

Exploring the Influence of Resource Management on Learning Strategies in the Learning of Foreign Languages

Muhammad Syaffiq Mohammed Raffi¹
Fariz Azzuan Amat Suparia²
Nur Hakimah MD Sallehuddin³
Asma' Ammar⁴

^{1,2,4} Akademi Pengajian Bahasa, Universiti Teknologi MARA Shah Alam

³ Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Negeri Sembilan, Kampus Seremban

Email: syaffiqraffi@uitm.edu.my, farizazzuan@uitm.edu.my, hakimah87@uitm.edu.my, asma_ammara@uitm.edu.my

Corresponding Author: Fariz Azzuan Amat Suparia² (farizazzuan@uitm.edu.my)

To Link this Article: <http://dx.doi.org/10.6007/IJARBS/v13-i11/19289> DOI:10.6007/IJARBS/v13-i11/19289

Published Date: 07 November, 2023

Abstract

Language learning strategies (LLS) are essential tools utilized by individuals to facilitate the process of acquiring proficiency in a foreign or second language. These strategies encompass a wide range of cognitive and metacognitive techniques. Understanding the role and effective implementation of these strategies is pivotal in promoting successful language acquisition and fostering learner autonomy. This study aims to identify students' perceptions of their deployment of resource management, metacognitive self-regulation, and cognitive strategies, and to evaluate whether there is a relationship between resource management and metacognitive self-regulation and cognitive strategies. This study used a quantitative research method by employing a questionnaire 5 Likert-scale survey and is adapted from Wenden and Rubin (1987). A total of 118 students from a public university in Malaysia participated in this study. The questionnaire has 4 sections with 41 items consisting of demographic profile, cognitive components, metacognitive self-regulation and resource management. The data were then transferred to SPSS 26 applying the mean and the Pearson correlation test. According to the research, students seeking help is one the most among the components of resource management, followed by environmental management and effort management. In terms of metacognitive self-regulation, students favour employing a variety of approaches, such as reviewing difficult topics, and actively attempting to assess their comprehension of curriculum content. Students have a significant tendency for relating

course information to prior knowledge and adopting memorising techniques with regard to cognitive components. It is worth noting that these three strategies have a statistically significant positive correlation based on student perceptions. The researchers propose an extensive study on the relationship between learning strategies and student's motivation as alternate strategies to enhance students' intrinsic motivation to learn.

Keywords: Learning Strategies, Cognitive Components, Metacognitive Self-Regulation, Resource Management, Foreign Language

INTRODUCTION

Background of Study

The significance of studying a foreign language has been mentioned in the Malaysian Education Blueprint 2015-2025 (Jabatan Pendidikan Tinggi, n.d.), which has also been acknowledged as one of the key components in realizing the country's vision of being a fully developed nation. A foreign language is defined as a language spoken by people who speak other than their native language (Boon et al., 2021). Many universities have considered foreign language courses, such as Mandarin, Arabic, French, Korean, and Japanese, a graduation requirement. (Singh et al., 2021). Foreign language proficiency is systematically related with meaningful and productive participation in politics, security, global trade, and education (Zubairi & Sarudin, 2009). It is possible to assert that individuals who can speak multiple languages are better able to compete in the international marketplace and thrive in wide, multiethnic work environments (Singh et al., 2021). Persistently, educational leaders emphasize on the necessity of increasing foreign language proficiency among students nowadays (Christian et al; 2005).

The field of foreign language education has shifted away from teacher-focused instructional learning and toward learner-centered learning that is centred on the learner's characteristics. Students must be self-directed learners and apply certain strategies and learning styles in order to attain language learning objectives. (Ayu, 2018, Wahyudin & Rido, 2020; Lestari & Wahyudin, 2020).

Language learning strategies (LLS) emerged in the 1970s, when research was focused on reflecting the characteristics of a successful language student and the differences in learning success (Lestari & Wahyudin, 2020). There are many learning strategies that have been produced by many scholars and researchers such as Wenden & Rubin (1987), Oxford (1990). Learning techniques are intended to help instructors improve the effectiveness of the language learning process (Lestari & Fatimah, 2020). Thus, it is essential to conduct study on reviewing learning strategies by integrating one strategy with others to provide even more effective and better results for students.

Statement of Problem

Every learning process necessitates the adoption of a method or strategy to achieve its primary objective. Important components of the learning process include the "what" and "how" of learning tools. However, while acquiring a language, humans employ a variety of strategies, some of which are effective and others which are ineffective (Hardan, 2013). The study of LLS has been a subject of research for over three decades, as it has been observed that foreign language learners employ and utilize a diverse range of LLS with high frequency and effectiveness during the process of acquiring a new language (Mila & Gutierrez-Mangado, 2019; Habok, Kong, Ragchaa, & Magyar, 2021). Previous studies have shown that strategies play an important part in the process of learning a language as well as the success of the

process (Lai, Saab, & Admiraal, 2022). It has also been noted by studies that these strategies make it possible for students to obtain more responsibility for their own learning and success and that LLS is believed to be one of the most important elements accounting for individual variances in language acquisition (Qasimnejad & Hemmati, 2014).

Extensive scholarly inquiry into language learning processes has resulted in the identification and classification of diverse strategies (Seng, Mustafa, Halim, Rahmat, & Amali, 2023). Current research focuses on self-regulated learning which can be differentiated into three main categories which are cognitive, metacognitive, and resource-management strategies (Biber, et al., 2021). Cognitive strategies encompass a range of tactics and procedures employed to facilitate the processing and storage of information in an efficient and effective manner (Yang, Zeng, & Xu, 2021), while the term metacognition refers to the capacity of individuals to possess knowledge about their cognitive processes, actively monitor these processes as they occur, exert control over them, and make necessary adjustments in order to optimize the learning experience (Mitsea & Drigas, 2019). Biber, et al. (2021) and Yusri, Rahimi, and Halim (2011) mentioned the four components of resource management strategies are time and study management, effort regulation, peer learning, and assistance seeking.

Many studies have been done to investigate the LLS in learning foreign languages. In a study conducted by Ahmad (2020), the objective was to investigate the level of awareness and utilization of cognitive and metacognitive reading strategies among Omani EFL students from various academic disciplines. The findings indicated that the participants exhibited a preference for cognitive strategies while demonstrating a reluctance to employ metacognitive strategies due to perceived difficulties associated with their implementation. On the other, studies about how foreign-language students at the undergraduate level learn languages showed that metacognition is the most used approach (Lestari & Wahyudin, 2020; Alqarni, 2023; Masitoh, Arifa, Ifawati, & Sholihah, 2023). In their research, Zubir et al. (2023) found that the students studied in a good setting, worked hard on their studies, and asked for help when they needed it. Similarly, a lot of research has been done on how learning strategies affect academic performance. Effort regulation and time management strategies were found to have the strongest relationship between reported strategy use and academic success (Waldeyer, et al., 2022). Given the significant gap between studies on the influence of resource management on learning strategies in the learning of foreign languages, particularly in the learning of Arabic as a foreign language, it is necessary to investigate students' awareness and the relationship between these strategies.

Objective of the Study and Research Questions

This study is done to explore perception of learners on their use of learning strategies. Specifically, this study is done to answer the following questions;

- How do learners perceive resource management strategies in their learning?
- How do learners perceive metacognitive self-regulation strategies in their learning?
- How do learners perceive the use of cognitive strategies in their learning?
- Is there a relationship between resource management with metacognition self-regulation and cognitive strategies?

LITERATURE REVIEW

Language Learning Strategies

The awareness of LLS started and developed in 1970's (Adan, D. A., & Hashim, H., 2021, Kosimova, A., 2022 & Hardan, A. A., 2013). Learning strategies are defined differently based on what kind strategies that had been used and the way it was used by the language learner. Language strategies as specific actions to enhance language learning effectively in an enjoyable, easier, faster, more enjoyable and more self-directed way, (Oxford, 1990). Zubbir et.al., (2023), as mentioned by Thomas et. al., (2021), LLS can be defined as a conceptualization that can be compared between factors while focusing on the language strategies method used.

Learning strategies for foreign language

Learning foreign language as a second or third language for non- native speakers is quite challenging. Generally, engaging LLS help to assist learners to enhance and improve the language performance in language acquisition (Adan, D. A., & Hashim, H., 2021). This also, on the other hand, is applicable to third languages, specifically Arabic language. Xuan et al, (2020) stated that, being aware of the LLS choice helps to utilize and significantly improve learners' performance in Arabic language, instead of solely depending on the learning environment. Thus, suitable learning strategies for learning foreign languages are needed to enhance the language learning process and motivate the students.

Past Studies on the Use of Learning Strategies

In Malaysia, learning foreign languages has become a new trend in the language field as it was offered in educational institutions starting from primary school until university level. Generally, English is the second language for Malaysians while Arabic, Mandarin, French and Korean and other foreign languages are regarded as third languages in Malaysia. Since these languages are taught widely in multiple levels of educational institutions, there have been many past studies on learning strategies and motivation to learn foreign languages. The following are previous studies on learning strategies in language learning.

Calafato (2020), studied the motivation, metacognition and autonomy in learning Arabic Language in Scandinavian. A total of 96 university students were involved in the study which take place in Norway, Sweden and Denmark. The results indicates that there are significant statistical difference among the student's motivation in learning Arabic language. Moreover, the results also revealed the gender difference also found in the student's self-regulations. In line with this study objective, understanding the factors of student's motivation helps to provide them with suitable tools and learning strategies in order to enhance and sustain the learning process (Calafato, 2020).

Adan, D. A., & Hashim, H. (2021) studied LLS used by art school English Second Language (ESL) learners. The respondents consists of 77 pupils from 7 to 17 years old with different talents in art. Using the Strategy Inventory Language Learning (SILL), the data were collected by questionnaire distribution to the respondents. The result shows that the most employed LLS are Metacognitive strategies while the least usage strategies are compensation strategies. Moreover, LLS is considered as an important item in language learning that effectively helps language learners to improve their proficiency in language acquisition.

