

The Influence of Resource Management on Learning Strategies Among Undergraduates

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ABSTRACT

Learning in secondary school and learning in higher institutions are not the same. To learn effectively in higher education, undergraduates need to know and employ various learning strategies to help them achieve good results. These learning strategies can be categorized as cognitive, resource management, and metacognitive strategies. To better understand how learners apply these components, a study was conducted with the aim of investigating how learners use cognitive, resource management, and metacognitive self-regulation in their learning. It is a quantitative survey with the use of questionnaires consisting of four sections. A total of 125 respondents from UiTM Pasir Gudang participated in the study. It is found that the respondents attend classes regularly, study in an environment that helps maintain focus, seek help from a classmate, and do not quit when it is difficult. These findings demonstrate that the respondents exhibit positive learning behaviours in terms of resource management. Hence, educators can help students to improve overall learning experience by focusing on resource management.

Keywords— resource management, learning strategies, cognitive, metacognitive, self-regulation

INTRODUCTION

Background of Study

Learning is a complex and multifaceted process that extends beyond the mere acquisition of knowledge. It involves not only the retention of information but also the ability to apply, analyse, and evaluate what has been learned. As the world of education continues to evolve, especially in the context of higher education and professional development, understanding the factors that influence learning has become crucial.

The research journey commenced with an in-depth understanding of learning styles, focusing on how individuals engage with information based on their preferences (visual, auditory, read/write, and/or kinaesthetic). While learning styles provide insight into the methods by which learners prefer to absorb and process information [11], it does not fully explain the effectiveness of the learning process. This observation highlighted a gap in understanding, prompting a shift in focus towards exploring learning strategies, which encompass the specific methods and techniques learners use to acquire, process, and retain knowledge. Learning strategies, unlike learning styles, extend beyond individual preferences, addressing the cognitive, resource management, and metacognitive self-regulation techniques that contribute to more efficient learning [17].

Cognitive strategies are techniques used to process information more effectively. These include activities like summarizing, elaborating, organizing, and rehearsing information to improve memory and understanding. Metacognitive strategies involve thinking about one's own thinking process. It includes activities like planning how to approach a learning task, monitoring one's understanding, and adjusting strategies as needed to achieve better results. Essentially, metacognitive strategies help learners reflect on and control their own learning. Resource-management strategies involve managing external resources to support learning, such as time

management, effort regulation, help-seeking, and utilizing study materials or peer support effectively. These strategies are particularly important for self-regulation and optimizing the learning environment [17].

Statement of Problem

Many students struggle to identify and apply effective learning strategies suited to their individual needs. This lack of awareness often leads to inefficient study habits, such as passive reading or last-minute cramming, which negatively impact retention, understanding, and academic performance. As a result, students may fail to achieve their desired grades. However, it is more than grades, improving learning strategies will result in academic self-efficacy that is strongly linked to motivation, persistence, and performance [20]. Thus, this research aims to investigate the effectiveness of various learning strategies to help students enhance their academic outcomes and become more effective, independent learners.

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 use cognitive components in learning?

How do learners perceive resource management in learning?

How do learners perceive metacognitive self-regulation in learning?

Is there a relationship between all learning strategies in learning?

LITERATURE REVIEW

Theoretical Framework

Social Cognitive Theory (SCT) and Learning Strategies: Social Cognitive Theory (SCT) is a psychological theory that explains how people learn by observing others, interacting with their environment, and through their own experiences. It emphasizes the role of social influence, cognitive processes, and self-regulation in learning. The theory was developed by Albert Bandura in the 1970s. He proposed that learning is not just about responding to stimuli but involves a complex interaction between behaviour (what we do), personal factors (like beliefs, thoughts, and emotions), and environmental influences (social surroundings, feedback from others) ([3], [4])

In relation to learners' use of learning strategies, learners are active participants in their own learning. They can observe others (teachers or peers) and learn strategies by watching how the others approach tasks. They can also reflect on their own experiences and adjust strategies based on what works or does not work. Moreover, students can also use self-regulation, meaning they set goals, monitor their progress, and control their effort and motivation. Finally, they believe in their ability to succeed (self-efficacy), which affects how they choose and use learning strategies. A student who believes they can learn well is more likely to persist and apply effective strategies ([3], [4], [19])

Importance of Resource Management in Learning: Resource management in learning refers to the strategic use of available resources, including time, study environments, and social support, to enhance learning outcomes. In the context of learning strategies, resource management is often divided into several sub-categories: environment management, effort management, and help-seeking. These strategies help students optimize their learning experience and improve their academic performance.

