

A Study of Japanese Language Learning Strategies from the Perspective of Self-Determination Theory

Noor Aizah Abas^{1*}, Nadiah Zubbir², Noor Hanim Rahmat³, Nurfarah Saiful Azam⁴, Mohamed Hafizuddin Mohamed Jamrus⁵, Marites Adan Doña⁶

¹⁻⁵Akademi Pengajian Bahasa, Universiti Teknologi MARA, Shah Alam, Malaysia,

⁶Nihongo Kyoiku Tutorial Service, Meycauayan, Philippines

*Corresponding Author

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ABSTRACT

Language learning strategies (LLS) are central to second language acquisition, and their success depends on learner motivation. This study looks at how autonomy, competence, and relatedness shape the experiences of Malaysian undergraduates, using Self-Determination Theory (SDT) as the framework. These three needs have not been studied in depth in the Malaysian context. The study set out to examine how learners perceive these needs, how they are connected, and whether differences exist across academic disciplines. Four hypotheses were developed to guide the research. Data were collected through a structured questionnaire with 42 items: competence (19), autonomy (11), and relatedness (12). A total of 218 undergraduates from Malaysia's largest public university took part. Responses were rated on a Likert scale, and reliability was confirmed using Cronbach's Alpha. The findings show that learners reported moderately high engagement in autonomy, competence, and relatedness. Significant positive correlations were found among the three needs, confirming their close relationship in language learning. This study suggests that motivational support and strategic training should be integrated into educational methods. It encourages future research to extend this framework to multiple contexts and disciplines to deepen our understanding of language learning.

Keywords: Self Determination Theory (SDT), Language Learning Strategies (LLS), motivation, autonomy, competence, relatedness

INTRODUCTION

Background of Study

Language learning has been recognized as a complex process influenced not only by cognitive abilities but also by motivation. Among the many frameworks about motivation, Self-Determination Theory (SDT) is one of the most influential. It was first proposed by Deci and Ryan (1985) and later refined in their representative paper (Ryan & Deci, 2000). SDT emphasizes that to maintain motivation and make meaningful progress, learners need to satisfy three basic psychological needs (autonomy, competence, and relatedness). In language education, SDT has been widely used to understand how learners' intrinsic and extrinsic motivations influence their choice of learning strategies, and eventually influence their success.

Meanwhile, autonomy is the sense of freedom to make choices and act accordingly. In the context of learning, autonomy means that learners are not only able to follow instructions. They also freely decide how and why they use strategies, fostering intrinsic motivation and sustained engagement (Ryan & Deci, 2000). Applied linguistics researchers often describe learner autonomy as a multifaceted concept, which integrates cognitive, metacognitive, and affective elements (Benson, 2011). At the cognitive level, autonomy refers to a learner's ability to process and understand information independently. On the other hand, metacognitive autonomy is evinced as a learner's ability to plan, monitor, and evaluate the strategies they use throughout the learning process.

Deci and Ryan (1985) highlighted that the affective aspect emphasizes the confidence and willingness of learners to take responsibility for their own progress.

Competency reflects a learner's sense of being able to successfully handle tasks and achieve goals. In language learning, competency is manifested as confidence in understanding, using, and communicating in the target language. According to Zimmerman (2002), when learners receive clear guidance on self-regulation and goal setting, they gradually acquire the skills necessary to manage their own learning. An ultimately increased sense of competence fosters confidence and promotes the development of autonomy.

Relatedness is about experiencing a real sense of connection with others, as well as recognizing that our presence makes a difference. In language learning, this need is often met through group activities, peer support, and encouragement from teachers (Benson, 2011). This social dimension strengthens motivation and encourages learners to keep trying even when tasks are challenging.

Language learning strategies (LLS) are defined as the specific behaviours and techniques that learners use to facilitate language acquisition, and they occupy a significant position in this discussion. Oxford (1990) describes LLS as "steps that learners take to facilitate their own learning," emphasizing their role in promoting autonomy and self-regulation. From the perspective of SDT, these strategies are not merely mechanical techniques but are closely related to the direction of the learner's motivation. For example, learners who feel autonomy and competence are more likely to employ metacognitive and cognitive strategies that maintain long-term outcomes. Buzrugshodyaeva (2025) emphasizes that explicit guidance on self-regulation and goal setting empowers learners with the ability and confidence to manage their own learning, thereby strengthening autonomy. From this perspective, strategies are not merely mechanical techniques but are closely related to the direction of motivation and the ability to reflect on, monitor, and adjust the learning process.

In Malaysia, similar themes have been explored at various educational levels. Zubbir et al. (2025) investigated language learner motivation and self-regulated learning strategies, suggesting how cultural and contextual factors influence the effectiveness of LLS. Khamis et al. (2024) conducted a systematic review of strategies used by ESL learners, exemplifying that communication strategies are crucial for maintaining ESL learner motivation. At the school level, Darus et al. (2024) examined how sixth graders in an urban primary school used strategies, showing that they relied mostly on practical approaches. At the university level, Yahaya et al. (2024) highlighted the role of metacognitive and social strategies. Ngarisan et al. (2022) pointed out the need to balance motivation with self-regulated learning in online classes. Wu et al. (2023) combined SDT with socio-cultural theory, explaining how blended learning can support autonomy and connectedness. These studies show that fieldwork is crucial for understanding Malaysian learners. Autonomy, competence, and relatedness are not just abstract concepts. They directly shape the choices learners make when learning a new language.

