

The Influence of Verbal-Linguistic Intelligence and Student-Centered Learning Strategies on Grammar Mastery

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ABSTRACT

Grammar mastery remains one of the most challenging aspects of English language learning for learners of English as a foreign language. Although both instructional practices and learner characteristics are considered important determinants of grammar achievement, studies integrating these factors within a single framework remain limited. This study aimed to examine the influence of verbal-linguistic intelligence and student-centered learning strategies on students' grammar mastery. A quantitative correlational design was employed involving one hundred and four members of the English Club at the University of Muhammadiyah Lampung selected through the Slovin formula. Data were collected using a grammar test and questionnaires measuring verbal-linguistic intelligence and student-centered learning. The data were analyzed using Structural Equation Modeling with the Partial Least Squares approach. The findings revealed that verbal-linguistic intelligence had a positive and significant effect on grammar mastery. Student-centered learning also demonstrated a positive and significant effect and contributed more strongly to grammar mastery than verbal-linguistic intelligence. These results indicate that both learners' linguistic abilities and active participation in the learning process play important roles in improving grammar achievement. This study contributes to a better understanding of the cognitive and instructional factors influencing grammar mastery and provides practical implications for designing more effective grammar instruction.

Keywords: *Verbal-Linguistic Intelligence; Student-Centered Learning; Grammar Mastery; English as a Foreign Language; English Language Learning*

INTRODUCTION

Grammar mastery is widely recognized as one of the fundamental components of English language learning, particularly in English as a Foreign Language (EFL) contexts. Grammar serves not merely as a set of linguistic rules but as a framework that enables learners to communicate meanings accurately and effectively in both spoken and written forms. Adequate grammatical competence contributes significantly to the development of other language skills, including speaking, writing, reading, and listening. However, numerous studies have reported that grammar remains one of the most challenging aspects of language acquisition for EFL learners, especially in countries where English is taught as a foreign language, including Indonesia (Lin, 2021). Limited grammar proficiency often leads to errors in sentence construction, difficulties in expressing ideas accurately, and reduced confidence in using English for communication.

The persistent challenges associated with grammar learning have prompted educators and researchers to explore various pedagogical approaches that can enhance learners' grammatical competence. Traditionally, grammar instruction has been dominated by teacher-centered approaches, where learners assume a relatively passive role in the learning process. Such approaches frequently emphasize memorization of grammatical rules rather than meaningful engagement with language use. In contrast, contemporary educational paradigms advocate for instructional models that actively involve learners in the construction of knowledge. One such

approach is Student-Centered Learning (SCL), which positions learners as active participants in the learning process and encourages autonomy, collaboration, critical thinking, and problem-solving skills. Within grammar instruction, SCL provides opportunities for learners to explore grammatical structures through authentic language use, collaborative activities, discussions, and reflective learning experiences. Previous studies have demonstrated that student-centered instructional practices positively influence language achievement, learner engagement, and grammatical development (Buditama, 2017).

Grammar acquisition in English as a Foreign Language (EFL) can be understood through the perspective of Skill Acquisition Theory, which posits that grammatical competence develops gradually through three interrelated stages: declarative knowledge, procedural knowledge, and automatization. At the initial stage, learners acquire explicit knowledge of grammatical rules through instruction and conscious understanding. Subsequently, repeated practice in meaningful communicative contexts enables learners to proceduralize this knowledge until grammatical forms can be produced more accurately and fluently with minimal conscious effort (DeKeyser, 2020). From this perspective, grammar learning is not merely the memorization of rules but a progressive cognitive process in which explicit knowledge is transformed into automatic language performance through sustained practice and interaction. Complementing this cognitive perspective, the distinction between explicit and implicit grammar knowledge provides an important theoretical foundation for understanding grammar mastery. Explicit grammar knowledge refers to learners' conscious awareness of grammatical rules and their ability to verbalize these rules, whereas implicit knowledge reflects the intuitive and automatic use of grammar during authentic communication (Ellis, 2022). Effective grammar instruction therefore requires learning environments that facilitate both forms of knowledge. Student-centered learning encourages learners to actively engage with language through discussion, collaboration, and problem-solving activities, thereby promoting the proceduralization of explicit knowledge into implicit competence. At the same time, learners with stronger verbal-linguistic intelligence are generally more capable of recognizing linguistic patterns, analyzing grammatical structures, and integrating explicit grammatical knowledge into meaningful language use. Consequently, the present study is theoretically grounded in the assumption that grammar mastery emerges through the interaction between learners' cognitive abilities and learning experiences that support the gradual acquisition and automatization of grammatical knowledge.

