

Exploring Learner Autonomy in AI-Assisted EFL Learning: A Comparative Classroom Observation of ChatGPT Use in Indonesian Senior High Schools



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ARTICLE INFO

Received: 08/05/2026
Reviewed: 09/05/2026
Accepted: 26/06/2026
Published: 29/06/2026

Keywords:

AI in education,
ChatGPT, EFL
learning, learner
autonomy, senior high
school students

ABSTRACT

The rapid integration of artificial intelligence (AI) into English as a Foreign Language (EFL) learning has shifted attention from technological utility to the enactment of learner autonomy. This study describes and compares how senior high school students demonstrate autonomous learning behaviours when using ChatGPT in English classrooms. Employing a qualitative descriptive design with a comparative classroom observation strategy, the study was conducted at SMA 3, SMA 4, and SMA 5 Banda Aceh. Data were collected using an observation sheet covering ten indicators of learner autonomy and analysed through a four-point rubric. The findings showed noticeable differences across the three schools. SMA 3 demonstrated the highest autonomy level (82.5%), characterised by initiative, goal setting, persistence, and metacognitive awareness. SMA 4 showed a moderate level (55%), with students displaying persistence and feature exploration but remaining dependent on teacher instruction. SMA 5 showed the lowest level (37.5%), with students appearing passive, hesitant, and limited in independent reflection. The findings suggest that ChatGPT may create opportunities for independent language practice, but autonomy does not emerge automatically. Pedagogical guidance remains necessary to help students move from teacher-dependent AI use toward strategic, reflective, and self-regulated learning.

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INTRODUCTION

Artificial intelligence has changed how students access information, practise language skills, and manage learning. In EFL contexts, learners can rely on ChatGPT to fulfill many immediate linguistic needs (Demirci et al., 2025), but ChatGPT also presents a learning environment that may change learners' behaviors, thoughts, decisions, and actions (Pawlak & Kruk, 2025). On the theoretical side, learner autonomy concerns learners' ability to take charge of their own learning with willingness, goal setting, strategic selection, monitoring, and evaluation behaviors (Liu et al., 2026). Similarly, self-regulated learning suggests learners can go beyond merely completing teacher-made tasks by consciously planning, remaining persistent (Ebadi et al., 2025), reflecting (Liao et al., 2025), and adjusting their learning endeavors (Wu & Li, 2025). Behforouz and Al Ghaithi (2025) frame autonomy as learners' ability to decide how they learn and evaluate if they learn well, whereas Singh et al. (2026) identify goal setting, persistence, and self-motivation as hallmarks of self-regulated learning.

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Drawing on this theory, ChatGPT's potential role in EFL education is not the answer bank it is often made out to be, but rather a tool that can mediate learner autonomy (Dieterle et al., 2024). Applied to this study, the question is not if students can use ChatGPT but how students use ChatGPT in autonomous, reflective, and independent ways. If a student learns how to ask better questions, revise unacceptable responses, try out edits and prompt variations, critically assess AI-generated feedback, and continue practicing after teacher instruction, they may be behaving autonomously (Wang et al., 2024). However, if students only turn to ChatGPT when instructed to do so, copy answers without revision or validation, and wait passively for teachers to prove them right or wrong, they may not be acting autonomously even when using a highly advanced digital tool (Renfeng et al., 2025). The AI is not the pedagogy. The learners are.

This study is situated within broader discussions of language learning with AI assistants. Debates surrounding AI in education have largely centered around the usefulness of technology in language education, how it assists (or fails to assist) with writing, efficiency, feedback, and concerns over plagiarism (Ozan & Azap, 2026). For EFL learners, ChatGPT has been framed as a tool to assist vocabulary learning, grammar correction, essay writing, and speaking (Pham, 2026). While these applications are important, less attention has been given to how students enact learner autonomy while using ChatGPT in real EFL classrooms, particularly at the senior high school level (Coeckelbergh & Gunkel, 2024). Autonomy matters because it is manifested through behaviors such as taking initiative, being persistent, reflecting on performance, working with peers, and using available resources independently (Rangponsumrit & Palmer, 2025). Therefore, this study zooms in on the behavioral and pedagogical aspects of ChatGPT use among EFL learners.