Research on Japanese language learning also shows that successful learners rarely depend on one method alone. They use traditional techniques such as kanji repetition and mnemonic devices, but they also add reflective practices like self-questioning and planning (Heisig, 2007; Hirata, 2010). Confidence building and emotional control help learners manage difficulties (Benson, 2011). Oxford (1990) noted that effective learners combine strategies such as spaced repetition, active recall, and social interaction to master the three Japanese writing systems. This mix of direct and indirect methods highlights the importance of variety and integration in language learning. Although many studies have explored language learning strategies, the field remains complex and continues to evolve. Recent meta-analyses confirm that intrinsic motivation strongly predicts success in second language learning. In today's multilingual world, it is vital to understand how motivational frameworks, especially SDT, interact with learner strategies. This is even more important given the diversity of learning environments today (from formal classrooms to online platforms and informal community spaces), each requiring its own set of strategies and motivational support.

Statement of Problem

Although there are many studies on LLS, recent studies have emphasized that its effectiveness is closely related to motivation. For example, Alamer et al. (2025) conducted a multilevel meta-analysis. They found that intrinsic rules based on autonomy, competence, and relatedness predicted language acquisition success more strongly

than extrinsic rules. This suggests that strategies alone are not sufficient without being supported by self-determined motivation.

Yang et al. (2025) also emphasized that social support and flow experiences play an important role in maintaining learner motivation. Social support and flow experiences also influence learning strategies in online learning environments. These findings suggest that existing LLS models may not fully capture the complexity of diverse learner situations. Similar concerns have been raised by Someya and Honda (2020). They reported that the use of learning strategies by Japanese EFL learners was closely related to motivational characteristics. Autonomy and competence emerging as important predictors of success. Nakamura (2023) further showed that motivation in Japanese language learning was dialogically constructed, shaped by learners' self-image and social support, which in turn helped them to choose learning strategies. In addition, Taguchi et al. (2009) conducted a comparative study of Japanese learners to explain how cultural background influences learners' self-motivation and the strategies they used.

In Malaysia, researchers have also studied the interaction between learning strategies and motivation. For example, Zainol et al. (2024) investigated motivational strategies in ESL classrooms and found that teachers' beliefs and practices significantly influence learners' motivation to learn. Chien et al. (2021) examined motivation in foreign language learning among Malay university students and revealed that intrinsic motivation is important for maintaining continuity. Yahaya et al. (2024) also looked at university students' use of learning strategies and emphasized the importance of metacognitive and social approaches. These findings show that while international theories provide a useful base, the cultural, institutional, and social realities in Malaysia strongly shape how learners choose their strategies and sustain motivation in language learning.

In summary, the literature points to a clear gap, i.e., while SDT is widely applied in research on language learning motivation, there is still little work that connects specific learning strategies to the psychological needs of autonomy, competence, and relatedness. Alamer et al. (2025) call for more in-depth research into how learners' motivational orientations determine strategic choices and subsequent success. There is a need to explore how motivations defined by SDT interact with learners' strategies across a variety of learning environments. Thus, this research is designed to study LLS from the perspective of SDT and directly from its research objectives and questions.

Objective of the Study and Research Questions

This research aims to examine LLS from the perspective of SDT. More specifically, it aims to address the following research questions:

- How do learners perceive their autonomy in language learning?
- How do learners perceive their competence in language learning?
- How do learners perceive relatedness in their language learning?
- Is there a relationship between autonomy and competence in language learning?

(H1: There is no relationship between autonomy and competence in language learning)

- Is there a relationship between competence and relatedness in language learning?

(H2: There is no relationship between competence and relatedness in language learning)

- Is there a relationship between relatedness and autonomy in language learning?

(H3: There is no relationship between relatedness and autonomy in language learning)

- Is there a significant difference between all strategies across academic fields?

(H4: There is no significant difference between all strategies across academic fields)

LITERATURE REVIEW

Theoretical Framework of the Study

Self-Determination Theory (Ryan & Deci, 2000)

According to Ryan & Deci (2000), Self-Determination Theory (SDT) contains the study of intrinsic developmental habits as well as intrinsic psychological needs, which are fundamental for one's integration of self-motivation and personality, and for the factors that encourage those positive processes. Ryan & Deci (2000) further explained that SDT conveyed the issue of how self-motivation can be nurtured despite the initial disinterested behaviour and how the social environment affects those processes. Ryan & Deci (2000) discovered through empirical procedure that there are three intrinsic psychological needs vital for supporting natural growth and encouraging positive social and personal development, which are the need for competence, relatedness, and autonomy.

