


Senior High School Students' Perception of the Use of Chatgpt in Learning English Vocabulary

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ABSTRACT

Background: The rapid development of generative artificial intelligence, particularly ChatGPT, has influenced educational practices in English as a Foreign Language (EFL) learning. While ChatGPT may support vocabulary learning, concerns regarding accuracy, trust, motivation, and ethical use remain, particularly at the secondary school level.

Purpose: This study aims to examine senior high school students' perceptions of ChatGPT as a tool for learning English vocabulary, focusing on perceived usefulness, ease of use, accuracy and trust, motivation, ethical concerns, and gender-based differences.

Method: This study employed a quantitative survey design involving 224 eleventh-grade students from a public vocational high school in Indonesia. Data were collected using a structured questionnaire adapted from previously validated instruments and analyzed through descriptive statistics and independent-samples t-tests.

Results and Discussion: The findings indicate that students' perceptions of ChatGPT were moderate across all constructs, with mean scores ranging from 2.67 to 3.13. ChatGPT was perceived as easy to use ($M = 3.13$) and useful ($M = 3.10$) for English vocabulary learning, whereas perceptions of accuracy and trust were lower ($M = 2.67$), reflecting cautious attitudes toward AI-generated content. Gender-based analysis revealed significant differences in ease of use and accuracy/trust, with male students reporting higher mean scores (Ease of Use: $M = 3.20$; Accuracy/Trust: $M = 2.79$) than female students (Ease of Use: $M = 3.02$; Accuracy/Trust: $M = 2.51$). No significant gender differences were found in usefulness, motivation, or ethical concerns.

Conclusions and Implications: This study concludes that ChatGPT can serve as a supplementary tool for EFL vocabulary learning when used pedagogically and responsibly. Conducted among grade 11 students in Indonesia, the findings emphasize the importance of teacher guidance, ethical awareness, and AI literacy. Future studies are recommended to examine broader contexts and additional factors influencing AI-assisted language learning.

Keywords:

ChatGPT; Students' Perceptions; English Vocabulary Learning; Artificial Intelligence; Gender Differences

ABSTRAK

Latar Belakang: Perkembangan pesat kecerdasan buatan generatif, khususnya ChatGPT, telah memengaruhi praktik pembelajaran di berbagai konteks pendidikan, termasuk pembelajaran Bahasa Inggris sebagai Bahasa Asing (EFL). Meskipun ChatGPT berpotensi mendukung pembelajaran kosakata, isu terkait akurasi, kepercayaan, motivasi belajar, dan penggunaan secara etis masih menjadi perhatian, terutama pada jenjang sekolah menengah.

Tujuan: Penelitian ini bertujuan untuk mengkaji persepsi siswa sekolah menengah atas terhadap penggunaan ChatGPT sebagai alat pembelajaran kosakata bahasa Inggris, ditinjau dari aspek kegunaan, kemudahan penggunaan, akurasi atau kepercayaan, motivasi, isu etika, serta perbedaan persepsi berdasarkan gender.

Metode: Penelitian ini menggunakan desain survei kuantitatif dengan melibatkan 224 siswa kelas XI dari sebuah sekolah menengah kejuruan negeri di Indonesia. Data dikumpulkan melalui kuesioner terstruktur yang diadaptasi dari instrumen tervalidasi dan dianalisis menggunakan statistik deskriptif serta uji independent-samples t-test.

Hasil dan Pembahasan: Hasil penelitian menunjukkan bahwa persepsi siswa terhadap ChatGPT berada pada kategori sedang pada seluruh konstruk, dengan rentang nilai rata-rata antara 2.67 hingga 3.13. ChatGPT dipersepsikan mudah digunakan ($M = 3.13$) dan bermanfaat ($M = 3.10$) dalam mendukung pembelajaran kosakata bahasa Inggris, sementara persepsi terhadap akurasi dan kepercayaan cenderung lebih rendah ($M = 2.67$), yang menunjukkan sikap kehati-hatian siswa terhadap konten yang dihasilkan oleh AI. Analisis berdasarkan gender menunjukkan perbedaan yang signifikan pada aspek kemudahan penggunaan dan akurasi/kepercayaan, di mana siswa laki-laki memiliki rata-rata nilai lebih tinggi (Kemudahan penggunaan: $M = 3.20$; Akurasi/Kepercayaan: $M = 2.79$) dibandingkan siswa perempuan (Kemudahan Penggunaan: $M = 3.02$; Akurasi/Kepercayaan: $M = 2.51$). Namun, tidak ditemukan perbedaan significant berdasarkan gender pada aspek manfaat, motivasi, dan isu etika.

Kesimpulan dan Implikasi: Penelitian ini menyimpulkan bahwa ChatGPT berpotensi digunakan sebagai alat pendukung dalam pembelajaran kosakata EFL apabila diintegrasikan secara pedagogis dan digunakan secara bertanggung jawab. Penelitian ini dilakukan pada siswa kelas XI di Indonesia, dan menekankan pentingnya peran guru, kesadaran etika, serta literasi AI dalam praktik pembelajaran. Penelitian selanjutnya disarankan untuk mengkaji konteks yang lebih luas serta faktor lain yang memengaruhi pembelajaran bahasa berbantuan AI.