In the realm of learning strategies, Zaini et al. (2023) conducted a study titled 'Exploring the Relationship between Learning Strategies Used in Language Learning. This quantitative study undertaken among undergraduate students from universities in Malaysia aims to investigate the impact of students' learning strategies on language learning, with a particular focus on exploring motivation factors. Using a 5-point Likert scale survey based on Wenden and Rubin's (1987) learning strategies, 129 participants responded to the survey to reveal the variables.

The survey comprises four sections: Section A covers demographic information, Section B contains 19 cognitive component items, Section C includes 11 metacognitive self-regulation items, and Section D addresses 11 items related to resource management. The findings indicate that metacognitive self-regulation positively enhances learning by enabling individuals to adapt their learning strategies, identify areas for improvement in understanding, set study goals, and encourage persistence and seeking help from peers when facing challenges in understanding the material.

Zubir et al., (2023) investigated the use of learning strategies through reciprocal determinism in learning Japanese language. 144 undergraduate students learning Japanese as a third language were involved in the quantitative survey. The merge of Bandura's (1986) reciprocal determinism and Wenden & Ruben (1987) were divided into four sections in the survey. The instruments consist of 41 items, divided into three sections and analyzed using SPSS Frequency Statistics. The findings revealed that the students generally claimed they practiced saying repetitively to themselves, memorized the key words to be reminded of the key concepts and studied the learned class materials. This study also shows that Metacognitive self-regulation is the most positive learning strategies used by the students that align with study conducted by Zaini et al., (2023).

A study was conducted by Seng et al. (2023) to investigate the learning strategies used by 132 undergraduate students in learning French as the third language at one of the public universities. This quantitative study survey instrument consists of three (3) sections, demographic profile, direct learning strategies and indirect learning strategies analyzed using SPSS. As for the result, the highest mean score (M=3.8) most employed by rehearsal items and the critical thinking strategy has the least mean score (M=3.5) is the lowest direct learning strategy used by the students. In contrast with the finding from Zaini et. al, (2023) and Zubir et. al, (2023), this research findings revealed that help seeking strategy in direct learning strategies scored the highest mean whereas the metacognitive self-regulation has the lowest mean score. On the other hand, this study proves that there are strong relationships between direct and indirect strategies in foreign language learning. It is also suggested to determine if gender factors could influence the choices of learning strategies (Seng et al, 2023).

The majority of the studies, Adan, D. A., & Hashim, H. (2021), Zaini et al. (2023) & Zubir et al., (2023) shows that metacognitive self-regulation learning strategies is the most employed by the students in learning foreign language. Differ from these studies, the study from Seng et al. (2023) shows the contrast results which help seeking in LLS scored the highest usage strategies while metacognitive scored the lowest mean score.

Conceptual Framework

Learners depend on different factors of motivation to make them pursue the learning task further. This motivation pushes the learners to be satisfied with the learning task (Rahmat, 2021). Motivate learners display confidence in learning. Figure 1 shows the conceptual framework of the study. This study is rooted from Wenden and Rubin's (1987) learning strategies and the strategies are resource management, metacognitive self-regulation and cognitive components. This study explores the relationship between resource management with metacognitive self-regulation and cognitive components.

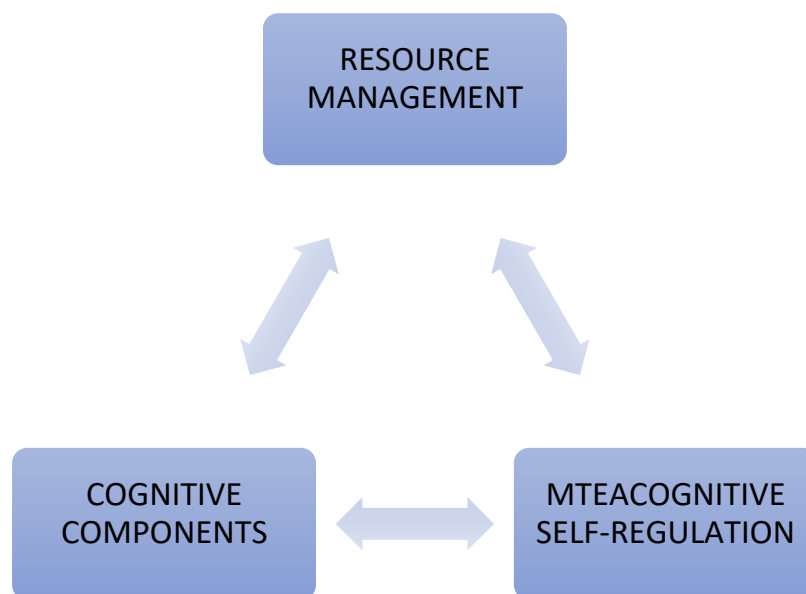


Figure 1- Conceptual Framework of the Study-
The Influence of resource management on learning strategies

Cognitive Components

The cognitive components can be defined as students actively processing information and structuring the information into memory; it also allows students to analyse information and connect it to existing cognitive structures. McKeachie et al. (1986) developed a unique cognitive model that included rehearsal, elaboration, and organisation.

Rehearsal: A strategy that students use to retain material through repetition, such as reciting the topic loudly, reproducing the material, taking selective verbatim notes, and highlighting the most essential sections of the subject (Weinstein & Mayer, 1986).

Elaboration: A process that students use to create internal connections between what they are learning and past knowledge. Activities include paraphrasing, summarising, generating analogies, generative note-taking, and question responding (McKeachie et al., 1986).

Organization: Organization is the process through which students organise and connect the knowledge obtained in the learning environment. The procedure entails picking the key idea through outlining, networking, and diagramming the data (McKeachie et al., 1986).

Metacognitive Self-Regulation

The metacognitive component focuses on the skills students use to organise their learning techniques, monitor their current learning, and assess their knowledge in a range of subject areas. It is a highly effective method for enhancing self-regulation since it encourages students to assess their knowledge. Regulating process including altering reading speed, rereading, reviewing, or test-taking (Filcher&Miller, 2000)

Resource Management

Resource management tactics are utilised by many students as a learning strategy. It is a plan that considers the quantity and quality of work involvement. It consists of three components: environment management, effort management, and help-seeking. This technique focuses on establishing well-defined goals and planning the course to achieve the greatest results (McKeachie et al., 1986).

Environment management: the development of a learning-friendly environment. Mckeachie et al. (1986) noted that the aspect of the environment is just as essential as the student's

awareness that the space is designated for studying. Therefore, students are advised to identify and designate a distinct, peaceful, and organised study place.

Effort management: The process whereby a student employs strategies such as attribution to effort, mood, self-talk, persistence, and self-reinforcement (McKeachie et al., 1986).

Help-seeking: A strategy that is also known as support of others, and students must learn to harness this support by soliciting assistance from fellow students and the instructor. Eastmond (1995) confirmed the significance of student-instructor connection when students contacted their teachers while completing the course assignment.

METHODOLOGY

This quantitative study is done to explore motivation factors for learning among undergraduates. A purposive sample of 182 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Wenden and Rubin (1987) to reveal the variables in table 1 below. The survey has 4 sections. Section A has items on demographic profile. Section B has 19 items on cognitive components. Section C has 11 items on metacognitive self-regulation and section D has 11 items on resource management.

Table 1- Distribution of Items in the Survey

	Wenden and Rubin (1987)				
A	COGNITIVE COMPONENTS	(a)	Rehearsal	4	19
		(b)	Organization	4	
		(c)	Elaboration	6	
		(d)	Critical Thinking	5	
B	METACOGNITIVE SELF-REGULATION				11
C	RESOURCE MANAGEMENT	(a)	Environment Management	5	11
		(b)	Effort Management	4	
		(c)	Help-Seeking	2	
					41

Table 2- Reliability of Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.965	41

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .965, thus, revealing a good reliability of the instrument chosen/used. Data was gathered online using a Google form. SPSS version 26 was then used to analyse the data. To answer the four research questions, the analysed data is presented in the form of percentages and mean scores.

FINDINGS

Findings for Demographic Profile

Q1 Gender

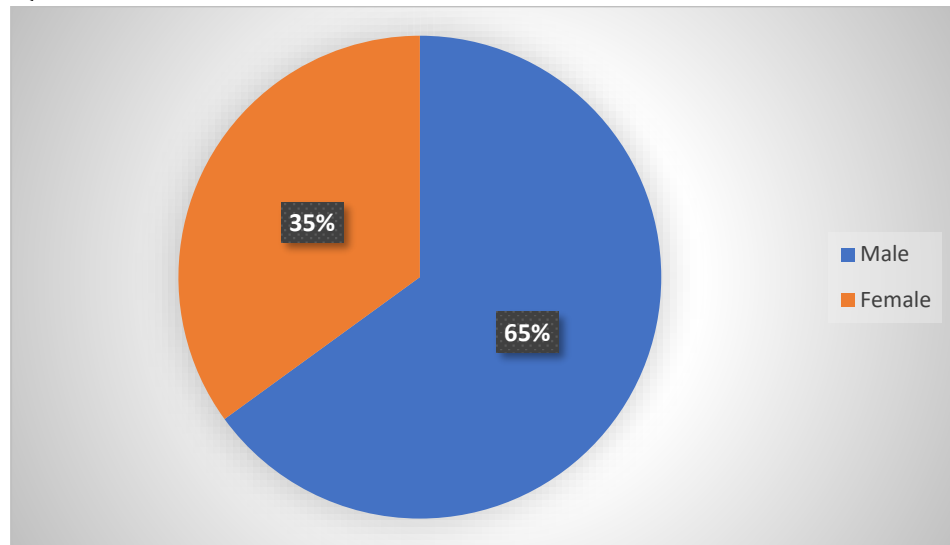


Figure 2- Percentage for Gender

Figure 2 illustrates the gender distribution of the study respondents. Most of the respondents (65%) were male, while only a minority (35%) were female. This distribution sheds light on the gender demographics of the sample, emphasizing the predominant presence of males in the study population.