The need for competence happens when one feels confident in executing activities that are important to social groups (Ryan & Deci, 2000). Ryan & Deci (2000) give an example of children who have not mastered a task and yet to understand its rationale, who could not fully internalize the task and depend largely on external control or pressure. The need for relatedness occurs when there is a need to have a sense of belonging and relatedness with others (Ryan & Deci, 2000). This need becomes the primary reason for an action due to the prompt, model, or value of someone they feel attached to or related to (Ryan & Deci, 2000). Finally, Ryan & Deci (2000) explained that the need for autonomy refers to being able to freely choose whether it is done individually or collectively. Despite autonomy being deemed to be antagonistic, Ryan & Deci (2000) supported the idea of autonomy as being independent and individualistic.

Metacognitive Knowledge as Language Learning Strategies (LLS)

To achieve an effective learning experience, LLS are vital for learners to adapt. According to Wenden and Rubin (1987), effective language learning not only depends on exposure but also utilizes the right strategies to regulate as well as maximize language learning. Wenden and Rubin (1987) explained that there are three categories of strategies when it comes to language learning, which are cognitive strategies, metacognitive strategies, and social strategies. Cognitive strategies are strategies or methods used by learners to process the language, such as memorization and summarizing.

Meanwhile, metacognition involves planning and self-evaluation. Wenden (1998) explained that metacognitive knowledge is the knowledge about learning and can be divided into three parts: person knowledge, task knowledge, and strategic knowledge. Person knowledge refers to learners' beliefs about human factors in the learning process. Task knowledge concerns their understanding of the task itself. Finally, strategic knowledge denotes their awareness of which strategies are most appropriate to employ. On the other hand, affective and social strategies consist of seeking help and managing anxiety. These strategies require learners to interact with others and handle their own emotions. The right use of LLS can bridge any gap found in a learner's language proficiency as well as improve learners' achievement (Wenden and Rubin, 1987). Wenden and Rubin (1987) highlighted the active role the learners need to play when going through their learning process. Wenden and Rubin (1987) emphasize the importance of metacognitive awareness, where learners who reflect not only on their improvement but also on their mistakes have a more effective learning experience.

Past Studies

Past Studies on Strategies in Language Learning

Previous studies have been done to investigate how LLS is connected to motivations. The study by Calafato (2023) was done to investigate issues on the association between Arabic language learning learners' language learning motivation (LLM), LLS, self-efficacy beliefs (SEB), and their achievement. Data were collected from

two female students who are learning Arabic as a foreign language at a Norwegian university. They were interviewed for 60 minutes and required to write down the changes in their motivation and SEB weekly. Their end-of-year exam scores were also gathered together with a post-exam interview on their LLM, LLS, and SEB throughout their semester. Calafato (2023) discovered that the learners chose to practice speaking Arabic by speaking to others. They also utilized Quizlet to go through their learning materials. Most of the strategies used were social strategies as well as metacognitive, memory, and cognitive strategies. Calafato (2023) discovered that for beginners, prior knowledge of the language learned does encourage or maintain LLM or SEB, especially when the language is totally distinct from the language they know. Tursunbayevich (2024) investigated whether gamification has an influence on learner motivation and achievement for English as a foreign language (EFL) learning in higher education. This study utilized a mixed-method approach consisting of both quantitative (pre- and post-assessments, engagement metrics, and surveys) and qualitative methods (interviews and open-ended responses) framed by Flow principles and Self-Determination Theory. The data was collected from learners who took higher education EFL courses, and they were divided into two groups: the experimental group and the control group. Tursunbayevich (2024) discovered that participants in the experimental group who are learning through gamification have increased motivation as well as a significant improvement in language proficiency compared to the control group. In addition, participants conveyed that they had more autonomy and a sense of accomplishment when using gamified modules as they received quick feedback and clear rewards, improving their motivation. Tursunbayevich (2024) suggested that, due to the positive outcome in the research, it was highly advised that the gamification approach be viewed as a part of a broader educational strategy and integrated as an educational reform. The discussed studies demonstrated how LLS played a vital role in learners' motivation. A suitable learning strategy can encourage learners as well as improve their performance. However, previous studies mainly focused on Arabic and English languages; thus, in this study, Japanese LLS are examined from the perspective of self-determination theory.

Conceptual Framework of the Study

Figure 1 below shows the conceptual framework of the study. This study explores learners' use of LLS from the perspective of self-determination theory by Ryan & Deci (2000). The theory states that in learning, learners need autonomy, competence, and relatedness to stay motivated. According to Rahmat & Thasrabiab (2024), there is a positive relationship between how learners feel about themselves and their motivation to learn. This study is anchored by the self-determination theory by Ryan & Deci (2000) and combined with Wenden & Rubin's (1987) strategies for language learning to form the conceptual framework below.

As shown in Figure 1, learners' autonomy is expressed through metacognitive self-regulation. To develop a sense of competence, they rely on cognitive processes such as (i) rehearsal, (ii) organization, (iii) elaboration, and (iv) critical thinking. In addition, learners require relatedness, which is fostered through resource management practices including (i) managing the learning environment, (ii) regulating effort, and (iii) seeking help. Furthermore, this study investigates whether there is an interrelationship among all these variables.