Kata Kunci

ChatGPT; Persepsi Siswa; Pembelajaran Kosakata Bahasa Inggris; Kecerdasan Buatan; Perbedaan Gender



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INTRODUCTION

In the past three years, large language models (LLMs) such as ChatGPT have rapidly entered formal and informal educational settings, offering on-demand explanations, example generation, and personalized practice that are highly relevant to vocabulary learning in foreign languages. Globally, educators and learners report widespread, varied use of ChatGPT for brainstorming, feedback, and drill practice, with these uses promising to address long-standing problems in vocabulary instruction, such as limited practice opportunities, one-size-fits-all materials, and delays in formative feedback.[1], [2] Previous studies have reported generally positive perceptions of ChatGPT's use in English language learning. Hasanah and Syah found that while ChatGPT enhances engagement and understanding, its use also involves challenges related to accuracy, technical limitations, and potential overreliance.[3] In the Indonesian context, emerging empirical evidence suggests that secondary-school students have begun to integrate AI-based tools into their

learning routines.[4], [5] At the local (K–12) level, the arrival of accessible LLM tools raises urgent practical questions: *can ChatGPT reliably scaffold vocabulary acquisition for senior high school learners, and how do students perceive its usefulness, ease of use, and trustworthiness compared with traditional resources?* These questions are especially pressing given evidence that many students already integrate AI into study routines [2] while educators struggle to define pedagogical policies.[1]

A growing body of research has examined the use of ChatGPT and artificial intelligence (AI) tools in language learning, revealing both promising outcomes and important limitations. Recent international studies report that learners generally perceive AI-based chatbots positively, particularly for their ability to provide immediate feedback, personalized practice, and automated material generation.[6], [7] Several intervention studies further indicate that ChatGPT-supported tasks can lead to measurable improvements in vocabulary learning outcomes in certain educational contexts.[8], [9] Nevertheless, the literature consistently documents concerns about response accuracy, over-reliance on AI, and academic integrity, as well as variability in findings across educational levels and age groups.[1], [7]

In the Indonesian context, empirical evidence on AI integration in secondary education has begun to emerge, although research at the senior high school level remains relatively limited. Studies conducted in Indonesian secondary school's report that students have initial experiences with AI-based tools for learning, including English language learning, and generally perceive them as easy to use and engaging. However, these studies also highlight students' concerns regarding ethical issues and the need for teacher guidance in AI-supported learning environments.[4] Similarly, a quantitative survey of senior high school and vocational high school students in Indonesia found that AI tools are increasingly used in learning activities, with senior high school students tending to use AI more analytically, while vocational students focus on practical applications to complete academic tasks.[5] Furthermore, a systematic review of ChatGPT use in English Language Teaching (ELT) in Indonesia indicates that most existing studies focus on higher education, leaving secondary school contexts, particularly SMA and SMK, underrepresented in empirical research.[10]

This study specifically focuses on English vocabulary learning, as vocabulary acquisition is particularly well-suited to AI-assisted support. Vocabulary learning requires repetitive exposure, contextualised examples, and immediate feedback, all of which ChatGPT can efficiently and at scale. Compared to more complex language skills such as writing or speaking, vocabulary learning allows clearer observation of students' interactions with AI tools and enables more direct examination of how perceived usefulness and trust relate to learning behaviors.

In addition, this study investigates gender differences in students' perceptions of ChatGPT, drawing on prior research in educational technology suggesting that learners' engagement with digital tools may be influenced by factors such as self-efficacy, perceived technological competence, and trust in digital systems. Examining gender-based variation, therefore, contributes to a more nuanced understanding of how different learner groups respond to AI-assisted vocabulary learning and how perceptions of usability and accuracy may differ by gender.

Overall, while adult and tertiary-level learners are relatively well represented in existing research [1], [6], empirical evidence on senior high school students' perceptions of ChatGPT for vocabulary learning, particularly within the Indonesian context, remains limited. Moreover, few studies have connected quantitative measures of students' perceptions with issues of trust, accuracy, and learning behavior. This gap highlights the need for further empirical investigation in Indonesian secondary-school settings, which the present study seeks to address.

This study contributes in two complementary ways. Theoretically, it extends technology acceptance and L2 vocabulary-learning models to the senior high school domain by integrating perception constructs (usefulness, ease, trust) with vocabulary-specific learning behaviours, thereby

refining the understanding of acceptance dynamics among adolescent learners. In practice, the findings will provide evidence-based guidance for teachers and school administrators on implementing ChatGPT in vocabulary instruction, identifying which student perceptions predict beneficial use, which accuracy or ethical concerns must be addressed through training or policy, and how classroom tasks can be redesigned to harness ChatGPT's affordances while mitigating risks. Such actionable insights are essential for policymakers and curriculum designers who must balance innovation with academic integrity and developmental appropriateness in K–12 settings.[1], [2]

To address this research gap, the present study investigates senior high school students' perceptions of ChatGPT when used explicitly for English vocabulary learning. Drawing on established technology acceptance and feedback-oriented learning frameworks, the study examines five key perception dimensions: perceived usefulness, perceived ease of use, perceived accuracy or trust, motivation, and ethical concerns, while also exploring potential gender-based differences in students' perceptions. By focusing on a senior high school EFL context, this study extends existing technology acceptance and vocabulary-learning models to an underexamined learner population. The findings are expected to contribute theoretically by refining understanding of how adolescent learners evaluate and adopt AI-assisted vocabulary tools, and practically by providing evidence-based guidance for teachers, school administrators, and policymakers on the responsible and pedagogically sound integration of ChatGPT in K–12 EFL classrooms.

Based on the research gap identified above, this study is guided by the following research questions: (1) How do senior high school students perceive the use of ChatGPT in terms of usefulness, ease of use, accuracy/trust, motivation, and ethical concerns for English vocabulary learning? (2) Are there significant gender differences in students' perceptions of ChatGPT for English vocabulary learning?