Beyond pedagogical factors, individual learner characteristics also play a crucial role in determining success in grammar learning. One of the most influential learner-related factors is verbal-linguistic intelligence. Grounded in Gardner's Theory of Multiple Intelligences, verbal-linguistic intelligence refers to an individual's capacity to effectively understand, manipulate, and utilize language for communication and learning purposes. Learners with high levels of verbal-linguistic intelligence tend to exhibit stronger abilities in interpreting linguistic patterns, acquiring vocabulary, comprehending language structures, and expressing ideas coherently. In language learning contexts, these abilities are particularly relevant to grammar acquisition, as grammatical competence requires learners to recognize, analyze, and apply linguistic rules appropriately. Empirical evidence suggests that verbal-linguistic intelligence is positively associated with various language skills, including reading comprehension, writing proficiency, and academic communication (Indra Nur Rahman, 2022). Although substantial research has examined the effects of instructional strategies and learner characteristics on language learning outcomes, existing studies have generally investigated these factors independently. Research on Student-Centered Learning has predominantly focused on its effectiveness in improving grammar achievement and overall language performance without adequately considering differences in learners' cognitive characteristics. Conversely, studies examining verbal-linguistic intelligence have primarily explored its relationship with reading, writing, and communication skills, while its specific contribution to grammar mastery has received comparatively limited attention. Furthermore, empirical

investigations integrating both verbal-linguistic intelligence and Student-Centered Learning strategies within a single analytical framework to explain grammar mastery remain scarce in the EFL literature.

This gap in the literature highlights the need for a more comprehensive understanding of both internal and external factors influencing grammar achievement. Verbal-linguistic intelligence represents an internal cognitive resource that facilitates language processing and grammatical understanding, whereas Student-Centered Learning serves as an external instructional factor that fosters active engagement and meaningful learning experiences. Examining the combined influence of these variables may provide deeper insights into the mechanisms underlying successful grammar acquisition among EFL learners.

Therefore, the present study aims to investigate the influence of verbal-linguistic intelligence and Student-Centered Learning strategies on students' grammar mastery. Specifically, the study seeks to determine the individual and simultaneous contributions of these variables to learners' grammatical competence. The findings are expected to contribute to the growing body of knowledge on language learning by providing empirical evidence regarding the interaction between learner intelligence and instructional strategies. Furthermore, the results may offer practical implications for English language educators in designing more effective grammar instruction that accommodates learners' cognitive characteristics while promoting active participation in the learning process.

LITERATURE REVIEW

Grammar Mastery in English Language Learning

Grammar mastery is widely acknowledged as a fundamental component of language competence that enables learners to comprehend and produce language accurately and effectively. In the context of English as a Foreign Language (EFL), grammatical competence serves as a critical foundation for successful communication because it directly influences learners' ability to construct meaningful sentences, interpret messages, and express ideas appropriately. According to Larsen-freeman (2018) grammar should not be viewed merely as a collection of linguistic rules but as an interconnected system involving form, meaning, and use within communicative contexts.

Despite the increasing emphasis on communicative approaches in language instruction, grammar continues to present significant challenges for EFL learners. Research has indicated that learners frequently experience difficulties with tense usage, subject-verb agreement, sentence structure, and the interpretation of complex grammatical relationships within discourse (Sato & Loewen, 2019). These challenges are often associated with limited opportunities for meaningful language practice, insufficient corrective feedback, and instructional approaches that emphasize passive knowledge acquisition rather than active language use.

Recent studies further suggest that grammar achievement is influenced not only by instructional practices but also by various learner-related factors, including cognitive abilities, motivation, learning strategies, and linguistic aptitude (Pawlak, 2021). Consequently, understanding grammar mastery requires a comprehensive examination of both internal learner characteristics and external instructional factors that shape the language learning process.