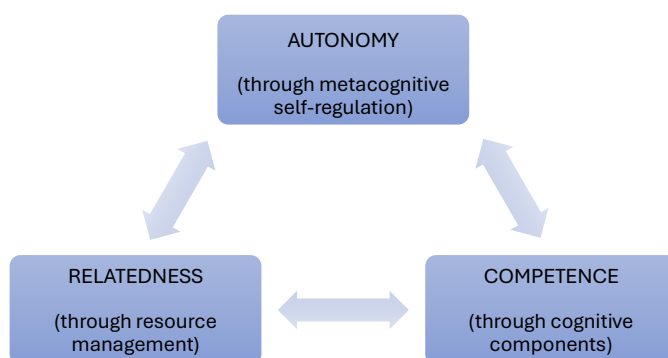


Figure 1 - Conceptual Framework of The Study: Language Learning Strategies from The Perspective of Self-Determination Theory

METHODOLOGY

This quantitative study is done to explore LLS from the perspective of self-determination theory. A convenient sample of 218 participants responded to the survey. The instrument used is a 5-point Likert-scale survey and is rooted in 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 Never, 2 is for Rarely, 3 is for Sometimes, 4 is for Very Often, and 5 is for Always.

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	Strategy		Construct	Item	Total Item	Cronbach Alpha
B	COMPETENCE	COGNITIVE COMPONENTS	(a)	Rehearsal	4	19	.938
			(b)	Organization	4		
			(c)	Elaboration	6		
			(d)	Critical Thinking	5		
C	AUTONOMY	METACOGNITIVE SELF-REGULATION				11	.876
D	RELATEDNESS	RESOURCE MANAGEMENT	(a)	Environment Management	4	12	.803
			(b)	Effort Management	4		
			(c)	Help-Seeking	4		
Total						42	.952

Table 2 exhibits the distribution of items in the survey, which was designed to measure three psychological constructs (competence, autonomy, and relatedness) based on established learning strategy frameworks. Competence was assessed through 19 items covering rehearsal, organization, elaboration, and critical thinking, with very high reliability ($\alpha = .938$). Autonomy was measured by 11 items focusing on metacognitive self-regulation, yielding strong reliability ($\alpha = .876$). Relatedness was examined through 12 items on environment management, effort management, and help-seeking, with acceptable reliability ($\alpha = .803$). Altogether, the instrument comprised 42 items and demonstrated excellent overall internal consistency ($\alpha = .952$), confirming its robustness in capturing learners' cognitive, metacognitive, and resource management strategies within the framework of self-determination theory.

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 breaks down the distribution and interpretation of the Cronbach Alpha range. According to Ahmad et al. (2024), Cronbach Alpha scores between 0.7 to 0.9 are considered acceptable to excellent. Table 3 also illustrates the reliability of the survey. The analysis shows a Cronbach alpha of .938 for Competence, .876 for Autonomy, and

.803 for Relatedness. The overall Cronbach Alpha for all 42 items is $\alpha = .952$; 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 AND DISCUSSION

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	51%
		Female	49%
3	Academic Field	Science & Technology	72%
		Social Sciences & Humanities	28%
4	Years of Learning Japanese	below 2 years	89%
		3-4 years	6%
		5 years and above	5%

Based on Table 4, the demographic profile has been divided into three sections: gender, academic field, and years of learning Japanese. The distribution came down to genders, with 51% being male participants and 49% being female participants. The academic fields were divided into two, with Science & Technology at 72%, while the remaining 28% for Social Sciences & Humanities. As for years of learning, participants were at 89% with below 3 years, while 3-4 years only consisted of 6% and, and 5 years and above at 5%.

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, whereas a high SD indicates they are more spread out. It is good to have a high SD.

Findings for Autonomy

This section presents data to answer Research Question 1: How do learners perceive their autonomy in language learning? In the context of this study, this is measured by metacognitive self-regulation.

Table 5 - Mean for Metacognitive Self-Regulation (11 items)

Item		Mean	SD
MSSRQ1	During class time, I often miss important points because I am thinking of other things.	3.01	0.98
MSSRQ2	When reading for the courses, I make up questions to help focus my reading.	3.36	0.83
MSSRQ3	When I become confused about something I am reading for the classes, I go back and try to figure it out.	3.68	0.84
MSSRQ4	If course readings are difficult to understand, I change the way I read the material.	3.61	0.85
MSSRQ5	Before I study new course material thoroughly, I often skim it to see how it is organized.	3.49	0.86
MSSRQ6	I ask myself questions to make sure I understand the material I have been studying in this program.	3.62	0.83

MSSRQ7	I try to change the way I study to fit any course requirements and the instructors' teaching style.	3.55	0.85
MSSRQ8	I 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.	3.56	0.81
MSSRQ9	When studying for the courses in this program, I try to determine which concepts I do not understand well.	3.69	0.78
MSSRQ10	When I study for the courses, I set goals for myself to direct my activities in each study period.	3.56	0.81
MSSRQ11	If I get confused taking notes in classes, I make sure I sort it out afterwards.	3.58	0.89

