



Language Learning Strategies and Students' Thinking Styles Correlation in Learning English in EFL Classroom

Heriyanti Tahang ^{(1)*}, Hafsah Subhan ⁽²⁾, Muhaiminah Akib ⁽³⁾, Putri Andini ⁽⁴⁾

⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾ Universitas Muhammadiyah Sorong, Indonesia

* heriyantitahang@um-sorong.ac.id

Abstract

The study aimed to ascertain whether students' thought patterns and language learning practices were correlated. This study uses a quantitative research design called a correlation study. Only English education students in their fifth semester—45 of whom were still enrolled—were included in the study's population. The research sample only randomly took 30 out of 45 students actively registering using the sample collection technique. The data-gathering process involved the use of two questionnaires as the primary instruments. The Strategy Inventory for Language Learning (SILL) assesses students' language learning techniques, and the Thinking Style Inventory (TSI) analyses students' thinking patterns. Meanwhile, the researcher employed the Person Product Moment analysis technique to find the association between the two variables. The results showed no link or minimal correlation between language acquisition and students' thinking styles.

Keywords

thinking style, language learning strategies, correlation

Introduction

There is a lot of interest in education regarding the relationship between students' thinking styles and language learning strategies when learning English. Teachers and legislators need to be aware of how students approach language acquisition and how their cognitive styles affect the results of their lessons. The significance of English language learning strategies—in particular, metacognitive strategies—in controlling learning and boosting exposure to English input has been demonstrated by research (Mandasari & Oktaviani, 2018). This highlights how crucial strategic thinking is to learning a language. Furthermore, research has been done on the relationship between thinking styles, language learning strategies, and learning styles in the context of academic achievement and motivation to study English (Barruansyah, 2018; Nozari & Siamian, 2015). These results highlight the connections between learning strategies, language acquisition, and cognitive processes.

Additionally, investigations shed light on the specific language learning strategies employed by students and their impact on success in learning English (Gumartifa et al., 2020; Rustam et al., 2015; Tahang et al., 2018; Wael et al., 2022). Understanding the nuances of these strategies, such as metacognition, can provide valuable insights into effective language learning practices.

Furthermore, research (Muslem et al., 2022; Suryadi et al., 2022) specifically explored the relationship between students' thinking styles and language learning strategies, emphasizing the importance of this relationship in educational settings. Educators can tailor their approaches to better support students' language acquisition by examining how thinking styles influence language learning strategies.

In conclusion, the synthesis of these studies underscores the intricate relationship between students' language learning strategies and their thinking styles in learning English. By considering cognitive processes, metacognitive strategies, and individual learning preferences, educators can enhance language learning outcomes and support students in achieving proficiency in English. Based on the previously described background, this study aims to determine the correlation between language students' learning strategies and thinking styles in learning English in a foreign language (EFL) classroom context.

Language Learning Strategy

Many studies have explored various aspects of this topic regarding students' language-learning strategies in learning English. Metacognitive, social, affective, and cognitive strategies are crucial in learning a second language (Gumartifa et al., 2020). Students often employ these strategies to increase exposure to English input, manage their learning, and enhance academic achievement (Hayati & Usman, 2021; Mandasari & Oktaviani, 2018). Furthermore, using metacognitive strategies has been found to have a solid and positive impact on effective English language learning (Gumartifa et al., 2020).

The design of learning environments plays a significant role in facilitating language learning strategies. Competency-based learning environments that incorporate authentic tasks have been highlighted as essential in promoting successful language learning (AL Ghaniy, 2023; Marcellino, 2018; Tahang et al., 2018). Additionally, incorporating various tasks and activities targeting critical strategies for second language acquisition has been recommended to enhance students' success in learning English (Alhaysony, 2017).

Gender differences when applying language learning strategies have also been investigated. Studies have reported significant differences in the strategies employed by female and male students, emphasizing the importance of considering gender in language learning strategies and English achievement (Hamsinah, 2017). Moreover, course level, cultural background, age, and gender have influenced students' choice and preference for specific learning strategies (Hayati & Usman, 2021; Rahman Hz & Ginting, 2023). Hence, conducting a related language learning strategy in learning English in an EFL classroom is still essential to provide meaningful information to improve students' English outcomes.

Thinking Style

The research on students' thinking styles in learning English covers various aspects of learning styles, cognitive styles, and their impact on language acquisition. An expert (Peacock, 2001) defines learning styles as the natural and preferred ways students absorb and process a second language. Understanding students' learning styles is crucial for educators, as emphasized by research (Almarwani & Elshatarat, 2022), to tailor instructional methods to match students' unique ways of processing information.

The literature (Jiang et al., 2016) provides evidence suggesting that EFL learners can develop native-like analytic thinking through language learning, indicating a potential link between language acquisition and cognitive styles. A finding (Putri & Yusrizal, 2021) further supports this, highlighting that students' thinking styles can significantly influence their learning outcomes. Additionally, research (Rini et al., 2020) demonstrates that project-based learning and motivation can enhance students' critical thinking skills, emphasizing the importance of considering different learning styles in educational approaches.

