An Investigation of Language Learning Strategies from the Perspectives of Social Cognitive Theory

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ABSTRACT

Language learning strategies have long been acknowledged as a key element in fostering learners' engagement, autonomy, and academic achievement in second and foreign language learning contexts. This study aims to understand the interralationship between Social Cognitive Theory factors; personal, behavioural and environmental and their influence on language learning strategies among 370 undergraduate students in public university. The instruments used consist four sections based on Bandura's SCT factors measuring personal, behavioural and environmental as well as language learning strategies. The findings demonstrated moderate to high levels of personal, behavioural and environmental strategy use in language learning. In addition, significant and strong interrelationships were found among the factors, supporting Bandura's concept of reciprocal determinism. Teachers must acknowledge and be aware that language learning happens through dynamic interaction across these factors; personal, behavioural and environmental. Therefore, teaching content, tasks, classroom practice and classroom environment should be designed and grounded in these factors.

Keywords: Social Cognitive Theory, language learning strategies

INTRODUCTION

Background of Study

Language plays a vital role in human survival and is inseparable from its function as a medium for social interaction. Learning meanwhile refers to the process of acquiring knowledge related to specific subject matter in order to achieve particular goals and to function as a basis for interaction. Language learning strategies (LLS) are defined as specific actions, behaviors, steps or techniques that learners consciously select to enhance the acquisition, storage, retention and use of a second language or foreign language (Oxford, 1990, 2017), while facilitating the self-directed involvement essential for developing communicative competence. Language learning strategies (LLS) constitute a crucial component in supporting learners' understanding of the second language learning process (Kamarul Shukri, 2009). Through the use of appropriate learning strategies, less proficient learners are able to enhance their achievement and improve their mastery of the target language. Therefore, the selection of effective and suitable language learning strategies is highly significant in facilitating learners' success in second language learning. Oxford (1990) delineates LLS into direct strategies (memory, cognitive, and compensation) which directly manipulate linguistic material, and indirect strategies (metacognitive, affective, and social) which orchestrate and support the learning process.

Concurrently, Bandura's Social Cognitive Theory (SCT) posits learning as a triadic reciprocal interaction among personal factors (cognitions, emotions), behavior and environmental influences (Bandura, 1986). Central to SCT is self-efficacy, which refers to individual's beliefs in their capacity to execute actions required for desired outcomes (Bandura, 1986; Schunk & DiBenedetto, 2020). Higher self-efficacy correlates with greater task persistence, challenge-seeking, and strategic adaptability (Schunk & DiBenedetto, 2020). In second and foreign language contexts, recent empirical work underscores self-efficacy's role is related to learners' use of metacognitive and self-regulated learning strategies, which may influence language achievement and performance (Teng & Zhang, 2020; Teng et al., 2023). Therefore, SCT provides a relevant theoretical frameword for examining how learners' beliefs, behaviours and learning environments shape their use of language learning strategies.

Despite extensive LLS research since the 1970s, early studies tended to focus on identifying and classifying learners' strategy use through established taxonomies (O'Malley & Chamot, 1990; Oxford, 1990), as well as examining the relationship between strategy use and successful language learning (Griffiths, 2015). However, recent reviews show that LLS research has several gaps. Many studies have mainly described learners' strategy use or examined the relationship between strategy use and learning related variables such as proficiency, motivation and self-regulation (Marenco Dominguez & Marin Juanias, 2024). At the same time, scholars have highlighted the need to connect LLS more clearly with self-regulation and to examine why and how learners choose, use and regulate their strategies in specific learning contexts (Rose et al., 2018; Thomas et al., 2024). Accordingly, this study examines how learners select, integrate, and regulate LLS through SCT constructs, focusing on self-efficacy, goal orientation, social interactions, and contextual concordances in shaping strategic repertoires.

Problem Statement

Language learning strategies (LLS) play a crucial role in Arabic as a Foreign Language (AFL) learning in Malaysia, particularly among non-native learners who face challenges such as diglossia, limited authentic exposure, and curricular structures that require adaptation to foreign language learning contexts (Calafato, 2023). These challenges demand that learners not only process linguistic input cognitively but also regulate their learning behaviors, metacognitive processes, and environmental influences in an integrated manner.

Grounded in Social Cognitive Theory (SCT), learning occurs through reciprocal interactions among personal, behavioral, and environmental factors (Bandura, 1986). Within this framework, self-efficacy and metacognitive self-regulation function as key personal factors influencing learners' use of language learning strategies, while behavioral factors encompass cognitive strategies such as rehearsal, organization, elaboration, and critical thinking (Wenden & Rubin, 1987). Previous research has demonstrated that self-efficacy significantly affects learners' effort, persistence, goal orientation, and use of self-regulated strategies in second and foreign language learning contexts (Schunk, 2003; Carmichael & Taylor, 2005).

In the Malaysian AFL context, existing studies indicate that learners tend to employ language learning strategies at a moderate level, including metacognitive strategies, peer collaboration, and the use of digital resources (Mohd Afandi et al., 2023). However, these studies often examine strategies in isolation by focusing on specific linguistic skills such as vocabulary or grammar, rather than investigating the holistic interaction among personal, behavioral, and environmental factors as conceptualized in SCT. This indicates a need for a more integrated perspective that can explain not only what strategies learners use, but also how these strategies are influenced by learners' beliefs, actions and learning environments.