Environment management refers to the physical and mental spaces in which students engage in learning activities. Most students indicated learning spaces as important and perceived that learning spaces contribute to the results of their tests and their collaborative activities. As for individual tasks, students generally avoid busy, open areas in university buildings and crowded public spaces. Instead, they prefer quieter environments,

such as their homes or calm study spaces within the university, which provide an opportunity to work in solitude. Meanwhile, for group study sessions, they particularly favour quiet, enclosed learning areas on campus [5]. Students' attendance is also under the sub-category of environment management. Students cared about their attendance [1] and half of the students, specifically 68.92% attended between 75-100% of their classes [15].

Effort management involves allocation of effort towards learning activities. This includes setting goals, maintaining persistence despite challenges, and ensuring consistent study habits. Effort management is linked to self-regulation and motivation, as students who manage their effort are more likely to stay focused on learning tasks and complete their assignments effectively [19]. Effort management is a critical aspect of students' success, particularly in higher education, where academic pressure can lead to burnout without effective self-management.

Help-seeking is another important component of resource management. Students' positive attitudes toward seeking academic help include recognizing the value of seeking help and the benefits of mutual assistance and communication [13]. Students generally consider seeking help a crucial part of their academic success, as it can help solve specific problems and improve learning effectiveness. For example, they can ask teachers for clarification or collaborate with peers to overcome learning obstacles [8]. This behaviour highlights the importance of social resources and support networks in the learning process. There are studies where students prefer to ask help from their classmates as compared to their lecturers and vice-versa ([18], [1]).

Learning Strategies

Learning strategies refer to the techniques or methods that individuals use to enhance their ability to learn, understand, and retain information. These strategies help learners manage and regulate their cognitive, motivational, and behavioural processes to achieve better learning outcomes. Learning strategies are often categorized into three main types which are cognitive, resource management, and metacognitive self-regulation [17]. Additionally, there are also learning strategies such as time study management, effort regulation, and peer learning ([15], [1]). Together, these strategies aim to promote self-regulated learning, where students actively control their learning processes, make informed decisions about their study habits, and adapt their strategies to different learning contexts to maximize academic success.

Past Studies

A study was conducted to identify the language learning strategies (LLS) employed by ESL (English as a Second Language) undergraduate students in Malaysia, and to examine the factors influencing the use of these strategies. The study used quantitative research design and was conducted using surveys to gather data and descriptive statistics for analysis. The SILL (Strategy Inventory for Language Learning) questionnaire by Oxford in 1990 was used as the research instrument. The questionnaire consists of items designed to assess different language learning strategies employed by students, including cognitive, memory, and metacognitive strategies. The population of the study consisted of undergraduate students at a private university in Malaysia, specifically ESL students. The sample included 200 freshmen undergraduates (119 female and 81 male) from five faculties at a non-governmental university located in Selangor, Malaysia. The data was processed using SPSS V23.0 software for descriptive statistics. The analysis involved calculating mean, standard deviation, and frequency of responses to assess the frequency of various learning strategies. The findings are metacognitive and social strategies are the most preferred language learning strategies. This is followed by memory and affective strategies which are the least used strategies [6].