Q2 Age

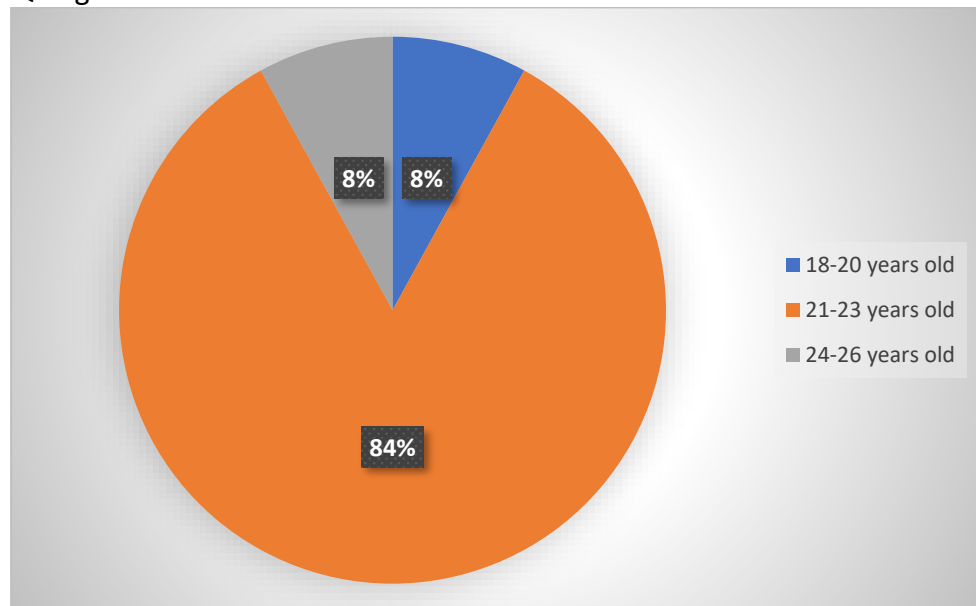


Figure 3- Percentage for Age

Figure 3 presents the distribution of respondent age groups as percentages, with the majority of respondents (84%) falling into the 21 to 23 years age range. Following that, an equal percentage (8%) was aged between 18 and 20 years, and another 8% were in the 24 to 26 years age group.

Q3 Highest Academic Level

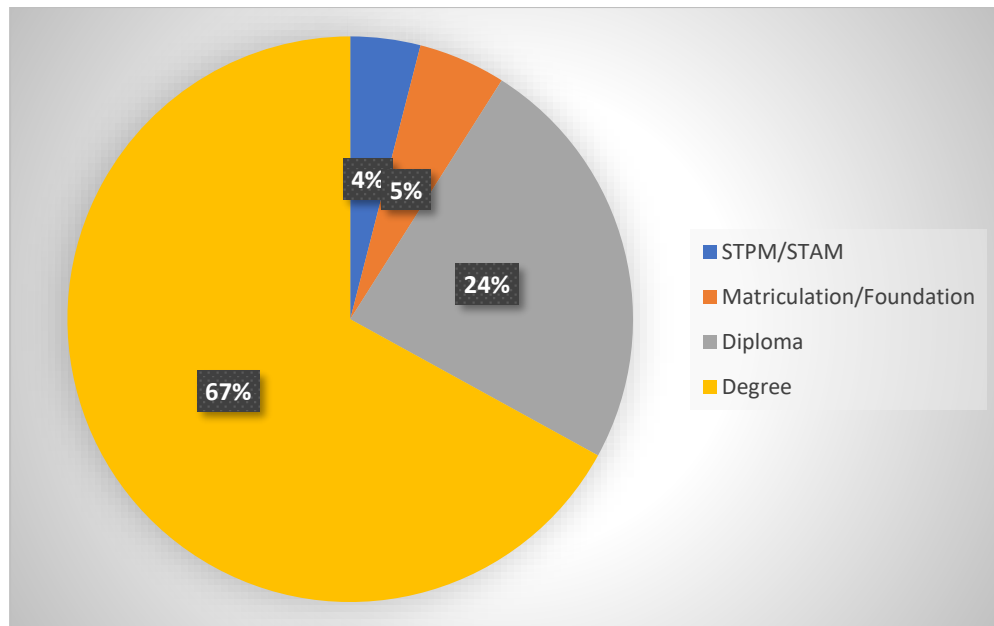


Figure 4- Percentage for Highest Academic level

Regarding the highest academic level among the students, Figure 4 depicts that 67% possess a degree, followed by 24% with a diploma, 4% with a Matriculation/Foundation background, and another 4% holding STAM qualifications, thus highlighting the diversity of educational backgrounds within the sample. Despite their academic level, most students are still pursuing undergraduate courses, possibly due to a misunderstanding about their prior academic accomplishments.

Q4 Course: Introductory Arabic

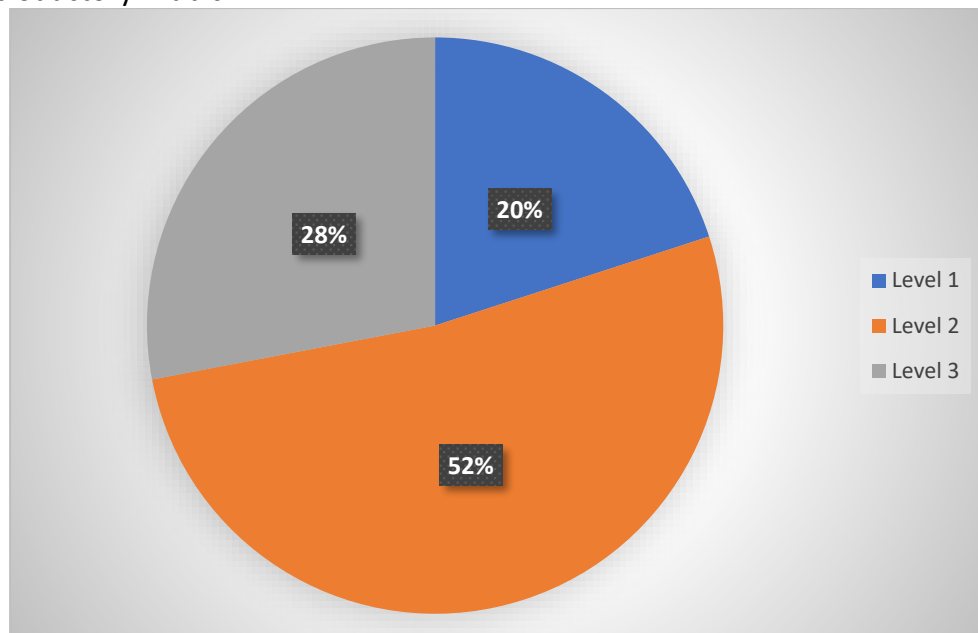


Figure 5- Percentage for Course-Introductory Arabic

Figure 5 illustrates the distribution of subject code levels that respondents were enrolled in at the time of this survey. The data suggests that a slightly higher proportion of respondents

were studying level 2 (52%) compared to level 3 (28%), with the lowest number of respondents being enrolled in level 1 (20%).

Q5 Basic Arabic

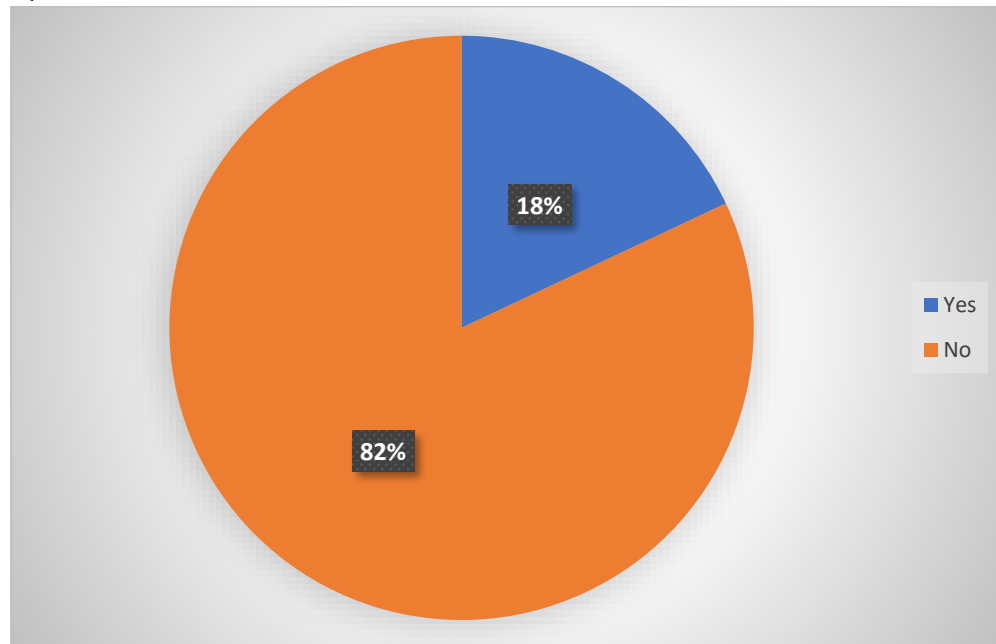


Figure 6- Percentage for Basic Arabic

Figure 6 displays the distribution of respondents according to their familiarity with basic Arabic. A substantial majority of respondents (82%) lacked a background in basic Arabic, while a smaller segment (18%) had some basic knowledge of the language. Including respondents from diverse backgrounds could assist researchers in assessing the comprehensiveness of various perspectives and opinions.