Recent scholarly discussions have emphasized the need to extend SCT-based investigations into culturally specific language learning contexts, highlighting the importance of examining how self-efficacy and environmental factors jointly shape learners' use of language learning strategies (Calafato, 2023). Accordingly, the present study employs a survey instrument adapted from Wenden and Rubin (1987), measuring three core domains (behavioral, personal, and environmental factors) to provide a comprehensive analysis of Arabic language learning strategies among non-native learners in Malaysia.

Objective of the Study and Research Questions

This study is done to explore language learning strategies from the perspectives of social cognitive theory. Specifically, this study is done to answer the following questions;

- How do personal factors influence language learning ?
- How do behavioural factors influence language learning?
- How does the environment influence language learning?
- Is there a relationship between personal and behavioural factors in language learning?
  (H1- There is no relationship between personal and behavioural factors in language learning?)
- Is there a relationship between behavioural and environmental factors in language learning?
  (H2-There is no relationship between behavioural and environmental factors in language learning)
- Is there a relationship between environmental and personal factors in language learning?
  (H3-There is no relationship between environmental and personal factors in language learning)
- Is there a significant difference between all factors in language learning across academic fields?
  (H4-There is no significant difference between all factors in language learning across academic fields)
- Is there a significant difference between all factors in language learning across levels of learning?
  (H5-There is no significant difference between all factors in language learning across levels of learning)

LITERATURE REVIEW

Theoretical Framework of the Study

- **Social Cognitive Theory (Bandura, 1986)**

Social Cognitive Theory (SCT) explains learning as a process shaped by the interaction of personal factors, behavioural patterns and environmental influences. According to Bandura (1986), learning develops through continuous interaction between what learners believe, what they do and the context in which learning takes place. Within this framework, SCT functions as the overarching theory that connects these three components in explaining learning behaviour and outcomes.

In foreign language learning, personal factors refer to learners' internal characteristics that influence how they approach language learning tasks. These include self-efficacy, motivation and attitudes toward the target language. Learners who believe in their ability to learn a foreign language are more likely to participate actively in learning activities and apply language learning strategies effectively. Such learners tend to set learning goals, practise language skills and monitor their own progress. Confidence in language ability also encourages learners to communicate, ask for clarification and continue learning despite challenges. Previous research indicates that positive personal beliefs support effective strategy use and contribute to better language learning outcomes (Bandura, 1997; Oxford, 2017).

Behavioural patterns in SCT focus on learners' observable actions during the learning process. In foreign language learning, these patterns include practising listening, speaking, reading and writing, using memory and cognitive strategies and seeking feedback from teachers and peers. Learners who apply appropriate strategies consistently are more likely to develop greater control over their learning and show improvement in language proficiency. Behavioural patterns are influenced by learners' beliefs about their abilities and expectations of success, reflecting the reciprocal relationship between personal factors and learning behaviour (Zimmerman, 2000).

Environmental influences refer to the social and instructional context in which foreign language learning occurs. Teacher guidance, classroom activities and peer interaction provide learners with opportunities to observe language use, practise skills and receive feedback. A supportive learning environment encourages learners to apply strategies, communicate in the target language and remain engaged in learning tasks. Research in ESL contexts shows that constructive feedback and guided instruction support learners' motivation and sustained use of language learning strategies (Bandura, 1986; Zulaikha Khairuddin et al., 2025).

The interaction among personal factors, behavioural patterns and environmental influences reflects the principle of reciprocal determinism in SCT. Learners' beliefs influence their learning behaviours, these behaviours affect responses from the learning environment and environmental support can strengthen or weaken learners' beliefs and actions. In foreign language learning, this continuous interaction helps explain how language learning strategies develop and vary among learners (Bandura, 1986; Zimmerman, 2000).

Overall, Social Cognitive Theory provides a coherent theoretical framework for examining language learning strategies in foreign language contexts. By linking personal factors, behavioural patterns and environmental influences under a single framework, SCT explains differences in learners' strategy use and academic performance. This framework aligns with the present study, which examines the interrelationships among these three factors and their influence on language learning strategies among undergraduate students.

- **Strategies for Learning Language**

Strategies for learning language have been acknowledged as a key factor affecting foreign language acquisition. Language learning strategies refer to the responsive thoughts and actions that have been used by learners to facilitate understanding, retention, and use of a target language (Oxford, 1990). Several studies recorded that effective use of language learning strategies is associated with higher language proficiency, enlarged learner autonomy, and improved academic performance (Chamot, 2005).

Oxford's (1990) widely accepted taxonomy categorises language learning strategies into direct and indirect strategies. Direct strategies include memory, cognitive, and compensation strategies that involve direct engagement with the language, such as repetition, summarising, and guessing meaning from context. Indirect strategies consist of metacognitive, affective, and social strategies that support learning through planning, monitoring, managing emotions and interacting with others. Research indicates that more successful language learners tend to employ a greater variety of strategies and use them more frequently than less successful learners (O'Malley & Chamot, 1990).

Metacognitive strategies, such as planning, monitoring, and evaluating learning, have been identified as strong predictors of language achievement, particularly in listening and reading skills (Vandergrift, 2003). Cognitive strategies have also been shown to contribute positively to vocabulary development and comprehension (Ellis, 1994). In addition, social strategies, including collaboration and seeking feedback, play an important role in developing communicative competence and learner confidence (Oxford, 2017).