Although English grammar encompasses a wide range of structures, including conditionals, modal auxiliaries, relative clauses, article usage, and complex sentence patterns, the operationalization of grammar mastery in the present study was intentionally limited to tenses, passive voice, and direct indirect speech. These grammatical domains were selected because they represent core components of English grammar that require learners to integrate morphological accuracy, syntactic knowledge, and contextual language use. Mastery of these structures demands not only the recognition of grammatical rules but also the ability to apply

them appropriately across different communicative situations. Larsen-Freeman (2015) argues that grammar should be viewed as the integration of form, meaning, and use, rather than as isolated rule memorization. Similarly, Ellis (2022) emphasizes that grammatical competence develops through learners' ability to process and apply grammatical structures that involve both explicit knowledge and contextual language use. Within Indonesian EFL contexts, these three grammatical categories are consistently emphasized in secondary and tertiary English curricula because they constitute essential foundations for developing broader grammatical competence. Therefore, although this operationalization does not encompass every dimension of English grammar, it provides a theoretically justified and pedagogically relevant representation of grammar mastery for the purposes of investigating the relationships between verbal-linguistic intelligence, student-centered learning, and grammatical performance. To acknowledge the multidimensional nature of grammar, the findings of this study should be interpreted within the boundaries of these selected grammatical domains rather than as representing comprehensive grammatical competence. Future studies are therefore encouraged to employ broader grammar assessments incorporating additional structures such as conditionals, modal verbs, relative clauses, article systems, clause combinations, and other advanced grammatical features to obtain a more comprehensive evaluation of learners' grammatical proficiency (Purpura, 2014; Nassaji & Fotos, 2022).

Verbal-Linguistic Intelligence and Grammar Mastery

Verbal-linguistic intelligence is one of the core dimensions of Gardner's Theory of Multiple Intelligences. It refers to an individual's capacity to effectively understand, manipulate, and utilize language in both spoken and written forms. Individuals with strong verbal-linguistic intelligence typically demonstrate advanced abilities in vocabulary acquisition, language comprehension, verbal reasoning, and linguistic expression (Rousseau, 2021).

Within the context of language learning, verbal-linguistic intelligence is considered an important predictor of academic success because it facilitates the processing and organization of linguistic information. Learners possessing high levels of verbal-linguistic intelligence are generally more capable of recognizing language patterns, interpreting syntactic structures, understanding grammatical relationships, and applying linguistic rules in communication. (Indra Nur Rahman, 2022) found that verbal-linguistic intelligence significantly contributes to learners' understanding of linguistic concepts and their ability to perform language-related academic tasks effectively.

Similarly, Putu & Widiastuti (2024) reported that learners with stronger verbal-linguistic intelligence demonstrate superior abilities in identifying syntactic patterns, understanding grammatical structures, and applying language rules across different communicative contexts. These findings suggest that verbal-linguistic intelligence may play a crucial role in grammar acquisition, as mastering grammar requires learners to analyze, interpret, and internalize complex linguistic systems.

However, a critical examination of the literature reveals that most existing studies have primarily focused on the relationship between verbal-linguistic intelligence and language skills such as reading comprehension, writing proficiency, and academic communication. Comparatively limited attention has been given to its direct influence on grammar mastery. This gap highlights the need for further empirical investigation into the extent to which verbal-linguistic intelligence contributes to learners' grammatical competence in EFL settings.

Student-Centered Learning Strategy in Grammar Instruction

The shift from teacher-centered instruction to student-centered learning has become a defining characteristic of twenty-first-century education. Student-Centered Learning (SCL) places learners at the center of the educational process and encourages them to actively construct knowledge through meaningful learning experiences (Fahraeus, 2013).

In English language education, SCL promotes active engagement, collaboration, critical thinking, and problem-solving through authentic language activities. Unlike traditional instructional approaches that emphasize knowledge transmission from teacher to learner, SCL encourages learners to explore, discover, and apply grammatical concepts through interactive learning experiences such as group discussions, project-based learning, problem-solving activities, and reflective practices.

A growing body of research supports the effectiveness of Student-Centered Learning in enhancing language learning outcomes. Reski et al. (2023) found that student-centered instructional practices significantly improved learners' grammar achievement by providing greater opportunities for language exploration and communicative practice. Rombepajung et al., (2026) demonstrated that student-centered grammar instruction increased learner engagement and facilitated deeper conceptual understanding of grammatical structures. Nevertheless, the effectiveness of Student-Centered Learning appears to vary across learners. Several studies suggest that the success of SCL implementation is influenced by individual learner characteristics, including motivation, cognitive abilities, and learning preferences (Kember & Corbett, 2016). Therefore, the impact of Student-Centered Learning on grammar mastery may not operate independently but may interact with learners' cognitive attributes and linguistic capabilities.