Research explores the correlation between students' thinking styles and language learning strategies (Muslem et al., 2022), indicating a potential connection between how students approach language learning and their cognitive preferences. Furthermore, an investigation found a positive correlation between students' thinking styles and language learning strategies, suggesting an interconnection between these aspects in language learning (Mahmood et al., 2012).

The literature underscores the importance of understanding students' thinking styles when learning English. By acknowledging and accommodating diverse learning preferences, educators can create more effective and tailored students' language

learning experiences, ultimately enhancing their language acquisition and critical thinking skills.

The relationship between students' thinking style and their language learning strategies in learning English in an EFL classroom is a crucial area of research that has garnered significant attention in recent years. Studies have shown that students' learning strategies play a vital role in language acquisition (Nur & Yusuf, 2022). Understanding students' thinking styles and language learning strategies can affect curriculum design, student performance, and teacher training (Alnujaidi, 2018). Matching teaching styles with learners' preferences can positively impact the success of EFL students (Hamed & Almagbruk, 2021).

Research has highlighted the importance of creating a supportive and motivating environment in EFL classrooms to enhance interactive exchanges and social engagement, ultimately improving language learning outcomes (Putri & Yusrizal, 2021). Additionally, practical learning tools, such as learning strategies, are essential for enhancing the L2 learning process and improving language achievement (Al-Khaza'le, 2019). Furthermore, identifying language learning styles and student strategies can help teachers facilitate practical learning approaches (Al-Seghayer, 2021).

Studies have also explored the correlation between students' thinking style and their language learning strategies, emphasizing the significance of this relationship in managing learning processes (Suryadi et al., 2022) (Suryadi et al., 2022). Moreover, pedagogical strategies like languaging in EFL classrooms have been investigated to enhance interaction between teachers and students during the learning process (A. et al., 2019).

In conclusion, Investigating the relationship between students' thinking style and their language learning strategies in learning English in EFL classrooms is also crucial for enhancing language acquisition and academic performance. Understanding how students' learning styles align with their language learning strategies can provide valuable insights for curriculum development, student engagement, and teacher training (Alnujaidi, 2018).

Studies have shown that students' motivation, learning styles, and language learning strategies are interconnected factors that significantly impact their English language proficiency (Barruansyah, 2018). By addressing questions related to students' thinking style and their language learning strategies, educators can effectively enhance students' motivation and engagement in learning English (Barruansyah, 2018).

Furthermore, effective learning strategies, such as problem-based learning and mobile-assisted language learning applications, have improved students' critical thinking skills and language proficiency in EFL classrooms (Montafej et al., 2022). Implementing innovative teaching methods like the flipped classroom has also enhanced critical thinking and academic achievement among EFL learners (Yulian, 2021).

Moreover, the correlation between students' thinking styles and language learning strategies has been explored, highlighting the importance of understanding how these

factors influence language learning outcomes (Suryadi et al., 2022). By aligning teaching methods with students' learning preferences and styles, educators can create a more conducive learning environment that promotes effective language acquisition (Al-Khaza'leh & Mohammed, 2020).

In conclusion, investigating the relationship between students' language learning strategies and thinking styles in EFL classrooms is essential for optimizing language learning outcomes. By considering students' learning styles, preferences, and strategies, educators can tailor their teaching approaches to better support students' language acquisition and cognitive development in English language learning.

Method

This study employed quantitative research methodology since it aimed to elucidate and examine the association, presented the data in numerical format, and analyzed them using statistical techniques. The researcher identified the variables and sought correlations without altering them. In order to ascertain the findings of this study, the researcher employed a questionnaire to gather data for subsequent analysis.

Researchers employed statistical correlation analysis in this investigation. This study aims to establish the relationship between two factors, namely language learning strategies and students' thinking styles. The variable X represents language learning strategies, while the variable Y represents the student's thinking style.

This research was conducted at the University of Muhammadiyah Sorong. The researchers employed a random sampling procedure to ensure that each sample from the diverse population had an equal chance of being selected. Out of a total population of 45 students enrolled in Semester 5 with an English language education major, the researchers selected a sample size of only 30 individuals. This strategy's practicality was its advantage, as the research sample was predetermined.

The study instrument utilized was a questionnaire. The primary research instrument utilized in this study consisted of two distinct types of questionnaires. A questionnaire regarding language learning strategies and another one assessing thinking style preferences were translated into Indonesian to enhance comprehensibility and prevent any potential misinterpretation.

Language Learning Strategies (LLS)

Two significant variations of the SILL were commonly used as language learning strategy questionnaires. Version 5.0 of this product was tailored explicitly for English-speaking individuals learning foreign languages. It consisted of 80 items. The alternative version (version 7.0, consisting of 50 items) is specifically designed for non-native English speakers studying English as their second or foreign language. The study utilized SILL version 7.0 because the participants were learners of English as a Foreign Language (EFL) or English as a Second Language (ESL). The SILL questionnaire served the objective of assessing language learning strategies.