Findings for Resource Management

This section presents findings to answer research question 1- How do learners perceive resource management strategies in their learning?

RESOURCE MANAGEMENT COMPONENT (11 items)

(a) Environment Management (5 items)

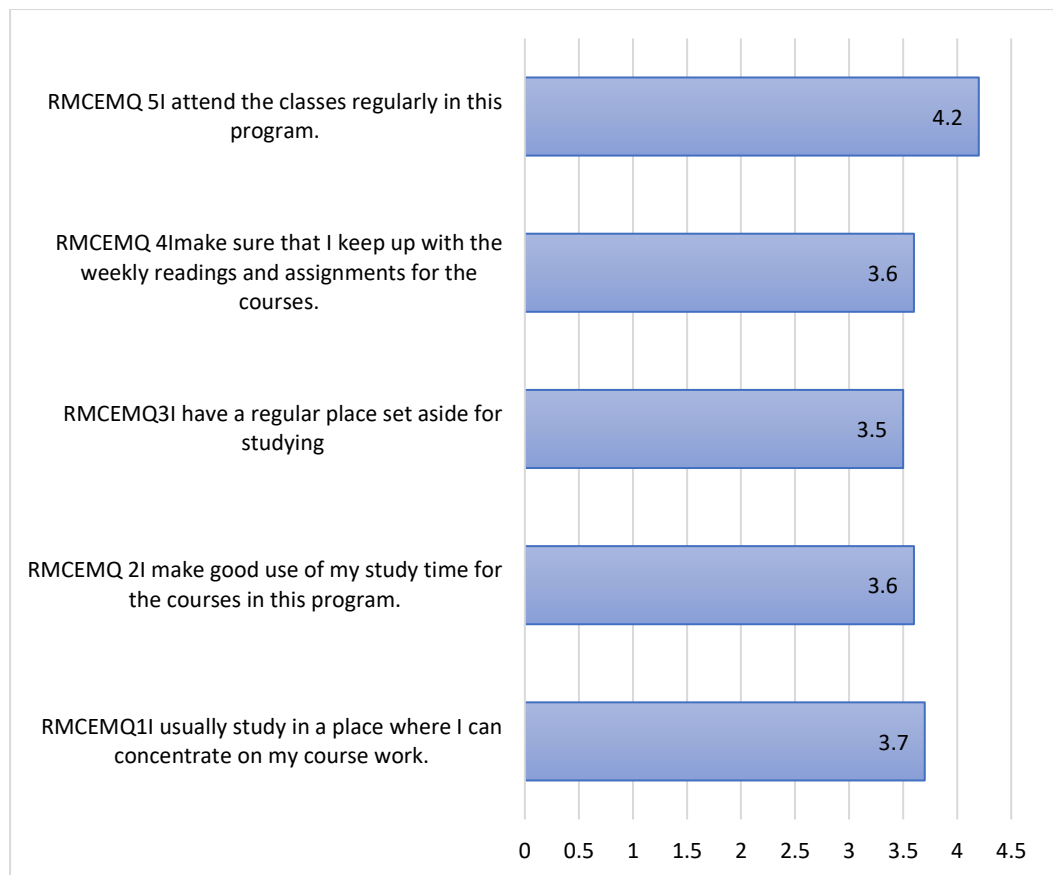


Figure 7- mean for Environment Management

According to the Figure 9, group Environment Management can be seen as a potential indicator of Resource Management Component in the context of learning Arabic as a foreign language. It showed by the item RMCEMQ 5 ($M=4.2$) in which students attend the classes regularly in this program as highly favourable. Items RMCEMQ2 and RMCEMQ4 ($M = 3.6$) showed students did make good use of their study time for the courses and make sure to keep up with the weekly readings and assignments for the courses. This is followed by items RMCEMQ1 ($M=3.7$) shows that respondents usually study in a place where they can concentrate on their course work. The item that received the lowest score is RMCEMQ3 ($M=3.5$), which is 'I have a regular place set aside for studying.' This indicates that most of the respondents do not have a designated specific and consistent location where they regularly engage in their study or learning activities.

(b) Effort Management (4 items)

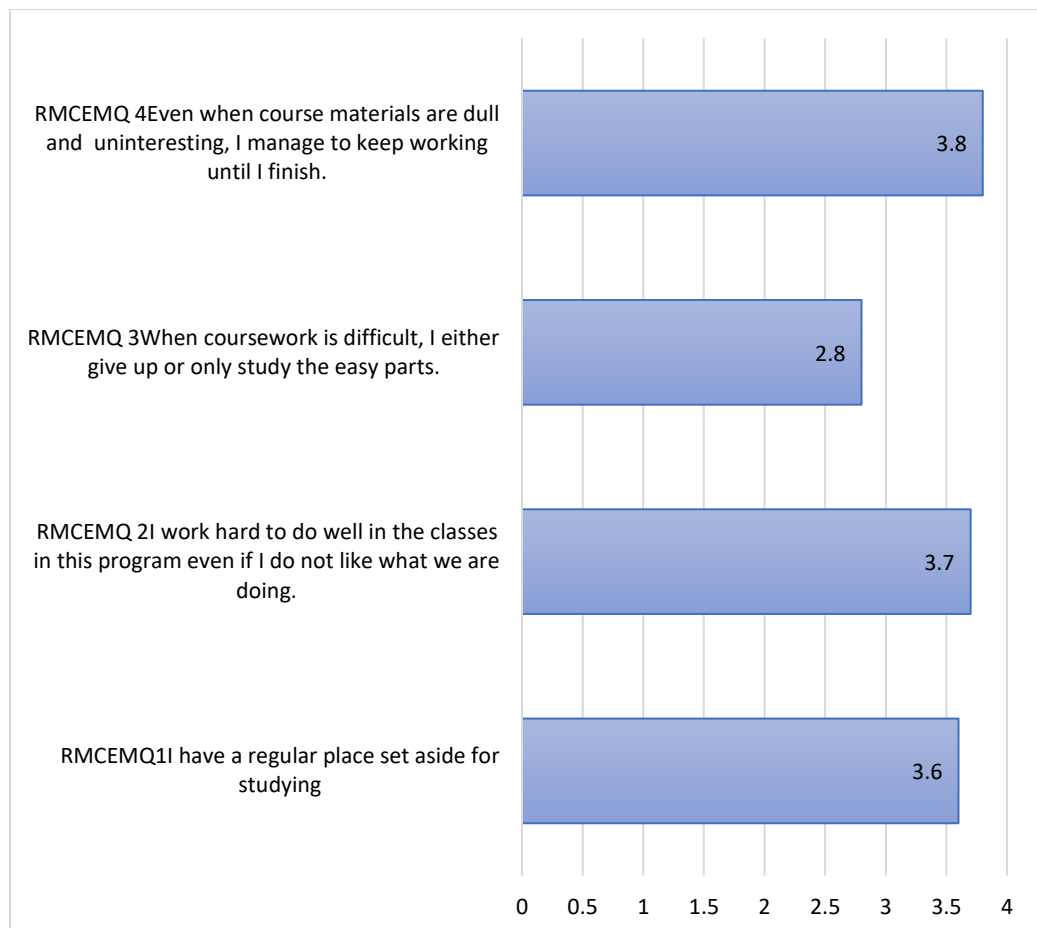


Figure 8- mean for Effort Management

Figure 8 highlights the role of effort management in influencing learning strategies in the study of Arabic as a foreign language. Students exhibited the highest level of agreement with the statement RMCEMQ 4, which states, "Even when course materials are dull and uninteresting, I manage to keep working until I finish" (with a score of 3.8), followed by the item RMCEMQ 2 (M= 3.7), which states, "I work hard to do well in the classes in this program even if I do not like what we are doing." Regarding the item RMCEMQ 1, with a mean of 3.6, it states, "I have a regular place set aside for studying." The item that received the lowest score is RMCEMQ 3 (2.8), which refers to 'When course work is difficult, I either give up or only study the easy parts.' This item demonstrates that more students exhibit persistence and do not solely concentrate on the simpler sections.

(c) Help-Seeking (2 items)

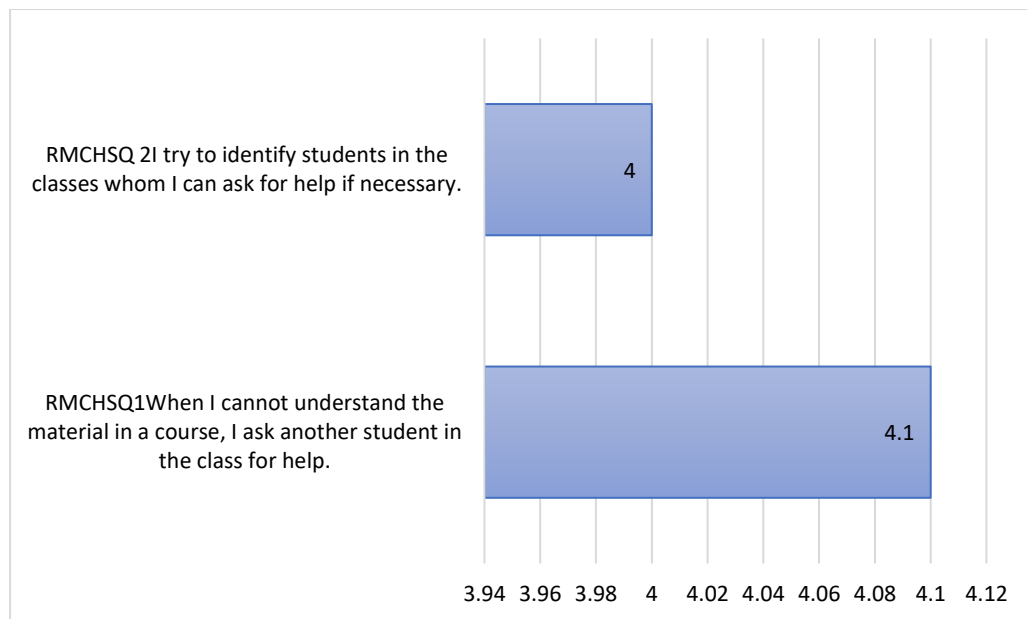


Figure 9- Mean for Help-Seeking

Figure 9 portrays the means for Help-Seeking which is one of the components in resource management strategies. Only two items have appeared in this variable. Students strongly agreed that when they cannot understand the material in a course, they will ask another student in the class for help ($M=4.1$). They will also try to identify students in the class whom they can ask for help if necessary ($M=4.0$).