Synthesis of Previous Studies and Research Gap

The reviewed literature indicates that verbal-linguistic intelligence and Student-Centered Learning represent two important factors that potentially influence grammar mastery. From a theoretical perspective, verbal-linguistic intelligence functions as an internal cognitive resource that facilitates language processing and grammatical understanding, whereas Student-Centered Learning serves as an external instructional factor that promotes active participation, knowledge construction, and meaningful engagement in learning activities.

Despite the growing body of literature addressing these variables, several limitations remain evident. First, most studies examining verbal-linguistic intelligence have concentrated on reading, writing, and communication skills rather than grammar mastery. Second, research on Student-Centered Learning has primarily focused on evaluating instructional effectiveness without adequately considering learners' cognitive characteristics as potential determinants of learning outcomes. Third, empirical studies integrating verbal-linguistic intelligence and Student-Centered Learning within a single conceptual framework to explain grammar mastery among EFL learners remain scarce.

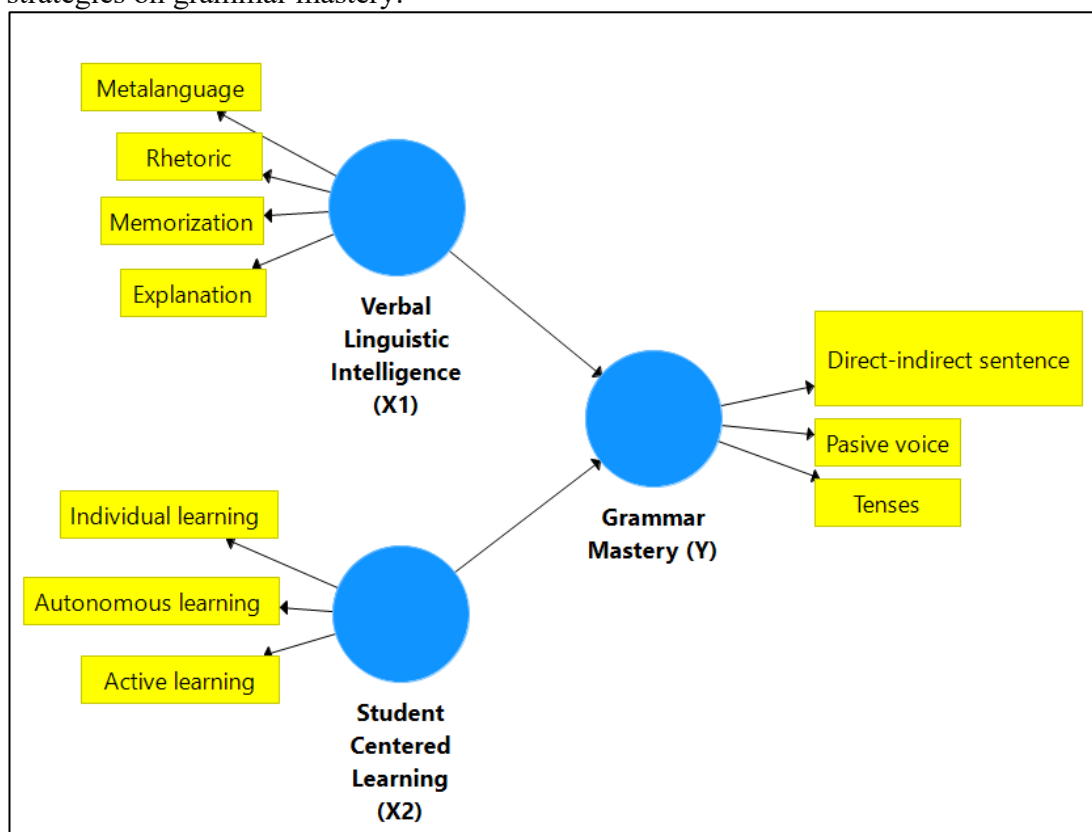
These limitations reveal a significant gap in the literature regarding the combined influence of cognitive and instructional factors on grammar achievement. The relationship between verbal-linguistic intelligence and Student-Centered Learning in shaping learners' grammatical competence has not yet been comprehensively explored. Consequently, further research is necessary to examine how these variables individually and collectively contribute to grammar mastery.

