

# Exploring EFL Instructors' Awareness of Metacognitive Strategy Use in Saudi Higher Education Institutions

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DOI: <https://doi.org/10.33948/JRLT-KSU-5-1-4>

Received: 24/07/2024; Revised: 16/12/2024; Accepted: 30/12/2024

## المخلص

تعتبر «فوق المعرفة» عنصرًا حاسمًا في سيكولوجية تعليم اللغة الأجنبية. وعلى الرغم من ضرورتها، إلا أن هناك فهما محدودا من قبل أساتذة اللغة الإنجليزية كلغة أجنبية لكيفية التعرف عليها وتنفيذها في ممارساتهم التدريسية نظراً لمحدودية الدراسات التي تستهدف على الأساتذة في مؤسسات التعليم العالي في السياق السعودي. وبذلك تهدف هذه الدراسة إلى استكشاف مدى وعي أساتذة اللغة الإنجليزية كلغة أجنبية في مؤسسات التعليم العالي بالإستراتيجيات فوق المعرفة. بلغ عدد المشاركين في هذه الدراسة 160 عضواً بواقع (80 أنثى - 80 ذكور) أُختبروا بالطريقة غير الإحصائية كعينة ملائمة من مختلف الجامعات والكليات السعودية. استخدم مقياس (MAIT) لبالسكانلي (2011) للكشف عن الفروق بين الجنسين لدى هيئة التدريس وصُنِّفت مستويات الوعي فوق المعرفي الست لديهم: المعرفة التصريحية، والمعرفة الإجرائية، والمعرفة المشروطة، والتخطيط، والرصد، والتقييم. أظهرت نتائج التحليل الإحصائي عدم وجود فروق ذات دلالة إحصائية على أساس الجنس في وعي أساتذة اللغة الإنجليزية كلغة أجنبية بالإستراتيجيات فوق المعرفة، وكذلك بين الفئات الفرعية. تقدم هذه الدراسة رؤى ومقترحات لاعتبارات أندراغوجية لمؤسسات التعليم العالي. يُشجع الأساتذة على حضور ورش العمل التدريبية التي تزيد من وعيهم بالممارسات ما وراء المعرفة حيث ستمكنهم إتاحة فرص التطوير المهني من التفكير نقدياً وإثراء فلسفتهم التعليمية، مما يعزز فعاليتهم في الفصول الدراسية. بالإضافة إلى ذلك، ينصح الباحثون في الميدان بإجراء مزيد من الأبحاث لاستكشاف مؤسسات التعليم العالي لسد الفجوة بين الإطار النظري والممارسة العملية.




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### Abstract

Metacognition is a crucial component of the psychology of foreign language instruction. Although metacognitive strategies are essential, there is limited understanding of how EFL instructors recognise and implement them in their teaching practises due to the lack of studies focusing on instructors in higher education institutions within the Saudi context. This study explores the awareness of metacognitive strategy among EFL instructors in Saudi higher education institutions. The participants were 160 instructors, consisting of 80 males and 80 females, who were selected using a nonprobability convenience sampling method from various universities and colleges in Saudi Arabia. The Metacognitive Awareness Inventory (MAIT) by Balçıkanlı (2011) was used to assess gender differences and categorise metacognitive awareness into six levels: declarative knowledge, procedural knowledge, conditional knowledge, planning, monitoring, and evaluating. The analysis showed no statistically significant gender-based differences in EFL instructors' awareness of metacognitive strategy, nor among the subcategories of metacognition. This study offers insights and suggestions for andragogical practises in higher education institutions. Instructors are encouraged to attend training workshops that increase their awareness of metacognitive practises. These professional development opportunities will enable educators to reflect critically on their instructional philosophy, enhancing their classroom effectiveness. Additionally, researchers are advised to conduct further research exploring higher education institutions to bridge the gap between theoretical framework and practical implications.

**Keywords:** *evaluating, metacognition, monitoring, planning*

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## Introduction

In English as a Foreign Language (EFL) education, metacognition is a fundamental concept that requires practise, integration, prioritisation, and facilitation. Flavell (1979) defined it as thinking about thinking, emphasizing the role of the school environment as a hotbed of metacognitive development due to its components. Schraw and Dennison (1994) divide metacognition into the knowledge of cognition, encompassing three types of knowledge: declarative, procedural, conditional, and regulation of cognition, involving five types: planning, managing information, monitoring comprehension, and debugging and evaluation.

EFL instructors in the Saudi context confront challenges influenced by three factors, which Alghamdi (2017) listed as follows. First was students' culture, including societal influence on their mentalities and personalities, their aversion to making errors, and class participation. Second was motivation, as students primarily studied English as a requirement rather than from a genuine desire to learn the language. They also felt that they had no practical use for the language outside of the classroom, and the instructors sometimes felt frustrated when dealing with unmotivated students due to their lack of authority to give extra marks for participating in additional tasks. Finally, the instructors' perspectives on students' backgrounds and experiences were significant, with influential factors including the quality of previous education, different socioeconomic backgrounds, exposure to the language, and overall learning experiences, both within and outside the classroom.