Furthermore, [14] claims that successful students used significantly more and varied strategies than unsuccessful students. As such, the aim of this study is to examine whether high-achieving students and low-achieving students at the university use different learning strategies and to what extent their preferences are related to their performance. It is a quantitative, comparative research design. The instrument used is a 60-item Likert-type scale developed by researchers, based on the classification of Weinstein and Mayer in 1986. It covers five strategy categories which are rehearsal, elaboration, organization, metacognition, and motivation. The participants are 278 senior-year undergraduate students at Anadolu University, Turkey (140 high-

achievers and 138 low-achievers). Statistical analysis is employed via SPSS, and ANOVA, correlation, multiple regression, and measures of central tendency and variability. The findings revealed in general, there is positive significant correlation between strategy use and academic performance ($r = .28$, $p < .001$). Metacognitive strategies were the most preferred across all groups; organization strategies were least used. Thus, the implication from this study is that learning strategy use is directly tied to academic success.

Other than that, a study was conducted among Ethiopian undergraduate students in three public universities to explore relationships between self-regulated learning strategies (SRLSs) and perceived learning gains. Additionally, it sought to assess how various SRLS components relate to each other in the context of Ethiopian universities and whether these components predict students' perceived learning outcomes. A total of 1142 students (700 male and 442 female) majoring in Business and Economics and Engineering and Technology fields involved in the study. The study utilized a cross-sectional survey design, which is appropriate for collecting data from a large sample of students at a single point in time. The study used a contextually modified SRLS questionnaire, originally derived from the Motivated Strategies for Learning Questionnaire (MSLQ). This instrument measured five SRLS components which are metacognition, time and study management, effort regulation, peer learning, and help-seeking. The data was collected through a survey, where participants were asked to complete the SRLS questionnaire. Descriptive statistics, factor analysis, and regression models were used to analyze the data. It is found that the help-seeking component was the most significant predictor of perceived learning gains, followed by peer learning, and time and study management. Thus, the findings emphasize that SRLSs are important mechanisms that contribute to undergraduate students' success in Ethiopian universities [15].

Moreover, [16] conducted a study with the aim of whether students' resource-management strategy use mediates the effect of resource-management strategy knowledge on academic performance or not. The participants of this study are 106 first-year students from the domain of civil engineering at a German university. The study followed a correlational design with multiple points of measurement over the period of one semester. The instruments used are Resource-Management Inventory (ReMI) (to measure students' strategy knowledge regarding time management, effort regulation, and help-seeking), online learning tool (to track students' resource-management strategy use via log data) and examination (to assess academic performance). Linear regression analyses and mediation analyses were used to analyse the data. The study found that students' knowledge of resource-management strategies (such as time management, effort regulation, and help-seeking) indirectly influenced their academic performance, but this effect was mediated through strategy use. This means that simply knowing these strategies is not enough to impact academic performance. Students must actively apply these strategies during their learning process for them to have an impact on performance.

Overall, the relationship between learning strategy uses and academic performance is consistently supported across the studies reviewed. Past studies demonstrated that when students apply learning strategies, academic performance is better. Although the learning strategies used differ from one another, it will still impact on the students' academic performance positively.

Conceptual Framework

The use of strategies facilitates learning in many ways. Learners use strategies such as cognitive components, metacognitive self-regulation, and resource management to improve their learning task [17]. No one strategy can be considered as the best learning strategy [12]. This is because different strategies are used for different tasks. Figure 1 shows the conceptual framework of the study. This study investigates if there is a relationship between resource management and cognitive components as well as metacognitive self-regulation. Resource management is measured by environment management, effort management and help-seeking. Cognitive components are measured by rehearsal, organization, elaboration and critical thinking. Metacognitive self-regulation are techniques that involve actively thinking about one's own learning process [17].



Fig. 1 Conceptual Framework of the Study

The Influence of Resource Management on Learning Strategies

METHODOLOGY

A purposive sample of 125 participants responded to the survey. Data was collected online via google form. The instrument used is a 5 Likert-scale survey. The scales in Table 1 used are never, rarely, sometimes, very often, and always.

Table 1 Likert Scale

1	Never
2	Rarely
3	Sometimes
4	Very Often
5	Always

This quantitative study was done to explore learning strategies among undergraduates. A purposive sample of 125 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from [17] to reveal the variables in Table 2 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 Components. Section D has 12 items on Resource Management.