Therefore, the present study seeks to investigate the influence of verbal-linguistic intelligence and Student-Centered Learning strategies on students' grammar mastery. By examining both internal learner characteristics and external instructional factors simultaneously, this study aims to provide a more comprehensive understanding of the determinants of grammar achievement in EFL contexts. The findings are expected to contribute to the advancement of language learning theories and offer practical implications for educators in designing grammar instruction that accommodates learners' cognitive characteristics while fostering active and meaningful learning experiences.

METHODS

This study employs a quantitative approach. The quantitative method is applied to systematically test the theory by analyzing the relationships among the existing variables. (Creswell, John W, 2018). The type of research employed in this study is

associative or correlational research (Yusuf, 2017) This study aims to examine the relationship between verbal-linguistic intelligence and student centered learning strategies on grammar mastery.



Picture 1. Conceptual Framework

Based on the proposed conceptual framework, each variable is operationalized through a set of measurable indicators to ensure that the constructs can be assessed systematically and accurately. Verbal Linguistic Intelligence (X1) is measured through four indicators, namely metalanguage, rhetoric, memorization, and explanation, which collectively reflect students' ability to understand, process, and effectively communicate language. Student-Centered Learning (X2) is assessed through individual learning, autonomous learning, and active learning, representing the extent to which learners take responsibility for their own learning process, engage independently, and actively participate in classroom activities. Meanwhile, Grammar Mastery (Y) is measured through students' competence in direct and indirect sentences, passive voice, and tenses, which represent essential components of English grammatical proficiency. These indicators serve as the foundation for developing the research instrument and provide a comprehensive basis for examining the relationships and contributions of the independent variables toward students' grammar mastery.

The study was conducted in 2026 at the English Club of the University of Muhammadiyah Lampung. The population consisted of 134 registered members. The sample size was determined using the Slovin formula with a 5% margin of error, resulting in a required sample of 104 respondents (Siregar, 2017). After the required sample size had been established, simple random sampling was employed to select participants from the population. This sampling technique was considered appropriate because all members of the English Club shared relatively similar characteristics as EFL learners and therefore had an equal probability of being selected. A complete

membership list provided by the club administration served as the sampling frame, and participants were randomly selected until the required sample size of 104 students was achieved. The use of simple random sampling minimizes selection bias and enhances the representativeness of the sample, thereby increasing the generalizability of the findings within the target population (Creswell & Creswell, 2018).

$$n = \frac{N}{1 + N e^2}$$

$$n = \frac{134}{1 + 134.05^2}$$

$$n = 100,37$$

Description:

N = Population size

n = Sample size

e = Margin of error (the percentage of sampling inaccuracy that can still be tolerated)

Based on the calculation above, the total sample was determined to consist of 104 respondents. The research instruments consisted of a test instrument in the form of multiple-choice questions and a non-test instrument in the form of a questionnaire. The questionnaire employed a four-point Likert scale with the following options: (1) Never, (2) Rarely, (3) Often, and (4) Always

Table 1. Research Instrument

No	Variable	Instrument	Item
1	Y (Grammar mastery)	Test	A set of 15 multiple choice questions
2	X1 (Verbal-linguistic intelligence)	Questioner	12 Questions
3	X2 (Student centered learning)	Questioner	9 Questions

All research instruments were developed under the guidance of expert validators, followed by validity and reliability testing using the SmartPLS analysis tool. The outer model analysis was carried out to determine the extent to which the indicators represent the latent variables, thereby ensuring that the measurement meets the standards of validity and reliability (Hair et al., 2017). There are three approaches, the first being the convergent validity test. An indicator is considered to have convergent validity if it has a loading factor value of ≥ 0.70 and an Average Variance Extracted (AVE) value of ≥ 0.50 . These values indicate that more than half of the variance in the indicators is explained by their construct. Based on Tables 3 and 4, it can be concluded that the indicators in this study meet the criteria for convergent validity.

