253	Fifth	3.2
Deduction skill	12	4.507	2.238	First	9.6
Evaluation skill	6	2.217	1.482	Fourth	4.8
<b>Total</b>	34	12.968	5.042	—	27.2

The data presented in Table (3) indicate that the deduction skill ranked first among the critical thinking skills, recording the highest arithmetic mean of (4.507) with a standard deviation of (2.238). This superiority can be attributed to the nature of deduction as a skill that involves mental activities practiced on a daily basis, such as generating ideas and searching for evidence, which makes it one of the most common and frequently used skills in everyday situations and classroom environments.

In contrast, the inference skill ranked last, with an arithmetic mean of (1.578) and a standard deviation of (1.253), reflecting the high level of difficulty associated with this skill and its reliance on complex cognitive processes that require advanced abilities in integration, analysis, and interpretation.

As for the remaining skills, they were distributed between these two extremes: induction ranked second, followed by analysis in third place, and evaluation in fourth place. This gradation can be explained by the increasing level of cognitive complexity required as one moves from one skill to another.

The results also revealed a clear variation in the levels of critical thinking skills among the members of the sample, with arithmetic means ranging from (1.578) to (4.507). Despite this variation, all means remained below the educationally acceptable level. This may be attributed to the inadequacy of the curricula in fostering critical thinking skills, in addition to the fact that such skills require continuous training and sustained practice.

This finding can be logically interpreted in light of the nature of the prevailing educational environment and the teaching methods adopted at the basic education stage. The higher mean score for deduction compared with other critical thinking skills is attributable to its general nature and its spontaneous use in everyday life and routine classroom situations. Arabic language teachers typically rely on explanation, providing examples, and linking meanings to context—practices that indirectly promote deduction without the need for deliberate, systematic training.

By contrast, the low level of inference reflects its complex nature, as it requires the integrated use of analysis, induction, and interpretation simultaneously. These higher-order cognitive processes are not

developed automatically; rather, they require modern instructional strategies such as problem-based learning, open discussions, and reflective thinking—approaches that remain limited in traditional classroom practices.

Moreover, the noticeable gradation in the levels of the remaining skills (induction, analysis, and evaluation) can be explained by the varying degree of emphasis placed on them within the curricula. These curricula tend to focus more on cognitive and rote-learning aspects than on the development of higher-order thinking skills, leading to partial and unbalanced acquisition of critical thinking skills among teachers.

Accordingly, the fact that all arithmetic means remained below the educationally acceptable level constitutes an indicator of a gap between the declared educational

objectives that emphasize the development of critical thinking and the reality of actual educational practices. This situation necessitates a reconsideration of curriculum content, teacher preparation methods, and professional development programs, in order to ensure the systematic and sustainable acquisition of critical thinking skills.

**Second: Results Related to the Second Research Question**

To examine whether there are statistically significant differences in the level of critical thinking skills among Arabic language teachers according to the gender variable (male/female), arithmetic means and standard deviations of their scores on the Critical Thinking Skills Test were calculated, as shown in Table (4).

**Table (4)**  
Arithmetic Means and Standard Deviations of Critical Thinking Skills According to Gender

Skill	Gender	Number	Arithmetic Mean	Standard Deviation
Analysis skill	Males	147	2.278	1.393
	Females	363	2.292	1.901
Induction skill	Males	147	2.408	1.378
	Females	363	2.363	1.490
Inference skill	Males	147	1.591	0.998
	Females	363	1.573	1.344
Deduction skill	Males	147	4.496	2.258
	Females	363	4.512	2.232
Evaluation skill	Males	147	2.142	1.452
	Females	363	2.247	1.495
<b>Total</b>	Males	147	12.918	4.145
	Females	363	12.989	5.368

The data presented in Table (4) indicate that the deduction skill ranked first for both males and females, with arithmetic means of (4.496) for males and (4.512) for females, reflecting a slight advantage in favor of

females. The induction skill ranked second, with arithmetic means of (2.408) for males and (2.363) for females, showing a marginal advantage for males. The analysis skill ranked third, with an arithmetic mean of

(2.278) for males and (2.292) for females, again favoring females.

Concerning the evaluation skill, it ranked fourth, with an arithmetic mean of (2.142) for males and (2.247) for females, with females outperforming males. The inference skill ranked fifth and last, recording an arithmetic mean of (1.591) for males and (1.537) for females, with a slight advantage for males.

At the overall level of critical thinking skills, the mean score for males was (12.918), compared with (12.989) for females, indicating a slight overall superiority in favor of females. In general, the results show that females outperformed males in deduction, analysis, and evaluation skills, whereas males outperformed females in induction and inference skills.