The SILL categorized language learning strategies into six assessment categories: memory strategies (9 items) for efficient recall of information, cognitive strategies (14 items) for applying mental processes, compensation strategies (6 items) for compensating for knowledge gaps, metacognitive strategies (9 items) for organizing and assessing learning, affective strategies (6 items) for controlling emotions, and social strategies (6 items) for learning in a social context.

Table 1. Parts of the SILL

Category	Item Total	Number
Memory strategies	9	1,2,3,4,5,6,7,8,9
Cognitive strategies	14	10,11,12,13,14,15,16,17,18,19,20,21,22,23
Compensation strategies	6	24,25,26,27,28,29
Metacognitive strategies	9	30,31,32,33,34,35,36,37,38
Affective strategies	6	39,40,41,42,43,44
Social strategies	6	45,46,47,48,49,50

Students Thinking style (STS)

The Thinking Style Inventory (TSI) developed by Sternberg, R.J., Wagner, R.K., and Zhang, L.F. was used to gather data on students' thinking styles. The questionnaire consisted of 65 items corresponding to 13 types of Thinking Styles. In TSI, the style of thinking was grouped into five types of assessment categories: 1) function (Legislative, Executive, and Judicial style) there are 15 items; 2) Forms (Hierarchical, Oligarchic, Monarchic, and Anarchic style) there are 20 items; 3) levels (Global and Local style) there were ten items; 4) Scopes (Internal and external style) there were ten items and Leanings (Liberal and Conservative style) there were ten items.

Table 2. Indicators of Thinking Style Inventory (TSI)

Variable	Dimension	Indicators	Number
Students Thinking Style	Function	1. Legislative styles	5,10,14,32,49
		2. Executive styles	18,11,12,31,39
		3. Judicial styles	20,23,42,51,57
	Forms	1. Hierarchical styles	4,19,33,25,56
		2. Oligarchic styles	27,29,30,52,59
		3. Monarchic styles	2,43,50,54,60
		4. Anarchic styles	16,21,35,40,47
	Levels	1. Global styles	7,18,38,48,61
		2. Local styles	1,6,24,44,62
	Scopes	1. Internal styles	9,15,37,55,63
		2. External styles	3,17,34,41,46
	Leanings	1. Liberal styles	45,53,58,64,65
		2. Conservative styles	13,22,26,28,36

Data from respondents was obtained by researchers using the results of the questionnaire. Data on students' thinking styles were calculated using Questionnaire B, and data on language learning strategies were calculated using Questionnaire A. This

method establishes the relationship between students' thinking styles and language learning strategies.

Before the researcher gave the questionnaire to students online via a Google form, the researcher had included an explanation of how to answer and information related to the questionnaire on the questionnaire. Afterwards, each student completed a questionnaire by opening the link shared in the previous group chat (Whatsapp). After answering the questions, students immediately sent their answers via the provided link. The data that has been filled in was described as a numeric data table and calculated using Excel. In addition, to determine whether the two variables were correlated, the researcher used SPSS version 22 as a valid data calculation.

In this section, the researcher described the procedures from the initial stage to the end. Stage 1 developing the topic: At this stage, the researcher looked for research titles that matched the researcher's interest by looking for problem topics. Stage 2: Conducting an initial search for information: The researcher sought information related to the title, which became research material. Stage 3: Looking for material: The researcher looked for material from various reliable sources related to the research title. Stage 4: Taking notes: At this stage, the researcher collected information related to the research in a small note to make it easy to conduct the research later. Stage 5 starting to write: At this stage, the researcher started to write with the help of various materials and information previously recorded in a notebook. Stage 6 correcting: At this stage, the researcher finished writing and then analyzed the writing to determine whether there were spelling errors or inappropriate sentences. Also, please see the source of the material that was taken.

Six strategies were employed, including memory-related, cognitive, compensatory, affective, metacognitive, and social. The questionnaire was adapted from Oxford. Subsequently, the study employed the Oxford (1990) scoring system to classify the language learning strategies into three distinct categories: High use (3.5-5.0), Medium use (2.5-3.4), and Low use (1.0-2.4), to capture the tactics that were utilized most frequently and those that are utilized less frequently.

Table 3. Frequency of Language Learning Strategies (LLS)

Frequency	Score
High use	3,5 – 5,0
Medium use	2,5 – 3,4
Low use	1,0 – 2,4

Questionnaire Students' Thinking Style (STS)

This questionnaire was adapted from Sternberg, R.J., Wagner, R.K., & Zhang, L.F. The theory of thinking styles is called the mental theory of self-government, which builds five dimensions and consists of 13 thinking styles, including 1) Function (Judicial, Executive, and Legislative Style), 2) Form (Anarchist, Monarchical, Oligarchic, and Hierarchical Style), 3) Rank (Local and Global Style), 4) Scope (External and Internal Style) and Italics

(Conservative and Liberal Style). Researchers identified it through academic achievement, which refers to the Grade Point Average (GPA). So the value provisions are if 3.51 - 4.00 'Very Good / Cum Laude,' values 3.01 - 3.50 'Good,' values 3.01 - 3.50 'Average,' values 2.01 - 2.50 'Poor,' values 0.00 - 2.00 'Very Poor / Fail.'