Table 2. Loading Factor

	Verbal Linguistic Intelligence (X1)	Student Centered Learning (X2)	Grammar Mastery (Y)
Metalanguage	0.726		
Rhetoric	0.747		
Memorization	0.752		

Explanation	0.764		
Individual learning		0.858	
Autonomous learning		0.769	
Active learning		0.809	
Tenses			0.712
Passive voice			0.820
Direct-indirect sentence			0.737

Table 3. Average Variance Extracted (AVE)

	Average Variance Extracted (AVE)
Verbal Linguistic Intelligence (X1)	0.559
Student Centered Learning (X2)	0.661
Grammar Mastery (Y)	0.591

The second stage is the discriminant validity test. One of the indicators used to assess discriminant validity is the Fornell-Larcker criterion, which states that the AVE value of each construct must be higher than its correlation with other constructs. Based on Table 5 below, it can be concluded that the indicators in this study meet the requirements for discriminant validity.

Table 4. Fornell-Larcker

	Student Centered Learning (X2)	Grammar Mastery (Y)	Verbal Linguistic Intelligence (X1)
Student Centered Learning (X2)	0.813		
Grammar Mastery (Y)	-0.089	0.769	
Verbal Linguistic Intelligence (X1)	0.298	0.163	0.748

The final stage is the reliability test. This test was carried out by analyzing the Composite Reliability (CR) value. A CR value of ≥ 0.70 is expected, as it indicates internal consistency among the indicators and reflects the reliability of the study. Based on Table 5 below, it can be concluded that the indicators in this research are reliable

Table 5. Composite Reliability (CR)

	Composite Reliability
Verbal Linguistic Intelligence (X1)	0.835
Student Centered Learning (X2)	0.854
Grammar Mastery (Y)	0.896

All validity and reliability tests were successfully passed, indicating that the entire set of research instruments is dependable and suitable for further analysis. The data analysis technique in this quantitative study employed inferential statistical analysis through Structural Equation Modeling (SEM) using the Partial Least Squares approach (PLS-SEM), processed with the assistance of SmartPLS software. SEM makes it possible to test the relationships among latent variables, namely variables that cannot be measured directly (Setiabudhi et al,

2025, h.17). This analysis was chosen because of the model's complexity, which involves several latent constructs.

RESULTS

Table 6. Descriptive Statistical Analysis

Score Range	Students	%	Category
1-5	11 students	11%	Low Grammar Mastery
6-10	25 students	25%	Moderate Grammar Mastery
11-15	64 students	64%	High Grammar Mastery
Total	100 students	100%	

Table 6 illustrates the distribution of grammar mastery levels among the English Club members of the University of Muhammadiyah Lampung. The data indicate that nearly two-thirds of the participants (64%) demonstrated high grammar mastery, while one-quarter (25%) were categorized as having moderate grammar mastery. Only 11% of the participants fell into the low grammar mastery category. This pattern suggests that grammatical competence among the participants is generally well-developed, as evidenced by the concentration of scores in the highest category. The findings further imply that engagement in extracurricular English-learning activities may contribute to the improvement of students' grammatical knowledge.

DISCUSSION

Table 7. Direct Effects

	Original Sample (O)	P Values	Interpretation
Verbal Linguistic Intelligence (X1) → Grammar Mastery (Y)	0.309	0.000***	Positive and 1% significant effect
Student Centered Learning (X2) → Grammar Mastery (Y)	0.462	0.002**	Positive and 5% significant effect

The Effect of Verbal-Linguistic Intelligence (X1) on Grammar Mastery (Y)

The results of the direct effect analysis indicate that Verbal Linguistic Intelligence has a positive and statistically significant relationship with Grammar Mastery. The path coefficient value of 0.309 suggests that an increase in students' verbal linguistic intelligence is associated with an improvement in their grammar mastery. In other words, students who possess stronger abilities in understanding, processing, and using language tend to demonstrate better grammatical competence. The significance value ($p = 0.000$) confirms that this relationship is unlikely to have occurred by chance, indicating that verbal linguistic intelligence contributes meaningfully to students' mastery of English grammar. The findings of this study are supported by several previous studies that highlight the significant role of verbal-linguistic intelligence in English language learning. Handayani et al., (2021) found that verbal-linguistic intelligence had a significant influence on students' English learning outcomes. Their study revealed that students with higher levels of verbal-linguistic intelligence tended to demonstrate better abilities in comprehending linguistic information, processing vocabulary, and applying language structures appropriately during English learning activities. This finding is consistent with the results of the present study, which indicate that strong linguistic abilities enable students to understand grammatical rules more effectively, thereby contributing to higher levels of grammar mastery. Consequently, verbal-linguistic intelligence can be

regarded as an important cognitive factor that supports students' success in learning English grammar.