These results may be interpreted in light of a set of educational and psychological factors related to the nature of each skill and the requirements for its practice within the educational environment. The close similarity in arithmetic means between males and females primarily indicates that gender is not a decisive factor in the possession of critical thinking skills, and that both groups operate within the same educational framework, being exposed to identical curricula and teaching methods.

The slight superiority of females in deduction, analysis, and evaluation skills may be explained by findings in some educational literature suggesting that females tend to demonstrate greater accuracy, organization, and commitment to deliberate and reflective thinking, in addition to an enhanced ability to discuss, analyze, and evaluate ideas according to logical criteria. These characteristics are consistent with the nature of these skills, which require reflection and objective judgment.

Conversely, the superiority of males in induction and inference skills may be attributed to the reliance of these skills on generalization, linking particulars, and deriving conclusions—processes that may be influenced by a tendency toward rapid thinking and cognitive risk-taking. Such tendencies are often associated with males in educational contexts, particularly in situations that require decision-making or the derivation of conclusions without prolonged analytical elaboration.

Moreover, the slight overall superiority of females may be related to higher levels of academic discipline and a stronger commitment to achieving good performance, which is positively reflected in their results on tests that measure multidimensional cognitive skills, such as the California Critical Thinking Skills Test.

Accordingly, these findings confirm that gender-based differences in critical thinking skills are limited and not substantial. Overall, they reflect differences in cognitive processing styles rather than genuine disparities in levels of competence, thereby underscoring the need for training and developmental programs directed at both genders without discrimination, focusing on the comprehensive and balanced enhancement of critical thinking skills.

**Third: Results Related to the Third Research Question**

This question examined whether there are statistically significant differences at the significance level ( $\alpha \geq 0.05$ ) in the level of critical thinking skills among Arabic language teachers attributable to the academic level variable (first year, second year, third year, fourth year).

To answer this question, the researcher calculated the arithmetic means and standard deviations of the sample members' scores on the Critical Thinking Skills Test, as presented in Table (5).

**Table (5)**

Arithmetic Means and Standard Deviations of Critical Thinking Skills According to Academic Level

Skill	Academic Level	Number	Arithmetic Mean	Standard Deviation
Analysis skill	First year	129	2.341	1.688
	Second year	150	2.413	2.223
	Third year	141	2.028	1.325

	Fourth year	90	2.411	1.613
	<b>Total</b>	510	2.288	1.768
Induction skill	First year	129	2.310	1.440
	Second year	150	2.540	1.491
	Third year	141	2.347	1.478
	Fourth year	90	2.244	1.392
	<b>Total</b>	510	2.376	1.457
Inference skill	First year	129	1.620	1.630
	Second year	150	1.773	1.992
	Third year	141	1.305	0.933
	Fourth year	90	1.622	1.097
	<b>Total</b>	510	1.578	1.253
Deduction skill	First year	129	4.519	2.225
	Second year	150	4.793	2.177
	Third year	141	4.312	2.220
	Fourth year	90	4.322	2.364
	<b>Total</b>	510	4.507	2.238
Evaluation skill	First year	129	2.441	1.653
	Second year	150	2.600	1.562
	Third year	141	1.751	1.254
	Fourth year	90	1.988	1.165
	<b>Total</b>	510	2.217	1.482
<b>Overall</b>	First year	129	13.232	4.755
	Second year	150	14.120	5.736
	Third year	141	11.744	4.542
	Fourth year	90	12.588	4.526
	<b>Total</b>	510	12.968	5.042

The data presented in the table indicate that the deduction skill ranked first, with an overall arithmetic mean of (4.507) and a standard deviation of (2.238). Teachers in the second year achieved the highest level in this skill, with a mean of (4.793) and a standard deviation of (2.177), followed by first-year teachers in second place.

The induction skill ranked second, with an overall mean of (2.376) and a standard deviation of (1.457). Second-year teachers again ranked first, recording a mean of (2.540) and a standard deviation of (1.491), while third-year teachers ranked second with a mean of (2.347) and a standard deviation of (1.478).

The analysis skill ranked third, with a mean of (2.288) and a standard deviation of (1.768). Second-year teachers occupied first place in this skill, with a mean of (2.413) and a standard deviation of (2.223), followed by fourth-year teachers with a mean of (2.411) and a standard deviation of (1.613).