Findings for Metacognitive Self-Regulation

This section presents findings to answer research question 2- How do learners perceive metacognitive self-regulation strategies in their learning?

a. Metacognitive Self-Regulation (11 items)

1	MSSRQ1During class time, I often miss important points because I am thinking of other things.	3
2	MSSRQ 2When reading for the courses, I make up questions to help focus my reading.	3.3
3	MSSRQ 3When I become confused about something I am reading for the classes, I go back and try to figure it out.	3.8
4	MSSRQ 4If course readings are difficult to understand, I change the way I read the material.	3.4
5	MSSRQ 5Before I study new course material thoroughly, I often skim it to see how it is organized	3.3
6	MSSRQ 6I ask myself questions to make sure I understand the material I have been studying in this program.	3.5
7	MSSRQ7I try to change the way I study in order to fit any course requirements and the instructors' teaching style.	3.4
8	MSSRQ8I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying for the courses in this program.	3.5

9	MSSRQ 9When studying for the courses in this program I try to determine which concepts I do not understand well.	3.6
10	MSSRQ 10When I study for the courses, I set goals for myself in order to direct my activities in each study period.	3.6
11	MSSRQ 11If I get confused taking notes in classes, I make sure I sort it out afterwards.	3.6

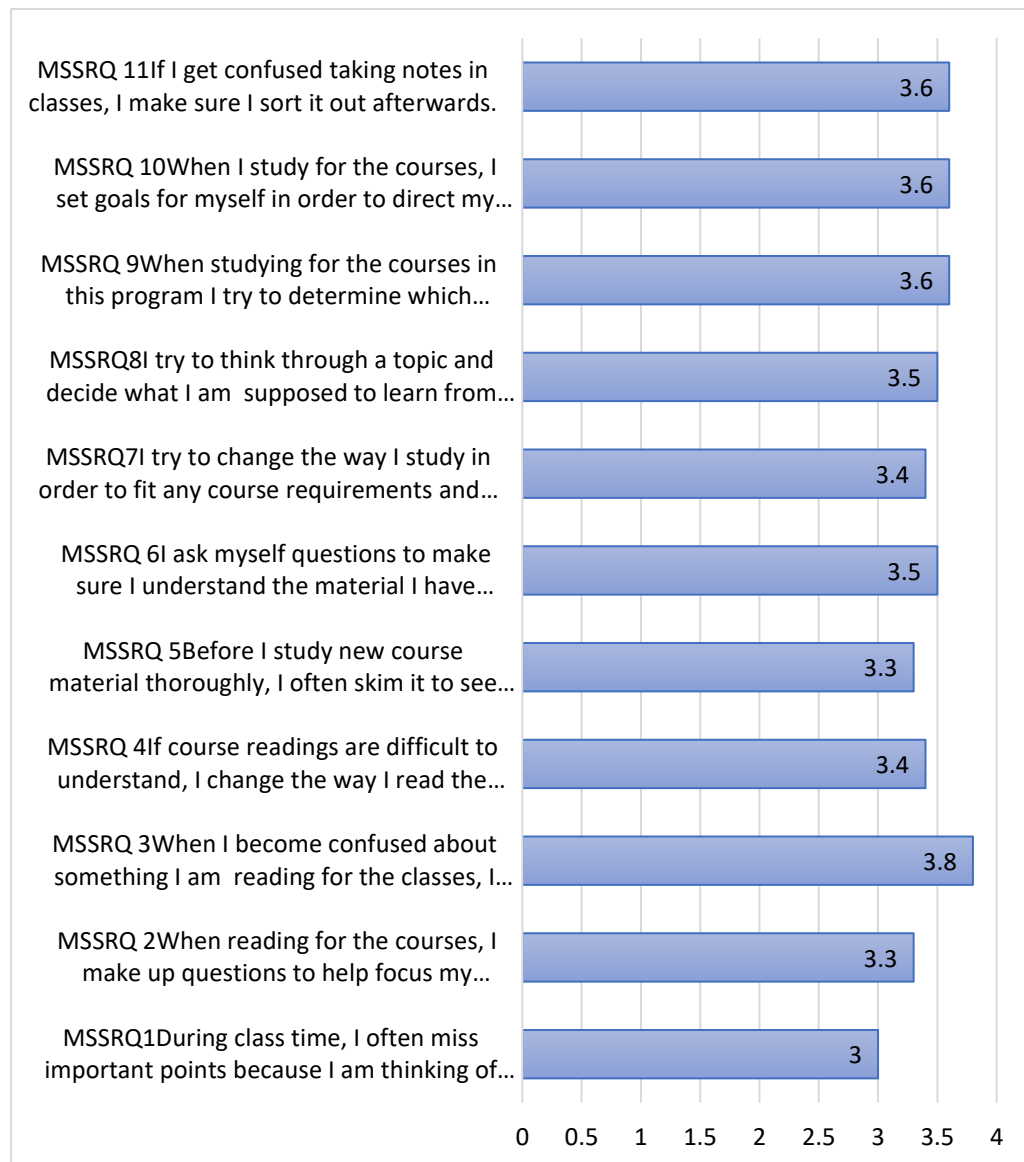


Figure 10- Mean for Metacognitive Self-Regulation

Figure 10 indicates the mean score for 11 items related to Metacognitive Self-regulation strategies with the highest mean (M=3.8) which shows most of the students agreed that when they become confused about something they are reading for the classes, they will go back and try to figure it out. Similarly, most of the students agreed with these 3 items which have the same mean score of 3.6 stating that when they are studying for the courses in this program they try to determine which concepts they do not understand well, and the second one is when they study for the courses, they set goals for themselves in order to direct their

activities in each study period, and the last one is if they get confused taking notes in classes, but they make sure they sort it out afterward. In contradiction, most of the students do not agree during class time, they often miss important points because they are thinking of other things, as shown by the lowest mean score ($M=3$).

Findings for Cognitive Strategies

This section presents findings to answer research question 3- How do learners perceive the use of cognitive strategies in their learning? Specifically in learning the Arabic language. There are 19 items for cognitive strategies in language learning that were divided into four sub-components, a) Rehearsal, b) Organization, c) Elaboration, and d) Critical Thinking.

a. Rehearsal (4 items)

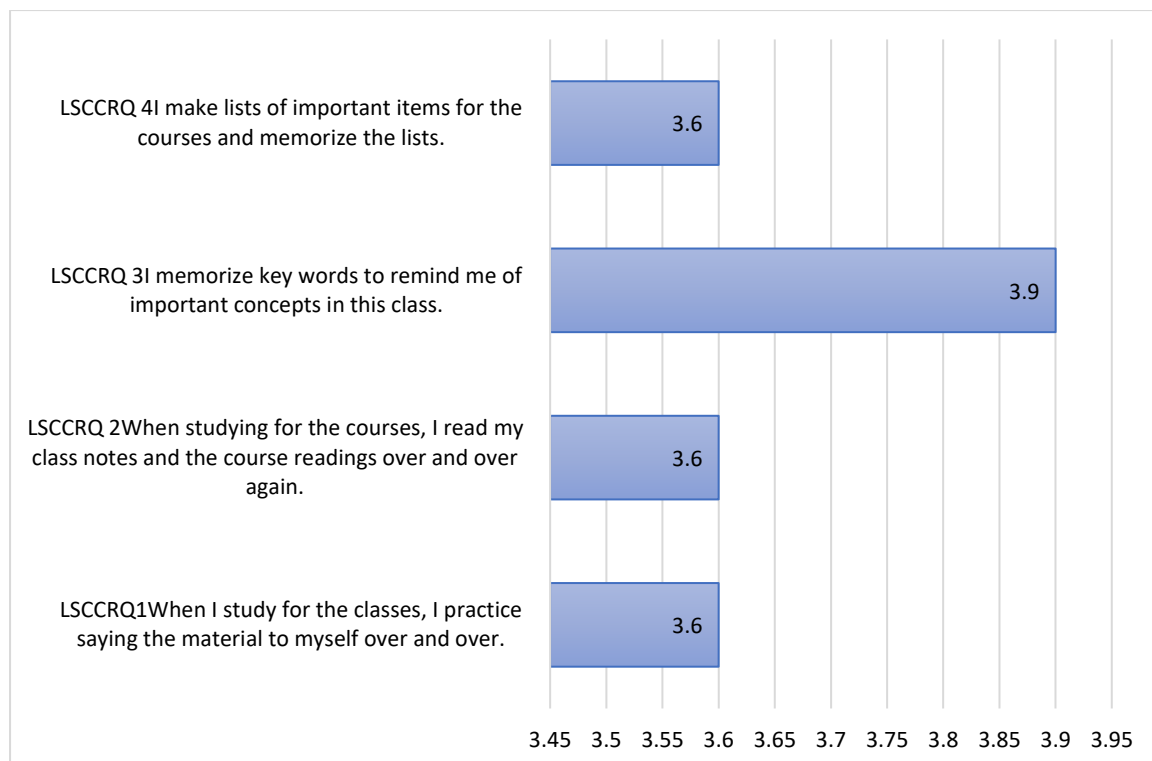


Figure 11- Mean for Rehearsal

Figure 11 showed the mean score for cognitive strategies first components (rehearsal) used by the students in learning Arabic language. The highest mean score for rehearsal items is ($M= 3.9$) in which the majority of the students memorize key words to remember the important concept LSCCRQ 3 in learning Arabic language. While the other three (3) rehearsal items shared the same mean score ($M= 3.6$). Majority of students get prepared for the class by practicing saying the material (LSCCRQ 1) and reading course reading including class notes (LSCCRQ 2) over and over. Other than that, one of the other strategies used was make lists of important items and memorize the lists for the courses (LSCCRQ 4)

b. Organization (4 items)