Recent quantitative studies using survey-based instruments have reported significant relationships between language learning strategies and learner variables such as motivation and self-efficacy (Chamot & Harris, 2019). Overall, the literature highlights that strategies for learning language are multidimensional and essential for effective language learning.

Past Studies

- **Past Studies on Language Learning Strategies**

Many studies have examined how students use language learning strategies and how these strategies relate to cognitive, metacognitive and social dimensions of second language acquisition. Most of these studies rely on survey instruments particularly Oxford's Strategy Inventory for Language Learning (SILL) to measure strategy frequency and types. These instruments are also used to examine relationships between strategy use, students' characteristics and learning outcomes.

Hapsari (2019) investigated the profile of language learning strategies used by English language students and explored variations across six strategy categories. The study involved 106 undergraduate students enrolled in an English Language Education program. Data were collected using Oxford's Strategy Inventory for Language Learning (SILL). The findings showed that metacognitive strategies were used most frequently. Memory, affective, cognitive, compensation and social strategies were used at moderate levels. The results suggest that students demonstrate awareness of higher-level strategies but require support to strengthen other types of strategies in the learning process.

Similarly, Warouw and Neman (2024) examined language learning strategy use among university students enrolled in a Business English course. The study involved 91 students who completed the Strategy Inventory for Language Learning (SILL) questionnaire. The results indicated that students employed a range of strategies including cognitive, metacognitive, affective, memory and social strategies. Differences in strategy use were observed across gender. The study highlights the importance of providing strategy instruction that is responsive to students' contextual needs particularly to enhance less frequently used strategies.

In a broader perspective, Borhanuddin et al. (2025) investigated learning strategies through the lens of Social Cognitive Theory (SCT). The study focused on behavioural, personal and environmental influences on students' strategic behaviour. A total of 128 public university students participated by completing an online questionnaire. The results revealed that students combine behavioural, personal and environmental strategies in their learning. This underscores the complex and integrated nature of language learning strategies within a social cognitive framework. The study suggests that strategy instruction informed by social and cognitive factors can promote more comprehensive language learning.

Zakaria et al. (2024) also examined foreign language learning strategies using Bandura social learning theory among 122 undergraduate students at a Malaysian university. The survey explored the relationship between strategy use and social learning components including attention, retention, reproduction and motivation. The results showed significant engagement with learning strategies influenced by social learning factors. These findings indicate that social cognitive variables can explain variations in how learners plan, monitor and evaluate their language learning. The study suggests that incorporating social cognitive principles into strategy instruction may enhance communicative competence.

Overall, these studies show that students employ a combination of cognitive, metacognitive and social strategies. Metacognitive and social strategies often emerge as the most prominent. While earlier research focused mainly on descriptive profiles using instruments such as the Strategy Inventory for Language Learning (SILL), recent studies adopt broader social cognitive perspectives. These approaches demonstrate that personal, behavioural and environmental factors shape students' strategic choices. Therefore, research grounded in Social Cognitive Theory (SCT) which is the focus of the current study is timely and relevant. It offers deeper insight into how students regulate and adapt their strategies within dynamic learning environments and moves beyond descriptive accounts toward explanatory models of strategic behaviour.

Conceptual Framework of the Study

Figure 1 below shows the conceptual framework of the study. This study explores language learning strategies from the perspectives of social cognitive theory which states the factors that influence learning are the learner (person), their behaviour and also the learning environment. The study by Rahmat & Thasrabiab (2024) has also shown that there is a positive influence of learners' behaviour on their motivation to learn. Learners' behaviour in learning stems from how they visualize themselves as a person. The concept of this study is anchored from Bandura's (1986) social cognitive theory and the instruments are adopted from Wenden and Rubin's (1987) learner strategies in language learning. Firstly, the main strategy in language learning would be what the learners how the learners view themselves. This is manifested through the use of metacognitive self-regulation. Next, what this personal manifestation is transformed into their behaviour in the learning task. This is done through (i) rehearsal, (ii) organization, (iii) elaboration, and (iv) critical thinking. Lastly, learners are also influenced by their environment and this manifested through (i) environment management, (ii) effort management and (iii) help-seeking strategies. In lieu of the concept of reciprocal determinism in the social cognitive theory, this study thus explores if there is a relationship for all the components in language learning.