Metacognitive strategies impact teaching and learning outcomes. For instance, they play a key role in supporting academic performance, fostering collaboration, maintaining motivation, increasing information retention, creating concept connections, and deepening understanding of students' learning development. Moreover, integrating metacognition enhances teaching and learning by providing students with assets that boost classroom tasks. Strategies such as planning, evaluating comprehension, reviewing their work, and reflecting critically would promote awareness of learning processes, enabling students to take control of their progress. (An et al., 2024; Beziat et al., 2018).

In planning, implementing and assessing a course, an instructor acts as a course planner, knowledge transmitter, facilitator, assessor, and developer. Therefore, understanding these processes represents a crucial tool that stimulates an individual's thinking process about the content to which they are exposed, their perspective, and their awareness of their prior knowledge.

Metacognition is beneficial for both learners and instructors. It empowers learners to orchestrate their learning processes and obtain valuable strategies during their educational progression. Analogously, instructors can leverage metacognition to fine-tune their teaching methods and foster more autonomous learning settings. Wilson and Bai (2010) proposed that metacognitive instruction involves understanding the fundamental aspects of educating learners to be metacognitive and outlining the framework for educational development. Thus,

by enhancing their metacognitive skills, EFL instructors can improve their teaching and support better student learning outcomes.

Some studies exist in the Saudi higher education context, such as Ahmadi and Motaghi (2024), Alkhaleefah (2023), Al-Khresheh and Alruwaili (2024), and Alshammari (2022), which focus on the metacognitive awareness of EFL undergraduate students in Saudi Arabia. Al-thresher and Al Basheer Ben Ali (2023) studied students and instructors and collected qualitative data through semi-structured interviews with English instructors. Despite these efforts, there remains a dearth of research on EFL instructors' metacognitive awareness in the context of higher education institutions in Saudi Arabia, which has led to the current study.

The study's aim to explore the metacognitive awareness of EFL instructors is central for two primary reasons: First, understanding instructors' metacognitive knowledge can provide insights into developing expertise in English language instruction (ELI). Second, the diversity of learners with varying social, emotional, and physical abilities necessitates a heightened level of responsibility for instructors within the classroom community.

By actively involving learners in tasks and promoting metacognition, instructors can effectively create an inclusive environment that caters to the needs of all students, regardless of their individual differences. To promote these goals, instructors must be equipped with the metacognitive skills to handle different types of students and help them learn effectively. The practical implications of our research findings, such as the potential for improving EFL instruction and enhancing student learning outcomes, can significantly contribute to the advancement of EFL education in Saudi higher education institutions.

### **The Aim of the Study**

The study aimed to explore the metacognitive awareness of instructors at higher education institutions in Saudi Arabia. It identified a research gap by measuring the metacognitive awareness of instructors as candidates in the following dimensions: declarative knowledge, procedural knowledge, planning, monitoring, and evaluation in this context. Realising this awareness is essential for guiding their professional development and influencing their academic achievements.

### **Research Questions**

The research questions under investigation for this study are as follows:

1. Are there any significant differences in metacognitive awareness between male and female EFL instructors in higher education institutions in Saudi Arabia?
2. Are there any significant differences among the six dimensions of metacognitive awareness among EFL instructors in higher education institutions in Saudi Arabia?

### **Literature Review**

A brief overview of previous research on metacognitive strategy instruction will be given. The related literature review will focus on five issues: metacognition, metacognitive instruction, metacognitive awareness, and metacognitive measures components, as well as

previous empirically relevant studies. This will build upon existing research and contribute to a deeper understanding of the topic.

## **Metacognition Definitions**

Scholars have defined metacognition in various ways. Flavell (1979) defined the term metacognition as a “segment of your (a child’s, an adult’s) stored world knowledge that has to do with people as cognitive creatures and with their diverse cognitive tasks, goals, actions, and experiences” (p. 906). Brown (1987) referred to metacognition as an “understanding of knowledge, an understanding that can be reflected in either effective use or overt description of the knowledge in question” (p. 65).

Larson and Gerber (1992) considered metacognition as “the key concern in promoting generalised improvements in learning” (p. 127). Hennessey (1999) characterised metacognition in terms of “the awareness of one’s own thinking, awareness of the content of one’s conceptions, an active monitoring of one’s cognitive processes, an attempt to regulate one’s cognitive processes in relationship to further learning, and an application of a set of heuristics as an effective device for helping people organise their methods of attack on problems in general” (p. 3). Schraw (1998) focused on two significant aspects of metacognition: knowledge of cognition and regulation. He suggested using a strategy evaluation matrix (SEM) to improve knowledge of cognition and a regulatory checklist (RC) to improve regulation.

Peteranetz (2016) proposed a metacognitive framework for thoroughly understanding cognition encompassing three subcategories of metacognitive knowledge: declarative, procedural, and conditional. The framework can provide information on how individuals comprehend, monitor, and control their cognitive processes, leading to better academic achievement. Furthermore, the framework involves the regulation of cognition, which can be achieved by metacognitive skills such as planning, monitoring, controlling, and evaluating tasks. Mitsea et al. (2021) stated, “Metacognition constitutes the key factor that allows individuals to manage their cognitive functions in ways that make them creative, cooperative, critical, resilient, decisive, and flexible” (p. 124).