LITERATURE REVIEW

A. Concept of Students' Perception

1. Definition and Theoretical Framework of Perception

Perception refers to individuals' interpretations of phenomena, shaped by their experiences, attitudes, and beliefs, which subsequently influence their behavior and decision-making. In educational contexts, students' perceptions of technology integration play a crucial role in determining their motivation, engagement, and learning strategies.[11] When learners perceive a technological tool positively, they are more likely to adopt it meaningfully and integrate it into their learning practices.

Recent studies further emphasize that perceptions are shaped not only by prior experience but also by learners' levels of familiarity, digital self-efficacy, and cognitive appraisal of a technology's usefulness and reliability.[12] As digital tools become increasingly embedded in educational environments, students' perceptions determine whether technology is used productively or merely superficially.

The Technology Acceptance Model (TAM) remains one of the most influential theoretical frameworks for explaining users' acceptance of educational technology. As reaffirmed in recent comprehensive reviews [13], TAM posits that Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are the primary determinants shaping users' attitudes and behavioral intentions toward technology use. In the context of intelligent systems, contemporary extensions of TAM incorporate additional affective and cognitive dimensions, including perceived accuracy, trust, and perceived risks.[14] These constructs have become increasingly relevant as learners are required not only to operate AI-based tools but also to evaluate the credibility, safety, and ethical implications of AI-generated outputs.

Subsequent theoretical developments, such as the Unified Theory of Acceptance and Use of Technology (UTAUT), further extend TAM by integrating constructs including social influence, facilitating conditions, and effort expectancy. Recent systematic reviews by [15] indicate that UTAUT has been refined to better account for AI-enhanced learning contexts, incorporating variables such as trust, risk awareness, and user acceptance.[16] These developments reflect the growing complexity of educational technology ecosystems, in which usability alone is insufficient without consideration of data privacy, bias, and information reliability.

Within the context of EFL vocabulary learning, these technology acceptance frameworks provide an important foundation for understanding how learners evaluate digital tools that support lexical development. Learners' perceptions of usefulness, ease of use, trust/accuracy, and ethical considerations may influence their willingness to engage with vocabulary learning activities mediated by AI-based systems.[17] However, acceptance alone does not guarantee learning effectiveness. Therefore, the integration of TAM and UTAUT in this study is complemented by vocabulary acquisition theories that explain how learners process, retain, and apply new lexical items through both intentional and incidental learning mechanisms.[18]

Within language education, TAM and UTAUT have been widely applied to examine learners' acceptance of mobile learning tools, digital platforms, and, more recently, large language models (LLMs) such as ChatGPT.[13], [14] Empirical findings suggest that learners' acceptance of LLMs is influenced by perceived accuracy, the immediacy of feedback, and the system's ability to personalize learning experiences.[19] In EFL contexts, perceptions of trustworthiness, ethical implications, and cognitive effort have emerged as key determinants of whether generative AI tools enhance or hinder learning outcomes. Therefore, integrating TAM and UTAUT provides a strong theoretical foundation for examining how students interpret, value, and engage with ChatGPT for vocabulary learning.

B. Dimensions of Perception in Technology-Based Learning

Recent research has adapted TAM to include dimensions related to ethics and cognition in AI-supported learning. For example, Sallam et al. [14] proposed the TAME-ChatGPT model, which incorporates perceived risks, psychosocial impact, and ethical concerns. Similarly, studies on generative AI emphasize evaluative dimensions such as accuracy, trust, ease of use, and ethical awareness.[20], [21] Building on these developments, the present study adopts five interrelated perception dimensions: usefulness, ease of use, accuracy or trust, motivation, and ethical concerns.

While motivation is traditionally treated as an outcome variable in the Technology Acceptance Model (TAM), particularly influenced by perceived usefulness and perceived ease of use, recent studies on AI-assisted learning conceptualize learners' perceptions of a tool's motivational potential as a distinct evaluative dimension.[22] In this perspective, motivation reflects learners' beliefs about whether a technology can enhance their willingness, engagement, and persistence in learning activities rather than their actual motivational outcomes. In the context of generative AI, such as ChatGPT, students may evaluate not only how useful or easy the system is to use, but also whether it can stimulate interest, sustain learning effort, and support autonomous learning processes. Therefore, in the present study, the motivation dimension refers to students' perceptions of ChatGPT's potential to enhance their motivation in English vocabulary learning.

In the present study, these perception dimensions are operationalized through a structured questionnaire adapted to the context of AI-assisted vocabulary learning. Perceived usefulness refers to students' beliefs about ChatGPT's effectiveness in supporting vocabulary acquisition. Perceived ease of use reflects how easy ChatGPT is to use and understand. Perceived accuracy or trust captures students' confidence in the correctness and reliability of ChatGPT's responses. Ethical concerns address students' awareness of potential risks, such as overreliance, academic integrity, and the responsible use of AI in learning.

Accordingly, each perception construct in this study is operationalized into measurable indicators that are theoretically grounded. Perceived usefulness, perceived ease of use, perceived accuracy or trust, motivation, and ethical concerns are measured through questionnaire items designed to capture students' evaluative judgements of ChatGPT use in English vocabulary learning. Detailed descriptions of the instrument development and the measurement of each construct are provided in the Method section.