Table 2 Distribution of Items in the Survey

	STRATEGY (VARIABLE)		SUB-STRATEGY	Item	Total Items	Cronbach Alpha
A	Demographic Profile					
B	COGNITIVE COMPONENTS	a)	Rehearsal	4	19	.937
		b)	Organization	4		

		c)	Elaboration	6		
		d)	Critical Thinking	5		
C	METACOGNITIVE SELF-REGULATION				11	.881
D	RESOURCE MANAGEMENT	a)	Environment Management	4	12	.781
		b)	Effort Management	4		
		c)	Help-Seeking	4		
					42	.952

Table 2 shows the reliability of the survey. The analysis shows a Cronbach alpha of .937 for cognitive components, .881 for metacognitive components, and .781 for resource management. The overall Cronbach alpha for all 42 items is .952; thus, revealing a good reliability of the instrument used. Further descriptive analysis using SPSS is done to present findings to answer the research questions for this study.

FINDINGS

Findings for Demographic Profile

Table 3 Percentage for Demographic Profiles

	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	59%
		Female	41%
2	Discipline	Science & Technology	36%
		Business Management	64%

Table 3 presents the demographic profiles of the respondents. In terms of gender, 59% of the participants identified as male, while 41% were female, indicating a moderately higher male representation. Regarding academic disciplines, a majority of 64% were from Business Management, whereas 36% were from Science and Technology. This suggests a stronger interest or participation from students in the business-related fields within the surveyed group.

Findings for Cognitive Components in Learning

This section presents data to answer research question 1- How do learners use cognitive components in learning? In the context of this study, cognitive components are measured by (i) rehearsal, (ii) organization, (iii) elaboration, and (iv) critical thinking.

Table 4 Mean for (I) Rehearsal

Item	Statement	Mean	SD
1	Practicing the material aloud repeatedly during study.	3.5	0.7
2	Reviewing class notes and course readings multiple times during study.	3.6	0.7

3	Memorizing key words to recall important concepts.	3.9	0.6
4	Making and memorizing lists of key course items.	3.6	0.7

Table 4 highlights how students engage with rehearsal strategies in their learning process. Among the four strategies, students most commonly memorized key words to help them recall important concepts, with an average rating of 3.9. This was closely followed by reviewing class notes and readings multiple times (3.6), as well as making and memorizing lists of key items (3.6). Practicing the material aloud was used slightly less often, with a mean score of 3.5. These findings suggest that students generally rely on repetition and memory-based techniques to reinforce their understanding of the material.

Table 5 Mean for (Ii) Organization

Item	Statement	Mean	SD
1	Outlining course readings to organize thoughts.	3.6	0.7
2	Going through readings and class notes to find the most important ideas.	3.8	0.8
3	Creating charts, diagrams, or tables to organize course materials.	3.3	0.9
4	Reviewing class notes and outlining key concepts.	3.7	0.7

Table 5 presents the descriptive statistics for students' use of organization strategies in their learning. The findings indicate that students most frequently engaged in identifying key ideas from their readings and class notes ($M=3.8$, $SD=0.83$), followed by reviewing notes and outlining essential concepts ($M=3.7$, $SD=0.80$), and outlining course readings to structure their understanding ($M=3.6$, $SD=0.78$). In contrast, the use of visual aids such as charts, diagrams, or tables was reported less frequently ($M=3.3$, $SD=0.94$). These results suggest that while students generally value organizational strategies, they tend to favour more linear, text-based approaches over visual or spatial methods when organising course content.

Table 6 shows how often students used elaboration strategies to help them understand their learning materials. The most common strategy was relating new information to what they already knew (mean=3.8), followed closely by applying ideas from readings during lectures and discussions (mean=3.7), and gathering information from different sources like lectures, readings, and class discussions (mean=3.7). Students also often made connections between readings and lecture content (mean=3.7). However, connecting ideas across different subjects and writing short summaries were slightly less common, both with a mean score of 3.5. These results suggest that students often try to make sense of new content by linking it to what they already know and by using it in different learning situations.