Therefore, increasing instructors' awareness about metacognitive strategy use is a key principle of modern professional development. A growing body of literature (e.g., Livingston, 1997; Louca, 2003; Rahimi & Katal, 2012; Wilson & Bai, 2010) has suggested that the efforts of instructors to create a better learning experience need to be supported by two elements. First, instructors should facilitate opportunities that promote students’ metacognitive development through metacognitive experiences, which will provide input for permanent metacognitive knowledge. Second, researchers have asserted that metacognition implies the cognitive process of actively controlling the higher-order thinking encountered in learning.

## **Metacognitive Instruction Awareness**

Peteranetz (2016) defined metacognitive instruction as “instruction that is designed to build metacognitive knowledge, introduce and develop metacognitive skills, and help students develop a habit of using metacognition. Specifically, it is instruction with “built-in” support for

students' metacognition" (p. 74). Therefore, employing metacognitive instructional strategies is beneficial for three reasons:

1. It expands individuals' realisation and deepens their learning processes.
2. It increases their recognition of their strengths and weaknesses.
3. It affects the appropriateness of the strategy to achieve a successful outcome.

Research on instruction and instructor education has addressed metacognitive awareness. In their work, Veenman et al. (2006) highlighted the fundamentals of integrating metacognitive instruction into the curriculum by encouraging instructors to initiate students' metacognitive awareness through three basic principles: First, embed metacognitive instruction in the course content, then enlighten students about the practicality of metacognitive strategies and activities, and finally, improve the smooth and maintainable application of metacognitive activity through continued training.

Through such approaches, students can rationalise their thinking and optimise their cognitive processes to enhance their achievements. These principles were implemented in the WWW&H rule: *What to do, When to do it, Why it should be done, and How to do it*. Moreover, these three principles guide effective instructional programs. Öztürk (2017) presented a generic model of metacognition instruction whose purpose is to practise and guide students in metacognitive strategies overtly. Applying the WWW&H rule is linked to using the think-aloud technique, which involves verbalising one's thoughts while performing a task and provides insight into cognitive processes. Moreover, self-questioning during metacognitive discussions offers guided and independent practise opportunities that promote learners' metacognitive development (Öztürk, 2017).

### **Metacognitive Measures Components**

Researchers in the field have suggested several components for exploring metacognitive strategy instruction awareness that has formed the foundation for various measurement instruments. First, Schraw and Dennison's (1994) scale, which classifies metacognition into knowledge of cognition and regulation of cognition, consists of eight subcategories between these two categories. Knowledge of cognition has three subcategories: declarative, procedural, and conditional knowledge. Regulation of cognition has five subcategories: planning, information management, comprehension monitoring, and debugging and evaluation. This scale was the basis of this study inventory. According to Balçıkanlı's (2011) modified version, the six components are declarative knowledge, procedural knowledge, conditional knowledge, planning, monitoring, and evaluating.

### **Instructor-Focused Research**

Nahrkhalaji's (2014) quantitative study measured the metacognitive awareness of language teachers' relationship with pedagogical effectiveness, academic education, and experience. The participants were 50 female EFL teachers and 417 learners in Iran. The researcher used two instruments. First, teachers completed the Metacognitive Awareness Inventory (MAI) by Schraw and Dennison (1994), which evaluated six components of metacognition: procedural knowledge, declarative knowledge, conditional knowledge, planning, evaluating, and management strategies. Then, learners completed the Language Teacher Characteristics Questionnaire (CSIET) by Moafian and Pishghadam (2009), which was

used to evaluate their teachers' pedagogical performance. The study's findings demonstrated a significant correlation between the factors.

Öztürk's (2018) mixed-method quasi-experimental study investigated the relationship between teachers' self-reported metacognitive awareness and teaching with metacognition. The participants were 30 EFL teachers in Turkey. The two hypotheses were: 1) There is a relation between teachers' metacognition and teaching metacognitively, and 2) A single professional development module of teaching metacognition might exert an impact. The data were collected by two inventories: the MAI (Schraw & Dennison, 1994) and the Metacognitive Awareness Inventory for Teachers (MAIT) developed by Balçıkanlı (2011). Interview protocols were also employed. The findings indicated that metacognitive awareness and teaching with metacognition were significantly correlated.

Taghizadeh and Alirezanejad Gohardani's (2019) mixed-method study explored the use of metacognitive strategies by EFL instructors while teaching listening. This study investigated EFL instructors' knowledge and use of metacognitive strategies, shedding light on their awareness of metacognition in areas such as experience, teaching, reflection, self, planning, and monitoring of language instructors. The participants were 63 EFL instructors at the Iran University of Science and Technology. The study measured to what extent EFL instructors activated metacognitive listening comprehension strategies using the Teacher Metacognition Inventory (TMI) adapted from Jiang et al. (2016).

This instrument consists of six categories: teacher metacognitive experience, metacognitive knowledge about pedagogy, teacher metacognitive reflection, metacognitive knowledge about the self, teacher metacognitive planning, and teacher metacognitive monitoring. Semi-structured interviews were also conducted. The findings revealed the importance of metacognitive awareness concerning experience, pedagogy, reflection, self, planning, and monitoring of English language teachers. It confirmed that EFL teachers need to give more thorough instructions about teacher metacognitive planning, which received the lowest mean score. This study can serve as a well-documented guide for educators due to its impact on academic achievement and teaching performance.