One problem motivating this study is the gap between the opportunities afforded by ChatGPT and students' actual classroom practices. On the one hand, ChatGPT provides several learning conditions that may foster autonomy, namely instant responses, flexible interaction, personalised explanations, and on-demand language practice (Shalan, 2025). However, just because a tool facilitates autonomy does not mean that learners will act autonomously. Students may still wait for teacher instruction, accept ChatGPT-generated answers without revision, and limit ChatGPT use to teacher-assigned activities (Renfeng et al., 2025). Some students may be more willing to initiate ChatGPT use, set learning goals, explore alternative strategies, evaluate feedback, and practise beyond teacher instructions, whereas others may not (Zhang et al., 2023). Thus, AI does not guarantee autonomy. It only creates opportunities to act autonomously.

Therefore, this study seeks to examine how senior high school learners enact learner autonomy while using ChatGPT for English learning. Instead of quantifying learning effectiveness or productivity in a narrow sense, this research studies the observable behaviors that can be interpreted as autonomous learning with ChatGPT. This study offers both theoretical and practical contributions. Theoretically, this study hopes to ground the discussion of learner autonomy in AI by reconnecting classical autonomy frameworks to learner behaviors with AI tools in digital learning contexts. Practically, this study provides insights for English teachers, curriculum designers, schools, and students navigating AI-mediated learning.

Earlier research has also found generative AI tools like ChatGPT to correlate with flexible, personalized, and self-directed language learning. Tram et al. (2024) found EFL learners reported accepting ChatGPT as a tool for self-learning due to how it allowed learners to practice English on their own, receive immediate support, and have control over their English learning. Du & Alm (2024) found ChatGPT affected learners' basic psychological needs, such as autonomy and competence in English for Academic Purposes contexts, highlighting how AI could impact learner agency. Nguyen et al. (2025) found ChatGPT instruction promoted stronger learner autonomy than teacher-led language learning, including autonomy in taking initiative and experimenting.

Additionally, Apriani et al. (2024) found AI chatbots could help EFL learners improve their writing ability while also supporting self-efficacy and self-regulation skills. At a meta level, Mohebbi's (2025) literature review found digital tools like chatbots and automatic writing feedback could help

language learners become more independent and self-regulated. In a systematic review of 144 language learning studies, Li et al. (2025) similarly found learner support, feedback, and autonomous language learning with digital tools were common themes among studies on generative AI. While these studies suggest strong potential for AI to support learner autonomy, there is a need for more classroom-based evidence, particularly in certain EFL contexts.

However, several aspects are yet to be explored. First, most prior research has been on higher education or students' perceptions. Fewer studies have focused on learners' autonomy itself or how useful ChatGPT is. Second, there has been little investigation into how learner autonomy is practiced tangibly in actual EFL classrooms, especially at the senior high school level. Existing literature has largely discussed autonomy in hypothetical terms or through learner reflections, rather than directly observing students' behaviors in practice. Third, while some research has been done in Indonesia, there is limited evidence comparing different schools. This study aims to address these gaps by observing learner autonomy as a behavioural practice across three Indonesian senior high schools where ChatGPT is used in EFL learning. The novelty brought within this study is in correlating AI and English as a foreign language classroom learning with observable measures of learner autonomy, rather than taking learner autonomy for granted. Based on this rationale, the research question being formulated in this study is: How do students demonstrate learner autonomy when using ChatGPT in EFL learning?

LITERATURE REVIEW

The Role of Learner Autonomy in EFL Classroom

Learner autonomy is often defined as the student ability to conduct an independent learning without solely relying on the teacher. Rooted in Self-Directed Theory (SDT) introduced by Knowles (1975), this action includes taking responsibility for setting up the learning goals, choosing the appropriate learning strategy, and conducting regular self-assessment (Smith et al., 2018). Learner autonomy has become widely acknowledged along with the integration of technology in the educational sector which allows students to learn independently with the help of digital tools (Akhmetzhanova et al., 2025). Moreover, the role of autonomous learning becomes vital, as it influences the student's success in, particularly in the 21-century education which emphasizes students to have critical and analytical thinking by using various learning sources.