C. Vocabulary Learning in EFL Contexts

1. The Importance of Vocabulary Mastery

Vocabulary knowledge is widely acknowledged as a core component of language proficiency and strongly predicts learners' performance in reading, speaking, and writing.[23] However, EFL learners often face challenges in vocabulary acquisition due to limited exposure and restricted opportunities for meaningful practice. Consequently, technology-assisted vocabulary learning (TAVL) has gained prominence as a practical approach to addressing these challenges.[24]

Vocabulary acquisition in the EFL context involves complex cognitive processes that require both deliberate instruction and meaningful exposure. According to the Nation's Four Strands framework, effective vocabulary learning should balance meaning-focused input, meaning-focused output, language-focused learning, and fluency development. This framework emphasizes that vocabulary development is optimized when learners engage in both intentional learning, such as explicit explanation and practice, and incidental learning through repeated exposure to lexical items in meaningful contexts.[25]

In line with this perspective, contemporary vocabulary learning research distinguishes between intentional and incidental vocabulary learning.[26] ChatGPT has the potential to support both learning processes in EFL contexts. Through explicit explanations, definitions, and targeted practice, ChatGPT facilitates intentional vocabulary learning, while its ability to generate contextualized examples, dialogues, and extended discourse supports incidental learning through rich and repeated lexical exposure. Thus, the pedagogical value of ChatGPT for vocabulary learning lies not only in its technological features, but also in its alignment with established theories of lexical acquisition.

2. Digital Tools and Vocabulary Learning

Digital learning tools provide flexible, interactive environments that facilitate vocabulary development. Chaikowska demonstrated that Quizlet's multimedia features and spaced-repetition mechanisms significantly enhance vocabulary retention.[27] More recently, AI-powered conversational agents have been introduced to support vocabulary practice through real-time interaction and contextualized language use.[28] Nevertheless, the effectiveness of these tools is strongly influenced by learners' perceptions of usefulness and ease of use [29], [30], reinforcing the importance of examining students' perceptions when integrating AI-based tools such as ChatGPT.

D. ChatGPT in English Language Learning

1. Benefits of ChatGPT

ChatGPT, developed by OpenAI, has been increasingly utilized in EFL contexts to support explanation, practice, and content generation.[31] Studies report its usefulness in brainstorming, translation, writing support, and vocabulary enrichment.[32] Its capacity to provide instant feedback, examples, and contextualized usage supports autonomous and self-paced vocabulary learning.[33]

2. Concerns and Ethical Issues

Despite these benefits, concerns persist regarding the accuracy of AI-generated content and the potential erosion of critical thinking skills.[34], [35] Ethical concerns, including plagiarism, overreliance on AI, and academic integrity, have also been consistently highlighted.[36]

E. Synthesis of Previous Studies and Research Gap

Empirical studies consistently indicate that learners generally perceive ChatGPT positively, particularly for its usefulness and ease of use.[14], [20], [37] Regional studies in Indonesia further confirm that students value ChatGPT's efficiency and accessibility, but require pedagogical guidance to prevent misuse.[32], [38] Vocabulary-focused investigations demonstrate ChatGPT's effectiveness while emphasizing ethical considerations.[39], [40]

However, most existing studies focus on higher education or general language skills, with limited attention to senior high school learners and vocabulary-specific contexts. Moreover, research examining gender-based differences in students' perceptions of ChatGPT remains scarce, despite evidence suggesting that gender may influence technology acceptance, trust, and confidence.[41] Therefore, there is a clear need for a focused investigation into senior high school students' perceptions of ChatGPT for English vocabulary learning, particularly regarding its usefulness, ease of use, accuracy, trust, motivation, ethical concerns, and gender-based differences. Addressing this gap, the present study seeks to contribute empirical evidence to the growing body of research on AI-assisted language learning in secondary education.

METHOD

Research Design

This study employed a quantitative survey research approach using a descriptive quantitative design. This design was selected because it enables the systematic collection of numerical data to describe students' perceptions of using ChatGPT as an English vocabulary learning tool. A survey approach is particularly appropriate for perception studies in educational contexts, as it enables researchers to capture participants' attitudes, evaluations, and experiences in a structured and measurable manner.

The study focused on five perception constructs: perceived usefulness, perceived ease of use, perceived accuracy or trust, learning motivation, and ethical concerns related to the use of ChatGPT in English vocabulary learning. Descriptive statistics were used to summarize students' perceptions across these constructs, and inferential statistics were used to examine differences in perceptions by gender. Specifically, independent-samples t-tests were used to assess whether there were statistically significant differences in perceptions between male and female students. This combination of descriptive and comparative analysis aligns with standard methodological practices in technology-assisted language learning research.

Population and Sample

The study population comprised eleventh-grade students enrolled at SMK Negeri 15 Samarinda, a public vocational senior high school in Indonesia, during the 2024/2025 academic year. The study was conducted in an English as a Foreign Language (EFL) context, in which English is taught as a compulsory subject.

A total of 224 students participated in the study, comprising 132 males and 92 females. The participants were drawn from various vocational departments, including Desain Komunikasi Visual (DKV), Manajemen Perkantoran dan Layanan Bisnis (MPLB), Teknik Geologi (TG), Akuntansi dan Keuangan Lembaga (AKL), Pemasaran (PM), Teknik Otomotif (TO), and Teknik Jaringan Komputer dan Telekomunikasi (TJKT). A purposive sampling technique was employed, with

participants selected for their active involvement in English vocabulary learning and prior exposure to ChatGPT as a learning support tool. Table 1 presents the characteristics of the research sample.