Siddiqui et al. (2020) conducted a quasi-experimental study at a public university in Lahore, Pakistan. Their study aimed to assess the role of instructors' metacognition in improving task performance in classrooms and to measure its effect on student performance. The participants were 68 B.Ed. Honours students. The researchers hypothesised that 'metacognition development does not significantly affect prospective teachers' task performance'. To test this hypothesis, the researchers used three instruments: the MAI (Schraw & Dennison, 1994), rubrics, and observation sheets to evaluate students' task performance. The findings indicated that metacognition development significantly affected the task performance of students who received the intervention.

Keçik (2021) conducted nonexperimental quantitative research at foundational higher education institutions in Ankara, Turkey. The study examined the differences in the metacognitive awareness levels among EFL instructors. The participants were 161 instructors. This study aimed to determine whether there was a significant difference in the level of metacognitive awareness among EFL instructors based on their age, educational attainment and degree, years of teaching experience, and the number of training courses they had received for

professional development. Two data collection tools were employed: a demographic information form developed by the researcher and the MAIT (Balçıkanlı, 2011). The results showed high metacognitive awareness among EFL instructors. The mean score for the declarative knowledge subcategory was the highest, while the lowest score was in the evaluating subcategory. There was a significant difference among the subcategories of EFL instructors' metacognitive awareness regarding the four addressed variables.

Benbouzid and Hamitouche's (2022) quantitative study investigated metacognitive awareness among Algerian EFL university writing instructors and their motivation, beliefs, and attitudes toward writing instruction in university settings. A metacognition awareness-raising questionnaire adapted from Petric and Czarl (2003) was administered to eight university instructors from two different universities to discover the three components of their metacognitive knowledge: person, task, and strategy knowledge. The study investigated the awareness of the candidates' teaching practises and whether they aligned with metacognition. The survey results corroborated that Algerian EFL writing teachers hold a positive attitude towards teaching writing and are metacognitively aware, motivated, and have positive beliefs about teaching and metacognition.

Greenier et al.'s (2023) quantitative study examined the relationship among EFL teachers' perceptions of school climate, teaching enthusiasm, teaching metacognition, and teaching for creativity (TFC). The researchers used four instruments to collect data: (a) the Teaching for Creativity Scale (TCS) developed by Rubenstein et al. (2013), (b) the Teaching Enthusiasm Scale, designed by Kunter et al. (2011), (c) the school-Level Environment Questionnaire (R-SLEQ) by Johnson et al. (2007), and (d) the TMI, developed by Jiang et al. (2016). The participants were 387 English teachers from different cities in Iran. This study investigated eight hypotheses concerning how teaching enthusiasm positively affects TFC, teaching metacognition, and vice versa.

Their findings included the following: (a) How teachers perceived school climate positively influenced TFC and influenced their teaching metacognition; (b) school climate positively affected teaching enthusiasm; (c) teacher-perceived school climate was related to TFC via the mediation of teacher metacognition, and (d) teaching enthusiasm was related to TFC via the mediation of teacher metacognition. Structural equation modelling (SEM) analyses indicated that teaching enthusiasm was the most effective predictor of TFC. Direct influences of school climate and teaching metacognition on TFC were also substantiated. Furthermore, the impact of school climate on TFC was mediated through teaching enthusiasm and metacognition (Greenier et al., 2023). These findings bear substantial implications for teacher education initiatives, elucidating the pivotal role of school climate in fostering creativity through teaching enthusiasm and metacognitive strategies

Based on the analysis of existing literature, two research gaps were identified. First, is the contextual gap, as all previous studies were conducted in different countries. In contrast, the present study narrows a gap that has remained largely unexplored and under-researched, particularly within the context of various Saudi universities. Studies in the field of metacognitive awareness have mainly focused on EFL students in higher education institutions and neglected the instructor role. By exploring the metacognitive awareness of Saudi higher education institution instructors, this study sheds light on a crucial area and emphasises the importance of



further investigation within EFL education. Second, a methodological gap emerged regarding participants and design, as previous studies varied in their approach to gender differences and the number of instruments used.

For instance, Öztürk's (2018) mixed-method quasi-experimental design used three instruments to find correlations among male and female instructors. Nahrkhalaji (2014) conducted a correlational study addressing female teachers and students using two quantitative instruments. Taghizadeh and Alirezanejad Gohardani (2019) conducted a mixed-method study using two instruments to explore instructors' metacognitive strategy use but did not differentiate by gender. Siddiqui et al. (2020) conducted a quasi-experimental quantitative study on B.Ed. Honours students to measure the role of instructors' metacognition effectiveness on the performance of the students using three instruments.

Keçik (2021) conducted a quantitative study of instructors using two instruments without highlighting gender differences. Benbouzid and Hamitouche's (2022) study focused on the metacognitive awareness of eight instructors of EFL writing courses and their attitude towards teaching writing. Thus, this study aims to fill these gaps by exploring the metacognitive awareness of instructors, with a specific focus on gender differences among the participants in many higher educations. The implications of these findings are not just academic but also practical. They offer insights that could potentially shape and enhance pedagogical practises in the unique context of Saudi Arabia, benefiting both instructors and students.