Concerning the evaluation skill, it ranked fourth, with a mean of (2.217) and a standard deviation of (1.482). Second-year teachers demonstrated the highest performance, with a mean of (2.600) and a standard deviation of (1.562), while first-year teachers ranked next with a mean of (2.441) and a standard deviation of (1.653).

Finally, the inference skill ranked last, with a mean of (1.578) and a standard deviation of (1.253). Second-year teachers again ranked first in this skill, with a mean of (1.773) and a standard deviation of (1.992), followed by fourth-year teachers with a mean of (1.622) and a standard deviation of (1.097).

At the level of the instrument as a whole, the results showed that second-year teachers ranked first, with an arithmetic mean of (14.120) and a standard deviation of (5.736), while first-year teachers ranked second, with a mean of (13.232) and a standard deviation of (4.725).

These findings may be explained by the fact that first-year teachers—who achieved advanced rankings in most skills and in the overall score—together with second-year teachers, are often holders of high university grade point averages (89.5% and above). This academic distinction may contribute to their possession of higher levels of critical thinking skills.

The results of the third research question can be logically interpreted in light of the nature of the academic stage and the requirements of the academic and professional preparation of Arabic language teachers. The superiority of second-year teachers in most critical thinking skills and in the overall instrument score may be attributed to their position at a transitional stage that combines recent graduation—associated with high cognitive engagement—with the acquisition of initial field experience that enables them to apply theoretical knowledge in real teaching contexts. This combination is likely to be positively reflected in their performance on critical thinking skills.

Similarly, the advanced rankings achieved by first-year teachers in several skills and in the overall score can be explained by their proximity to university study, during which skills of thinking, analysis, and deduction remain active and have not yet been affected by the routines of school work or by excessive reliance on traditional teaching methods. This interpretation is further supported by the finding that the majority of first- and second-year teachers possess high university grade point averages, which are typically associated with higher cognitive abilities and more advanced thinking skills.

In contrast, the lower mean scores observed among third- and fourth-year teachers in some skills may be explained by increasing job responsibilities and work-related pressures, as well as a tendency to settle into traditional instructional patterns that provide fewer opportunities for the conscious and systematic practice of critical thinking skills. Moreover, the absence of continuous and specialized training programs aimed at developing critical thinking may contribute to this relative decline as years of service increase.

Accordingly, these results indicate that the initial years of teaching constitute a fertile period for the development of teachers' critical thinking skills, and that maintaining this level requires sustained institutional support through ongoing training and professional development, in order to ensure the continuity of critical thinking skills among teachers across different academic levels.

#### **Fourth: Results Related to the Fourth Research Question**

This question examined whether there are statistically significant differences at the (0.05) significance level in the level of critical thinking skills among Arabic language teachers attributable to the type of secondary school

certificate (scientific vs. literary). To answer this question, arithmetic means and standard deviations of the sample members' scores were calculated. Table (6) presents these results.

**Table (6)**

Arithmetic Means and Standard Deviations of Critical Thinking Skills According to the Type of Secondary School Certificate

Dimension	Type of Secondary Certificate	Number	Arithmetic Mean	Standard Deviation
Analysis skill	Scientific	202	2.582	2.213
	Literary	308	2.107	1.385
Induction skill	Scientific	202	2.502	1.740
	Literary	308	2.289	1.241
Inference skill	Scientific	202	1.733	1.532
	Literary	308	1.477	1.025
Deduction skill	Scientific	202	4.532	2.249
	Literary	308	4.490	2.244
Evaluation skill	Scientific	202	2.492	1.749
	Literary	308	2.035	1.258
<b>Overall</b>	Scientific	202	13.844	6.012
	Literary	308	12.399	4.234

The data presented in Table (6) indicate that the deduction skill ranked first in terms of arithmetic means, with teachers from the scientific stream outperforming their counterparts from the literary stream, and the differences favoring teachers of the scientific stream. The induction skill ranked second for both the scientific and literary streams, again with an advantage in favor of the scientific stream.

In third place came the analysis skill for both streams, with superiority observed among teachers from the scientific stream. This was followed by the evaluation skill in fourth place for both streams, with results likewise favoring teachers from the scientific stream. The inference skill ranked fifth and last for both streams,

with the differences also in favor of teachers from the scientific stream.

At the overall level of the instrument, the arithmetic mean for teachers from the scientific stream was (13.844), with a standard deviation of (6.012), compared with an arithmetic mean of (12.399) and a standard deviation of (4.234) for teachers from the literary stream. This indicates an overall superiority in favor of teachers from the scientific stream.

These findings may be explained by the fact that teachers who graduated from the scientific stream in secondary education typically received academic training that emphasizes logical and analytical thinking.