Table 1. Characteristics of the Research Sample

Characteristic	Category	n	%
Grade level	Grade 11	224	100
Gender	Male	132	58.9
	Female	92	41.1
Study program	Desain Komunikasi Visual (DKV)	54	24.11
	Manajemen Perkantoran dan Layanan Bisnis (MPLB)	34	15.18
	Teknik Geologi (TG)	25	11.16
	Akuntansi dan Keuangan Lembaga (AKL)	24	10.71
	Pemasaran (PM)	25	11.16
	Teknik Otomotif (TO)	50	22.32
	Teknik Jaringan Komputer dan Telekomunikasi (IJKT)	12	5.36
	Experience Using ChatGPT	Yes	224
Total		224	100

Students' English proficiency levels were not formally categorized in this study, as no standardized English proficiency test was administered. Data collection was conducted over approximately ten days.

Instrument

Data were collected using a structured questionnaire adapted from previously validated instruments examining students' perceptions of digital learning tools and generative AI in English language education (Meluwu & Neman, 2025; Moskovich & Rozani, 2025; Pallivathukal et al., 2024; Sallam et al., 2024). The questionnaire consisted of five constructs: perceived usefulness (U), perceived ease of use (EOU), perceived accuracy or trust (ACC), learning motivation (MOT), and ethical concerns related to the use of ChatGPT (ETH) in English vocabulary learning.

All questionnaire items were measured using a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), which was employed to minimize neutral responses and encourage clearer evaluative judgments. Prior to data collection, the instrument underwent minor linguistic and contextual adaptations to ensure its suitability for vocational high school students and the local educational context. These adaptations included wording refinement, translation into Bahasa Indonesia, and contextual localization, while preserving the original constructs and item structure.

Regarding validity, the instrument adaptation focused on maintaining content and face validity. The adaptation process involved linguistic refinement, translation into Bahasa Indonesia, and contextual adjustment to suit vocational high school students, without altering the original constructs or removing or adding any items. Each item remained conceptually aligned with its original construct as established in the validated instruments. Therefore, the construct validity of the questionnaire was theoretically supported by the original sources, while contextual validity was ensured through careful adaptation and item-total correlation analysis.

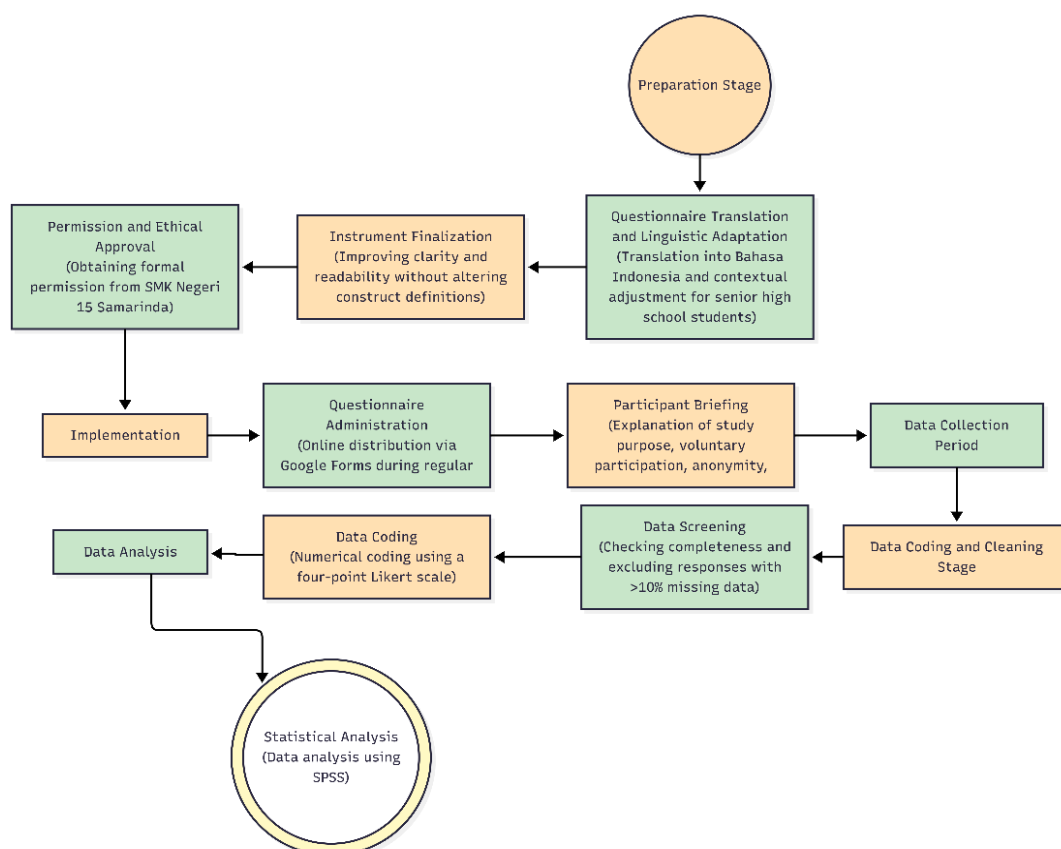
Although the questionnaire was adapted from previously validated instruments, validity and reliability tests were re-conducted using data from the current sample to ensure contextual validity. Item validity was examined using corrected item-total correlation, with values above 0.30 considered acceptable. The results showed that all items across the five constructs met this criterion, indicating adequate item validity for vocational high school students. Internal consistency reliability was assessed using Cronbach's alpha. The reliability coefficients indicated acceptable to good internal consistency for perceived usefulness ($\alpha = 0.64$), perceived ease of use ($\alpha = 0.69$), perceived accuracy ($\alpha = 0.81$), learning motivation ($\alpha = 0.81$), and ethical concerns ($\alpha = 0.64$). These reliability coefficients were calculated based on data obtained from the current study sample, indicating that the adapted instrument demonstrated acceptable internal consistency in the present context. Taken together, these procedures ensured that the adapted instrument was both theoretically grounded and empirically appropriate for vocational high school students in the Indonesian EFL context.