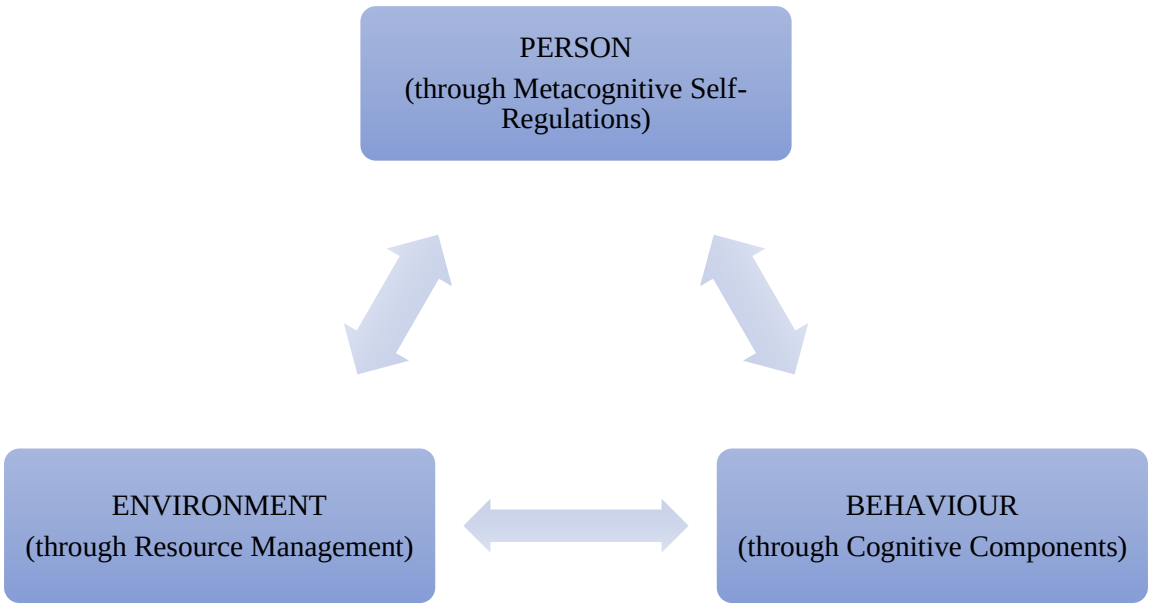

Figure 1- Conceptual Framework of the Study Exploring language learning strategies from the perspectives of social cognitive theory

METHODOLOGY

This quantitative study is done to explore language learning strategies from the perspectives of social cognitive theory. A convenient sample of 370 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Wenden & Rubin (1987) to reveal the variables in table 3 below. Table 1 below shows the categories used for the Likert scale; 1 is for Strongly Disagree, 2 is for Disagree, 3 is for Undecided, 4 is for Agree and 5 is for Strongly Agree.

Table 1- Likert Scale Use

1	Never
2	Rarely
3	Sometimes
4	Very Often
5	Always

Table 2- Distribution of Items in the Survey

SECT	VARIABLE		CONSTRUCT	ITEM	TO ITEM	CRONBACH ALPHA
B	BEHAVIOUR	(a)	Rehearsal	4	19	.945
		(b)	Organization	4		
		(c)	Elaboration	6		
		(d)	Critical Thinking	5		
C	PERSONAL		Metacognitive Self-Regulation		11	.890
D	ENVIRONMENT	(a)	Environment Management	4	12	.795
		(b)	Effort Management	4		
		(c)	Help-Seeking	4		
					42	.958

Table 2 shows the distribution of items in the survey instrument adapted from Wenden and Rubin (1987). The questionnaire consists of 42 items measuring three domains; behavioural factors (19 items), personal factors (11 items) and environmental factors (12 items). Behavioural factors include rehearsal, organization, elaboration and

critical thinking, while personal factors focus on metacognitive self-regulation. In addition, environmental factors comprise environment management, effort management and help-seeking strategies. Overall, the instrument demonstrates high internal consistency ranging from .795 to .945 with an overall alpha of .958, showing excellent reliability of the survey instrument.

Table 3- Reliability Levels, Cronbach's Alpha Ranges, and Their Interpretations

Reliability Level	Cronbach's Alpha range	Interpretation
Excellent	0.9 and above	Indicates very high internal consistency
Good	0.80-0.89	Reflects strong internal consistency
Acceptable	0.70-0.79	Indicates acceptable internal consistency
Questionable	0.60-0.69	Reflects questionable internal consistency
Poor	Below 0.6	Indicates poor internal consistency

In order to determine the internal reliability of the instrument, reliability analysis is one. Table 3 above shows the distribution and interpretation of Cronbach Alpha range. According to Ahmad,et.al. (2024), Cronbach Alpha scores between 0.7 to 0.9 is considered acceptable to excellent.

Table 2 also shows the reliability of the survey. The analysis shows a Cronbach alpha of .945 for Behaviour, .890 for Personal, and .795 for Environment. The overall Cronbach ALpha for all 42 items is .958; thus, revealing a good reliability of the instrument chosen/used. Further analysis using SPSS is done to present findings to answer the research questions for this study.

FINDINGS

Demographic Analysis

According to Zienefuss, et.al (2021), researchers report demographic data in percentages to establish sample representatives, and allow for generalizability to a larger population. The reporting also provides an overview of participants' characteristics. Percentages offer a clear and understandable picture of the sample makeup.

Table 4- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	32%
		Female	68%
2	Academic Field	Science & Technology	48%
		Social Sciences & Business	52%
3	Arabic Language course code	TAC 401/TAC 402	39%
		TAC451/TAC 452	33%
		TAC 501	28%

Table 4 presents the demographic profile of the respondents involved in this study. In terms of gender distribution, female learners represented the majority of the participants (68%), while male learners comprised 32% of the participants. Regarding academic fields, the respondents were relatively balanced between 52% representing Social Sciences and Business and 48% from Science and Technology disciplines. Meanwhile, in term of arabic language course code, 39% of the respondents were from TAC 401/TAC 402, followed by 33% from TAC451/TAC452 and 28% from TAC501. Overall, the demographic distribution indicates a diverse representation of learners across gender, academic fields and language proficiency levels.

Descriptive Statistics

Why is there a need to report the mean and standard deviation? According to Vetter (2017), Mean (M) represents the average, or centre of a data set. Standard deviation (SD) indicates the typical distance of individual observations from the mean which shows the data's variability or spread. A low SD means the data points are

clustered close to the mean whole a high. SD indicates they are more spread out. It is good to have a high SD.