This background may make them more inclined to employ scientific modes of thinking when processing information and solving problems. Moreover, studies related to brain functions suggest that students in the scientific stream tend to rely more on the left hemisphere of the brain, which is associated with logical reasoning, sequential processing, analysis, and convergent thinking—patterns that are closely linked to critical thinking.

These results are consistent with the findings of previous studies, including those by Al-Halfawi (1997), Afaneh (1998), Al-Attari (1997), and Sarhan (2000).

The results of the fourth research question can be interpreted scientifically and logically in light of the academic background received by Arabic language teachers according to the type of secondary school certificate. The consistent and clear superiority of teachers from the scientific stream across all critical thinking skills—both at the level of individual skills and at the overall level of the instrument—indicates a sustained effect of the cognitive preparation pattern acquired during the secondary education stage.

This superiority can be attributed to the fact that students in the scientific stream are exposed during their secondary schooling to educational practices that emphasize logical analysis, problem solving, reasoning, induction, and conclusion—core components of critical thinking. Such practices contribute to the consolidation of organized thinking patterns based on linking causes and effects, which are later reflected in their academic and professional performance, even after transitioning into humanities disciplines such as Arabic language education.

These findings may also be interpreted in light of evidence from cognitive studies on brain functions, which suggest that learners in the scientific stream tend to rely more on the left hemisphere, associated with logical reasoning, sequential analysis, and convergent thinking. These cognitive patterns align closely with the requirements of critical thinking skills, particularly deduction, analysis, evaluation, and inference.

By contrast, the relatively lower mean scores observed among teachers from the literary stream do not imply deficiencies in their intellectual abilities. Rather, they reflect the nature of secondary-level preparation, which places greater emphasis on memorization, comprehension, and descriptive interpretation, with fewer structured opportunities for the systematic development of analytical and critical thinking skills. Such a pattern may weaken the later practice of critical thinking unless it is supported by deliberate and sustained training.

Accordingly, these results underscore the importance of diversifying approaches to the development of critical thinking skills within teacher preparation programs, particularly for those with a literary background. This can be achieved by integrating scientific and analytical thinking strategies into university curricula and professional development programs, thereby contributing to greater cognitive and professional equity among teachers regardless of the type of secondary school certificate they hold.

#### **Fifth: Results Related to the Fifth Research Question**

The fifth research question was formulated as follows: *Is there a statistically significant correlation at the level ( $\alpha \geq 0.05$ ) between the level of critical thinking skills and both the secondary school average and the cumulative university GPA among the study population?*

To answer this question, regression coefficients were extracted for two independent variables:

1. Secondary school average
2. Cumulative university GPA

These variables were used to predict scores of critical thinking skills. The results are presented in Tables (7, 8, 9, 10, 11, and 12). Table (7) presents the multiple regression analysis of the two independent variables for the purpose of predicting the score of the *analysis skill*.

**Table (7)***Multiple Regression Analysis of the Independent Variables for Predicting the Analysis Skill Score*

Independent Variables	Regression Coefficients (B)	t-value	Significance Level
Secondary school average	-0.129	-0.778	0.437
Cumulative university GPA	0.0095	1.354	0.176
Constant	2.698	—	—

The results of the multiple regression analysis shown in Table (7) indicate that the two independent variables—secondary school average and cumulative university GPA—do not have statistically significant predictive power at the level ( $\alpha \geq 0.05$ ) with respect to the analysis skill score. Accordingly, the predictive equation for the analysis skill score can be expressed as follows:

$$\text{Analysis Skill Score} = -0.0129 \times (\text{Secondary School Average}) + 0.0095 \times (\text{Cumulative University GPA}) + 2.698$$

**Table (8)** presents the same multiple regression analysis of the two independent variables for the purpose of predicting the *induction skill* score, thereby allowing examination of the effect of both the secondary school average and the cumulative university GPA on the acquisition of this skill.

**Table (8)***Multiple Regression Analysis of the Independent Variables for Predicting the Induction Skill Score*

Independent Variables	Regression Coefficients (B)	t-value	Significance Level
Secondary school average	-0.0043	-0.330	0.742
Cumulative university GPA	0.0259	4.688*	0.000
Constant	0.714	—	—

\* Statistically significant at the level ( $\alpha \geq 0.05$ ).