Furthermore, the study conducted by Rahayu et al., (2023) demonstrated that multiple intelligences are associated with the performance of Indonesian EFL learners. Their findings emphasized that students' intelligence profiles, including linguistic intelligence, contribute significantly to their achievement in various aspects of English language learning. This result supports the present study, as grammar constitutes one of the fundamental components of language proficiency that is strongly influenced by learners' ability to comprehend, analyze, and process linguistic information systematically. Therefore, students with well-developed verbal-linguistic intelligence are more likely to achieve better academic performance in English language learning, particularly in grammar-related tasks.

Additional empirical support is provided by the study of Mujiono (2023) which examined the role of verbal-linguistic intelligence in EFL writing problem-solving. The findings indicated that verbal-linguistic intelligence positively contributed to students' ability to organize ideas, understand language structures, and produce linguistically accurate written texts. Although the primary focus of the study was writing skills, these abilities are closely connected to grammar mastery, as grammatical competence serves as a fundamental basis for producing effective and communicative written language. Therefore, the findings further reinforce the results of the current study, suggesting that students with higher levels of verbal-linguistic intelligence tend to demonstrate better grammar mastery than those with lower levels of linguistic intelligence.

Moreover, the researcher's classroom observations provided additional support for the quantitative findings. Students with higher levels of verbal-linguistic intelligence were generally more active in classroom discussions, reading activities, question-and-answer sessions, and oral communication tasks. They demonstrated a greater ability to recognize grammatical errors, understand sentence patterns, and apply grammatical rules in various learning activities. The implementation of student-centered learning also provided broader opportunities for students to actively engage in language use through discussions, presentations, collaborative learning, and problem-solving activities. Such learning experiences enabled students to develop their linguistic abilities more effectively, which subsequently contributed to the improvement of their grammar mastery. Therefore, the findings of this study suggest that verbal-linguistic intelligence is a crucial factor in enhancing students' mastery of English grammar and overall language achievement, highlighting the important role of linguistic abilities in language learning achievement.

Nevertheless, the present findings are not entirely consistent with all previous studies. Some research has reported that learners' cognitive abilities alone do not necessarily lead to higher grammatical competence unless they are accompanied by appropriate instructional support and sufficient opportunities for language practice. For example, Nassaji and Fotos (2022) argue that grammar acquisition is influenced by a complex interaction of cognitive, instructional, and contextual factors rather than by individual learner characteristics alone. Likewise, Ellis (2022) emphasizes that explicit grammatical knowledge does not automatically develop into fluent language use unless learners are provided with meaningful communicative practice and repeated exposure to target language structures. These differing perspectives suggest that verbal-linguistic intelligence should not be viewed as the sole determinant of grammar mastery. Instead, its contribution is likely to be strengthened when learners engage in instructional environments that encourage active language use and continuous practice. This interpretation aligns with the present study, in which verbal-linguistic intelligence significantly predicted grammar mastery while Student-Centered Learning demonstrated an even stronger effect.

The Effect of Student Centered Learning (X2) on Grammar Mastery (Y)

Student-Centered Learning also exerts a positive and significant influence on Grammar Mastery. The path coefficient of 0.462 indicates a stronger relationship compared to that of

Verbal Linguistic Intelligence. This result implies that learning environments that actively engage students in the learning process, encourage participation, and promote independent learning are likely to enhance students' grammatical understanding and application. The significance level ($p = 0.002$) further supports the existence of a reliable relationship between Student-Centered Learning and Grammar Mastery. The present finding corroborates the results reported by Febryanti (2013), who found that Student-Centered Learning exerted the greatest effect on students' academic performance. Similarly, Lin (2021), who examined the effects of Data-Driven Learning on EFL students with different levels of grammar proficiency. The findings revealed that students participating in learner-centered grammar instruction demonstrated significant improvements in grammar performance, motivation, and self-efficacy. The study suggests that instructional approaches encouraging students to investigate language patterns, solve linguistic problems, and regulate their own learning processes foster a more meaningful understanding of grammar. Such results reinforce the present study by highlighting that student-centered learning environments not only improve grammatical knowledge but also strengthen learners' confidence and engagement, which are essential factors for long-term language development.