Findings for Personal Factors

This section presents data to answer research question 1- How does personal factors influence language learning?

Table 5- Mean for Personal factors

ITEM	Mean	SD
MSSRQ1During class time, I often miss important points because I am thinking of other things.	2.94	1.03
MSSRQ 2When reading for the courses, I make up questions to help focus my reading.	3.40	0.85
MSSRQ 3When I become confused about something I am reading for the classes, I go back and try to figure it out.	3.90	0.74
MSSRQ 4If course readings are difficult to understand, I change the way I read the material.	3.72	0.81
MSSRQ 5Before I study new course material thoroughly, I often skim it to see how it is organized.	3.52	0.85
MSSRQ 6I ask myself questions to make sure I understand the material I have been studying in this program.	3.65	0.81
MSSRQ7I try to change the way I study in order to fit any course requirements and the instructors' teaching style.	3.73	0.78
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.	3.68	0.74
MSSRQ 9When studying for the courses in this program I try to determine which concepts I do not understand well.	3.83	0.75
MSSRQ 10When I study for the courses, I set goals for myself in order to direct my activities in each study period.	3.67	0.77
MSSRQ 11If I get confused taking notes in classes, I make sure I sort it out afterwards.	3.78	0.81

5 presents the mean scores for the personal factors. The highest mean scores for the personal factors. The highest mean score was received for the item measuring students' frequently engaged in metacognitive self-regulation during reading (M=3.90, SD=0.74). This was followed by item MSSRQ9, students actively employed metacognitive monitoring by identfying concept that they had not fully understood. The third highest mean score related to learners reviewing and clarifying notes after class to ensure understanding. In contrast, the item MSSRQ 5 recorded the lowest mean score (M=3.52, SD=0.85), showing that learners rarely skimmed new course material to understand before engaging in detailed study.

Findings for Behavioural factors

This section presents data to answer research question 2- How does behavioural factors influence language learning? In the context of this study, this is measured by (i) rehearsal, (ii) organization, (iii) elaboration, and (iv) critical thinking,

(a) Table 6- Mean for Rehearsal (4 items)

ITEM	Mean	SD
LSCCRQ1When I study for the classes, I practice saying the material to myself over and over.	3.76	0.79
LSCCRQ 2When studying for the courses, I read my class notes and the course readings over and over again.	3.75	0.81
LSCCRQ 3I memorize key words to remind me of important concepts in this class.	3.95	0.78
LSCCRQ 4I make lists of important items for the courses and memorize the lists.	3.81	0.86

Based on Table 6, the findings indicate that rehearsal strategies were moderately to highly employed by the respondents. Among the four items, memorising key words to recall important concepts (LSCCRQ3) recorded

the highest mean score (M = 3.95, SD = 0.78), suggesting that learners strongly rely on keyword memorisation as a primary rehearsal strategy in their learning process. This was followed by making lists of important items and memorising them (LSCCRQ4), which obtained the second highest mean (M = 3.81, SD = 0.86), indicating a consistent tendency to organise and retain information through listing. In contrast, repeatedly practising the material by saying it aloud (LSCCRQ1) showed a slightly lower mean score (M = 3.76, SD = 0.79), while repeatedly reading class notes and course materials (LSCCRQ2) recorded the lowest mean among the four items (M = 3.75, SD = 0.81). Overall, the results suggest that learners preferred more structured and intentional rehearsal strategies, such as memorisation and listing, rather than passive repetition through reading alone

(b) Table 7- Mean for Organization (4 items)

ITEM	Mean	SD
LSCCOQ1When I study the readings for the courses in the program, I outline the material to help me organize my thoughts.	3.83	0.82
LSCCOQ 2When I study for the courses, I go through the readings and my class notes and try to find the most important ideas.	3.99	0.73
LSCCOQ 3I make simple charts, diagrams, or tables to help me organize course materials in this program.	3.27	1.04
LSCCOQ 4When I study for the courses, I go over my class notes and make an outline of important concepts.	3.83	0.83

As shown in Table 7, the results reveal that organisational learning strategies were applied at a moderately high level among the respondents. The highest mean score was observed for identifying key ideas from readings and class notes (LSCCOQ2), with a mean of 3.99 (SD = 0.73), indicating that learners strongly relied on recognising main ideas as a primary strategy to structure their understanding. This was followed by two strategies that shared the second-highest position: outlining course materials (LSCCOQ1) and reviewing notes to construct outlines of important concepts (LSCCOQ4), both recording a mean of 3.83 (SD = 0.82 and 0.83 respectively). These findings suggest that students consistently employed outlining techniques to organise their learning content. In contrast, the use of charts, diagrams, or tables to organise course materials (LSCCOQ3) received the lowest mean score (M = 3.27, SD = 1.04), indicating that visual organisation strategies were less frequently practised compared to text-based organisational methods.

