

Metacognitive awareness and language achievement test performance among Iranian undergraduate ESP students

Ali Panah Dehghani^{1, *}, Seyedeh Khadijeh Najafi¹

¹Department of English, Kaz.C., Islamic Azad University, Kazerun, Iran

Received: 28.12.2023 • Accepted: 30.02.2025 • Published: 20.08.2025 • Final Version: 07.09.2025

Abstract: Metacognitive awareness plays a fundamental role in enabling learners to employ appropriate strategies in problem solving, and monitoring their learning process in different conditions. The current study aims at finding the metacognitive awareness level of undergraduate students in ESP. To this end, 33 undergraduate students in ESP took part in the study. They were asked to respond to the given statements provided in the inventory. The data were gathered and analyzed. The results indicated that the participants' metacognitive awareness is high. Moreover, the participants obtained high mean scores on the two components of metacognitive awareness. Additionally, the results revealed a very weak positive correlation between the students' metacognitive awareness and test performance. The findings of the study can help students become familiar with their level of metacognitive awareness and use it effectively in different situations. The findings, moreover, can be conducive to instructors and material developers to deliver materials in such a way that best increase learners' metacognitive awareness and involvement in learning process.

Key words: Metacognitive awareness, ESP, undergraduate students

1. Introduction

During the past decades different studies have addressed the role of metacognition due to various factors. It is argued that it can influence individuals' problem solving (Swanson, 1990). It can also affect the learning process of individuals. Chastain (1998, p. 35) refers to metacognition as a conscious process that is related to potential of mind in monitoring its mental process. Cognitive is defined as "of, relating to, being, or involving conscious intellectual activity (such as thinking, reasoning, or remembering)", and metacognition as "awareness or analysis of one's own learning or thinking processes" (Merriam Webster, online dictionary). Metacognitive theories are described as "systematic frameworks used to explain and direct cognition, metacognitive knowledge, and regulatory skills." (Schraw and Moshman 1995, p. 351). Metacognitive knowledge may be defined as what knowledge individuals have about their cognitive process (Young and Fry, 2008).

Metacognitive awareness encompasses two main components, namely, knowledge about cognition and regulation of cognition. Knowledge about cognition is related to knowledge about ourselves, as learners, learning strategies and when and why to use the strategies. It is therefore, the knowledge one has about him/herself. As Schraw and Moshman (1995) argue, it is about what individuals know about cognition. To (Siqueira, et al., 2020), knowledge about cognition is pertinent to awareness of individuals' weak and strong points.

Knowledge about cognition has three subcomponents: a) Declarative knowledge is related to knowing *about* things, the knowledge learners need prior to being able to use critical thinking. "Declarative knowledge includes knowledge about oneself as a learner and about what factors influence one's performance" (Schraw 1998, p. 114). It is the type of knowledge that "individuals use to comprehend and remember new information" (Chastain, 1988, p. 39). b) Procedural knowledge refers to knowledge about how to use strategies, and to do things. Chastain (1998) refers to procedural knowledge as the learning skills and strategies that learners have mastered during their learning process. c) Conditional knowledge is the selection of strategies according to the

* Corresponding Author: alidehghani35@gmail.com

situation the learning activity takes place; knowledge of when and why to use strategies. Conditional knowledge enables learners to change strategies of learning in different situations.

The other level of metacognitive awareness is regulation of cognition. "Regulation of cognition refers to a set of activities that help students control their learning" (Schraw 1998, p. 113). It is about "metacognitive activities that help control one's thinking or learning" (Schraw and Moshman, 1995, p. 354). Regulation of cognition encompasses planning, information management strategies, comprehension monitoring, debugging strategies (strategies for correcting errors in performance and comprehension), and evaluation (analysis of performance).

Schraw (1998) emphasizes that the two components of metacognitive awareness are related to each other, that is, they are interrelated, and that both cover a wide variety of domain, that is, the knowledge in one domain is the same as the knowledge in another domain. Students' knowledge of metacognition increases as they progress, and with their advances in learning they can use them more appropriately. It may be said that adults have better knowledge about memory in comparison to children. Schraw (1998) argues that the higher the level of the learners, the more metacognitive knowledge they acquire.