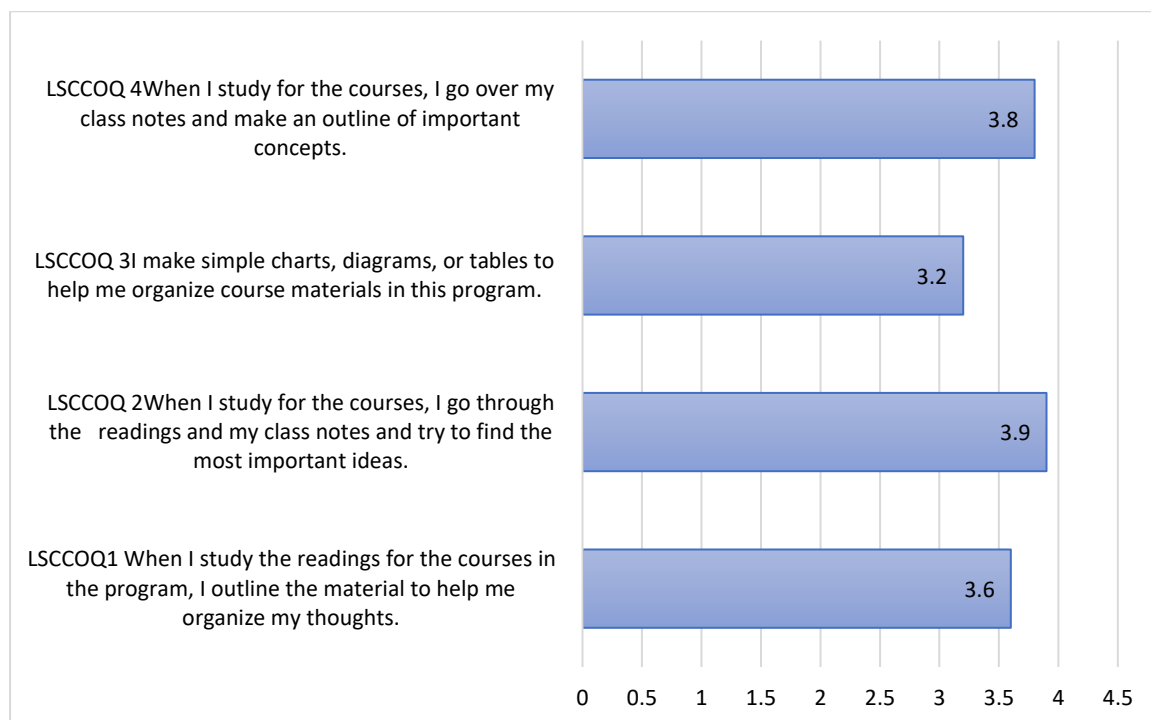


Figure 12- Mean for Organization

The results for the second component in cognitive strategies (organization) indicated that the highest mean score was ($M= 3.9$) for LSCCOQ 2. It shows that the most frequent strategy used by the students in learning Arabic language was to go through the readings and class notes to find the important ideas. It is followed by LSCCOQ 4 mean score ($M= 3.8$) where the students make outlines for the important concepts from the notes given. While, for item LSCCOQ 1 mean score ($M= 3.6$) the students organize the thoughts using outline materials from reading. The least mean score for organization in cognitive strategies was ($M= 3.2$) for item LSCCOQ 3 which students seldom use simple charts, diagrams or tables in organizing the course materials for learning Arabic language.

c. Elaboration (6 items)

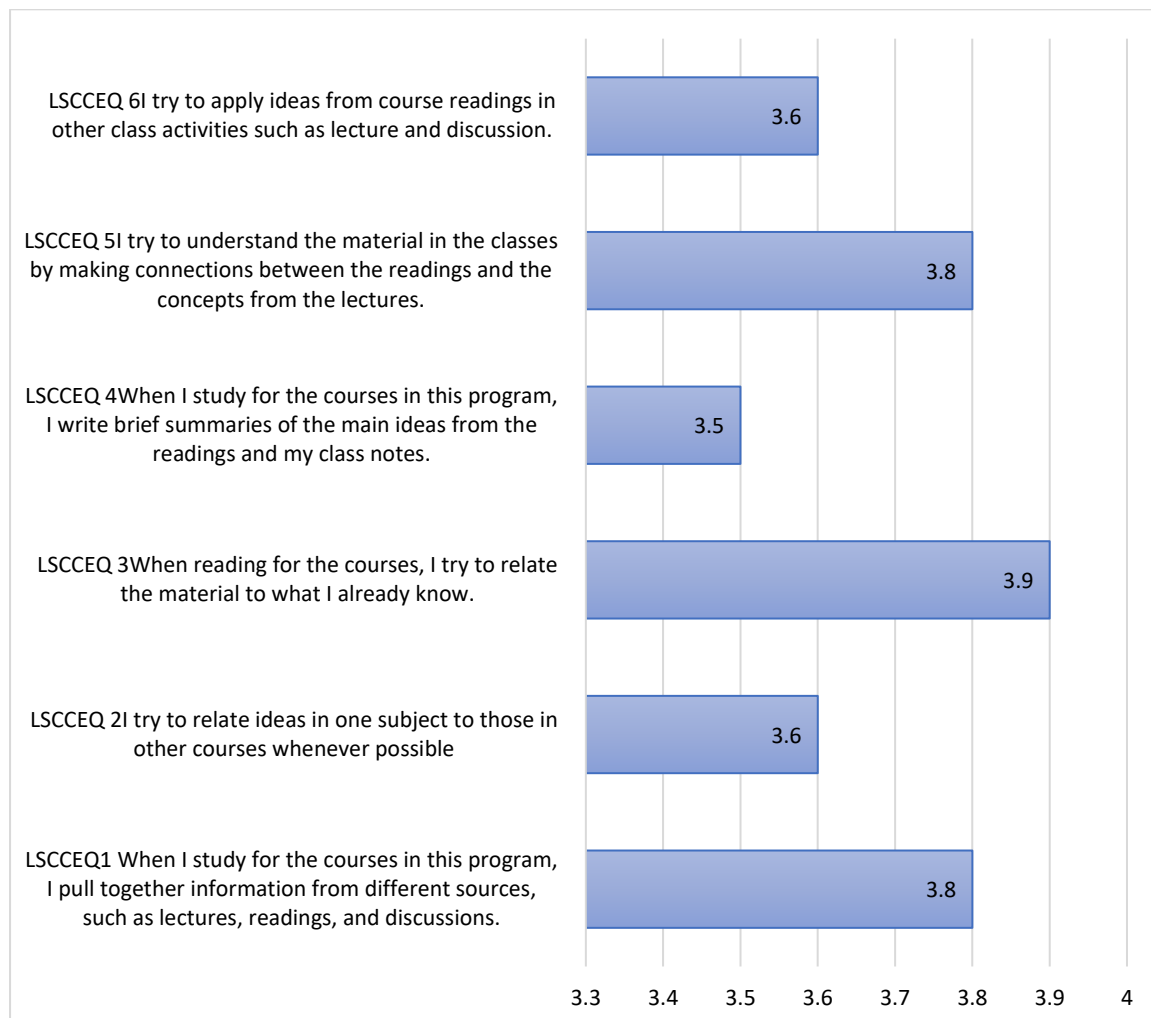


Figure 13- Mean for Elaboration

Figure 13 illustrates that the students agreed for all items. The highest mean score was recorded for LSCCEQ 3 ($M= 3.9$) in which students relate the material to the general knowledge while reading for the course. It is followed by LSCCEQ 1 and LSCCEQ 5 sharing the same mean score ($M= 3.8$). On the other hand, LSCCEQ 2 and LSCCEQ 6 both items' mean score was ($M= 3.6$). Whereas the lowest mean score for the elaboration items for cognitive strategies components was recorded by LSCCEQ 4 ($M= 3.5$), the strategy used was to write brief summaries for the main ideas from reading and class notes.

d. Critical Thinking (5 items)