### **Methods**

The current study, employing a quantitative research design holds significant importance in shedding light on instructors' metacognitive awareness in various higher education institutions in Saudi Arabia. The choice of a quantitative research design is deliberate, as it is highly regarded for its scientific rigour, objectivity, and widespread acceptance (Allen et al., 2008; Nardi, 2018). By incorporating statistical analysis, this research design minimises bias, ensures consistency across researchers, and maintains an objective perspective. The precision, reliability, and structured nature of the data obtained from this type of research make it widely accepted and valuable for informed decision-making in academia.

### **Participants**

The study involved 160 EFL instructors, comprising 80 males and 80 females, from various colleges and universities in Saudi Arabia. The study engaged a diverse group of EFL instructors, each representing different levels of academic accomplishment. This included teaching assistants, lecturers, assistant professors, associate professors, and full professors. This diversity of educators provided different insights into the metacognitive strategy used to teach languages in different academic settings.

Convenience sampling, a nonprobability method based on participants' accessibility, was used to select the candidates. Although convenience sampling poses a risk by introducing bias and undermining the validity of findings, it is considered a dual-edge challenge because it relies on readily available volunteers, making it a resource-efficient data collection method. Furthermore, it rationalises the enrolment process and enhances the efficiency of data collection by utilising easily accessible participants. Consequently, strategic selection also ensures that the study can be conducted within a reasonable timeframe while maintaining the sample's integrity.

## **Instrument**

Research data were obtained via the Metacognitive Instruction Inventory developed by Balçıkanlı (2011), who conducted a study encompassing three distinct phases comprising, respectively, 323, 226, and 125 student teachers. The inventory displayed a validity coefficient of 0.794. Notably, the inventory's reliability, denoted by Cronbach's alpha scores, ranged from 0.79 to 0.85, suggesting a consistently high level of reliability. Correspondingly, similar levels of validity and reliability were observed in studies by Kallio et al. (2017), Keçik (2021), and Öztürk (2018) that used the same inventory. Accordingly, with its robust validity and reliability, this inventory was chosen to provide a comprehensive understanding of instructors' metacognitive awareness, thereby enlightening the field of foreign language instruction (see Appendix A). The inventory options were based on a five-option Likert scale: strongly disagree, disagree, neutral, agree, and strongly agree. This scale consisted of 24 items. These items were subcategorised according to the following dimensions of metacognition:

1. Declarative knowledge refers to the acquaintance of the strategies that can be implemented.
2. Procedural knowledge pertains to the ability to execute these strategies.
3. Conditional knowledge is the toolkit for tackling a challenge.
4. Planning involves organising strategies.
5. Monitoring tracks the progress of strategies.
6. Evaluating entails assessing the effectiveness of the selected strategies.

Under each dimension, there are four items. The Cronbach's alpha reliability score of declarative knowledge was  $\alpha = 0.865$ , procedural knowledge was  $\alpha = 0.795$ , conditional knowledge was  $\alpha = 0.823$ , planning was  $\alpha = 0.786$ , monitoring was  $\alpha = 0.823$ , and evaluating was  $\alpha = 0.817$ . The scale score was  $\alpha = 0.933$ , indicating overall excellent internal consistency because the closer Cronbach's alpha coefficient is to 1.0, the greater the internal consistency of the items in the scale.

## **Procedure**

The study proposal was officially approved by the university, granting permission for the principal investigator to collect data from EFL instructors in higher education institutions in Saudi Arabia. To ensure a comprehensive and inclusive sample, all instructors were invited to participate via various communication channels, including email, WhatsApp, LinkedIn, and Twitter. These platforms were deliberately selected due to their extensive use within the target population.

From an ethical standpoint, participants were carefully chosen to join the study voluntarily, without any conflict of interest. The data collection for this quantitative study spanned 4 months, from September to December 2023. Participating instructors were required to allocate 10–15 minutes to complete the questionnaire. The collected responses were subsequently analysed quantitatively using Jamovi version 2.3.28 (<https://www.jamovi.org>), an open-source statistical processing software developed explicitly for academic purposes. Moreover, the collaborative nature of Jamovi allows for generating and sharing analyses, thereby enabling knowledge-sharing with a broader audience.

## Data Analysis and Results

This section presents data analysis in four phases: the normality test, the homogeneity of variances test, the non-parametric test, and descriptive statistics. The first data analysis phase checks for the normality distribution of the candidates and determines whether the data follows a normal distribution pattern using the Shapiro-Wilk test. The second phase evaluates whether the different groups in your data have similar variances. Variances' homogeneity is calculated using Levene's test. The next phase decides if the parametric test assumptions are met or not. Consequently, the Mann-Whitney U is utilised as a non-parametric test as an alternative test. Finally, median data is highlighted as a part of the descriptive statistics.

### Normality Test

First, the Shapiro-Wilk test was used to ensure the normality of the candidates' distribution. The results showed that the low p-value violated the normality assumption (see Table 1).

**Table 1**

*Shapiro-Wilk Test of Normality*

Subcategory	W	P
Declarative Knowledge	0.802	< .001
Procedural Knowledge	0.880	< .001
Conditional knowledge	0.856	< .001
Planning	0.899	< .001
Monitoring	0.889	< .001
Evaluating	0.951	< .001

### Homogeneity of Variances Test

Second, Levene's homogeneity of variances test was used to verify the assumption that groups have equal variances. The results of this test showed a low p-value, indicating a violation of the assumption of equal variances (see Table 2).