Some researchers have addressed the reasons why individuals construct metacognitive theories. Schraw and Moshman (1995) suggest two main reasons in this regard: "to systematize their metacognitive knowledge, and to understand and plan their own cognitive activities within a formalized framework" (p. 352). Metacognitive knowledge, stored in long term memory, forms three separate variables: person knowledge which is related to a person's belief about himself and others, task knowledge which deals with individuals' knowledge about the task during a cognitive activity, and strategic knowledge, one's knowledge about choosing proper strategy and evaluating its effectiveness (Farahian 2015, p. 39).

Pintrich (2002) points to the essential role of metacognition in learning; Individuals can have knowledge about strategies for reading a textbook and knowledge about strategies to control their comprehension of the passage. Learners can also activate situational and conditional learning in problem solving; Different strategies are applied in different situations. For instance, the type of information required in multiple choice items (recognition knowledge) is different from that of essay type questions (recall information). These types of knowledge can influence the way learners prepare for examinations (Pintrich 2002).

According to Chastain (1998) individuals have their own learning cognitive styles, which are unique to every person. That is, since individuals are different, their brains function differently due to inheritance features, prior knowledge and past experiences. Individual differences, age and gender especially, should be taken into account to provide equal opportunities for both groups. Abdelrahman (2020) found that females' metacognitive awareness level were higher, in both scales (metacognitive knowledge and metacognitive regulation), than males'. This may support the view that teachers should take into consideration individual differences in classrooms in a way that all learners, both males and females, can improve their metacognitive awareness levels effectively. Whenever possible, teachers should offer materials in a way that best work for learners with different learning strategies.

In a study, Khan and Sanosi (2024) reported moderate to high use of metacognitive awareness and cognitive strategies by the participants. The correlation between academic awareness and academic achievement was reported to be stronger than the correlation between cognitive strategies and academic achievement. Mohamed and Shaaban (2023) conducted a study to determine college students' level of metacognitive awareness in enhancing ESP writing proficiency, in Saudi Arabia. They found that the participants of the study showed a moderate level of knowledge of recognition and a relatively high degree of regulation of knowledge in writing. Female students were reported to have a higher level of metacognitive awareness than the male students. Moreover, they found that IT students obtained higher mean scores on both categories of metacognitive awareness than Supply Chain Management students.

Krisdianata and Kuswando (2022) found low level of metacognitive knowledge and regulation among high school Indonesian students in writing descriptive test. The researchers argue that the subjects of the study were unaware of metacognitive knowledge and regulation (p. 193). Association between metacognitive awareness and other variables essential in language learning such as motivation to learn (Siqueira et al., 2020; Abdelrahman, 2020), EFL writing (Farahian and Avarzamani 2018), and reading comprehension (Zahra, Komariah and Sari, 2016) have been reported in previous research. Farahian and Avarzamani (2018) conducted a study to determine the metacognitive awareness of skilled and less skilled EFL writers and found that skilled EFL learners took advantage of higher level of metacognitive awareness. Additionally, they found positive correlations between metacognitive awareness and writing proficiency with the exception that negative correlation was reported for avoidance strategy.

Ahangari and Mohseni (2016) conducted a study to determine the effect of metacognitive awareness strategy- planning and monitoring- on reading comprehension of ESP learners and concluded that instruction of

the given strategies can improve learners' performances on reading comprehension tests. Premachandran (2016) found no statistically significant differences in the learners' metacognitive awareness based on gender, locality, and type of management of the school. Takallou (2011) found significant differences between the performances of the experimental group, who received direct instruction on planning and monitoring of metacognitive awareness, and the control group in reading comprehension test. That is, the experimental group outperformed the control group on the test. Moreover, it was reported that direct instruction of metacognitive awareness increased significantly students' metacognitive awareness level.

Memnun and Akkaya (2009) conducted a study to determine the metacognitive awareness level of primary teacher trainee and found that the participants had a high level of metacognitive awareness although gender was reported to have no role in this regard. Significant differences were found between the participants based on their class levels. Young and Fry (2008) reported significant differences between graduate and undergraduate students' scores on regulation of knowledge. They also found that the differences were not significant for knowledge of cognition.