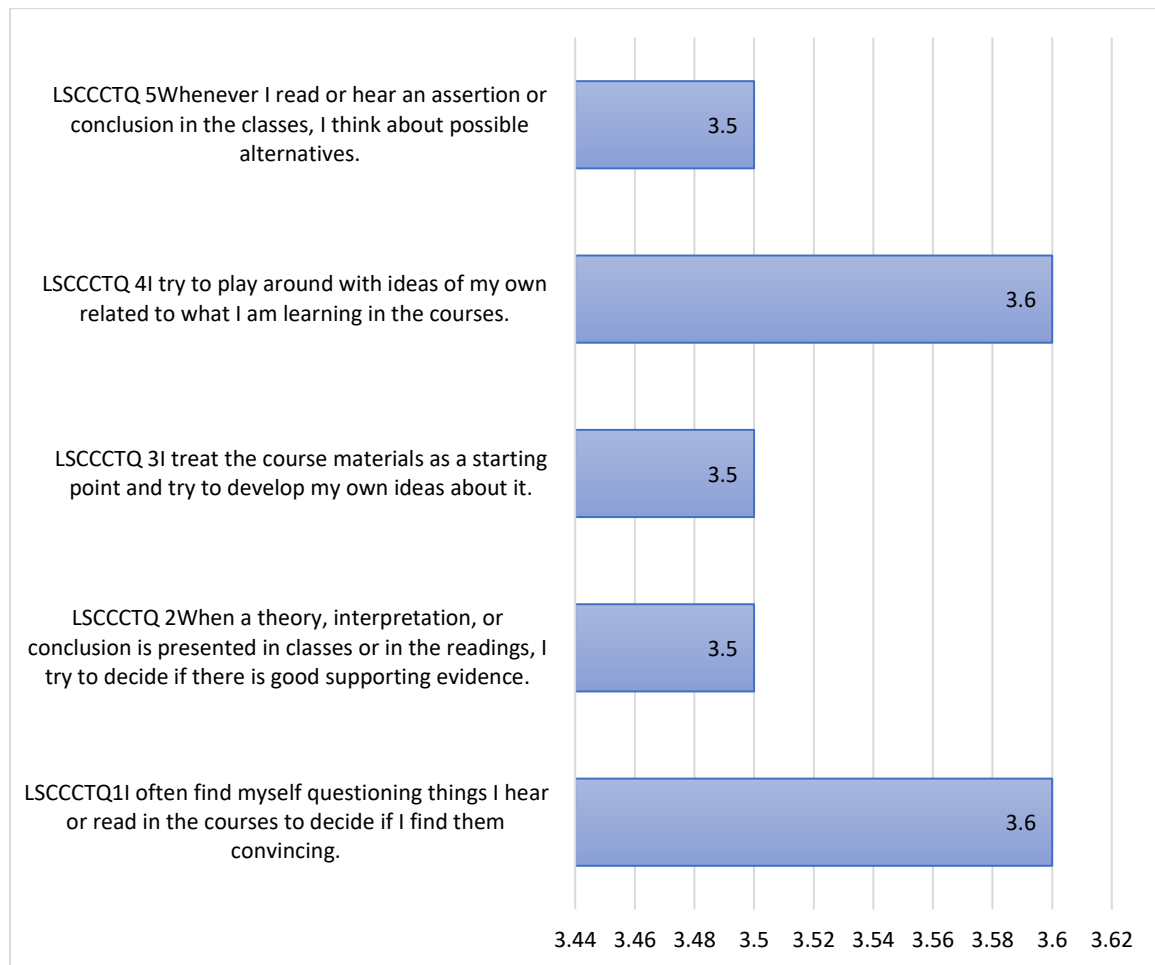


Figure 14- Mean for Critical Thinking

The results for Figure 14 indicated that the most used cognitive strategies for critical components were LSCCCTQ 1 and LSCCCTQ 4 where both items mean score were the highest ($M= 3.6$). The students often questioning things that they hear or read in the course to find it convincing and play around with their own ideas that relate to the course. Meanwhile, the other three (3) critical thinking components shared the same mean score ($M= 3.5$) for LSCCCTQ 2, LSCCCTQ 3 and LSCCCTQ 5. Among the average strategies used by the students were, deciding good supporting evidence from theory, interpretation or conclusion, using course materials as a starting point in developing their own ideas and finding or thinking possible alternatives from assertion or conclusions.

Findings for Relationship between resource management with metacognition self-regulation and cognitive strategies

This section presents findings to answer research question 4- Is there a relationship between resource management with metacognition self-regulation and cognitive strategies?

To determine if there is a significant association in the mean scores between metacognitive, effort regulation, cognitive, social and affective strategies data is analysed using SPSS for correlations. Results are presented separately in table 3, 4, and 5 below.

Table 3- Correlation between Resource Management and Metacognitive Self-Regulation

		ResourceManagement	metacognitiveSelfRegulation
ResourceManagement	Pearson Correlation	1	.785**
	Sig. (2-tailed)		.000
	N	182	182
metacognitiveSelfRegulation	Pearson Correlation	.785**	1
	Sig. (2-tailed)	.000	
	N	182	182

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows there is an association between resource management and metacognitive self-regulation. Correlation analysis shows that there is a high significant association between resource management and metacognitive self-regulation ($r=.785^{**}$) and ($p=.000$). According to Jackson (2015), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between resource management and metacognitive self-regulation.

Table 4- Correlation between Metacognitive Self-Regulation and Cognitive Components

		metacognitiveSelfRegulation	cognitiveComponents
metacognitiveSelfRegulation	Pearson Correlation	1	.797**
	Sig. (2-tailed)		.000
	N	182	182
cognitiveComponents	Pearson Correlation	.797**	1
	Sig. (2-tailed)	.000	
	N	182	182

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4 shows there is an association between metacognitive self-regulation and cognitive components. Correlation analysis shows that there is a high significant association between metacognitive self-regulation and cognitive components ($r=.797^{**}$) and ($p=.000$). According to Jackson (2015), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between metacognitive self-regulation and cognitive components.

Table 5- Correlation between Cognitive Components and Resource Management

		cognitiveCom ponents	ResourceMan agement
cognitiveComponents	Pearson Correlation	1	.718**
	Sig. (2-tailed)		.000
	N	182	182
ResourceManagement	Pearson Correlation	.718**	1
	Sig. (2-tailed)	.000	
	N	182	182

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5 shows there is an association between cognitive components and resource management. Correlation analysis shows that there is a high significant association between cognitive components and resource management ($r=.718^{**}$) and ($p=.000$). According to Jackson (2015), coefficient is significant at the .05 level and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0. This means that there is also a strong positive relationship between cognitive components and resource management.

Conclusion

Summary of Findings and Discussions

The findings of this survey revealed that among the components of resource management, students choose to seek help the most, followed by environmental management and effort management. Results indicate a persistent desire to seek assistance from classmates in the same course and programme, as well as a proactive effort to identify possible sources of support inside the class. In addition, students indicate a high level of agreement with consistently attending classes, and they are able to finish their assignments despite finding the course material dull and uninteresting.

The results for Metacognitive Self-Regulation students show that, on average, students use a variety of tactics to improve their cognitive control and learning processes. Notably, students engage in activities such as revisiting challenging concepts and they actively attempt to determine their understanding of course concepts, set goals for their study activities, and clarify any confusion that arises, either during or after class. In line with the findings of Teng et al. (2021), the use of metacognitive methods demonstrates a proactive approach to learning and a readiness to adapt learning strategies to course requirements.

According to the findings, students are most interested in practising elaboration strategies, followed by rehearsal, organisation, and critical thinking. As per the data, students show a strong tendency to relate course materials to prior knowledge, and they frequently prioritise discovering essential ideas from course materials and adopting memorization techniques such as memorising key words. Students also make an attempt to understand the content by connecting readings and lecture concepts, and they regularly integrate information from many sources, such as lectures, readings, and discussion. It is consistent with the findings of

Zaini et al. (2023) and Mustajab Ahmed (2020), in which students employed these strategies to improve their academic performance and overall study results.

The finding also revealed that there is positive inter-correlation between resource management, metacognitive self-regulation, and cognitive components. This finding sheds light on the dynamic relationship that exists between these strategies, highlighting the necessity of both of these factors working together to create academic achievement and learning outcomes. Students who demonstrate higher levels of self-regulatory metacognitive abilities are also more likely to exhibit higher levels of cognitive abilities, including critical thinking, problem-solving, and knowledge application. The results are aligned with the findings of Mohammadi et al. (2022), who discovered a high and positive correlation between academic well-being and the adoption of cognitive and metacognitive strategies by college students.

Pedagogical Implications

The findings of this study have substantial educational implications. First, it empowers students by allowing them to recognise and choose the most effective learning tactics depending on personal needs and preferences. The study highlights the necessity of giving students the ability to actively implement these selected techniques, ensuring that they are not merely aware of them but can also employ them effectively in their academic pursuits. The research assists students in sustaining ably enhancing their academic performance, establishing a culture of lifelong learning and educational environment development.

Teachers can immediately implement the suggested learning strategies in their classrooms, giving students concrete examples and direction. This implementation can help students comprehend and experience these ideas in action, hence allowing a deeper understanding of efficient learning strategies. Teachers are able to identify and recommend the most effective learning strategies for student learning if they understand the different requirements and preferences of their students. In conclusion, these outcomes highlight the responsibility of teachers as facilitators of successful learning practices and advocates for tailored education, ultimately leading to increased student results and engagement.

Suggestions for future research

Future study in the subject of learning strategies should focus on a number of essential areas. First, additional research into the efficacy of diverse learning strategies, especially in various educational contexts and for various subjects or disciplines. Second, as online learning continues to grow in popularity, there is an urgent need for study examining the adaptation and optimization of these strategies across digital contexts, including their incorporation into e-learning platforms and virtual classrooms. Thirdly, instructors' viewpoints and awareness of language strategies can provide useful insights into educational procedures and how educators can better serve language learners if they are explored in depth. Exploring the complex relationship between learning techniques and student motivation could provide alternative methods for enhancing students' intrinsic motivation to learn, thus encouraging a more comprehensive and effective educational experience.

Contribution of study

The issue of learning techniques is explored in this paper, and including resource management, cognitive components, and metacognitive self-regulation. Additionally, the influence between these strategies has been examined, providing information and data that aids students in selecting the best strategies for learning a foreign language. This research

also prepares scholars, academics, and teachers with deeper understanding, knowledge, and explanation of learning strategies in the teaching of foreign languages.