Table 6 Mean for (Iii) Elaboration

Item	Statement	Mean	SD
1	Gathering information from lectures, readings, and discussions.	3.7	0.8
2	Connecting ideas across subjects when possible.	3.5	0.8
3	Relating course material to existing knowledge.	3.8	0.7
4	Writing brief summaries of main ideas from readings and class notes.	3.5	0.8

5	Making connections between readings and lecture concepts to understand the material.	3.7	0.6
6	Applying ideas from course readings in lectures and discussions.	3.7	0.7

Table 7 highlights how students engage with critical thinking strategies in their learning. The data shows that students often question the credibility of course material and explore their own ideas related to what they learn, both with a mean score of 3.6. Other strategies, such as evaluating the evidence behind classroom content, using course materials to form personal viewpoints, and considering different perspectives, were also used, though slightly less frequently (mean=3.5). These findings suggest that students are actively thinking beyond surface-level information, though their critical thinking tends to remain at a moderate level. This indicates an opportunity to further encourage deeper analysis and independent thought in academic settings.

Table 7 Mean for (Iv) Critical Thinking

Item	Statement	Mean	SD
1	Questioning course material to determine its credibility.	3.6	0.8
2	Assessing the evidence supporting theories, interpretations, or conclusions in class or readings.	3.5	0.7
3	Using course materials as a foundation to develop personal ideas.	3.5	0.7
4	Exploring personal ideas related to course material.	3.6	0.7
5	Considering alternative viewpoints when encountering assertions or conclusions in class.	3.5	0.7

Findings for Resource Management in Learning

This section presents data to answer research question 2- How do learners perceive resource management in learning? In the context of this study, this is measured by (i) environment management, (ii) effort management, and (iii) help-seeking.

Table 8 Mean For (I) Environment Management

Item	Statement	Mean	SD
1	Studying in an environment that helps maintain focus on course work.	4	0.8
2	Utilizing study time effectively for the program courses.	3.8	0.7
3	Keeping up with weekly readings and assignments for the courses.	3.7	0.8
4	Attending classes regularly in the program.	4.2	0.8

Table 8 outlines how students manage their learning environments to support their studies. The most commonly practiced behaviour was regular class attendance (mean=4.2), reflecting students' strong commitment to participation. Many also reported studying in environments that help them concentrate (mean=4.0), highlighting the importance of a focused setting. In addition, students indicated that they use their study time efficiently (mean=3.8) and try to stay on track with weekly readings and assignments (mean=3.7). These findings suggest that students are generally proactive in creating conditions that support their academic success.

Table 9 Mean for (Ii) Effort Management

Item	Statement	Mean	SD
1	Having a designated study space.	3.7	0.8
2	Striving to perform well in classes, even when the material is unappealing.	3.8	0.8
3	Quitting or concentrating solely on the easier parts when coursework is tough.	2.8	1.0
4	Continuing until the work is done, even when course materials are boring and unengaging.	3.8	0.7

Table 9 illustrates students' effort management practices. The results show high levels of perseverance, with students reporting they strive to perform well even when content is unappealing ($M=3.8$) and continue working through unengaging materials ($M=3.8$). Maintaining a dedicated study space was also commonly reported ($M=3.7$). However, a lower mean score was observed for the tendency to avoid difficult tasks ($M=2.8$), suggesting some students struggle to sustain effort when facing academic challenges.

As shown in Table 10, students were most comfortable reaching out to their classmates when they struggled with course content, as reflected by the highest average score (mean=4.0). Lecturers were also seen as a helpful resource (mean=3.6), while friends from other classes were consulted slightly less often (mean=3.5). Interestingly, fewer students turned to seniors with prior experience in the course (mean=2.8), which may suggest a lack of access or comfort in seeking help from more experienced peers. Overall, the data indicates a strong preference for seeking help within familiar academic circles.

Table 10 Mean for (Iii) Help-Seeking

Item	Statement	Mean	SD
1	Seeking help from a lecturer when the course material is difficult to understand.	3.6	0.80
2	Seeking help from a classmate when the course material is difficult to understand.	4	0.7
3	Seeking help from a friend from another class when the course material is difficult to understand.	3.5	1.0
4	Seeking help from a senior who has taken the course previously when the course material is difficult to understand.	2.8	1.1

Findings for Metacognitive Self-Regulation in Learning

This section presents data to answer research question 3- How do learners perceive metacognitive self-regulation in learning?