The results presented in Table (8) indicate that the cumulative university GPA has a statistically significant effect at the level ( $\alpha \geq 0.05$ ) in predicting the induction skill score, whereas the secondary school average does not demonstrate a statistically significant effect in predicting this skill. Accordingly, the predictive equation for the induction skill score can be expressed as follows:

$$\text{Induction Skill Score} = -0.0043 \times (\text{Secondary School Average}) + 0.0259 \times (\text{Cumulative University GPA}) + 0.714$$

**Table (9)** presents the multiple regression analysis of the same two independent variables for the purpose of predicting the *inference skill* score, allowing for examination of the effect of both the secondary school average and the cumulative university GPA on the acquisition of this skill.

**Table (9)** Multiple Regression Analysis of the Independent Variables for Predicting the Inference Skill Score

Independent Variables	Regression Coefficients (B)	t-value	Significance Level
Secondary school average	0.0077	0.651	0.515
Cumulative university GPA	0.0025	0.497	0.620
Constant	0.724	—	—

\* Statistically significant at the level ( $\alpha \geq 0.05$ ).

The results shown in Table (9) indicate that the two independent variables—secondary school average and cumulative university GPA—do not exhibit statistical significance at the level ( $\alpha \geq 0.05$ ) in predicting the inference skill score. Accordingly, the predictive equation for the inference skill score can be expressed as follows:

$$\text{Inference Skill Score} = 0.0077 \times (\text{Secondary School Average}) + 0.0025 \times (\text{Cumulative University GPA}) + 0.724$$

**Table (10)** presents the multiple regression analysis of the same independent variables for the purpose of predicting the *reasoning skill* score, enabling the researcher to examine the effect of both the secondary school average and the cumulative university GPA on the acquisition of this skill.

**Table (10)** Multiple Regression Analysis of the Independent Variables for Predicting the Reasoning Skill Score

Independent Variables	Regression Coefficients (B)	t-value	Significance Level
Secondary school average	0.0728	3.655*	0.000
Cumulative university GPA	-0.0150	1.788	0.075
Constant	-0.583	—	—

\* Statistically significant at the level ( $\alpha \geq 0.05$ ).

Table (10) indicates that the secondary school average has a statistically significant effect at the level ( $\alpha \geq 0.05$ ) in predicting the reasoning skill score, whereas the cumulative university GPA does not exhibit a statistically significant effect in predicting this skill. Accordingly, the predictive equation for the reasoning skill score can be expressed as follows:

$$\text{Reasoning Skill Score} = 0.0728 \times (\text{Secondary School Average}) - 0.0150 \times (\text{Cumulative University GPA}) + 0.583$$

**Table (11)** Multiple Regression Analysis of the Independent Variables for Predicting the Evaluation Skill Score

Independent Variables	Regression Coefficients (B)	t-value	Significance Level
Secondary school average	0.0116	0.844	0.399
Cumulative university GPA	0.0169	2.908*	0.004
Constant	-0.0757	—	—

\* Statistically significant at the level ( $\alpha \geq 0.05$ ).

Table (11) indicates that the cumulative university GPA has a statistically significant effect at the level ( $\alpha \geq 0.05$ ) in predicting the evaluation skill score, whereas the secondary school average does not show a statistically significant effect in predicting this skill. Accordingly, the predictive equation for the evaluation skill score can be expressed as follows:

$$\text{Evaluation Skill Score} = 0.0116 \times (\text{Secondary School Average}) + 0.0169 \times (\text{Cumulative University GPA}) - 0.0757$$

**Table (12)** presents the multiple regression analysis of the same two independent variables for the purpose of predicting the *overall score of critical thinking skills*, thereby allowing examination of the effect of both the secondary school average and the cumulative university GPA on overall critical thinking performance among the sample.

**Table (12)** Multiple Regression Analysis of the Independent Variables for Predicting the Overall Critical Thinking Skills Score

Independent Variables	Regression Coefficients (B)	t-value	Significance Level
Secondary school average	0.0749	1.605	0.109
Cumulative university GPA	0.0398	2.018*	0.044
Constant	3.478	—	—

\* Statistically significant at the level ( $\alpha \geq 0.05$ ).

The results shown in Table (12) indicate that the cumulative university GPA has a statistically significant effect at the level ( $\alpha \geq 0.05$ ) in predicting the overall score of critical thinking skills, whereas the secondary school average does not demonstrate a statistically significant effect in predicting the overall critical thinking score. Accordingly, the predictive equation for the overall critical thinking skills score can be expressed as follows:

$$\text{Overall Critical Thinking Skills Score} = 0.0749 \times (\text{Secondary School Average}) + 0.0398 \times (\text{Cumulative University GPA})$$

An examination of the results related to the fifth research question reveals a statistically significant effect at the level ( $\alpha \geq 0.05$ ) between the cumulative university GPA and each of the *induction skill*, *evaluation skill*, and the *overall score of critical thinking skills*. In contrast, a statistically significant effect is observed between the secondary school average and the *reasoning skill* only.