Table 4. Category of Students' Thinking Style (STS) Preferences

Thinking Style Category	Score Range
Very Good/Cum Laude	3.51 – 4.00
Good	3.01 – 3.50
Average	2.51 – 3.00
Poor	2.01 – 2.50
Very Poor/Fail	0.0

Correlation Analysis

The researcher employed Karl Pearson's correlation product moment to ascertain the correlation between two variables. The formula is:

$$r = \frac{N (\sum XY) - (\sum X) (\sum Y)}{\sqrt{[(\sum X^2) - (\sum X)^2][n (\sum Y^2) - (\sum Y)^2]}}$$

r = Person's Correlation Coefficient

N = Number of participants

X = Students Language Learning Strategies

Y = Student Thinking style

$\sum X$ = The Sum of Language Learning Strategies

$\sum Y$ = The Sum of Thinking Style

$\sum X^2$ = The Sum of Squared Language Learning Strategies

$\sum Y^2$ = The Sum of Squared Thinking Style

$\sum XY$ = The Sum of Multiplies Scores between X and Y

This formula calculates the product-moment correlation coefficient " r " between variables X and Y.

The researcher applied the following interpretation to understand the index scores of the correlation " r " product moment between variables X and Y (r_{xy}).

Table 5. The Coefficient Correlation

The Score of " r " Product Moment (r_{xy})	Interpretation
0.00 – 0.199	Very low correlation
0.20 – 0.399	Low correlation
0.40 – 0.599	Moderate correlation
0.60 – 0.799	High correlation
0.80 – 1.000	Very high correlation

Inferential Statistic

Inferential statistics, in a general sense, is a type of statistic that focuses on processing sample data to make decisions or conclusions about the population. Based on data processing analysis, researchers used correlation analysis. Correlation analysis is a statistical analysis that seeks to find the influence or correlation between two or more variables. Inferential statistics is based on probability and a randomly selected sample.

The Pearson product-moment (r) formula was employed to examine the correlation between the independent and dependent variables. The significant findings revealed the correlation between the two variables in the following manner:

1. If the p-value was less than 0.05 and the correlation was positive, then there was a significant correlation.
2. If the p-value was more than 0.05, the link was negative, and there was no correlation.

Results

This study examined the potential association between the Language Learning Strategy (variable X) and Thinking Style (variable Y). This study exclusively administered questionnaires to assess the link between Language Learning Strategy, as measured by the Strategy Inventory for Language Learners (SILL), and Thinking Style, as measured by the Thinking Style Inventory (TSI).

The initial questionnaire pertained to language learning strategies (X) and comprised 50 numerical items. The second questionnaire consisted of the students' thinking style (Y), which had 65 numbers. This questionnaire was created using Google Drive with the available links <https://forms.gle/1edjQfrjhmjaJnex6> for the language Learning Strategies and this link <https://forms.gle/DGLS15Vru44vgtxi7> for the Thinking Style. Then, it was distributed using the online group (WhatsApp) of students who were the participants of this research. This procedure must be done to avoid crowds when gathering, considering the COVID-19 pandemic has not ended.

This research described the data that has been obtained in the field. The first questionnaire data was the language learning strategy (dependent), which consisted of 50 questions; the second was the student's thinking style (independent), which consisted of 65 questions. So, the total questionnaire data was 115 questions with each questionnaire link. This questionnaire was distributed to 30 samples from 5th-semester Muhammadiyah University of Sorong students. In this section, the researcher presented an overview of the data from each data that has been obtained in the field.

Students' Language Learning Strategies

The SILL questionnaire was employed to determine the extent of usage of different techniques, categorized as high, medium, or low. This questionnaire comprised 50

statements, categorized into six parts according to the number of learning strategies: memory, cognitive, compensation, metacognitive, affective, and social.

To determine which strategy was used most frequently, Oxford divided it into three category scales; strategies were on the 'low' scale; in other words, the strategy was rarely used or rarely used. If the mean was 1.0 - 2.4, strategies were on the 'medium' scale. If the mean scores were at 2.5 - 3.4, it means that the strategy was sometimes used, and the strategy was on the 'high' scale of use. The strategy is often or almost always used if the mean score is on the 3.5 - 5.0 scale.

The mean value was calculated by adding all the scores for each strategy and dividing the total score by the number of statements for each category.

Table 6. Descriptive Statistics of Students' Language Learning Strategy

Language learning Strategies	N	Mean	Category
Memory-related strategies (Mem)	30	3.6	High use
Cognitive strategies (Cog)	30	3.7	High use
Compensatory strategies (Comp)	30	3.7	High use
Metacognitive strategies (Meta)	30	4.0	High use
Affective strategies (Aff)	30	3.7	High use
Social Strategies (Soc)	30	3.8	High use

The data from the descriptive analysis of language learning strategies in Table 4.1 indicated that strategic metacognitive values had a significantly higher average value than other learning strategies, with a mean score of 4.0 in the 'High Use' category. Simultaneously, the strategic memory exhibited a low mean value of 3.6.