Table 5 lists the means for metacognitive self-regulation in perceiving their autonomy in language learning. The highest mean comes to 3.69 (MSSRQ9), where learners will try to determine the concepts that they do not understand well when studying for the course. At a close mean of 3.68 (MSSRQ3), learners tend to reflect and try to figure it out when confusion occurs during reading in the classes. The next mean at 3.62 (MSSRQ6) indicated learners asking themselves questions to ensure understanding of the learnt materials. At 3.61 (MSSRQ4), learners try changing their way of reading when the materials are difficult to understand. At 3.58 (MSSRQ11), if confusion is to occur during note-taking in classes, learners would clarify it afterwards. Two items (MSSRQ8 and MSSRQ10) result in the same mean of 3.56, where learners tend to think through what is supposed to be learnt rather than just reading it over during revision and setting goals for themselves to have a better direction of activities to be done during each study session. At 3.55 (MSSRQ7), learners mentioned that they change the way they study to fit into the requirements of the course and the teaching styles of the instructors. At a mean of 3.49 (MSSRQ5), learners skim through the organisation of the materials before studying them. At a lower mean of 3.36 (MSSRQ2), questions are made up to help focus during reading. The lowest mean for metacognitive self-regulation on how learners perceive their autonomy comes at 3.01 (MSSRQ1), where they tend to miss important information as they were thinking of other things during lessons.

Findings for Competence

This section presents data to answer Research Question 2: How do learners perceive their competence in language learning? In the context of this study, this is measured by cognitive components such as (i) rehearsal, (ii) organisation, (iii) elaboration, and (iv) critical thinking.

Table 6 - Mean for Rehearsal (4 items)

Item		Mean	SD
LSCCRQ1	When I study for the classes, I practice saying the material to myself over and over.	3.70	0.94
LSCCRQ2	When studying for the courses, I read my class notes and the course readings over and over again.	3.61	0.90
LSCCRQ3	I memorise key words to remind me of important concepts in this class.	3.74	0.88
LSCCRQ4	I make lists of important items for the courses and memorize the lists.	3.69	0.92

Table 6 represents the means for rehearsal, with the highest mean at 3.74 for item LSCCRQ3, where learners memorise key words as a reminder of crucial concepts during learning. At 3.70 (LSCCRQ1), learners practice verbalising the materials repeatedly, while at 3.69 (LSCCRQ4), they make lists of important items for memorisation when studying for the classes. The lowest mean came to 3.61 (LSCCRQ2), where learners repeatedly read the notes and course readings while studying for the course.

Table 7 - Mean for Organisation (4 items)

Item		Mean	SD
LSCCOQ1	When I study the readings for the courses in the program, I outline the material to help me organize my thoughts.	3.56	0.91
LSCCOQ2	When I study for the courses, I go through the readings and my class notes and try to find the most important ideas.	3.72	0.83

LSCCOQ3	I make simple charts, diagrams, or tables to help me organize course materials in this program.	3.04	1.07
LSCCOQ4	When I study for the courses, I go over my class notes and outline important concepts.	3.59	0.89

Table 7 displays the means for organisation, with 3.72 as the highest item (LSCCOQ2), where learners indicated going through readings and class notes in trying to find the most important information. At 3.59 (LSCCOQ4), learners go over class notes to outline crucial concepts, while at 3.56 (LSCCOQ1), learners only outline the material for organisation of thoughts. The least amount of mean came to learners making simple charts, diagrams, or tables to help organise course materials at 3.04 (LSCCOQ3) for organisation.

Table 8 - Mean for Elaboration (6 items)

Item		Mean	SD
LSCCEQ1	When I study for the courses in this program, I pull together information from different sources, such as lectures, readings, and discussions.	3.66	0.91
LSCCEQ2	I try to relate ideas in one subject to those in other courses whenever possible.	3.48	0.91
LSCCEQ3	When reading for the courses, I try to relate the material to what I already know.	3.91	0.80
LSCCEQ4	When I study for the courses in this program, I write summaries of the main ideas from the readings and my class notes.	3.34	0.93
LSCCEQ5	I try to understand the material in the classes by making connections between the readings and the concepts from the lectures.	3.73	0.82
LSCCEQ6	I try to apply ideas from course readings in other class activities, such as lectures and discussions.	3.55	0.89

Table 8 depicts the means for elaboration, with 3.91 for item LSCCEQ3 as the highest mean, where learners make a relation to prior knowledge when reading for the course. The second highest is at 3.73 (LSCCEQ5). Learners try to understand materials through connections between readings and concepts provided by the lecturer. At 3.66 (LSCCEQ1), different sources such as lectures, readings, and discussions were used for the collection of information. At 3.55 (LSCCEQ6), learners apply ideas collected from other class activities. At 3.48, the relation of ideas was done through different courses, and the lowest mean was at 3.34 (LSCCEQ4). Writing of brief main idea summaries was done from readings and class notes for elaboration purposes.