In sum, ESP courses are designed to meet specific language needs of students in a particular field of study. Metacognitive awareness allows language learners in ESP contexts to monitor their learning and progress. It also makes it possible for students to adjust their learning strategies to master knowledge and subject matters more efficiently. Metacognitive awareness, additionally, enables language learners to use effective strategies to cope with the challenges they face in the course of language learning. That is, it helps them apply the strategies that work best in different situations. Therefore, awareness of metacognition is crucial for problem-solving, particularly in ESP contexts. Due to the importance of metacognitive awareness in learning and its significant role in enabling students to select appropriate strategies in different contexts and situations, this study was conducted to determine the level of metacognitive awareness of Iranian undergraduate ESP students. Moreover, the current study aimed at finding the possible relationship between metacognitive awareness and the language achievement test performance of the participants.

2. Method

In the following sections, the participants of the study, instruments as well as data collection procedures are provided and discussed.

2.1 Participants

33 male and female undergraduate students, majoring in public health and laboratory science participated in this study. They were selected based on convenience sampling. They were mostly speaking Persian as their first language.

2.2 Instruments

To determine the participants' metacognitive awareness, Metacognitive Awareness Inventory developed by Schraw and Dennison (1994) was employed. Furthermore, an achievement test, related to the covered materials, was administered at the end of the semester.

2.3 Data collection procedures

Metacognitive Awareness Inventory consists of 52 true/false items. The inventory covers two main components namely "knowledge about cognition" with 17 items on declarative knowledge (8 items), procedural knowledge (4 items) and conditional knowledge (5 items), and "regulation of cognition" with 35 items on planning (7 items), information management strategies (10 items), comprehension monitoring (7 items), debugging strategies (5 items), and evaluation (6 items). The Persian version of the questionnaire was provided for the learners to make sure that they fully understand the items. The questionnaire was administered at the end of the semester. The participants were reminded that their responses on the given items just reflect their own way of learning materials, and represent the level of their metacognitive awareness. They were asked to pay attention to each statement carefully and to consider if the given statements are true or false for them. Then, the data were collected and analyzed the results of which are given below.

3. Findings and Results

Firstly, descriptive statistics related to the participants' metacognitive awareness were dealt with, and the results are given below.

Table 1. Descriptive Statistics of the Participants on Metacognitive Awareness

N	Mean	Median	Mode	Std.	Variance	Min	Max
---	------	--------	------	------	----------	-----	-----

	N		Mean	Std. Deviation	Std. Error	Minimum	Maximum		
	Valid	Missing							
Metacognitive awareness	33	0	.8140	.8055	.60 ^a	.10021	.010	.60	1.01

a. Multiple modes exist. The smallest value is shown

As shown in Table 1, the participants' obtained mean score on metacognitive awareness is .81 ($M=.81$, $SD = .10$). This represents that the metacognitive awareness of the learners is high. The following figure also shows the performances of the participants on the metacognitive awareness inventory.

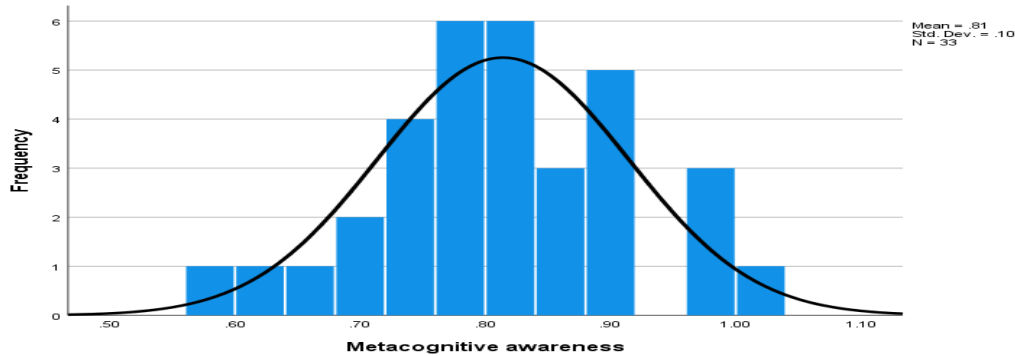


Figure 1. The Performance of the Learners on Metacognitive Awareness

In addition to mean score and standard deviation, the given histogram represents the distribution of the frequency of the scores by the learners.

As mentioned earlier, two components of metacognitive awareness are knowledge about cognition and regulation of knowledge. The participants' performance on each component was analyzed and the results are provided below.