Research Procedures

The research procedure consisted of four main stages: preparation, implementation, data coding and cleaning, and data analysis, as illustrated in Figure 1. During the preparation stage, the questionnaire was translated into Bahasa Indonesia and linguistically adjusted to align with the context of senior high school students and ChatGPT-based vocabulary learning. The adaptation process focused on improving clarity and readability without altering the original meaning or the definitions of constructs. After finalizing the instrument, formal permission was obtained from SMK Negeri 15 Samarinda to conduct the study.

In the implementation stage, the questionnaire was administered to 224 eleventh-grade students during regular English class hours. Data were collected online via Google Forms. Before completing the questionnaire, students were informed of the study's purpose, the voluntary nature of participation, and that their responses would be kept anonymous and confidential. Clear instructions were provided to ensure accurate responses. Data were collected over approximately ten days.

The data coding and cleaning stage involved exporting all responses into a spreadsheet for initial screening. Responses were checked for completeness, and cases with more than 10% missing data were excluded from further analysis. The remaining responses were then numerically coded using a four-point Likert scale to prepare the dataset for statistical analysis.

Figure 1. Research Procedure Flowchart

Data Analysis

The cleaned dataset was imported into SPSS version 22 for analysis. Descriptive statistics, including mean scores, standard deviations, frequencies, and percentages, were calculated to summarize students' perceptions of ChatGPT across the five constructs. For interpretation purposes, mean values were categorized into four levels: 1.00–1.75 (very low), 1.76–2.50 (low), 2.51–3.25 (moderate), and 3.26–4.00 (high).

An independent-samples t-test was conducted to examine gender-based differences in students' perceptions. Levene's Test for Equality of Variances was applied to determine the appropriate t-test results to interpret, with a significance level at $p < .05$. In addition to statistical significance, effect sizes were calculated using Cohen's d to indicate the magnitude of the observed differences between groups.

RESULT AND DISCUSSION

A. Result

1. Students' Perceptions of ChatGPT in Vocabulary Learning

This section presents the descriptive results of senior high school students' perceptions of ChatGPT in learning English vocabulary. Five constructs were examined: usefulness, ease of use, accuracy/trust, motivation, and ethical concerns. Mean scores and standard deviations were calculated and interpreted using a four-point Likert scale benchmark.

Table 2 presents the mean scores and standard deviations for each construct. Collectively, the results indicate that students hold moderately positive perceptions of ChatGPT across all five constructs, with mean scores ranging from $M = 2.67$ to $M = 3.13$. Among the constructs, Ease of

Use had the highest mean score ($M = 3.13$, $SD = 0.49$), followed by Usefulness ($M = 3.10$, $SD = 0.47$), indicating that students generally perceive ChatGPT as easy to use and helpful for vocabulary learning. In contrast, Accuracy/Trust had the lowest mean score ($M = 2.67$, $SD = 0.55$), suggesting a more cautious perception of ChatGPT's response reliability. The Motivation construct also yielded a moderate mean score ($M = 2.85$, $SD = 0.57$), while Ethical Concerns showed a mean score of $M = 3.03$ ($SD = 0.55$), reflecting students' awareness of ethical issues related to ChatGPT use.

Table 2. Mean Scores for Each Construct

Construct	Mean	Std. Deviation	Interpretation
Usefulness	3.10	.47	Moderate
Ease of Use	3.13	.49	Moderate
Accuracy/Trust	2.67	.55	Moderate
Motivation	2.85	.57	Moderate
Ethical Concerns	3.03	.55	Moderate

To provide a more detailed understanding of students' perceptions, item-level descriptive statistics are presented in Table 3. At the item level, Item 7 ("ChatGPT is easy to use to find information") recorded the highest mean score ($M = 3.32$, $SD = 0.61$), indicating strong agreement regarding the accessibility of ChatGPT. Item 4 ("ChatGPT saves time when searching for information") also obtained a high mean score ($M = 3.30$, $SD = 0.63$), suggesting that students perceive ChatGPT as a time-efficient tool. Conversely, items related to accuracy and trust tended to receive lower mean scores, with Item 10 ("I believe that the responses provided by ChatGPT are accurate and trustworthy") recording the lowest mean score ($M = 2.53$, $SD = 0.71$). Items addressing learning motivation and ethical concerns generally yielded moderate-to-high mean scores, indicating that students appreciate ChatGPT's practicality while remaining cautious about its accuracy and moral implications.

Table 3. Item-Level Descriptive Statistics (N = 224)

Construct	Statements	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	Std. Deviation
Usefulness	ChatGPT helps me complete English tasks.	2.2	8.0	66.5	23.2	3.11	.63
	ChatGPT improves my vocabulary learning.	2.2	15.6	62.9	19.2	2.99	.66
	ChatGPT makes learning easier.	4.5	16.1	54.9	24.6	3.00	.77
	ChatGPT saves time when searching for information.	1.3	5.4	54.9	38.4	3.30	.63
Ease of Use	ChatGPT features are easy to understand.	3.1	19.6	54.0	23.2	2.97	.75
	I can learn to	2.7	11.2	56.7	29.5	3.13	.71

	use ChatGPT quickly.						
	ChatGPT is easy to use to find information.	0.9	4.9	55.4	38.8	3.32	.61
	ChatGPT is usable even with limited tech skills.	2.2	10.7	64.3	22.8	3.08	.65
Accuracy/Trust	ChatGPT provides accurate and updated information.	4.0	31.7	54.5	9.8	2.70	.70
	I believe that the responses provided by ChatGPT are accurate and trustworthy.	5.4	43.3	44.2	7.1	2.53	.71
	I am confident that ChatGPT utilizes up-to-date information when generating its responses.	2.7	29.5	58.5	9.4	2.75	.66
	I consider ChatGPT to be a relatively accurate source of information.	2.7	31.7	56.7	8.9	2.72	.66
Motivation	ChatGPT makes me more active in vocabulary learning.	3.6	25.9	57.6	12.9	2.80	.70
	ChatGPT has enhanced my motivation to learn vocabulary.	4.0	28.6	52.7	14.7	2.78	.74
	I would recommend ChatGPT to my peers as a tool for learning new vocabulary.	4.9	21.9	58.0	15.2	2.83	.75