Table 9 - Mean for Critical Thinking (5 items)

Item		Mean	SD
LSCCCTQ1	I often find myself questioning things I hear or read in the courses to decide if I find them convincing.	3.71	0.75
LSCCCTQ2	When a theory, interpretation, or conclusion is presented in classes or in the readings, I try to decide if there is good supporting evidence.	3.49	0.76
LSCCCTQ3	I treat the course materials as a starting point and try to develop my own ideas about them.	3.61	0.76
LSCCCTQ4	I try to play around with ideas of my own related to what I am learning in the courses.	3.65	0.81
LSCCCTQ5	Whenever I read or hear an assertion or conclusion in class, I think about possible alternatives.	3.63	0.82

Table 9 demonstrates the means for critical thinking. The highest mean comes to 3.71 for item LSCCCTQ1, where learners question what has been heard or read for them to be convinced. At 3.65 (LSCCCTQ4), learners play around with their own ideas to find a relation to what they are learning about. At a close mean of 3.63 (LSCCCTQ5), learners consider possible alternatives whenever they read or hear of any assertions. Another close mean refers to item LSCCCTQ3 with a mean of 3.61, where learners treat the course materials as a starting point before trying to develop their own ideas on them. The lowest mean for critical thinking comes to 3.49

(LSCCTQ2), where learners tend to decide if there is any good supporting evidence when a theory, interpretation, or conclusion is represented.

Findings for Relatedness

This section presents data to answer Research Question 3: How do learners perceive relatedness in their language learning? In the context of this study, this is measured by resource management such as (i) environment management, (ii) effort management, and (iii) help-seeking.

Table 10 - Mean for Environment Management (4 items)

Item		Mean	SD
RMCEMQ1	I usually study in a place where I can concentrate on my coursework.	3.93	0.88
RMCEMQ2	I make good use of my study time for the courses in this program.	3.64	0.85
RMCEMQ3	I have a regular place set aside for studying.	3.66	0.77
RMCEMQ4	I make sure that I keep up with the weekly readings and assignments for the courses.	4.21	0.91

Table 10 presents the means for environment management. The highest mean comes to 4.21 (RMCEMQ4), where learners indicated to make sure they keep up with weekly readings and assignments. Next is at 3.93 (RMCEMQ1) detailing that learners usually study in a place where they feel they can concentrate best. At 3.66 (RMCEMQ3), learners have their own regular study place, while the lowest is at 3.64 (RMCEMQ2), where they make good use of their study time for their courses.

Table 11 - Mean for Effort Management (4 items)

Item		Mean	SD
RMCEMQ1	I have a regular place set aside for studying	3.61	0.93
RMCEMQ2	I work hard to do well in the classes in this program, even if I do not like what we are doing.	3.73	0.87
RMCEMQ3	When coursework is difficult, I either give up or only study the easy parts.	2.87	10.8
RMCEMQ4	Even when course materials are dull and uninteresting, I manage to keep working until I finish.	3.70	0.82

Table 11 unveils the means for effort management. The mean point of 3.73 for item RMCEMQ4 comes as the highest mean, where learners indicate that they work hard to do well in the program, even when they dislike it. At 3.70 (RMCEMQ4), learners share that they manage to keep working until completion even when the course materials are dull and uninteresting. At 3.61 (RMCEMQ1), learners report that they have a regular place set aside for studying, and the lowest mean for effort management comes to 2.87 (RMCEMQ3), where they mention that they either give up or only study the easy parts when the work is difficult.

Table 12 - Mean for Help-Seeking (4 items)

Item		Mean	SD
RMCHSQ1	When I cannot understand the material in a course, I ask my lecturer for help.	3.56	0.93
RMCHSQ2	I try to identify students in the classes who I can ask for help from another student.	3.91	0.89
RMCHSQ3	When I cannot understand the material in a course, I ask my friends from another course for help.	3.49	1.07
RMCHSQ4	When I cannot understand the material in a course, I ask my seniors who have taken the course for help.	2.83	1.24

Table 12 delineates the means for help-seeking. Item RMCHSQ2 comes to a mean of 3.91, showing the highest mean for help-seeking, where learners tend to identify students in the class whom they can ask for help. At 3.56 (RMCHSQ1) and 3.49 (RMCHSQ3), learners tend to ask for help from their lecturer or friends for clarification.

The lowest mean comes to 2.83 (RMCHSQ4), where they will ask their seniors who have taken the course before for their understanding.

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 is 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 The Relationship Between Autonomy and Competence in Language Learning

This section presents data to answer Research Question 4: Is there a relationship between autonomy and competence in language learning? (H1: There is no relationship between autonomy and competence in language learning). To determine if there is a significant association in the mean scores between autonomy and competence, data is analysed using SPSS for correlations. Results are presented separately in Table 13 below.

Table 13 - Correlation Between Autonomy and Competence

		Autonomy	Competence
AUTONOMY	Pearson (Correlation)	1	.747**
	Sig (2-tailed)		<.001
	N	218	218
COMPETENCE	Pearson (Correlation)	.747**	1
	Sig (2-tailed)	<.001	
	N	218	218

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

Table 13 reveals there is an association between autonomy and competence. Correlation analysis shows that there is a highly significant association between autonomy and competence($r=.747^{**}$) and ($p=.000$). According to He (2024), the 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 autonomy and competence. The null hypothesis is rejected.