Table 11 Mean for Metacognitive Self-Regulation

Item	Statement	Mean	SD
1	Missing important points in class due to distractions.	3	0.9
2	Creating questions to focus reading for the courses.	3.4	0.8

3	Rereading confusing material to clarify understanding.	3.77	0.7
4	Changing reading strategies when course material is hard to understand.	3.6	0.8
5	Skimming new course material to understand its organization before studying it in detail.	3.4	0.8
6	Asking questions to ensure understanding of the material being studied in the program.	3.5	0.7
7	Adapting study methods to meet course requirements and instructors' teaching styles.	3.5	0.8
8	Thinking through a topic to identify key lessons instead of just rereading it during study.	3.5	0.7
9	Identifying unclear concepts during study for the program.	3.6	0.7
10	Setting goals to guide study activities during each study period.	3.5	0.7
11	Clarifying any confusion in notes after class.	3.5	0.7

The data reveals that students actively use metacognitive self-regulation strategies to support their learning. They most frequently reported rereading confusing material (mean=3.77) and adjusting reading strategies or identifying unclear concepts when faced with difficult content (means=3.6). Other common practices included asking questions, setting study goals, clarifying notes, and adapting study methods—all averaging around 3.5, indicating a moderate level of self-awareness in learning. However, some strategies like skimming for structure or creating guiding questions were used slightly less (mean=3.4), and distractions in class were noted as a challenge (mean=3.0). These findings suggest that while students generally take responsibility for monitoring and adjusting their study behaviours, there remains potential to improve consistency and reduce barriers like in-class distractions.

Findings for Relationship between all Learning Strategies

This section presents data to answer research question 4- Is there a relationship between all learning strategies in learning? To determine if there is a significant association in the mean scores between all learning strategies in learning, data is analysed using SPSS for correlations. Results are presented separately in Table 12 and 13 below.

Table 12 Correlation Between Resource Management and Cognitive Strategies

		RESOURCE MANAGEMENT	COGNITIVE
RESOURCE MANAGEMENT	Pearson (Correlation)	1	.697**
	Sig (2-tailed)		.000
	N	125	125
COGNITIVE	Pearson (Correlation)	.661**	1
	Sig (2-tailed)	.000	
	N	125	125

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

Table 12 highlights a meaningful connection between how students manage their learning resources and how they apply cognitive strategies. The correlation coefficient ($r = .697$, $p = .000$) indicates a strong and statistically significant positive relationship between the two. A coefficient above 0.5 suggests a strong positive association [7], meaning that students who are better at organising their time, effort, and learning environment also tend to engage more actively in cognitive strategies such as rehearsing, organising, elaborating, and thinking critically. This finding reinforces the idea that effective resource management plays a crucial role in supporting deeper learning and academic engagement.

Table 13 Correlation Between Resource Management and Cognitive Components

		RESOURCE MANAGEMENT	METACOGN ITIVE
RESOURCE MANAGEMENT	Pearson (Correlation)	1	.736**
	Sig (2-tailed)		.000
	N	125	125
METACOGNITIVE	Pearson (Correlation)	.736**	1
	Sig (2-tailed)	.000	
	N	125	125

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

Table 13 highlights a strong and significant link between how students manage their learning resources and how they use metacognitive strategies. With a correlation value of $r = .736$ and a p-value of .000, the analysis confirms a high positive association. Based on Jackson's scale [7], this places the relationship in the strong range, suggesting that students who are better at managing their study environment, time, and effort also tend to plan, monitor, and adjust their learning more effectively. This finding underscores the importance of resource management in supporting students' ability to take control of their own learning processes.