(c) Table 8- Mean for Elaboration (6 items)

ITEM	Mean	SD
LSCCEQ1When I study for the courses in this program, I pull together information from different sources, such as lectures, readings, and discussions.	3.72	0.82
LSCCEQ 2I try to relate ideas in one subject to those in other courses whenever possible	3.50	0.90
LSCCEQ 3When reading for the courses, I try to relate the material to what I already know.	3.96	0.73
LSCCEQ 4When I study for the courses in this program, I write brief summaries of the main ideas from the readings and my class notes.	3.69	0.89
LSCCEQ 5I try to understand the material in the classes by making connections between the readings and the concepts from the lectures.	3.93	0.74
LSCCEQ 6I try to apply ideas from course readings in other class activities such as lecture and discussion.	3.67	0.85

As presented in the findings, elaboration strategies were generally employed at a moderate to high level among the respondents. The highest mean score was recorded for relating new reading materials to prior knowledge (LSCCEQ3), with a mean of 3.96 (SD = 0.73), indicating that learners strongly relied on connecting new information with existing knowledge to enhance understanding. This was followed by making connections between readings and lecture content (LSCCEQ5), which obtained the second highest mean of 3.93 (SD = 0.74), reflecting students' tendency to integrate information across different learning sources. In contrast, relating ideas across different courses (LSCCEQ2) received the lowest mean score at 3.50 (SD = 0.90), suggesting that cross-subject integration was less frequently practised compared to within-course connections. Overall, the findings

demonstrate that learners were more inclined to engage in elaboration strategies that strengthened understanding within a specific course context rather than across different subjects.

(d) Table 9-Mean for Critical Thinking (5 items)

ITEM	Mean	SD
LSCCCTQ1I often find myself questioning things I hear or read in the courses to decide if I find them convincing.	3.73	0.84
LSCCCTQ 2When a theory, interpretation, or conclusion is presented in classes or in the readings, I try to decide if there is good supporting evidence.	3.60	0.81
LSCCCTQ 3I treat the course materials as a starting point and try to develop my own ideas about it.	3.68	0.82
LSCCCTQ 4I try to play around with ideas of my own related to what I am learning in the courses.	3.71	0.79
LSCCCTQ 5 Whenever I read or hear an assertion or conclusion in the classes, I think about possible alternatives.	3.62	0.83

Table 9 presents the mean scores and standard deviations for five items measuring learners' critical thinking. The results indicate that learners generally engage in moderate to high levels of critical thinking during their courses, with mean scores from 3.60 to 3.73 on a 5-point scale. The highest mean score (M = 3.73, SD = 0.84) was observed for the item "I often find myself questioning things I hear or read in the courses to decide if I find them convincing," suggesting that learners actively evaluate information and reflect critically on content. The lowest mean score (M = 3.60, SD = 0.81) was for "When a theory, interpretation, or conclusion is presented in classes or in the readings, I try to decide if there is good supporting evidence," indicating slightly less but still considerable attention to evaluating evidence. Other items, such as developing own ideas from course materials (M = 3.68, SD = 0.82), experimenting with ideas (M = 3.71, SD = 0.79), and considering alternatives (M = 3.62, SD = 0.83), show that learners are engaged in reflective and analytical thinking as part of their learning process. In conclusion, the data suggest that learners are moderately self-directed in applying critical thinking skills, consistently questioning, analyzing, and generating ideas based on course content. The relatively low standard deviations across all items indicate that perceptions of critical thinking are fairly consistent among participants.

Findings for Environmental factors

This section presents data to answer research question 3- How does the environment influence language learning?

In the context of this study, this is measured by (i) environment management, (ii) effort management and (iii) help-seeking.

(a)Table 10- Mean for Environment Management (5 items)

ITEM	Mean	SD
RMCEMQ1I usually study in a place where I can concentrate on my course work.	4.11	0.77
RMCEMQ 2I make good use of my study time for the courses in this program.	3.95	0.72
RMCEMQ3I have a regular place set aside for studying	3.93	0.76
RMCEMQ 4I make sure that I keep up with the weekly readings and assignments for the courses.	4..40	0.73

Table 10 shows the descriptive statistics for the Environment Management built using five items. In general, the means scores specify a high level of consistency among respondents regarding effective management of their learning environment. The highest mean score was listed for the item related to keeping up with the weekly readings and assignments for the courses (M = 4.40, SD = 0.73), which recommended strong self-discipline in managing academic tasks. This was succeeded by the capability to study in a supportive environment that supports concentration (M = 4.11, SD = 0.77). Moderate to high mean scores are noticed for making good use of study time (M = 3.95, SD = 0.72) and having a regular place set aside for studying (M = 3.93, SD = 0.76). The relatively low standard deviation values across all items showed consistent responses among respondents, indicating a generally positive and stable perception of environment management within the study sample.

(b)Table 11- Mean for Effort Management (4 items)

ITEM	Mean	SD
RMCEMQ1I have a regular place set aside for studying	3.75	0.84
RMCEMQ 2I work hard to do well in the classes in this program even if I do not like what we are doing.	3.86	0.79
RMCEMQ 3When course work is difficult, I either give up or only study the easy parts.	2.96	1.15
RMCEMQ 4Even when course materials are dull and uninteresting, I manage to keep working until I finish.	3.89	0.82

Table 11 presents the mean scores for the effort management. The highest mean score was obtained for the item measuring students' persistence in completing tasks despite uninteresting course materials (M = 3.89, SD = 0.82). This was followed closely by students' willingness to exert effort in their courses even when they did not find the activities enjoyable (M = 3.86, SD = 0.79). The third highest mean score related to maintaining a specific place for studying (M = 3.75, SD = 0.84). Conversely, the lowest mean score was associated with the tendency to give up or focus only on easier tasks when academic work becomes difficult (M = 2.96, SD = 1.15).