The findings of this study were corroborated by previous research conducted by N. O. Lestari in 2015. The research revealed a tremendous average of 3.69 for metacognitive methods, indicating a 'high use' category. Similarly to the findings of a study (Negari & Solaymani, 2013), it was observed that the Metacognitive strategy had a high mean value of 3.82. This indicates that metacognitive strategies significantly influence students' language learning strategies in the classroom.

Students Thinking Style

The Thinking Style Inventory (TSI), derived from Stenberg, R.J., Wagner, R.K., & Zhang, L.F. (2007), was used to collect questionnaire data on students' thinking styles. The questionnaire consists of sixty-five statement items categorized into five categories, each further broken into different sorts of thinking styles.

The assessment was categorized into the following categories: 1) In terms of the function of government, including legislative, executive, and judicial styles, there were 15 statement items. 2) Regarding the form of government, including hierarchy, oligarchy, monarchy, and anarchist styles, there were 20 statement items. 3) In terms of the level of government, including global and local styles, there were 10 statement items. 4) Regarding the scope of government, including internal and external styles, there were

10 statement items. Lastly, in terms of political leanings, including liberal and conservative styles, there were 10 statement items.

The researchers detected it by assessing academic achievement, precisely measured by the Grade Point Average (GPA). The criteria for categorizing the value are as follows: a score between 3.51 and 4.00 is considered 'Very Good / Cum Laude,' a score between 3.01 and 3.50 is considered 'Good,' a score between 2.51 and 3.00 is considered 'Medium,' a score between 2.01 and 2.50 is considered 'Poor,' and a score between 0.00 and 2.00 is considered 'Very Bad / Failed.' In the initial questionnaire, the mean value for determining the category was calculated by summing up all the scores for each strategy and then dividing by the total score divided by the number of statements in each category.

Table 7. Descriptive Statistic of Students' Thinking Style

Dimension	Thinking Style	N	Mean	Category
Function	Legislative	30	3.54	Very good
	Executive	30	3.55	Very good
	Judicial	30	3.36	Good
Form	Hierarchy	30	3.46	Good
	Oligarchy	30	3,5	Very good
	Monarchy	30	3.45	Good
	Anarchist	30	3.33	Good
Levels	Global	30	3.18	Good
	Local	30	3.45	Good
Scope	Internal	30	3.06	Good
	External	30	3.7	Very good
Leanings	Liberal	30	3,5	Very good
	Conservative	30	3.44	Good

The signs from the dimension were characterized by high and low values, potentially impacting the learning standards of students with varied thinking styles. This is evident from the table of findings derived from the descriptive statistics on students' thinking styles. The study results revealed a low indicator value 3.06 in the internal dimension scope. Conversely, the dimension scope of the outside indication portion had a high value, namely a mean value of 3.7.

The Result of the Hypothesis Analysis

The researcher employed SPSS 22 software to assess the questionnaire findings. They utilized a person's product-moment correlation analysis to ascertain the presence of a correlation between students' thinking patterns and language learning methodologies. Hypothesis testing was employed to determine the presence of a correlation between the independent and dependent variables. This hypothesis was evaluated using a significance threshold of 5%. A strong correlation was present between the independent and dependent variables when the significance level was below 0.05. Conversely, if the significance value exceeded 0.05, there was no correlation between the two variables.

Table 8. Summary of Product Moment Correlation Analysis Results

Variables	Significance Value (Sig.2-tailed)	
	Language Learning Strategies	Students Thinking Style
Language Learning Strategies		.367
Students Thinking Style	.367	

This level of correlation indicates a relatively low existence of two variables. The result of the conventional analysis of the product-moment value, with a significance level below 0.05, was 0.36, suggesting a weak or insignificant correlation between the two variables. Therefore, a negative link was observed between students' thinking styles and their language learning practices among English Language Education students at Universitas Muhammadiyah Sorong.

Discussion

This study's findings suggested no correlation between language learning methodologies and students' thinking patterns in the English Education Department. Using Pearson product-moment correlation analysis, it has been determined that the significance level (two-tailed) was present. Alternatively, the correlation coefficient (r) was 0.36. If the significance value was more than 0.05, it indicated a negative direction of the link between the two variables and no significant relationship between them. When considering the r -value, the link between the two variables was weak, with a correlation coefficient 0.17.

The results also showed that the statistical descriptive analysis for language learning strategies for the highest score was a metacognitive strategy with a mean value of 4.0 in the 'High use' category and the lowest value in Strategy memory with a mean value of 3.6 in the 'High Use' category. Meanwhile, in statistical descriptive analysis for students' thinking styles, the highest score was in the External style (dimension scope) with a mean value of 3.7 in the 'Very Good' category and the lowest in the Internal style (dimension scope) with a mean value of 3.06 in the 'Good' category.