Table 2. Descriptive Statistics of the Participants on Knowledge about Cognition

	N		Mean	Median	Mode	Std. Deviation	Min	Max
	Valid	Missing						
Declarative	33	0	.7689	.7500	1.00	.17711	.50	1.00
Procedural	33	0	.8333	1.0000	1.00	.21348	.25	1.00
Conditional	33	0	.8242	.8000	.80	.17859	.40	1.00
Knowledge about cognition	33	0	.8088	.8333	.81 ^a	.13553	.45	1.00

a. Multiple modes exist. The smallest value is shown

Table 2 depicts the descriptive statistics of knowledge about cognition and its subcategories. The obtained mean score of the participants on knowledge about cognition is high ($M= .81$, $SD = .136$). Knowledge about cognition includes declarative, procedural, and conditional knowledge. The mean scores of the subcomponents of knowledge about cognitions were shown to be high, too. The highest mean is related to procedural knowledge ($M= .83$, $SD = .213$), followed by conditional knowledge ($M= .82$, $SD = .179$), and declarative knowledge ($M= .77$, $SD = .177$).

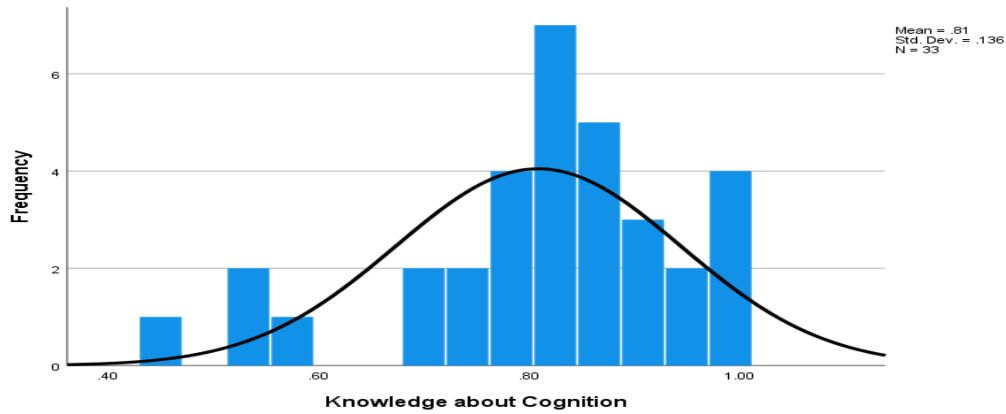


Figure 2. The Performance of the Learners on Knowledge about Cognition

The obtained mean score, standard deviation as well as the distribution of the frequencies of the scores are depicted in the above histogram (Figure 2). Descriptive statistics related to regulation of knowledge are as follow.

Table 3. Descriptive Statistics of the Participants on Regulation of Knowledge

	N		Mean	Median	Mode	Std. Deviation	Min	Max
	Valid	Missing						
Planning	33	0	.7835	.8571	.86	.16020	.43	1.00
Information	33	0	.7606	.8000	.80	.15996	.30	1.00
Comprehension	33	0	.7403	.7143	.71	.15753	.43	1.00
Debugging	33	0	.9455	1.0000	1.00	.10335	.60	1.00
Evaluation	33	0	.7778	.8333	.83	.18002	.33	1.00
Regulation of knowledge	33	0	.8191	.8124	.65 ^a	.11152	.65	1.14

a. Multiple modes exist. The smallest value is shown

In Table 3, the mean score of regulation of knowledge is shown to be high ($M = .82$, $SD = .112$). Accordingly, the mean scores of the subcomponents of regulation of knowledge are high and shown to be as follows successively: Debugging with the mean score of ($M = .95$, $SD = .103$) is the highest one. Planning is the second highest ($M = .78$, $SD = .160$), evaluation is in the third place ($M = .78$, $SD = .180$), information is in the fourth place ($M = .76$, $SD = .160$), and comprehension is the last subcomponent ($M = .74$, $SD = .158$). The following histogram also represents the distribution of the frequencies of the learners' scores on regulation of knowledge.