CONCLUSION

Summary of Findings and Discussions

Students employed various learning strategies to learn. In terms of cognitive components, the findings reveal the majority of students memorize key words to recall important concepts. This statement is in the subcategory of rehearsal. The finding is in line with [9] that found students who use the memorization strategy feel very confident in their learning activities. The memorization strategy also made it easier for them to absorb lesson information. [18] adds that students in his study state that memorization critically plays an important role in their academics. However, they also emphasized the need to understand the given data before they memorize that could help them to memorize better. In contrast, the lowest statement rank in cognitive components is from the subcategory of organization where students create charts, diagrams, or tables to organize materials. The students are not visual learners because they do not create and transform the materials to visual representation. Therefore, this finding contrasts with studies that revealed students prefer to learn visually the most ([1], [11])

Additionally, it is found that students answered positively for resource management strategies, specifically in the subcategory of environment management in terms of attendance and conducive environment. This finding is in accordance with the finding found by [5] that students prefer learning spaces that support their learning activities and confirm that learning spaces influence their learning outcomes Moreover, students also ask for help when they do not understand the materials. Majority students ask for help from their own classmates

(help-seeking). Students feel comfortable with their own classmates who are the same age and learn in the same class with the same lecturers when asking for help if the course materials are difficult to understand ([3], [4]). It is different from what [18] found that a lecturer is the person that students are comfortable with as compared to their friends. To them, a good lecturer was someone who always gave students the chance to ask questions for the purpose of clarification. Other than that, students do not quit even though the coursework is tough (effort management). It shows that the students are persistent in their learning. Persistence is a good characteristic that can help students to perform well in their learning [20].

Students also use metacognitive self-regulation in learning, specifically rereading confusing materials to clarify understanding. This finding is in accordance with [10] that said effective readers can check if their understanding matches the main ideas in the text. When they notice something is unclear or missing, they are likely to reread parts of the text to improve their understanding. Furthermore, students are focused in class and do not miss any information because of distractions. In general, students of this study exhibit positive behaviours towards all the strategies especially resource management.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications: The findings of this study have strong theoretical implications within the framework of Bandura's Social Cognitive Theory (SCT) ([3], [4], [19]). One of them is that students primarily seek help from classmates, rather than seniors or lecturers. This supports Bandura's idea of observational learning that students model behaviours from peers that they perceive as similar and relatable. Besides, students' persistence in learning even when coursework is difficult demonstrates strong self-efficacy, a core component of SCT. Students with higher self-efficacy are more likely to put in effort, persevere through challenges, and recover from setbacks. The findings of this study also have strong conceptual implications within the framework cognitive, resource management, and metacognitive self-regulation. There are no best strategies, instead learners can use all the strategies from all the concepts to perform well in their studies [1]

Pedagogical Implications: Findings help not only students but also educators to make the learning more effective. Educators need to apply different strategies and adapt their teaching style to accommodate the students' learning strategies.

Since most students use rehearsal techniques, during the lesson, educators can highlight key concepts or keywords in notes and materials to support memorization. Consequently, students will take notes and memorize the key concepts and keywords. Educators can also review what has been learnt before ending the lesson. This is being done to make students recall all the important information.

Not only memorization, but educators can also introduce metacognitive activities such as self-questioning and summarizing to deepen understanding. Educators can teach students how to use the techniques to achieve better outcomes as students reread to clarify understanding, the educators can show the correct reading skills for the students to apply.

Educators can also take the opportunity to encourage collaborative learning in class because students in this study prefer to ask for help from their classmates the most as compared to lecturers, friends from other classes, or seniors. Educators can give tasks that involve students to work in a pair or group.

Additionally, educators should create positive, structured, and supportive classroom climates that promote focus and participation since students respond positively to conducive environments and regular attendance. As a result, students will enjoy coming to class and learning. Educators can also encourage reward and motivation when the students regularly attend the class or engage in the learning process. Teachers can use positive reinforcement, praise, or participation points.

Suggestions for Future Research: This study only investigates general learning strategies that students employ during their learning. Therefore, future researchers can explore the influence of learning strategies towards specific subjects. This is important because different subjects may have different findings depending on the nature of the study programme. Additionally, future researchers can also find out the similarities and

differences of learning strategies employed by different gender, male and female students. This will help determine whether gender influences the use of learning strategies or not. Finally, future research can combine both learning strategies and learning styles to examine the relationship with academic performance.

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