These findings are consistent with the study conducted by **Afana (1998)**, which reported a positive relationship between cumulative university GPA and students' levels of critical thinking skills.

The results of the fifth research question can be interpreted scientifically and logically considering the nature of both the secondary school average and the cumulative university GPA, as well as the role each plays in the development of critical thinking skills among Arabic language teachers.

The findings indicate that the cumulative university GPA was the most influential and statistically significant variable in predicting several critical thinking skills, particularly induction, evaluation, and the overall critical thinking skills score. This may be attributed to the fact that the university environment provides broader opportunities for the practice of critical thinking through research requirements, discussion, analysis, critique, and the preparation of reports and research papers. Such activities contribute to the cumulative and sustained refinement of these skills, in contrast to the secondary school stage, which is predominantly characterized by an achievement- and examination-oriented approach.

Moreover, the association between cumulative university GPA and both induction and evaluation skills can be explained by the fact that these skills require long-term, systematic training, as well as the ability to integrate information and evaluate ideas according to

rational criteria—capacities that are more explicitly developed in higher education than in pre-university education.

Conversely, the results indicate that the secondary school average did not demonstrate statistical significance in predicting most critical thinking skills, with the exception of the *reasoning skill*. This finding may be explained by the nature of this skill, which relies on general and relatively direct cognitive processes, such as understanding causal relationships and making simple logical inferences—processes that can be developed during the secondary school stage through both scientific and literary subjects.

Furthermore, the lack of statistical significance of the secondary school average in predicting the overall score of critical thinking skills suggests the limited role of this stage in fostering deep and systematic critical thinking. This limitation can be attributed to the strong emphasis on memorization, recall, and examination preparation, rather than on analysis, critique, and evaluation.

Accordingly, these findings recommend strengthening critical thinking practices within university education and teacher preparation programs, while also reconsidering assessment mechanisms at the secondary school level in ways that contribute to building a deeper and more sustainable knowledge base for the development of critical thinking skills.

## Conclusions

1. The results of the study revealed that the level of critical thinking skills among Arabic language teachers at the basic education stage was below the pedagogically acceptable level, with clear variation across skills. *Reasoning* ranked highest, whereas *inference* ranked lowest.
2. Differences among teachers according to the gender variable were limited and not substantial. Female teachers showed a slight advantage in skills related to analysis and evaluation, while male teachers demonstrated a marginal advantage in induction and inference skills, indicating that gender is not a decisive factor in the possession of critical thinking skills.

3. The findings revealed differences attributable to academic level, as teachers in the first and second years achieved higher levels in most critical thinking skills and in the overall score compared to teachers in the third and fourth years. This reflects the impact of recent graduation and higher university GPA levels in enhancing these skills.
4. The study showed statistically significant differences attributable to the type of secondary school certificate, all of which favored teachers from the scientific stream, both at the level of sub-skills and the overall score. This suggests the influence of a prior scientific background in fostering analytical and critical thinking patterns.
5. The results of the regression analysis indicated a statistically significant correlational relationship between cumulative university GPA and each of the induction skill, evaluation skill, and the overall score of critical thinking skills, whereas the effect of the secondary school average was limited to the reasoning skill only.
6. Overall, the study findings confirm that the development of critical thinking skills among Arabic language teachers is more strongly influenced by university academic experiences and continuous, systematic training than by prior school achievement.
7. The study concluded that there is a clear gap between educational objectives that emphasize the development of critical thinking and actual instructional practices within the school environment, which necessitates a reconsideration of teacher preparation programs, as well as the teaching and assessment methods currently adopted.

## Recommendations

1. Critical thinking skills should be explicitly and systematically integrated into Arabic language curricula at the basic education stage, with particular emphasis on higher-order skills—especially inference and evaluation—rather

than limiting instruction to cognitive and rote memorization aspects.

2. Arabic language teacher preparation programs in colleges of education should be developed to ensure systematic training in modern, critical thinking-oriented instructional strategies, such as problem-based learning, cooperative learning, dialogue and discussion, and reflective thinking.
3. Continuous in-service training courses and workshops should be organized for Arabic language teachers to enhance their critical thinking skills and enable them to effectively employ skills in everyday classroom practices.
4. Assessment methods currently adopted in schools should be reconsidered, shifting away from tests that emphasize memorization and recall toward assessment tools that measure analysis, reasoning, induction, and evaluation skills.
5. Special attention should be given to Arabic language teachers with a literary background through targeted support and training programs that enhance their analytical and critical thinking skills, thereby achieving professional parity with their counterparts who have a scientific background.
6. The findings of studies that highlight the impact of cumulative university GPA on the development of critical thinking skills should be utilized by strengthening research, analysis, and critical evaluation requirements in university courses related to the Arabic language specialization.