In several previous studies, a researcher (N. O. Lestari, 2015) revealed a high mean score for metacognitive strategies with a mean value of 3.69 in the 'high use' category. In addition, the research results (Negari & Solaymani, 2013) also found a high statistical descriptive value for the metacognitive strategy with a mean value of 3.82. It revealed that metacognitive strategies played an active role in students' language learning strategies in the classroom.

In addition to the same research results, some studies contradicted the results obtained from such research (Sriwarsiti, 2017). In his research, the highest value of thinking style was found in the liberal style, with a value of 13.98%. In this study, the highest mean value was an external style.

A study was conducted (Farih, 2018) to investigate the correlation between Language Learning Strategies and Students' Thinking Styles. The correlation coefficient was found to be 0.606. This was classified as a strong positive correlation (0.60-0.799) at the fourth level, indicating a high correlation between the two variables. The p-value was 0.000, indicating a statistically significant association between the two variables. The correlation coefficient obtained in this study contradicted the findings of previous research (Farih, 2018) since it had a value of 0.17. This fell under the lowest threshold (Farih, 2018) and indicated a very weak correlation, indicating a low amount of association between the two variables. The p-value was 0.36, indicating that the correlation between the two variables was not statistically significant.

Ultimately, there was no discernible association between language learning strategies and students' thinking processes at the Universitas of Muhammadiyah Sorong. While both characteristics directly or indirectly influenced enhancing the learning process of a foreign language, language learning methodologies also indirectly impacted language performance through students' cognitive processes. To enhance the development of language learning processes, it was crucial to motivate students to utilize their cognitive preferences more efficiently, thereby enhancing their proficiency in foreign languages.

The literature lacked agreement about the relationship between students' language learning strategies and their thinking patterns in the EFL classroom. While several studies proposed a connection between language learning strategies and students' thinking styles (Suryadi et al., 2022), other studies indicated that there might not be a substantial association (Weizheng, 2019). The study (Suryadi et al., 2022) revealed no statistically significant relationship between English language learning strategies and students' thinking styles. In contrast, research (Weizheng, 2019) examined the communication accommodation tactics utilized in EFL courses, specifically emphasizing interaction patterns rather than the direct relationship between language learning strategies and thinking styles.

Furthermore, scholarly studies (Alnujaidi, 2018; Balci, 2017) emphasized the significance of comprehending students' learning preferences and how they related to language learning strategies. The study conducted (Alnujaidi, 2018) highlighted the importance of recognizing the learning styles and language strategies of English as a Foreign Language (EFL) students. These factors had an impact on curriculum development and student achievement. The literature (Balci, 2017) indicated a potential indirect association between language learning tactics and thinking styles, as students' learning strategies are connected to their learning styles.

Conclusion

The researcher drew multiple conclusions to tackle the research problem, relying on the findings from the data analysis. The research showed no statistically significant relationship between language learning methodologies and student thinking styles among fifth-semester students in the English Education Department at Muhammadiyah University of Sorong. The analysis yielded a correlation coefficient (r count) value of 0.171 and a significance value (p) of 0.367, demonstrating the relationship. The p-value of 0.367

exceeded the significance level of 0.05. Therefore, the relationship between language learning methodologies and students' thinking patterns was insignificant.

The outcome of a language learning approach that held significant importance was implementing the metacognitive technique. This demonstrated that students with a dominant personality preferred tactics that enhanced their self-assurance, accomplishments, and autonomy, particularly in verbal communication abilities. This method was highly effective for students who experienced a loss of learning focus due to excessive incoming information, while external factors predominantly influenced their thinking styles. This study revealed that students generally have extroverted characteristics, such as being sociable and focused on others. They frequently exhibited heightened empathy towards others and actively sought more social interactions and experiences. Implementing outdoor learning strategies improved the quality of students' language learning experiences.

The findings of this study were advantageous for educators, particularly those teaching at the Universitas of Muhammadiyah Sorong. Utilizing metacognitive learning strategies has the potential to enhance the calibre of student learning in the acquisition of foreign languages. In addition, instructors could assist students in identifying an appropriate cognitive approach to facilitate modifications in acquiring a foreign language.

The researcher recommended implementing the research findings and discussion for English students. Nevertheless, the findings of this study revealed no discernible link between language learning methodologies and students' thinking patterns. To achieve better results in English language learning, students must focus on other crucial factors that can elevate their performance beyond the data collected. Prior. At the very minimum, students must possess a language learning approach and thinking style that will assist them in their future foreign language learning endeavours to enable students to recognize and cultivate their potential. Furthermore, it was crucial to allow the education that was offered.

As an exemplary teacher, he was responsible for identifying the cognitive types of his students. The students exhibited diverse thinking styles, each with its unique characteristics. Consequently, lecturers can employ more impactful language learning tactics.

Furthermore, this discovery has the potential to offer various benefits for future researchers. Moreover, it was expected that this research may be a beneficial reference for their investigations, irrespective of whether the conclusions of this study were negative or lacked association. Researchers suggested that further inquiry may reveal a direct correlation between language learning methodologies and students' cognitive types.