References

- Adan, D. A., & Hashim, H. (2021). Language learning strategies used by art school ESL learners. *Creative Education*, 12(03), 653. <https://doi.org/10.4236/ce.2021.123045>
- Ahmed, R. M. (2020). Investigating EFL Learners' Awareness of Cognitive and Metacognitive Reading Strategies. *Arab World English Journal (AWEJ)*, 11, 294-304. doi: <https://dx.doi.org/10.24093/awej/vol11no3.18>
- Ali, A. M., & Razali, A. B. (2019). A Review of Studies on Cognitive and Metacognitive Reading. *English Language Teaching*, 12(6). doi:10.5539/elt.v12n6p94
- Alqarni, N. (2023). Language learning strategies and learning engagement as predictors of language learning achievement: an investigation of Saudi EFL learners. (E. P. Limited, Ed.) *Saudi Journal of Language Studies*, 3(3), 129-143. doi: <https://doi.org/10.1108/SJLS-12-2022-0084>
- Ayu, M. (2018). Interactive activities for effective learning in the overcrowded classroom. *Linguists*, 4(2), 1-6.
- Biwer, F., Wiradhany, W., Egbrink, M. o., Hospers, H., Wasenitz, S., Jansen, W., & Bruin, A. d. (2021, April). Changes and Adaptations: How University Students Self-Regulate Their Online Learning During The Covid-19 Pnademic. *Front. Psychol*, 12. doi:<https://doi.org/10.3389/fpsyg.2021.642593>
- Boon, M. H. A., Abdullah, N. A., Rahmat, N. H., Ahmad, N., Sharif, S., & Yean, C. P. (2021). Balancing negative and positive factors in foreign language learning. *International Journal of Asian Social Science*. <https://doi.org/10.18488/journal.1.2021.118.376.387>
- Calafato, R. (2020). Learning Arabic in Scandinavian: Motivation, Metacognition, and Autonomy. *Lingua*, 246, 102943. <https://doi.org/10.1016/j.lingua.2020.102943>
- Christian, D., Pufahl, I., & Rhodes, N. C. (2005). Fostering foreign language proficiency: What the US can learn from other countries. *Phi Delta Kappan*, 87(3), 226-228.
- Eastmond, D. V. (1995). Alone but together: Adult distance study through computer conferencing. *35th Annual Adult Education Research Conference, Knoxville, TN*, pp. 127-132. Filcher, C., & Miller, G. (2000). Learning strategies for distance education students. *Journal of Agricultural education*, 41(1), 60-68.
- Habok, A., Kong, Y., Ragchaa, J., & Magyar, A. (2021). Cross-cultural differences in foreign language learning strategies preferences among Hungarian, Chinese and Mongolian University students. *Heliyon*. doi:<https://doi.org/10.1016/j.heliyon.2021.e06505>
- Hardan, A. A. (2013). Language Learning Strategies: A general Overview. *Procedia - Social and Behavioral Sciences*, 106, 1712-1726. doi: 10.1016/j.sbspro.2013.12.194
- Jabatan Pendidikan Tinggi (n.d.). Malaysia Education Development Plan 2015-2025, accessed 5 September 2023, <<https://jpt.mohe.gov.my/portal/index.php/en/corporate/policy-documents/16-malaysia-education-development-plan-2015-2025>>
- Jackson, S.L. (2015) *Research methods and Statistics-A Critical Thinking Approach* (5th Edition) Boston, USA: Cengage Learning.
- Kosimova, A. (2022). MAIN FEATURES OF LANGUAGE LEARNING STRATEGIES. *Евразийский журнал академических исследований*, 2(12), 1247-1249. <https://doi.org/10.5281/zenodo.5584563>
- Lai, Y., Saab, N., & Admiraal, W. (2022). Learning Strategies in Self-directed Language Learning Using Mobile Technology in Higher Education: A Systematic Scoping Review.

- Education and Information Technologies*, 27, 7749-7780. doi:[https://10.1007/s10639-022-10945-5](https://doi.org/10.1007/s10639-022-10945-5)
- Lestari, M., & Wahyudin, A. Y. (2020). Language Learning Strategies Of Undergraduate EFL Students. *Journal of English Language Teaching and Learning*, 25-30. <https://doi.org/10.33365/jeltl.v1i1.242>
- Lestari, T. M., & Fatimah, S. (2020). An analysis of language learning strategies used by EFL student teachers at English Language Education Program Universitas Negeri Padang. *Journal of English Language Teaching*, 9(1), 333-345. <https://doi.org/10.24036/jelt.v9i1.108314>
- Masitoh, S., Arifa, Z., Ifawati, N. I., & Sholihah, D. N. (2023). Language Learning Strategies and the Importance of Cultural Awareness in Indonesian Second Language Learners. *Journal of Language Teaching and Research*, 14(2), 436-445. doi:<https://doi.org/10.17507/jltr.1402.20>
- McKeachie, W. J. (1987). Teaching and Learning in the College Classroom. A Review of the Research Literature (1986) and November 1987 Supplement. *Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning*. <http://files.eric.ed.gov/fulltext/ED314999.pdf>
- Mila, R., & Gutierrez-Mangado, M. J. (2019). Language learning strategy reported choice by bilingual children in CLIL: The effect of age, proficiency and gender in L3 learners of English. *System*, 87. doi:<https://doi.org/10.1016/j.system.2019.102165>
- Mitsea, E., & Drigas, A. (2019). A Journey into the Metacognitive Learning Strategies. *International Journal of Online & Biomedical Engineering*, 15(14). doi:<https://doi.org/10.3991/ijoe.v15i14.11379>
- Mohammadi, A., Parandin, S., Akbari, M., & Yarahmadi, Y. (2022). Investigating the Correlation between Cognitive and Metacognitive Strategies and Students' Academic Well-being Mediated by Academic Engagement. *International Journal of School Health*, 9(4), 225-231. <https://doi.org/10.30476/intjsh.2022.96744.1255>
- Mustajab Ahmed, R. (2020). Investigating EFL learners' awareness of cognitive and metacognitive reading strategies of students in different disciplines. *Arab World English Journal (AWEJ)*, 11. <https://ssrn.com/abstract=3705746>
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Boston: Heinle, Heinle.
- Qasimnejad, A., & Hemmati, F. (2014). Investigating the Language Learning Strategies used by Iranian Monolingual (Persian) and Bilingual (Persian_Turkish) Speakers as EFL learners. *Procedia - Social and Behavioral Sciences*, 136, 26-30. doi: 10.1016/j.sbspro.2014.05.281
- Rahmat, N. H., Sukimin, I. S., Sim, M. K., Anuar, M., & Mohandas, E. S. (2021) Online Learning Motivation and Satisfaction: A Case Study of Undergraduates vs Postgraduates. *International Journal of Asian Social Sciences*, 11(2), 88-97. <https://doi.org/10.18488/journal.1.2021.112.88.97>
- Seng, H. Z., Mustafa, N. C., Halim, H. A., Rahmat, N. H., & Amali, N. A. (2023). An Investigation of Direct and Indirect Learning Strategies in Learning Foreign Languages. *International Journal of Academic Research in Business and Social Sciences*, 13(3), 322 – 338. <http://dx.doi.org/10.6007/IJARBS/v13-i3/16492>
- Singh, K., Fu, D. L. E., Chu, I. L. Y., Ngor, P. Y., Seng, C. Y., & Hamid, N. a. A. (2021). Motivational Orientations of Learning Japanese as A Foreign Language Among Undergraduates In A

- Public University In Malaysia. *Asian Journal of University Education*, 17(3), 255. <https://doi.org/10.24191/ajue.v17i3.14525>
- Teng, M. F., Wang, C., & Wu, J. G. (2021). Metacognitive strategies, language learning motivation, self-efficacy belief, and English achievement during remote learning: A structural equation modelling approach, *RELC Journal*. <https://doi.org/10.1177/00336882211040268>
- Wahyudin, A. Y. & Rido. A. (2020). Perceptuals learning styles preferences of international master's students in Malaysia. *BAHTERA: Jurnal Pendidikan Bahasa Dan Sastra*, 19(1), 95-103. <https://doi.org/10.21009/bahtera.191.10>.
- Waldeyer, J., Dicke, T., Fleischer, J., Guo, J., Trentepohl, S., Wirth, J., & Leutner, D. (2022). A moderated mediation analysis of conscientiousness, time management strategies, effort regulation strategies, and university students' performance. *Learning and Individual Differences*, 100. doi:<https://doi.org/10.1016/j.lindif.2022.102228>
- Weinstein, C. E., & Mayer, R. E. (1983). The teaching of learning strategies, *Innovation abstracts*, 5(32).
- Wenden A and Rubin J (1987) *Learner Strategies in Language Learning*. New Jersey: Prentice Hall.
- Xuan, D., Ismail, W. M., & Zailani, M. A. (2020). Non-Native Arabic Learners' Social Media Usage and Motivation Influencing Learning of Arabic Language in Malaysian Public Universities. *International Journal of Language Education*, 4(2), 258-275. Doi: <https://doi.org/10.26858/ijole.v4i2.13980>
- Yang, X., Zeng, L., & Xu, Z. (2021). An investigation of the language learning strategies used by Brazilian students learning chinese as a foreign language. *Heliyon*, 7. doi:<https://doi.org/10.1016/j.heliyon.2021.e07476>
- Yusri, G., Rahimi, N. M., & Halim, W. H. (2011). Value And Resource Management Strategies Among Students Of Arabic As A Third Language Course. *Procedia - Social and Behavioral Sciences*, 29, 1635-1644. doi:10.1016/j.sbspro.2011.11.406
- Zaini, N., Norwahi, N. A., Hisham, S. B., Atan, M. A., Hamid, A. A. A., & Rahmat, N. H. (2023). Exploring the Relationship between Learning Strategies Used in Language Learning. *International Journal of Academic Research in Business and Social Sciences*, 13(5), 2556 – 2572. <http://dx.doi.org/10.6007/IJARBS/v12-i2/12268>
- Zubairi, A. M., & Sarudin, I. H. (2009). Motivation to learn a foreign language in Malaysia. *GEMA Online Journal of Language Studies*, 9(2).
- Zubbir, N., Abas, N. A., Druckman, Z. A., Rahmat, N. H., Azam, N. S., Isa, Z. M., & Dona, M. A. (2023). Exploring The Use of Language Learning Strategies Through Reciprocal Determinism. *International Journal of Academic Research in Business and Social Sciences*, 13(3), 1740 – 1758. <http://dx.doi.org/10.6007/IJARBS/v13-i3/16503>