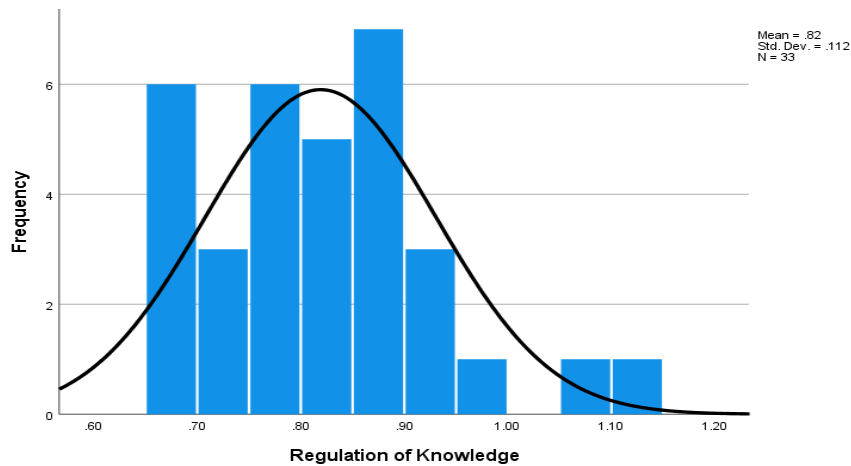


Figure 3. The Performance of the Learners on Regulation of Knowledge

The performance of the participants on each statement is depicted in the following table.

Table 4. The Participants' Performance on the Statements of metacognitive awareness

Items	False	True	Items	False	True	Items	False	True
1	3.0%	97.0%	21	51.5%	48.5%	41	30.3%	69.7%
2	0.0%	100.0%	22	18.2%	81.8%	42	6.1%	93.9%
3	6.1%	93.9%	23	12.1%	87.9%	43	30.3%	69.7%
4	36.4%	63.6%	24	36.4%	63.6%	44	12.1%	87.9%
5	21.2%	78.8%	25	6.1%	93.9%	45	30.3%	69.7%
6	12.1%	87.9%	26	15.2%	84.8%	46	0.0%	100.0%
7	24.2%	75.8%	27	24.2%	75.8%	47	9.1%	90.9%
8	36.4%	63.6%	28	48.5%	51.5%	48	42.4%	57.6%
9	24.2%	75.8%	29	9.1%	90.9%	49	33.3%	66.7%
10	30.3%	69.7%	30	30.3%	69.7%	50	6.1%	93.9%
11	33.3%	66.7%	31	6.1%	93.9%	51	0.0%	100.0%
12	30.3%	69.7%	32	15.2%	84.8%	52	0.0%	100.0%
13	27.3%	72.7%	33	12.1%	87.9%			
14	24.2%	75.8%	34	12.1%	87.9%			
15	9.1%	90.9%	35	33.3%	66.7%			
16	24.2%	75.8%	36	33.3%	66.7%			
17	30.3%	69.7%	37	27.3%	72.7%			
18	21.2%	78.8%	38	24.2%	75.8%			
19	9.1%	90.9%	39	12.1%	87.9%			
20	33.3%	66.7%	40	9.1%	90.9%			

As shown in table 4, the participants in general had completely checked "true" (100%) for statements 2, 46, 51 and 52. These statements are related to comprehension (item 2), declarative knowledge (46), and dubbing strategies (51-52).

To examine the possible relationship between metacognitive awareness and language achievement test performance of the participants of the study, Pearson correlation coefficient was run and the results are given in the following table.

Table 5. The correlation between metacognitive awareness and achievement test

		Achievement	Metacognitive
Achievement	Pearson Correlation	1	.056
	Sig. (2-tailed)		.757
	N	33	33
Metacognitive Awareness	Pearson Correlation	.056	1
	Sig. (2-tailed)	.757	
	N	33	

A Pearson correlation analysis was performed, revealing virtually no meaningful relationship - a very weak positive correlation- between the participants' metacognitive awareness and their test performance ($r = 0.056$). The results indicate that the correlation between the two variables is not statistically significant, as evidenced by the p-value (sig) of 0.76, $p > 0.05$ (two-tailed).

4. Discussion

Metacognition refers to one's thinking about thinking. It is related to the way an individual learns. To determine the metacognitive awareness of Iranian undergraduate students studying English for specific purposes (ESP) the current study was conducted. The results indicated that the participants' metacognitive awareness was high in general. Their mean scores on two types of metacognitive awareness were also found to be high. This indicates that learners had a good understanding of when, how, and why to use strategies. They knew well in which situations which strategies work best and which strategies should be utilized. Learners should be aware of their metacognitive awareness in learning process. It can help them to deal effectively with different tasks in different conditions and situations. It also allows them to know the reasons for applying particular strategies, and to assess their comprehension during learning.