References

- Al Ghaniy, R. M. (2023). FLSP Students' Anxiety and Their Learning Strategies in Speaking Class. *Celtic: A Journal of Culture*, 10(1), 81–96. <https://doi.org/10.22219/celtic.v10i1>
- Alhaysony, M. (2017). Language Learning Strategies Use by Saudi EFL Students: The Effect of Duration of English Language Study and Gender. *Theory and Practice in Language Studies*, 7(1), 18–29. <https://doi.org/10.17507/tpls.0701.03>
- Al-Khaza'le, B. A. (2019). Exploring Language Learning Strategies of Saudi EFL learners at Shaqra University, Saudi Arabia. *Advances in Language and Literary Studies*, 10(4), 63–71. <https://doi.org/10.7575/aiac.all.v.10n.4p.63>
- Al-Khaza'leh, B., & Mohammed, I. A. (2020). Matching The Students' Learning Preferences with Teacher's Teaching Methods: The Case of International EFL Students In Malaysia. *Journal of Education in Black Sea Region*, 5(2), 42–50. <https://doi.org/10.31578/jeb.v5i2.198>
- Almarwani, A. M., & Elshatarat, R. (2022). Understanding Learning Styles in Undergraduate Nursing Programs of the Kingdom of Saudi Arabia: An Integrative Literature Review. *The Open Nursing Journal*, 16(1), 1–11. <https://doi.org/10.2174/18744346-v16-e2209260>
- Alnujaidi, S. (2018). The Relationship Between EFL Students' Perceptual Learning Styles and Their Language Learning Strategies in Saudi Arabia. *International Journal of English Linguistics*, 9(1), 69–78. <https://doi.org/10.5539/ijel.v9n1p69>
- Al-Seghayer, K. (2021). Characteristics of Saudi EFL Learners' Learning Styles. *English Language Teaching*, 14(7), 82–94. <https://doi.org/10.5539/elt.v14n7p82>
- Barruansyah, R. T. (2018). The Correlation Between Learning Styles, Language Learning Strategies, and English Learning Motivation of the Sixth Semester Students of STIBA. *J-SHMIC: Journal of English for Academic*, 5(1), 49–63. [https://doi.org/10.25299/jshmic.2018.vol5\(1\).1050](https://doi.org/10.25299/jshmic.2018.vol5(1).1050)
- Farih, I. N. (2018). *The Correlation between Language Learning Strategies and Students' Thinking Styles (A Study of the Ninth Semester of English Education Department of IAIN Salatiga in Academic)*. <https://e-repository.perpus.uinsalatiga.ac.id/4660/>
- Gumartifa, A., Agustiani, I. W. D., & Aditiya, F. (2020). Differences of Language Learning Strategies in English as a Second Language Classroom of Social Collage Students. *Journal of English Educational Study (JEES)*, 3(2), 119–128. <https://doi.org/10.31932/jees.v3i2.733>
- Hamed, M., & Almabruk, A. (2021). Perceptual Learning Style Preferences of English Major Libyan University Students and their Correlations with Academic Achievement. *Advances in Language and Literary Studies*, 12(5), 1–5. <https://doi.org/10.7575/aiac.all.v.12n.5.p.1>
- Hamsinah. (2017). The Relationship and Differences in Gender Between Language Learning Strategies and Students' English Achievement in Senior Secondary School. *ELITE: English and Literature Journal*, 4(1), 97–108. <https://doi.org/10.24252/elite.v4i1a9>
- Hayati, N., & Usman, U. (2021). The Study of Strategies in Learning English and English Academic Achievement. *ENGLISH FRANCA: Academic Journal of English Language and Education*, 5(2), 347–367. <https://doi.org/10.29240/ef.v5i2.3364>