**Table 2**

*Levene's Homogeneity of Variances Test*

Subcategory	F	df	df2	P
Declarative Knowledge	0.00594	1	158	0.939
Procedural Knowledge	0.02476	1	158	0.875
Conditional knowledge	0.07376	1	158	0.786
Planning	0.12859	1	158	0.720
Monitoring	0.55420	1	158	0.458
Evaluating	0.22295	1	158	0.637

## Non-parametric Test

Third, the independent samples t-test alternative (Mann-Whitney U) was employed to analyse nonparametric data. The results of the Mann-Whitney U test revealed that effect size varied based on the rank-biserial correlation coefficient (rb). The rb correlation coefficient measures effect size, which indicates the strength and direction of the association between the two groups.

The researcher calculated correlation coefficients (r) and effect sizes for the Mann-Whitney-U test based on the statistical data. Regarding interpretation, values between .01 and .09 indicate a negligible relationship. On the other hand, a small relationship is represented by values ranging from .10 to .29. Values between .30 and .49 identify a medium relationship, while values of .50 and above indicate a strong relationship. (Green & Salkind, 2005; Pallant, 2007). The first subcategory is declarative knowledge (U = 2857, p = 0.236). This analysis had a small effect size (r = 0.1073) ranging between (0.10–0.29).

Second, in the procedural knowledge (U = 3137, p = 0.828). There was a negligible effect size for this analysis (r = 0.0198) because it was (< 0.10). Third, for conditional knowledge (U = 3023, p = 0.543). There was a negligible effect size for this analysis (r = 0.0553) because it was (< 0.10). Next, for planning (U = 3139, p = 0.834). There was a negligible effect size for this analysis (r = 0.0192) because it was (< 0.10). After that, for monitoring (U = 3116, p = 0.772). There was a negligible effect size for this analysis (r = 0.0264) because it was (< 0.10). Finally, evaluating (U = 3083, p = 0.689). There was negligible effect size for this analysis (r = 0.0366) because it was (< 0.10). Thus, the effect sizes of each subcategory were slightly distinctive but remained insignificant (see Table 3).

**Table 3**

*Mann-Whitney U Test Results*

Subcategory	Test	Statistic	p		Effect Size
Declarative Knowledge	Mann-Whitney	2857	0.236	Rank biserial correlation	0.1073
Procedural Knowledge	Mann-Whitney	3137	0.828	Rank biserial correlation	0.0198
Conditional knowledge	Mann-Whitney	3023	0.543	Rank biserial correlation	0.0553
Planning	Mann-Whitney	3139	0.834	Rank biserial correlation	0.0192
Monitoring	Mann-Whitney	3116	0.772	Rank biserial correlation	0.0264
Evaluating	Mann-Whitney	3083	0.689	Rank biserial correlation	0.0366

## Descriptive Statistics

Finally, the descriptive statistics of the two groups' medians are discussed below to determine whether the difference between the medians of the two groups is statistically

significant. As shown in Table 4, declarative knowledge was equal for males and females (Mdn = 4.25) and procedural knowledge (Mdn = 4.00). Conditional knowledge was higher among males (Mdn = 4.50) than females (Mdn = 4.25), whereas planning was equal among males and females (Mdn = 4.00). Monitoring was higher among males (Mdn = 4.25) than females (Mdn = 4.00). Evaluation was higher among females (Mdn = 4.00) than males (Mdn = 3.75). Thus, medians ranged between 3.75 and 4.50, with the agreement level increasing the closer the value is to 5. Despite the differences observed among these medians, they have no statistical significance.

**Table 4**  
*Descriptive Statistics*

Subcategory	Gender	N	Median
Declarative Knowledge	Female	80	4.25
	Male	80	4.25
Procedural Knowledge	Female	80	4.00
	Male	80	4.00
Conditional knowledge	Female	80	4.25
	Male	80	4.50
Planning	Female	80	4.00
	Male	80	4.00
Monitoring	Female	80	4.00
	Male	80	4.25
Evaluating	Female	80	4.00
	Male	80	3.75

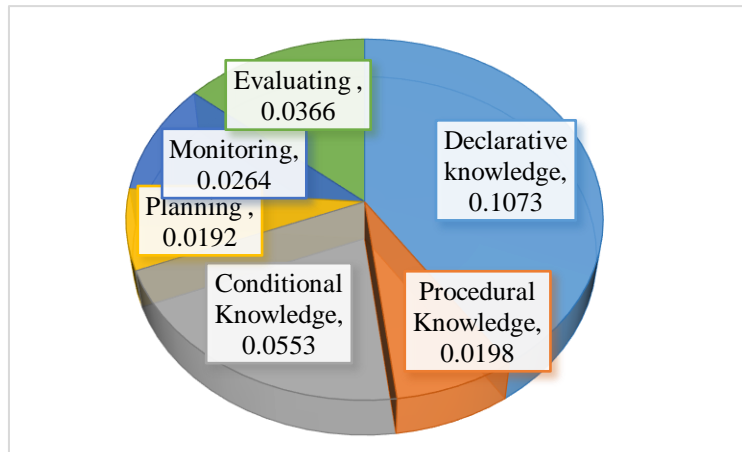
The primary aim of this study was to explore the awareness of metacognitive strategy among EFL instructors in Saudi higher education institutions. The researchers used the Metacognitive Instruction Inventory, a validated instrument Balçıkanlı (2011) developed to gather quantitative data. The study sought to identify significant differences in metacognitive awareness between male and female EFL instructors and among the six dimensions of metacognitive awareness. This section addresses the two research questions posed in the study.