Higher awareness of metacognition may be beneficial in learning taught materials. It helps learners for problem solving and for evaluating their progress in leaning. Students with high level of metacognitive awareness can plan, monitor, evaluate, and regulate their learning process better than those with lower level of metacognition. It plays a basic role in learning language independently (Ismael, 2015), therefore, students can develop their strength and overcome deficiencies in language learning. Rogers (2010) suggests some ways for increasing metacognitive awareness of students in classroom, such as teachers' explicit instruction and students' practice and reflection on the skills. However, teaching methods and learning conditions in ESP differs from general English. In EGP settings, the focus is on how learners learn language and not on delivery of contents (Nasim, AlTameemy, and Ahmad, 2022). They argue that most ESP books focus on reading and writing activities, and little has been paid to speaking and listening in real-life contexts. Therefore, the knowledge of metacognition is very conducive to them. The literature concerning the role of metacognitive supports its significant effect in ESP settings (e.g., Rogers, 2010; Seifoori, 2014). The results of a study by Seifoori (2014), also, indicated the need for training metacognitive by ESP students.

The findings of the current study indicated that there is a very weak positive correlation between the participants' metacognitive awareness and performance on the achievement test. The findings suggest that there is no substantial evidence to support a statistically significant correlation between the variables of the study. However, the findings of the study contradict those obtained by Young and Fry (2008) who found significant correlation between metacognitive awareness and students' academic achievement. The results, however, are somehow in line with the findings by Gul and Shehzad (2012) who found a weak correlation between metacognition and academic achievement.

The findings of the study can help instructors to pay more attention to students' metacognitive awareness in ESP contexts. Metacognition is viewed essential for successful and effective language learning (Teng, 2025). Knowing about metacognitive awareness can lead students to apply effective strategies when facing a problem. It can also enhance and promote learners' autonomy in learning. It is to be noted that the findings of the current study may not be generalizable to other samples or contexts. The obtained findings may be due to the participants' great efforts in the achievement test. That is, they might have put more time and energy to do their best in the test regardless of the variation in their metacognitive knowledge. Additionally, the nature of ESP course materials may play a role in this regard. Therefore, caution should be exercised in generalizing the findings of the current study. The authors suggest a more comprehensive study, with a larger number of participants.

5. Conclusions

The findings of the study revealed that the Iranian ESP students' metacognitive awareness is high in general, and for both components of metacognitive awareness. Although the findings of the current study did not confirm a significant relationship between metacognitive awareness and achievement test performance, metacognition may make a contribution to successful learning. It makes it possible, for learners, to use proper strategies in particular conditions. Teachers should be aware of the importance of metacognitive awareness and should present materials in a way that best helps individuals learn. It can be conducive to learners to know how and when to utilize strategies. Both teachers and learners should be more patient and put more efforts to improve students' metacognitive skills. Gourgey (2001) suggested it is possible to increase the level of metacognition, through extra attempts, even for those learners who have been passive in the classrooms, and do not know how to become more active. Metacognitive knowledge and metacognitive strategies should be taught explicitly by instructors, since all learners do not use them spontaneously (Hartman, 2001). In sum, metacognition which encompasses thinking about one's learning, using right strategies during learning, and evaluating one's learning can help learners be aware of their learning process.