#### Proposed Directions for Future Research

1. Conduct further studies examining the impact of employing specific instructional strategies on the development of critical thinking skills among Arabic language teachers across different educational stages.
2. Undertake comparative studies between Arabic language teachers and teachers of other subject

areas to identify differences in critical thinking skills attributable to disciplinary specialization.

3. Investigate the effect of proposed training programs grounded in critical thinking on improving teaching performance and students' linguistic achievement.
4. Expand the study population to include additional governorates or other Arab countries to assess the generalizability of the findings of the present study.
5. Carry out qualitative studies based on interviews and classroom observations to explore the actual practices of Arabic language teachers in fostering critical thinking skills within the classroom.
6. Examine the relationship between critical thinking skills and other variables, such as years of teaching experience, school leadership style, classroom climate, and motivation toward teaching.

#### References

##### Arabic Sources

1. Ḥabīb, Majdī. *Contemporary Trends in Teaching Thinking (Future Strategies for the New Millennium)*. Cairo: Dar Al-Fikr Al-'Arabi, 2023.
2. Al-Ḥalfāwī, Mus'if. "Deriving Performance Standards for Undergraduate Students in Public Universities Using the Watson-Glaser Critical Thinking Appraisal." Unpublished master's thesis, The University of Jordan, Amman, Jordan, 2007.
3. Ḥamādnah, Aḥmad. "The Level of Critical Thinking in Mathematics among Tenth-Grade Students in Jordan." Unpublished master's thesis, The University of Jordan, Amman, 2005.
4. Al-Dosarī, Muḥammad. *Developing Critical Thinking Skills: Methods and Tools*. Riyadh: Dar Al-Ma'rifah, 2020.
5. Al-Rabaḍī, Maryam Sālim. "The Effect of a Training Program Based on Critical Thinking Skills on the Acquisition of These Skills by

- Secondary School Social Studies Teachers in Jordan and the Extent of Their Practice.” Unpublished doctoral dissertation, Amman Arab University for Graduate Studies, Amman, 2004.
6. Ziyādāt, Māhir. “The Effect of Using Metacognitive Teaching Strategies and the Inquiry Model on Achievement and the Development of Critical Thinking among Ninth-Grade Students in Geography.” Unpublished master’s thesis, Yarmouk University, 2023.
  7. Sarhān, Ibrāhīm. “The Level of Critical Thinking Skills and Their Relationship to Problem Solving among Palestinian University Students in Light of Selected Variables.” Unpublished master’s thesis, The Islamic University of Gaza, Gaza, Palestine, 2020.
  8. Al-Shablāwī, Sa’d Kāzīm Zughayr. “The Reality of Arabic Language Teachers’ Employment of Critical Thinking Skills in Teaching the Intermediate Stage in the Holy Karbala Governorate from Their Perspectives.” *Journal of Humanities and Natural Sciences*, 2021. Directorate of Education, Karbala Governorate, Iraq.
  9. Al-Ṣalāḥāt, Fāṭimah. “The Effect of Using Modern Strategies in Teaching Arabic on Developing Reading Skills among Basic Stage Students.” Master’s thesis, Yarmouk University, Jordan, 2015.
  10. ‘Abd Allāh, Munā. “The Effect of the School Environment on Improving the Performance of Basic Stage Students in Public Schools.” Master’s thesis, An-Najah National University, Palestine, 2019.
  11. Al-‘Abdalāt, Su’ād. “The Effect of a Training Program Based on Problem-Based Learning on the Development of Critical Thinking Skills among Tenth-Grade Basic Students.” Unpublished doctoral dissertation, Amman Arab University for Graduate Studies, Amman, 2023.
  12. Al-‘Aṭṭārī, Sanā’. “The Level of Critical Thinking Skills and Their Relationship to Locus of Control and Other Variables among a Sample of Palestinian University Students.” Unpublished master’s thesis, Al-Quds University, Jerusalem, Palestine, 2009.
  13. ‘Affānah, ‘Azzū. “The Level of Critical Thinking Skills among Students of the Faculty of Education at the Islamic University of Gaza.” *Palestinian Journal of Educational Research and Studies*, vol. 1, no. 1, 2008, pp. 39–82.
  14. ‘Awwād, Ḥusayn. *A Guide to Educational Statistics for Assessing Thinking Skills*. Amman: Dar Al-Masirah, 2019.
  15. Al-Kaylānī, Anmār. “Critical Thinking among Principals of Government Secondary Schools Enrolled in the Master’s Program in Educational Administration at the University of Jordan.” *Dirasat: Humanities*, 22(3), 2005, pp. 3599–3632.
  16. Muḥsin, Sa’d. “The Relationship between Critical Thinking and Academic Achievement among Third-Grade Intermediate Students in Makkah Al-Mukarramah.” *Al-Ustadh Journal*, 2022, vol. 61, no. 4.
  17. Al-Mas’ad, Ibrāhīm. “Social Studies Teachers’ Knowledge of Critical Thinking Skills and the Extent of Their Practice.” Unpublished master’s thesis, Yarmouk University, Irbid, Jordan, 2007.