Findings for The Relationship Between Competence and Relatedness in Language Learning

This section presents data to answer Research Question 5: Is there a relationship between competence and relatedness in language learning? (H2: There is no relationship between competence and relatedness in language learning). To determine if there is a significant association in the mean scores between competence and relatedness in language learning, data is analysed using SPSS for correlations. Results are presented separately in Table 14 below.

Table 14 - Correlation Between Competence and Relatedness

		Competence	Relatedness
COMPETENCE	Pearson (Correlation)	1	.654**
	Sig (2-tailed)		<.001
	N	218	218
RELATEDNESS	Pearson (Correlation)	.654**	1
	Sig (2-tailed)	<.001	
	N	218	218

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

Table 14 manifests that there is an association between competence and relatedness. Correlation analysis shows that there is a highly significant association between competence and relatedness ($r=.654^{**}$) and ($p=.000$). According to He (2024), the 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 competence and relatedness. The null hypothesis is rejected.

Findings for The Relationship Between Relatedness and Autonomy in Language Learning

This section presents data to answer Research Question 6: Is there a relationship between relatedness and autonomy in language learning? (H3: There is no relationship between relatedness and autonomy in language learning).

To determine if there is a significant association in the mean scores between relatedness and autonomy, data is analysed using SPSS for correlations. Results are presented separately in Table 15 below.

Table 15 - Correlation Between Relatedness and Autonomy

		Relatedness	Autonomy
RELATEDNESS	Pearson (Correlation)	1	.724**
	Sig (2-tailed)		<.001
	N	218	218
AUTONOMY	Pearson (Correlation)	.724**	1
	Sig (2-tailed)	<.001	
	N	218	218

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

Table 15 showcases that there is an association between relatedness and autonomy. Correlation analysis shows that there is a highly significant association between relatedness and autonomy ($r=.724^{**}$) and ($p=.000$). According to He (2024), the 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 relatedness and autonomy. The null hypothesis is rejected.

Inferential Statistics (Significant Difference)

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both tests are done to compare means. The 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 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, the T-test and ANOVA are done to identify significant differences.

The output of a t-test provides a p-value (significance value). If the p-value is below a predetermined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to conclude the populations from which their samples were drawn.

Findings for A Significant Difference Between All Strategies Across Academic Fields

This section presents data to answer Research Question 7: Is there a significant difference between all strategies across academic fields? (H4: There is no significant difference between all strategies across academic fields).

Table 16 – T-Test for Significant Difference Between All Strategies Across Academic Fields

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Significance One-Sided p Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper	
COMPETENCE	Equal variances assumed	.137	.712	-1.419	216	.079 .157	-.12778	.09006	-.30528	.04973
	Equal variances not assumed			-1.458	115.795	.074 .147	-.12778	.08762	-.30132	.04576
AUTONOMY	Equal variances assumed	.562	.454	-2.131	216	.017 .034	-.18100	.08494	-.34842	-.01359
	Equal variances not assumed			-2.265	124.631	.013 .025	-.18100	.07993	-.33920	-.02281
RELATEDNESS	Equal variances assumed	.974	.325	-1.236	216	.109 .218	-.09895	.08008	-.25679	.05888
	Equal variances not assumed			-1.205	104.014	.115 .231	-.09895	.08212	-.26180	.06389

A T-test was conducted to examine the effects of competence, autonomy, and relatedness across academic fields (Table 16). The analysis shows there is no significant difference between competence ($F=0.137$, $p=0.079$) and relatedness ($F=0.974$, $p=0.109$) across academic fields. Hull hypotheses are accepted for both competence and relatedness. However, there is a significant difference for autonomy ($F=0.462$, $p=0.034$) and relatedness across academic fields. The null hypothesis is rejected for autonomy.

CONCLUSION

Summary of Findings and Discussions

This study examines LLS from the perspective of Self-Determination Theory, focusing on learners' perceptions of autonomy, competence, and relatedness, as well as the relationships among these constructs. Overall, the findings indicate that learners demonstrated moderately high engagement across all three psychological needs, supporting the assumption that motivation in language learning is closely tied to strategic behaviour and self-regulation.

Research Objective 1 (RO1): How do learners perceive their autonomy in language learning?

The findings for RO1 reveal that learners demonstrated a moderately high level of metacognitive self-regulation, indicating that they generally perceive themselves as autonomous and self-directed learners. Learners actively monitored their understanding, revisited confusing materials, adjusted learning strategies, and set learning goals. This finding is in accordance with the study by Tursunbayevich (2024), who found that increased autonomy, supported by structured learning environments such as gamified modules, enhanced learners' motivation and engagement. Although the current study did not employ gamification, the frequent use of metacognitive strategies suggests that learners exercised control over their learning processes, a key indicator of autonomy within Self-Determination Theory (Ryan & Deci, 2000).

However, weaker engagement in planning strategies, such as generating guiding questions and maintaining focus during lessons, suggests that autonomy is not uniformly developed across all metacognitive dimensions. This is consistent with Calafato's (2023) finding. According to Calafato (2023), learners adjust their strategies depending on the task and their learning habits. Even when they feel independent, they still need structured guidance to stay focused and plan strategies effectively.