- Jiang, J., Ouyang, J., & Liu, H. (2016). Can learning a foreign language foster analytic thinking?-Evidence from Chinese EFL learners' writings. *PLoS ONE*, 11(10), 1–17. <https://doi.org/10.1371/journal.pone.0164448>
- Lestari, A. P., & Pratolo, B. W. (2019). Strategies of the English Teachers in Islamic Boarding School (IBS). *1st International Conference on Progressive Civil Society (IconProCS 2019)*, 95–100. <https://doi.org/10.2991/iconprocs-19.2019.19>
- Lestari, N. O. (2015). *Language Learning Strategies of English Education Department of FITK (A Comparison Descriptive Study at the Fourth and the Sixth Students)*. [https://repository.uinjkt.ac.id/dspace/bitstream/123456789/29624/3/NURLIANAO KTAIVIANI%20LESTARI%20-FITK.pdf](https://repository.uinjkt.ac.id/dspace/bitstream/123456789/29624/3/NURLIANAO%20TAVIANI%20LESTARI%20-FITK.pdf)
- Mahmood, K. B., Hossein, H., & Shahrooz, J. (2012). The relationship between language learning strategies and thinking styles of Iranian EFL learners. *International Journal of Research Studies in Language Learning*, 2(3), 1–18. <https://doi.org/10.5861/ijrsl.2012.186>
- Mandasari, B., & Oktaviani, L. (2018). English Language Learning Strategies: an Exploratory Study of Management and Engineering Students. *Premise: Journal of English Education and Applied Linguistics*, 7(2), 61–78. <https://doi.org/10.24127/pj.v7i2.1581>
- Marcellino, M. (2018). English Language Teaching in Indonesia: A Continuous Challenge in Education and Cultural Diversity. *TEFLIN Journal*, 19(1), 57–70. <https://doi.org/10.15639/teflinjournal.v19i1/57-69>
- Montafej, J., Lotfi, A. R., & Chalak, A. (2022). The Effectiveness of Hybrid and Pure Problem-Based Learning in the Productive Skills and Critical Thinking of Iranian Undergraduate Students through MALL Application. *Education Research International*, 2022(1), 1–11. <https://doi.org/10.1155/2022/1531210>
- Muslem, Wati, S., & Sagita, D. S. (2022). The Correlation Between Language Learning Strategies and Students' Thinking Styles of IAIN Langsa. *JL3T (Journal of Linguistics, Literature and Language Teaching)*, 8(2), 137–149. <https://doi.org/10.32505/jl3t.v8i2.4880>
- Negari, G. M., & Solaymani, M. (2013). The Relationship among Autonomy, Thinking Styles and Language Learning Strategy Use in Iranian EFL Learners. *International Journal of Linguistics*, 5(1), 332–347. <https://doi.org/10.5296/ijl.v5i1.3320>
- Nur, S., & Yusuf, F. (2022). Gender Differences in the Strategy Inventory for Language Learning (SILL). *IJEE (Indonesian Journal of English Education)*, 9(1), 176–191. <https://doi.org/10.15408/ijee.v9i1.25671>
- Peacock, M. (2001). Match or mismatch? Learning styles and teaching styles in EFL. *International Journal of Applied Linguistics*, 11(1), 1–20. <https://doi.org/10.1111/1473-4192.00001>
- Putri, A., & Yusrizal, E. A. H. E. (2021). The Impact of Learning and Thinking Styles on the Learning Outcomes of High School Students. *Proceedings of the 2nd International Conference on Science, Technology, and Modern Society*, 285–290. <https://doi.org/10.2991/assehr.k.210909.064>
- Rahman Hz, B. I., & Ginting, R. S. B. (2023). Unveiling the Diverse Language Learning Strategy of Indonesian EFL Twins: A Case Study. *Celtic: A Journal of Culture, English Language Teaching, Literature and Linguistics*, 10(2), 260–278. <https://doi.org/10.22219/celtic.v10i2.28802>

- Rini, D. S., Adisyahputra, & Sigit, D. V. (2020). Boosting student critical thinking ability through project based learning, motivation and visual, auditory, kinesthetic learning style: A study on Ecosystem Topic. *Universal Journal of Educational Research*, 8(4A), 37–44. <https://doi.org/10.13189/ujer.2020.081806>
- Rustam, N. S., Hamra, A., & Weda, S. (2015). The Language Learning Strategies Used by Students of Merchant Marine Studies Polytechnics Makassar. *ELT Worldwide*, 2(2), 77–105. <https://doi.org/10.26858/eltww.v2i2.1689>
- Sriwarsiti, E. (2017). *The Correlation Between Thinking Style and Academic Achievement of Undergraduate English Education Study Program Students of UIN Raden Fatah Palembang*. <https://repository.radenfatah.ac.id/1536/>
- Suryadi, R., Syamsinar, Simpuru, I., & Firdayana. (2022). The Correlation Between English Language Learning Strategies and Students' Thinking Style at The Second Grade of MAN 1 Kolaka. *Tamaddun*, 21(1), 11–22. <https://doi.org/10.33096/tamaddun.v21i1.96>
- Tahang, H., Sarmin, Yuliana, & Taslim. (2018). Language Learning Strategies Employed by Successful Students in Developing English-Speaking Performance. *Qalam: Jurnal Ilmu Kependidikan*, 7(1), 56–66. <https://doi.org/10.33506/jq.v7i1.354>
- Wael, A., Tahang, H., Hasanudin, & Siregar, I. (2022). Students' Sensory referred on Learning Styles at English Education Department of Universitas Muhammadiyah Sorong. *Jurnal Ilmu Kependidikan*, 11(1), 22–29. <https://ejournal.um-sorong.ac.id/index.php/jq/article/view/1896>
- Weizheng, Z. (2019). Teacher-Student Interaction in EFL Classroom in China: Communication Accommodation Theory Perspective. *English Language Teaching*, 12(12), 99–102. <https://doi.org/10.5539/elt.v12n12p99>
- Yulian, R. (2021). The flipped classroom: Improving critical thinking for critical reading of EFL learners in higher education. *Studies in English Language and Education*, 8(2), 508–522. <https://doi.org/10.24815/siele.v8i2.18366>