	I enjoy using technologies such as ChatGPT to study and to look up information about newly learned vocabulary.	1.8	15.6	62.9	19.6	3.00	.65
Ethical Concerns	ChatGPT may reduce my critical thinking and increase my reliance on AI.	8.0	21.4	38.8	31.7	2.94	.92
	Completing assignments entirely using ChatGPT may be considered dishonest.	2.7	10.3	51.8	35.3	3.20	.73
	I worry about plagiarism when using ChatGPT.	3.6	18.8	55.4	22.3	2.96	.73
	I am concerned about privacy/security risks when using ChatGPT.	3.1	16.5	56.3	24.1	3.01	.73

In general, the descriptive findings suggest that students perceive ChatGPT as a supportive and easy-to-use learning tool. However, their perceptions remain moderate across all constructs and are accompanied by awareness of potential limitations.

2. Gender-Based Differences in Students' Perceptions

To examine whether students' perceptions of ChatGPT differed by gender, descriptive statistics and independent-samples t-tests were conducted across the five constructs. Descriptive results for male and female students are presented in Table 4, while the inferential statistics are shown in Table 5.

Descriptively, male students reported slightly higher mean scores across most constructs than female students, except for Ethical Concerns, where female students showed a marginally higher mean score. However, the mean scores for both groups remained within the moderate range.

Table 4. Group Statistics by Gender

Construct	Gender	N	Mean	Std. Deviation	Std. Error Mean
Usefulness	Male	132	3.14	.48	.04
	Female	92	3.05	.45	.05
Ease of Use	Male	132	3.20	.49	.04

	Female	92	3.02	.46	.05
Accuracy/Trust	Male	132	2.79	.54	.05
	Female	92	2.51	.51	.05
Motivation	Male	132	2.89	.60	.05
	Female	92	2.80	.52	.05
Ethical Concerns	Male	132	3.02	.56	.05
	Female	92	3.05	.53	.06

The independent-samples t-test results presented in Table 5 indicate statistically significant gender differences in Ease of Use ($p = .01$) and Accuracy/Trust ($p < .01$), with male students reporting higher mean scores in both constructs. In contrast, no statistically significant differences were found between male and female students in Usefulness, Motivation, and Ethical Concerns ($p > .05$).

Table 5. Independent Samples t-test Results

Construct	t-value	df	p-value	Mean Difference	Cohen's d	Interpretation
Usefulness	1.42	222	.16	.09	.19	Not significant
Ease of Use	2.68	222	.01	.18	.36	Significant
Accuracy/Trust	3.98	222	< .001	.29	.53	Significant
Motivation	1.11	222	.27	.09	.15	Not significant
Ethical Concerns	-0.46	222	.65	-.03	.06	Not significant

Cohen's d was calculated to assess the practical significance of the gender differences. The effect size was small to medium for Ease of Use ($d = 0.36$) and medium for Accuracy/Trust ($d = 0.53$). Overall, these findings indicate that while most perceptions of ChatGPT are shared across genders, differences emerge in students' evaluations of usability and trust.

B. Discussion

1. Students' Perceptions of ChatGPT in Vocabulary Learning

The findings of this study indicate that senior high school students hold moderately positive perceptions of ChatGPT as a tool for learning English vocabulary across five dimensions: perceived usefulness, perceived ease of use, perceived accuracy or trust, motivation, and ethical concerns. The consistent placement of all constructs within the moderate range suggests that students recognize ChatGPT's pedagogical value while maintaining a critical and cautious stance toward its use.

The relatively higher scores for perceived usefulness and perceived ease of use suggest that students view ChatGPT as a practical and accessible tool that supports vocabulary learning. This finding aligns with the Technology Acceptance Model, which posits that perceived usefulness and ease of use are central determinants of users' acceptance of educational technology.[13] In line with previous studies, ChatGPT's conversational format, rapid response time, and ability to provide contextualized explanations appear to facilitate vocabulary practice and reduce learners' cognitive load.[8], [39], [40] Similar positive perceptions of AI-based tools for vocabulary-related tasks have also been reported in broader AI-assisted language learning research.[42]

Despite these advantages, perceived accuracy and trust were rated the lowest. This result indicates that students remain cautious about relying entirely on AI-generated responses. Such skepticism is consistent with earlier research showing that learners often question the reliability of generative AI outputs and prefer to verify information through other sources.[20], [35] Rather than

reflecting resistance to technology, this cautious stance may signal emerging critical awareness and developing AI literacy, particularly important for secondary school learners.

The findings related to motivation suggest that ChatGPT moderately supports students' engagement in vocabulary learning but does not substantially enhance intrinsic motivation. This aligns with previous research indicating that AI tools tend to function as facilitators that improve efficiency and task completion rather than as primary drivers of long-term motivation.[24] Without structured pedagogical integration, such as guided tasks, reflective activities, or goal-oriented learning designs, ChatGPT may remain a supportive supplementary tool rather than a strong motivational catalyst.