The researcher's observations during the learning process revealed that students with strong verbal-linguistic intelligence tended to demonstrate a better understanding and mastery of grammatical concepts. These students were generally able to comprehend instructional explanations more quickly, recognize the functions and patterns of grammatical structures more accurately, and identify grammatical errors across various language contexts. Furthermore, students with higher levels of verbal-linguistic intelligence actively participated in reading activities, classroom discussions, questioning sessions, and oral communication tasks. Such engagement provided them with greater exposure to language use, which in turn enhanced their understanding of grammatical rules and improved the accuracy of their grammar usage in both spoken and written communication.

The observations also indicated that student-centered learning contributed positively to students' grammar mastery. Through learning activities that positioned students as active participants, such as group discussions, presentations, problem-solving tasks, and contextual language practice, students were given broader opportunities to explore and apply grammatical knowledge independently. This interactive learning environment encouraged learners to construct their own understanding through meaningful learning experiences, enabling grammar to be understood and utilized in authentic contexts rather than merely memorized as isolated rules. Therefore, the researcher's observations suggest that verbal-linguistic intelligence and student-centered learning have a complementary and directly proportional relationship with grammar mastery, as both factors play a significant role in supporting students' grammatical development and overall language proficiency.

Although the present study demonstrated a significant positive effect of Student-Centered Learning on grammar mastery, previous research has also suggested that learner-centered instruction does not always produce consistent outcomes across different educational contexts. Kirschner, Sweller, and Clark (2006) argued that instructional approaches relying heavily on minimally guided learning may be less effective for novice learners because they impose excessive cognitive demands and provide insufficient instructional support. Similarly, DeKeyser (2020) noted that grammar acquisition requires structured guidance and explicit instruction, particularly during the early stages of learning before learners can proceduralize grammatical knowledge through communicative practice. These findings indicate that the effectiveness of Student-Centered Learning depends on how learning activities are designed and scaffolded. Therefore, the positive effect observed in the present study may be attributed to the implementation of student-centered activities that continued to provide appropriate instructional guidance while encouraging active learner participation.

CONCLUSION

This study successfully established the validity and reliability of all measurement instruments employed. The results of the measurement model evaluation demonstrated that all constructs satisfied the required criteria for convergent validity, discriminant validity, and composite reliability, indicating that the instruments were appropriate for measuring the intended variables. The structural model analysis further revealed that both verbal-linguistic intelligence and Student-Centered Learning significantly contributed to grammar mastery among members of the English Club at the University of Muhammadiyah Lampung. Student-Centered Learning demonstrated a stronger influence than verbal-linguistic intelligence, suggesting that learner-centered instructional practices play a particularly important role in facilitating grammatical development within EFL contexts.

Despite these contributions, several limitations should be acknowledged. First, the study relied partly on self-report questionnaires to measure verbal-linguistic intelligence and Student-Centered Learning, making the findings potentially susceptible to response bias and social desirability bias (Podsakoff et al., 2003). Second the study was conducted within a single English Club at one university, which may limit the generalizability of the findings to other EFL contexts or educational settings. Finally, the cross-sectional design examined relationships among variables at a single point in time and therefore does not permit causal inferences regarding the long-term development of grammar mastery. Future research is encouraged to employ longitudinal or experimental designs involving more diverse participant populations and broader measures of grammatical competence to strengthen the generalizability and explanatory power of the findings.

The findings also provide several practical implications for grammar instruction. Rather than relying primarily on rule memorization, grammar teachers are encouraged to design student-centered learning activities that actively engage learners in constructing grammatical knowledge through meaningful communication. For example, teachers may incorporate collaborative problem-solving tasks, peer editing, grammar-focused discussions, role-play activities, project-based assignments, and contextual writing exercises that require students to apply grammatical structures in authentic situations. In addition, teachers should provide explicit grammar instruction followed by guided and independent communicative practice, enabling learners to gradually transform declarative grammatical knowledge into procedural and automatic language use (DeKeyser, 2020; Ellis, 2022). Furthermore, considering individual differences in verbal-linguistic intelligence, teachers are encouraged to differentiate instructional activities by integrating vocabulary development, reading-based grammar analysis, reflective language tasks, and opportunities for oral interaction. Such instructional strategies may help learners develop grammatical competence while simultaneously fostering learner autonomy, engagement, and long-term language proficiency.

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