RQ1: Are there any significant differences in metacognitive awareness between male and female EFL instructors in higher education institutions in Saudi Arabia?

To answer the first research question, the Mann-Whitney U test, an alternative to the independent samples t-test for nonparametric data, revealed that effect size varied based on the rank-biserial correlation coefficient (rb). The effect sizes of each subcategory were slightly distinctive but remained insignificant. Declarative knowledge has a low relationship between .10 and .29, while Procedural knowledge, Conditional knowledge, Planning, Monitoring and Evaluating have a negligible relationship between .01 and .09 (see Figure 1).

**Figure 1**

*Effect Size among the MAIT Dimensions*



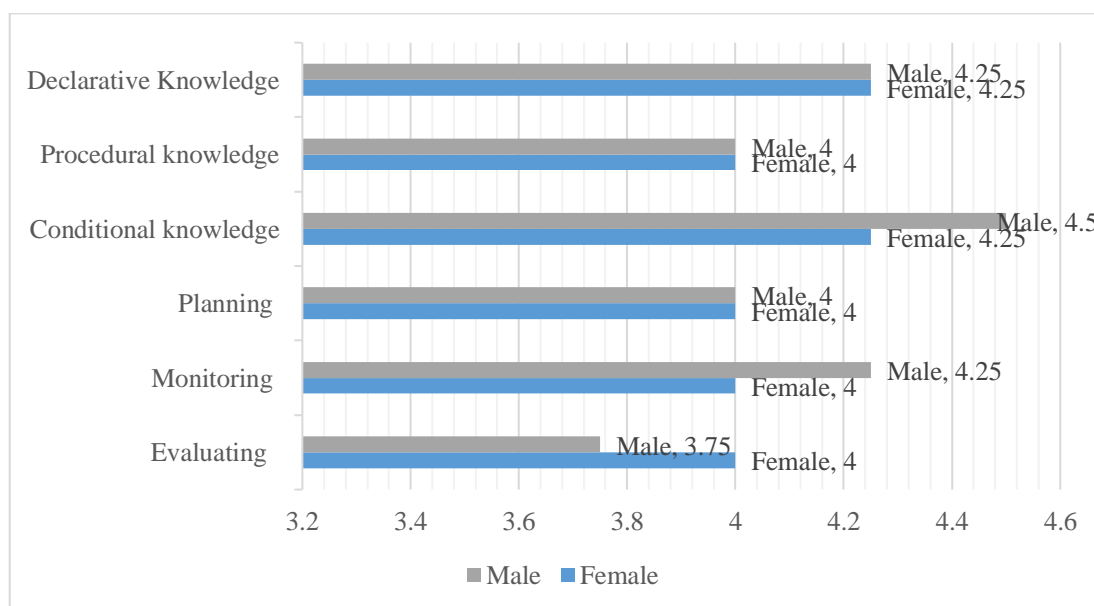
The results indicated that both male and female instructors demonstrated awareness of metacognitive strategy instruction, with no significant differences between genders. Indicating a consistent level of comprehension and approach towards metacognitive practises in their teaching across both groups.

RQ2: Are there any significant differences among the six dimensions of metacognitive awareness among EFL instructors in higher education institutions in Saudi Arabia?

Scores were calculated using medians, a measure of central tendency used with nonparametric data. Each median represents the precise middle value and depicts insight into the central point of the distribution of values. In the descriptive statistics, the analysis revealed no significant differences in the levels of each dimension among males and females. The higher median values typically ranged between 3.75 and 4.50, indicating a strong level of agreement approaching the maximum value of 5 (see Figure 2).

**Figure 2**

*Similarity of Male and Female Medians between MAIT Dimensions*



Accordingly, it is crucial to consider various factors that influence the significant level of metacognitive awareness across genders in Saudi Arabia. First, the educational sector is affected by a range of factors, including individuals' educational backgrounds and the availability of equal opportunities for professional development provided by universities and the Education and Training Evaluation Commission (ETEC) in Saudi Arabia; for instance, it provides professional development courses to enhance the skillful practices of educators aiming to improve the quality of education. These courses cover a wide range of topics, are expert-led, and are available online in Arabic and English. Furthermore, it provides interactive learning and certification upon completion. Additionally, instructors in Saudi Arabia adhere to the National Qualification Framework (NQF) established by ETEC. The NQF categorizes qualifications based on learning outcomes to enhance quality and recognition. It includes levels aligned with global standards for universal recognition, aiding institutions, employers, and students in understanding and comparing qualifications. This would develop course specifications, outline course plans, and establish key performance indicators (KPIs). This commitment significantly enhances the development of higher-order thinking skills and expands metacognitive instruction within the educational environment (Livingston, 1997; Okoza & Aluede, 2013; Öztürk, 2018).