Research Objective 2 (RO2): How do learners perceive their competence in language learning?

For RO2, learners of the Japanese language rated their competence as moderate to high. They built confidence through memory-based strategies, for instance, rehearsal, repetition, and keyword learning. These kinds of

strategies support Calafato's (2023) view. Calafato (2023) stated that self-efficacy must be protected in foreign language learning. On top of that, learners also used elaboration strategies, where they linked new material to what they already knew. This strategy reflects Ryan and Deci's (2000) idea that managing tasks increases competence. However, even though learners understand the basics well, they still struggle with greater skills like summarizing and evaluating evidence.

Research Objective 3 (RO3): How do learners perceive relatedness in their language learning?

The feedback for RO3 manifests positive relatedness (managing study environments, putting in effort, and seeking help). Even when interest was low, sustained motivation reflects Tursunbayevich's (2024) finding that supportive settings encourage long-term commitment. The fact that students prefer working with classmates rather than their seniors is consistent with Calafato's (2023) view (social strategies drive motivation). It is because peer connections shaped belonging and engagement, rather than formal hierarchies.

Research Objective 4 (RO4): Is there a relationship between autonomy and competence in language learning?
(H1: There is no relationship between autonomy and competence in language learning)

As for RO4, the findings show a strong positive correlation, thus rejecting the null hypothesis (H_0). This supports Ryan and Deci's (2000) research that autonomy and competence reinforce each other. Echoing Tursunbayevich (2024), independence in the classroom boosted achievement. Metacognitive self-regulation also helped learners to choose the right strategies (like deciding whether to rehearse, summarize, or ask for help). As a result, their autonomy or independence directly drives their competence (confidence and ability).

Research Objective 5 (RO5): Is there a relationship between competence and relatedness in language learning?
(H2: There is no relationship between competence and relatedness in language learning)

The results for RO5 reveal a positive relationship, also rejecting the null hypothesis (H_0). The findings suggest that learners with stronger skills collaborated more. The feeling of less anxiety in communication is consistent with Calafato (2023). From the SDT perspective, confidence helps the learners stay motivated to use support systems (classmates, instructors, study groups, etc) and be actively involved in learning.

Research Objective 6 (RO6): Is there a relationship between relatedness and autonomy in language learning?
(H3: There is no relationship between relatedness and autonomy in language learning)

The findings for RO6 show a strong connection. It rejects the null hypothesis (H_0). The supportive social environments encouraged independence, and it is in line with Ryan and Deci's (2000) claim. Peer interaction and feedback gave learners confidence, enabling them to study on their own, which supports Tursunbayevich's (2024) study. Autonomy, therefore, grows through social connection.

Research Objective 7 (RO7): Is there a significant difference between all strategies across academic fields? (H4: There is no significant difference between all strategies across academic fields)

For RO7, results show no major differences in competence and relatedness across fields. It supports SDT's claim that motivational needs are universal. Autonomy, however, varied across disciplines. It rejects the null hypothesis (H_0) for this variable. The findings suggest that teaching styles and departmental cultures influenced how much freedom learners experienced. It summarizes that competence and relatedness transfer easily across subjects. However, autonomy depends on the academic setting.

Implications and Suggestions for Future Research

This section discusses the value of the classroom, the impact of theory on LLS, and suggestions for future research. The theoretical framework is based on Ryan and Deci's (2000) SDT. The conceptual framework integrates SDT with Wenden and Rubin's (1987) LLS classification.

Implications for Teaching

For autonomy support, instructors can offer assignment choices, encourage reflection on progress, and implement learning journals or self-assessment sheets. And for metacognitive benefits, encouraging independence can help learners check understanding, change study habits, and set proactive goals. Regarding competency building, instructors should design scalable and increasingly difficult assignments with clear guidance to overcome a reliance on simple repetition. In terms of higher-order skills, targeted feedback gives learners the confidence to move from basic elaboration to critical summarization and questioning of evidence. While in terms of cultivating relevance, instructors can build a supportive community safety net using group work, peer discussions, and collaborative team projects. Finally, regarding interdisciplinary curriculum, course designers must standardize independence-building methods across all majors to eliminate significant differences between academic fields.

Theoretical Implications

The findings on the validation of SDT prove that autonomy, competence, and relatedness are interrelated and mutually reinforcing. For the manifestation of needs, the results show that learners' language strategy choices are real-world expressions of internal psychological needs. Regarding the effectiveness of the framework, the combination of SDT with Wenden and Rubin's (1987) model is confirmed as a very effective classroom analysis tool.

Suggestions for Future Research

Further research can be conducted in several ways. Firstly, conducting a longitudinal study by tracking learners over a long period of time to observe how their strategic choices and psychological needs develop over time. Secondly, carry out studies via qualitative methods, i.e., using interviews, diaries, or focus groups to uncover the deeper reasons behind the selection of certain strategies. Thirdly, intervention tests can also be conducted by conducting controlled trials of freedom-focused teaching methods or educational games to measure the direct motivational impact. Lastly, doing cross-contextual comparisons by comparing different languages, cultures, and school systems to confirm whether these behavioural patterns occur globally.

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