References

- [1] Abdelrahman, R. M. (2020). Metacognitive awareness and academic motivation and their impact on academic achievement of Ajman University students. *Heliyon* 6(9).
- [2] Ahangari, S., & Mohseni, F. (2016). The effect of awareness raising through metacognitive strategy-based instruction on ESP learners' reading comprehension. *Journal of English Language Pedagogy and Practice*, 9(18), 65-77.
- [3] Chastain, K. (1998). *Developing Second Language skills. Theory and practice*. (3rd Edition). U.S.A.
- [4] Farahian, M. and Avarzamani, F. (2018). Metacognitive awareness of skilled and less-skilled EFL writers. *Asian-Pacific Journal of Second and Foreign Language Education* 3(10).
- [5] Farahian, M. (2015). Assessing EFL learners' writing metacognitive awareness. *Journal of Language and Linguistic Studies*, 11(2), 39-51.
- [6] Gourgey, A. F. (2001). Metacognition in basic skills instruction. In *Metacognition in learning and instruction*, 17-32, Springer, Dordrecht.
- [7] Gul, F. and Shehzad, Sh. (2012). Relationship between metacognition, goal orientation and academic achievement. *Procedia - Social and Behavioral Sciences* 47, 1864 – 1868
- [8] Hartman, H. J. (2001). Developing students' metacognitive knowledge and skills. *Metacognition in learning and instruction*, 33- 68, Springer, Dordrecht.
- [9] Ismael, H. A. (2015). The Role of Metacognitive Knowledge in Enhancing Learners Autonomy. *International Journal of Language and Linguistics*, 2(4).
- [10] Khan, A. A., & Sanosi, A. B. (2024). Correlation of ESP Learners' Cognitive, Metacognitive Strategies and Academic Achievement. *Journal of Language Teaching and Research*, 15(5), 1625-1633.
- [11] Krisdianata, Y. Y., & Kuswandono, P. (2022). Investigating EFL high school students' metacognitive awareness in writing. *JURNAL BASIS*, 9(1), 185-196.
- [12] Memnun, D. S., & Akkaya, R. (2009). The levels of metacognitive awareness of primary teacher trainees. *Procedia-Social and Behavioral Sciences*, 1(1), 1919-1923.
- [13] Merriam-Webster.(n.d.). Cognitive. In *Merriam-Webster.com dictionary*. Retrieved December 15, 2023, from <https://www.merriam-webster.com/dictionary/cognitive>.
- [14] Merriam-Webster.(n.d.). Metacognition. In *Merriam-Webster.com dictionary*. Retrieved December 15, 2023, from <https://www.merriam-webster.com/dictionary/metacognitive>.
- [15] Mohamed, A., & Shaaban, T. (2023). Investigating college students' metacognitive awareness in enhancing ESP writing proficiency. *Journal of Teaching English for Specific and Academic Purposes*, 387-401.
- [16] Nasim, S. M., AlTameemy, F., & Alhamod, A. (2022). Identifying metacognitive listening comprehension strategies of Saudi ESP students. *FWU Journal of Social Sciences*, 16(2).
- [17] Pintrich, P. R. (2002). The role of metacognitive knowledge in learning, teaching, and assessing. *Theory into practice*, 41(4), 219-225.
- [18] Premachandran, S.J. (2016). A Study on the metacognitive awareness of secondary school students. *Universal Journal of Educational Research* 4(1), 165-172.
- [19] Rogers, R. J. (2010). Incorporating metacognitive strategy training in ESP writing instruction: English for lawyers. *English Language Teaching*, 3(4), 3-9.
- [20] Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional science*, 26(1), 113-125.
- [21] Schraw, G., & Moshman, D. (1995). Metacognitive theories. *Educational psychology review*, 7(4), 351-371.

- [22] Seifoori, Z. (2014). Discipline and gender variation in ESP learners' use of metacognitive strategies. *Iranian Journal of Language Teaching Research* 2(2), 13-34.
- [23] Siqueira, M. A. M., Gonçalves, J. P., Mendonça, V. S., Kobayasi, R., Arantes-Costa, F. M., Tempski, P. Z., & Martins, M. D. A. (2020). Relationship between metacognitive awareness and motivation to learn in medical students. *BMC Medical Education*, 20(1), 1-10.
- [24] Swanson, H. L. (1990). Influence of metacognitive knowledge and aptitude on problem solving. *Journal of educational psychology*, 82(2), 306.
- [25] Takallou, F. (2011). The effect of metacognitive strategy instruction on EFL learners' reading comprehension performance and metacognitive awareness. *Asian EFL Journal*, 13(1).
- [26] Teng, M. F. (2025). *Metacognition in Language Teaching*. Cambridge: Cambridge University Press.
- [27] Young, A., & Fry, J. D. (2008). Metacognitive awareness and academic achievement in college students. *Journal of the Scholarship of Teaching and Learning*, 8(2), 1-10.
- [28] Zahra, F., Komariah, E., & Sari, D. F. (2016). A study on students' metacognitive awareness and their reading comprehension. *Research in English and Education Journal*, 1(1), 10-17.