(c) Table12- Mean for Help-Seeking (2 items)

ITEM	Mean	SD
RMCHSQ1When I cannot understand the material in a course, I ask my lecturer in the class for help.	3.61	0.89
RMCHSQ1When I cannot understand the material in a course, I ask another student in the class for help.	4.19	0.77
RMCHSQ3When I cannot understand the material in a course, I ask my friends from other classes for help.	3,63	1.13
RMCHSQ3When I cannot understand the material in a course, I ask my my seniors who have taken the course previously for help	3.01	1.29

Table 12 displays the mean values for help-seeking. The statement regarding asking another student in class for help when course material is unclear received the highest mean score (M = 4.19, SD = 0.77). Next, the second highest mean score (M=3.63, SD=1.13) was recorded for the item stating that students ask peers from other classes for help when they have difficulty understanding the course material. This was subsequently accompanied by consulting the lecturer in class whenever difficulties in understanding the course material arose (M=3.61, SD=0.89). By contrast, students report the lowest tendency to seek help from seniors who have taken the course when they do not understand the material (M = 3.01, SD = 1.29).

Exploratory Statistics

According to He (2024), correlation is a statistical technique that shows how strongly two variables are related to each other or the degree of association between the two. It's a common tool for describing simple relationships without making a statement about cause and effect. This section presents data to answer research questions on correlation.

Findings for Relationship between personal and behavioural factors in language learning

This section presents data to answer research question 4- Is there a relationship between personal and behavioural factors in language learning?

(H1- There is no relationship between personal and behavioural factors in language learning?)

To determine if there is a significant association in the mean scores between personal and behavioural factors in language learning, data is analysed using SPSS for correlations. Results are presented separately in table 3 below.

Table 13- Correlation between personal and behavioural factors in language learning

		PERSONAL	BEHAVIOURAL
PERSONAL	Pearson (Correlation	1	.816**
	Sig (2-tailed)		<.001
	N	370	370
BEHAVIOURAL	Pearson (Correlation	.816**	1
	Sig (2-tailed)	<.001	
	N	370	370

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

Table 13 shows there is an association between personal and behavioural factors . Correlation analysis shows that there is a high significant association between personal and behavioural factors (r=.816**) and (p=.000). According to He (2024), 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 personal and behavioural factors .Null hypothesis is rejected.

Findings for Relationship between behavioural and environmental factors in language learning

This section presents data to answer research question 5- Is there a relationship between behavioural and environmental factors in language learning?

(H2-There is no relationship between behavioural and environmental factors in language learning)

To determine if there is a significant association in the mean scores between behavioural and environmental factors, data is analysed using SPSS for correlations. Results are presented separately in table below.

Table 14- Correlation between behavioural and environmental factors

		BEHAVIOUR	ENVIRONMENT
BEHAVIOUR	Pearson (Correlation	1	.721**
	Sig (2-tailed)		<.001
	N	370	370
ENVIRONMENT	Pearson (Correlation	.721**	1
	Sig (2-tailed)	<.001	
	N	370	370

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

Table 14 shows there is an association between behavioural and environmental factors . Correlation analysis shows that there is a high significant association between behavioural and environmental factors (r=.721**) and (p=.000). According to He (2024), 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 behavioural and environmental factors .Null hypothesis is rejected.

Findings for Relationship between environmental and personal factors in language learning

This section presents data to answer research question 6- Is there a relationship between environmental and personal factors in language learning?

(H3-There is no relationship between environmental and personal factors in language learning)

To determine if there is a significant association in the mean scores between environmental and personal factors, data is analysed using SPSS for correlations. Results are presented separately in the table below.

Table 15- Correlation between environmental and personal factors

		ENVIRONMENT	PERSONAL
ENVIRONMENT	Pearson (Correlation	1	.730**
	Sig (2-tailed)		<.001
	N	370	370
PERSONAL	Pearson (Correlation	.730**	1
	Sig (2-tailed)	<.001	
	N	370	370

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

Table 15 shows there is an association between environmental and personal factors . Correlation analysis shows that there is a high significant association between environmental and personal factors (r=.730**) and (p=.000). According to He (2024), 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 environmental and personal factors .Null hypothesis is rejected.

Inferential Statistics

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both are done to compare means. This test is also done to determine if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be considered statistically meaningful and are not just due to random chance. Secondly, T-test and ANOVA are done to test hypotheses. Researchers use t-tests and ANOVA to test hypotheses about means, such as whether a new treatment significantly impacts a variable or if there's a difference in performance between two distinct groups. Lastly, T-test and ANOVA are done to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a predetermined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to draw conclusions about the populations from which their samples were drawn.

Findings for Significant Difference between all factors in language learning across academic fields.

This section presents data to answer research question 7- Is there a significant difference between all factors in language learning across academic fields?