#### Foreign Sources

1. Beyer, K. *Practical Strategies for the Teaching of Thinking*. Boston: Allyn and Bacon, Inc., 1998.
2. Christensen, M. “Developing Methods for Teaching Critical Thinking to Preservice Secondary Social Studies Teachers.” *Dissertation Abstracts International (DAI)*, 48(9), p. 116-A, 1996.
3. Cotton, Kathleen. *Teaching Thinking Skills: School Improvement Research Series (SIRS)*. United States, 2002.

4. Ennis, R. H. "Critical Thinking and Subject Specificity: Clarification and Needed Research." *Educational Leadership*, 18(3), p. 410, 1998.
5. Facione, P. A., Sanchez, G., Facione, N. C., & Gainen, J. "The Disposition toward Critical Thinking." *Journal of General Education*, 44(1), pp. 1–25, 1995.
6. Facione, P. A., & Facione, N. C. *California Critical Thinking Skills Test*. California Academic Press, USA: Form A, Form B, and Test Manual, 2002.
7. Facione, P. A. *Critical Thinking: What It Is and Why It Counts*. California Academic Press, 1998.
8. Ferrett, S. *Critical Thinking across the Curriculum Project*. Retrieved May 2005 from <http://www.kcmetro.cc.mo.us/Longview/ctac/definitions.htm>, 1997.
9. Guzy, A. "Writing in the Other Margin: A Survey of Guides to Composition Courses and Projects in University Honors Programs." *Dissertation Abstracts International (DAI)*, 60(6), p. 2011-A, 1999.
10. Kim, J. "The Effects of Creative Dance Instruction on Creativity and Thinking of Seventh-Grade Female Students in Seoul, Korea." *Dissertation Abstracts International (DAI)*, 59(5), p. 1378-A, 1998.
11. Lee, A. A. *Critical Thinking for the New Millennium: A Pedagogical Imperative*. Paper presented at the Annual Meeting of the National Historically Black Colleges and Universities Faculty Development Symposium, 1998.
12. Nicoll, B. *Developing Minds: Critical Thinking in K–3*. Paper presented at the California Kindergarten Conference, San Francisco, CA, January 13, 1996.
13. Norris, S. "Synthesis of Research on Critical Thinking." *Educational Leadership*, 42(1), p. 413, 1985.
14. Paul, R. W. *Critical Thinking: How to Prepare Students for a Rapidly Changing World*. Santa Rosa, CA: Foundation for Critical Thinking, 1995.
15. Ramer, C. A. "The Influence of the Jefferson Centennial Practicum on the Self-Efficacy of Five Social Studies Student Teachers." *Dissertation Abstracts International (DAI)*, 59(9), p. 3416-A, 1999.
16. Ruland, J. "The Relationship of Classroom Environment to Growth in Critical Thinking Ability of First-Year College Students." *Dissertation Abstracts International (DAI)*, 60(8), p. 745-A, 2000.
17. Sternberg, R. J., & Williams, W. M. *Educational Psychology*. Boston: Allyn & Bacon, 2004.
18. Stroud, N. "Describing and Analyzing What American Teachers Know about American History." *Dissertation Abstracts International (DAI)*, 48(9), p. 107-A, 1995.
19. Temple, C. "What Can We Learn from 15,000 Teachers in Central Europe and Central Asia?" *The Reading Teacher*, 54(3), pp. 312–315, 2000.
20. Tsai, M. "Secondary School Teachers' Perspectives on Teaching Critical Thinking in Social Studies Classes in the Republic of China (Taiwan)." *Dissertation Abstracts International (DAI)*, 57(2), p. 569-A, 1996.