Second, Sociocultural factors include societal perceptions of the teaching profession, the influence of traditional teacher-development approaches, group learning, community support as an interactive process and shared knowledge action. Moreover, Integrating cultural sensitivity and Islamic values into the educational framework is paramount because they guide teaching methods and align educational objectives with society's moral and ethical standards in Saudi Arabia (Almuhammadi, 2024).

Third, the background of EFL instructors based on the previous two factors outlines the methodological factor when EFL instructors in Saudi universities use different strategies to help inculcate metacognition development among their students, thereby promoting better learning outcomes.

The findings of this study corroborate the results obtained in previous studies, which highlighted that instructors' awareness of metacognitive strategies was insignificant. This finding also parallels those of Hashmi et al. (2019), who utilised the MAI (Schraw & Dennison, 1994) to assess the metacognitive awareness of 400 prospective teachers at Public Universities in Punjab. The findings revealed no significant differences in the prospective teachers' metacognitive knowledge and metacognitive regulatory skills across gender and age. Moreover, Alci and Karatas (2011) conducted a study to assess the metacognitive awareness levels among teacher candidates. The study aimed to examine whether these levels varied according to certain variables, such as gender or domains, using the MAI (Schraw & Dennison, 1994) to investigate 233 teacher candidates enrolled in the Pedagogical Formation Certificate Program at Yıldız Technical University, representing the domains of social sciences (121), numeric (51), and fine arts and design (61). Remarkably, the results indicated that gender differences were insignificant.

A paucity of scientific literature focuses on the metacognitive awareness of EFL instructors worldwide in higher education institutions. More comprehensive research in this area

is crucial to enhance our understanding and elevate the quality of education. In conclusion, while the field of metacognition has made significant progress, several conceptual, theoretical, methodological, and analytical issues still need urgent attention to expand and have a meaningful impact.

### **Conclusion**

This exploratory research aims to contribute substantially to the current body of literature in the Saudi context. It is specifically tailored to offer valuable insights to educators in higher education institutions in Saudi Arabia regarding instructors' awareness of metacognitive strategies. Given the complex interplay between metacognition and EFL instruction, the goal is to foster the repertoire with the dynamics involved in teaching and elevate the efficacy of learning within the EFL environment in Saudi Arabia.

This study's findings indicated no statistically significant differences between genders regarding EFL instructors' awareness of metacognitive strategies or in the various subcategories of metacognition, which include Declarative Knowledge, Procedural Knowledge, Conditional Knowledge, Planning, Monitoring, and Evaluating. This research offers insights that cultivate the Saudi context where higher education is valued, and stakeholders actively contribute to the learning process.

Furthermore, by focusing on the specific context of Saudi universities, this study fills a critical gap in the literature. It provides a perspective on EFL instructors' challenges and opportunities in this educational setting. Ultimately, the investigation of Saudi university instructors' metacognitive awareness holds promise for enriching both theoretical and practical aspects of language education, providing continuous work into this dynamic area of research.

### **Limitations, Implications and Suggestions for Further Studies**

The study highlights potential constraints observed in higher education research. First, it notes the limited number of studies conducted in higher education institutions globally over 10 years (2014–2024), encompassing only the seven referenced studies. Second, the study's sample size can be increased to produce more valid generalisations based on the results.

The instructors' insights reveal important andragogical implications in metacognitive strategy instruction, which is vital in enhancing their metacognitive knowledge. The process can be effectively enhanced through a series of suggested steps based on the six dimensions of metacognitive awareness:

First, a mentorship committee should be implemented as part of the professional development program for faculty members, where experienced professors collaborate with less-experienced committee members to promote professional development and share effective methods that increase their metacognition. Also, teaching methods that align with the cultural norms of male and female EFL instructors should be adopted to foster an inclusive environment. Additionally, faculty members should be trained to incorporate metacognitive strategies into their course tasks. Furthermore, they should be encouraged to reflect on their teaching experiences to identify when, where, why, what, and how these strategies can be used. Lastly,



faculty should be inspired to engage in metacognitive teaching by facilitating opportunities for peer observations, peer reviews, and self-assessments.

Based on the findings discussed above, it is recommended to conduct further EFL studies on the following:

First, since the data was gathered through one questionnaire with closed-ended items, a semi-structured interview could be employed to examine the same variables and then analyse them qualitatively to triangulate results. Second, a qualitative study using think-aloud protocols could be investigated by focusing on sociocultural factors influencing EFL instructors' metacognitive strategy awareness. Third, longitudinal studies on metacognitive strategy awareness could be implemented. This may involve studying instructors' performance over an extended period to observe how their understanding and utilisation of these strategies progress. Finally, further research could explore the influence of professional development training courses in metacognitive strategy instruction on EFL instructors' teaching philosophy, which may depict significant gender differences. It can help gain insights when it uncovers their tacit beliefs about how metacognitive strategies are integrated into instruction and provides broader implications for teaching effectiveness in EFL contexts.

### **Acknowledgements**

I sincerely acknowledge the constructive comments and valuable suggestions provided by the anonymous reviewers and editorial team of this esteemed journal, which have significantly improved the final version of this paper.

### **Bio**

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