(H4-There is no significant difference between all factors in language learning across academic fields)

Table 16: T-Test for all factors in language learning across academic fields

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean	Std. Error	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Difference	Difference	Lower	Upper
BEHAVIOUR	Equal variances assumed	.718	.397	-1.590	368	.056	.113	-.09694	.06096	-.21682	.02294
	Equal variances not assumed			-1.590	366.048	.056	.113	-.09694	.06096	-.21680	.02293
PERSONAL	Equal variances assumed	.876	.350	-1.071	368	.142	.285	-.06276	.05861	-.17801	.05249
	Equal variances not assumed			-1.069	361.801	.143	.286	-.06276	.05873	-.17825	.05273
ENVIRONMENT	Equal variances assumed	.200	.655	-1.521	368	.065	.129	-.07942	.05223	-.18213	.02329
	Equal variances not assumed			-1.521	366.333	.065	.129	-.07942	.05221	-.18210	.02325

With reference to table 16, a T-test was conducted to examine all factors in language learning across academic fields. The analysis shows there is no significant difference between behavioural (F=0.718,p=0.113) and personal (F=0.876, p=0.285) and environmental (F=0.200, p=).129) factors across academic fields. Null hypothesis is accepted.

Findings for Significant Difference between all factors in language learning across levels of learning.

This section presents data to answer research question 8- Is there a significant difference between all factors in language learning across levels of learning?

(H5-There is no significant difference between all factors in language learning across levels of learning)

Table 17: T-Test for all factors in language learning across levels of learning

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
BEHAVIOUR	Between Groups	.377	2	.188	.545	.580
	Within Groups	126.815	367	.346		
	Total	127.191	369			
PERSONAL	Between Groups	.006	2	.003	.009	.991
	Within Groups	117.109	367	.319		
	Total	117.115	369			
ENVIRONMENT	Between Groups	.269	2	.135	.531	.588
	Within Groups	93.041	367	.254		
	Total	93.311	369			

With reference to table 16, a one way ANOVA was conducted to examine the effects of all factors in language learning across levels of learning across levels of learning. The analysis in table 16 shows there is no significant difference between behaviour (F=0.545,p=0.580), personal (F=0.009, p=0.991) and environment (F=0.531, p=0.588)factors across levels of learning. Null hypothesis is accepted.

CONCLUSION

Summary of Findings and Discussions

For research question 1 to research question 3, the results of the study demonstrate that learners utilised at moderate to high levels in language learning strategies across personal, behavioural and environmental domains. Learners frequently utilised metacognitive self-regulation strategies by monitoring understanding, adapt learning approaches and identify learning challenges. Furthermore, behavioural strategies such as rehearsal, organisation, elaboration and critical thinking were highly employed by learners, indicating active cognitive involvement in learning tasks. In addition, environmental strategies including study environment management, effort regulation and help-seeking behaviours contributed significantly in sustaining learning processes. Similarly, the present study aligned with Hapsari (2019), that found metacognitive strategies as the most frequently employed among university learners and with Warouw and Neman (2024), who reported the use of cognitive, metacognitive, affective, memory and social strategies at moderate to high levels.

For research question 1 to research question 3, regarding the integration of Social Cognitive Theory factors, these findings showed that the combined use of personal, behavioural and environmental strategies used by learners supports the perspective that language learning strategies operate as an integrated system rather than as isolated components. This finding is consistent with Borhanuddin et al. (2025), who reported that learners simultaneously use behavioural, personal and environmental strategies within a Social Cognitive Theory framework. This integration reflects the dynamic interaction proposed in Social Cognitive Theory.

For research question 4 to research question 6, with regard to the relationships among the factors, the strong and significant interrelationships were found across personal, behavioural and environmental dimensions, indicating learners' self-regulation is closely associated with their strategic behaviours and the learning environments they involve with. These findings are aligned with the study by Borhanuddin et al. (2025), who reported the interconnected nature of behavioural, personal and environmental influences in shaping learners' strategic behaviour.

For research question 7 to research question 8, in terms of differences across academic fields and learning levels, there is no significant differences in learners' personal, behavioural and environmental strategies. This suggests that the strategic processes of language learning are relatively consistent across disciplinary backgrounds and proficiency levels. While previous study by Warouw and Neman (2024) who reported variations in strategy used across gender. This finding may indicate that Social Cognitive Theory based strategies function as transferable and adaptable mechanisms across learning contexts. This result supports the perspective that strategic language learning is shaped more by reciprocal detrminism of personal, behavioural and environmental processes than by academic specialization alone and learning levels.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

The findings of this study provide empirical support for Bandura' s Social Cognitive theory, particularly the reciprocal determinism principles between three factors; personal, behavioural and environmental factors. The strong interrelationship across these factors proves that language learning strategies are dynamic processes through the interaction across the factors rather than isolated construct. Furthermore, the absence of significant differences among academic fields and learning levels suggests that social cognitive theory may represent a generalizable theoretical model applicable across learners groups.

Pedagogical Implications

Teachers must acknowledge and be aware that language learning happens through dynamic interaction across these factors; personal, behavioural and environmental. Therefore, teaching content, tasks, classroom practices and classroom environment should be designed and grounded in these factors.

Regarding teaching content, teachers should explicitly integrate metacognitive strategy training, especially in planning, monitoring and evaluation skills in their teaching. Encouraging them to actively reflect on their method and strategies in learning and not only what they learn. Moreover, learning tasks should be designed to promote behavioural engagement such as rehearsal, organisation, elaboration and critical thinking activities. In addition, in terms of the environment, teachers should create supportive learning environments that facilitate effort management and peer collaboration. Peer collaboration should be intentionally structured.

Suggestions for Future Research

This research may be limited to a quantitative survey design. Future studies could examine the interrelationship among personal, behavioural and environment factors using qualitative approaches to gain deeper insights into the dynamic interactions involved in learners' strategy use.

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