The moderate impact of ChatGPT on students' motivation may be explained through the lens of Self-Determination Theory (SDT), which emphasizes the fulfillment of three basic psychological needs such as autonomy, competence, and relatedness. While ChatGPT may support autonomy by allowing learners to access explanations and practice at their own pace, it has a limited capacity to foster relatedness due to the absence of genuine social interaction and emotional responsiveness. For adolescent learners, social connection, emotional feedback, and teacher or peer support are crucial for sustaining intrinsic motivation. As an AI-based system, ChatGPT primarily functions as a task-oriented, cognitively supportive tool rather than a socially engaging agent. Consequently, although it may enhance learning efficiency and engagement, its contribution to long-term intrinsic motivation remains constrained without structured pedagogical integration and human-mediated support.

Students' responses also revealed moderate awareness of ethical concerns, including plagiarism, overreliance on AI, and issues related to academic integrity. This finding is consistent with prior studies reporting that both learners and teachers recognize the ethical implications of AI use in educational contexts.[1], [43] The presence of ethical awareness alongside positive perceptions suggests that students do not adopt ChatGPT uncritically, highlighting the importance of teacher guidance and responsible AI integration in EFL classrooms.

Overall, these findings demonstrate that students perceive ChatGPT as a valuable and easy-to-use tool for vocabulary learning while remaining cautious about its accuracy and ethical implications. This balanced perception underscores the need for pedagogically guided use of ChatGPT that emphasizes critical evaluation, responsible engagement, and alignment with instructional goals.

2. Gender-Based Differences in Students' Perceptions

In addition to overall perceptions, this study examined whether students' evaluations of ChatGPT varied by gender. While descriptive results indicated generally similar patterns of perception between male and female students, inferential analysis revealed significant gender differences in perceptions of ease of use and accuracy or trust.

Male students reported higher ease-of-use perceptions, suggesting greater confidence in interacting with AI-based tools. This finding is consistent with previous research indicating that male learners often report higher levels of technological self-efficacy and trust when engaging with digital learning environments.[44] Male students also demonstrated greater trust in ChatGPT's outputs, whereas female students appeared to adopt a more cautious evaluative stance. Similar patterns have been reported in prior studies, which suggest that female learners may engage more critically with AI-generated information and exhibit greater concern regarding its reliability.[14], [35]

The effect size (Cohen's $d = 0.38$ for Ease of Use and $d = 0.53$ for Accuracy/Trust) indicates that the gender differences, although statistically significant, range from small to medium in practical terms. This suggests that male students' greater confidence in using ChatGPT and their

trust in its outputs are not only statistically measurable but also meaningfully noticeable in the classroom. Therefore, teachers should consider providing additional support to female students in building AI literacy and trust evaluation skills.

In contrast, no significant gender differences were found in perceptions of usefulness, motivation, and ethical concerns. This indicates that students of both genders similarly recognize the benefits of ChatGPT for vocabulary learning, exhibit comparable engagement, and demonstrate comparable awareness of ethical issues. These findings support recent research suggesting that gender gaps in general attitudes toward educational technology may be narrowing as AI tools become more familiar and widely used in learning contexts.[31], [37]

Taken together, the gender-related findings suggest that, although overall perceptions of ChatGPT are similar across genders, differences emerge in students' confidence and trust when interacting with AI systems. These results highlight the importance of providing equitable instructional support, particularly in fostering critical evaluation skills and confidence among students who may be more cautious in adopting AI-based learning tools.

CONCLUSION AND IMPLICATIONS

This study examined senior high school students' perceptions of ChatGPT as a tool for learning English vocabulary, focusing on usefulness, ease of use, accuracy/trust, motivation, ethical concerns, and gender-based differences. Overall, the findings show that students hold moderately positive perceptions of ChatGPT across all dimensions. The tool is generally considered easy to use and helpful for vocabulary learning, suggesting its potential as a supplementary resource in EFL classrooms.

Nevertheless, perceptions of accuracy and trust were relatively low, suggesting that students remain cautious about relying entirely on AI-generated responses. This careful attitude reflects a growing awareness of the limitations of generative AI and underscores the need for its guided and responsible use. ChatGPT was also found to moderately support learning motivation, but it did not strongly enhance students' motivation, underscoring the importance of integrating ChatGPT into structured pedagogical practices. In addition, students demonstrated awareness of ethical issues, such as plagiarism, overreliance on AI, and academic integrity.

From a pedagogical perspective, the findings suggest that ChatGPT can be effectively used as a supplementary tool for vocabulary-related tasks, such as generating example sentences, exploring word meanings in context, and supporting independent practice. However, teachers are encouraged to guide students to verify AI-generated information, critically evaluate responses, and emphasize ethical use, including proper attribution and avoiding overreliance on AI, to ensure responsible and meaningful integration in EFL classrooms. Practically, teachers may integrate ChatGPT into guided vocabulary tasks by asking students to generate word examples, cross-check meanings using dictionaries or textbooks, and reflect on the accuracy and ethical use of AI outputs as part of classroom activities.

Gender-based analysis revealed significant differences in perceived ease of use and in accuracy or trust, with male students reporting higher levels in both. However, no significant differences were found in usefulness, motivation, and ethical concerns. This study is limited by its single-school sample and reliance on self-reported data. Future research should include more diverse samples, employ mixed methods designs, and examine factors such as proficiency levels, AI literacy, and instructional design.

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