In EFL classrooms context, learner autonomy has been recognized as an important key factor contributing to improved academic performance. Numerous studies have been conducted to examine the impact of learner autonomy in enhancing learning outcomes, specifically in EFL classroom. For instance, Ozer and Yukselir (2023) found that learner autonomy or self-directed learning, and goal setting are significantly improved Turkish students' English competency. Furthermore, implementing autonomous activities in writing classrooms can increase student's motivation, resulting in improved students writing performance (Al-Shboul et al., 2023). Similarly, Botes et al. (2025) reported that autonomous learning can improve students' willingness to participate in classroom activities without worrying of making mistakes, so that they can enjoy the learning process effectively. This indicates that autonomous learning is suitable to implemented in EFL classrooms, as it can reduce students learning anxiety that commonly become the issue in a foreign language learning.

In the Indonesian context, many EFL teachers agreed that learner autonomy is considered as one of important aspects in language learning. However, several challenges such as students limited experience of autonomous learning and time constraint found in the curriculum still impeded the optimal implementation of learner autonomy in EFL classroom (Lengkanawati, 2017). Therefore, ensuring both teachers and students readiness to employ autonomous learning is paramount in order to achieve its benefits (Xi et al., 2024). Overall, these studies have confirmed the advantages of implementing autonomous learning, particularly in EFL classroom settings while highlighting the importance of mitigating the contextual challenges that may hinder its successful adoption.

The Role of AI-mediated Learning in Promoting Learner Autonomy in EFL Classroom

Given the advancement of technology, the demand for students to take a greater responsibility in their own learning have increased, particularly with the emerging of several AI-assisted tools in education. Studies have shown that AI has potentially enhanced learners' autonomy which influences their motivation to study, resulted in enhanced academic achievement (Kundu & Bej, 2025; Wei, 2023). Integrating AI-mediated learning in EFL classroom is advantageous, as it offers interactive, joyful, and interesting classroom activities which can improve students' motivation (Yuan & Liu, 2024). EFL students in China found that chatbots is an effective media that can be used as a speaking partner in an informal speaking classroom (Liu et al., 2024). Similarly, in an experimental study, Fathi et al. (2024) revealed that Chatbots is one of the effective AI-based learning tools that can be used to improve EFL students' fluency, pronunciation, coherence, and accuracy in speaking skills.

One of the most adopted AI tools in EFL classroom is ChatGPT, developed by OpenAI, this tool is advantageous in helping students in language learning, particularly in improving English skills and subskills, offering direct feedback, and enabling personal learning experiences (Xiao & Zhi, 2023). In recent years, several studies have highlighted the role ChatGPT in improving English language proficiency. For example, Huang and Tan (2023) asserted that regardless of its limitation, ChatGPT is still effective in assisting writers to produce a higher-quality writing within a shorter timeframe. Additionally, integrating AI-based learning tools is beneficial in improving EFL students critical thinking in the English literature classroom compared to those using traditional methods (Liu & Wang, 2024).

Further studies underscore the potential of ChatGPT in enhancing multiple language competencies. Khzouz et al. (2024) acknowledged ChatGPT as the prominent tools that can significantly improve students writing skills, pronunciation, as well as grammar and vocabulary mastery. Correspondingly, Enamorado (2025) reported that ChatGPT allows students to achieve a better understanding of writing skill through the implementation of text-based activities, underscoring the promising benefits of ChatGPT in developing students' foreign language proficiency. Likewise, Boudouaia et al. (2024) claimed that this tool can effectively increase students writing skill through iterative feedback, emphasizing its significant role as a pedagogical resource in improving students' language proficiency.

Importantly, despite the numerous advantages offered by ChatGPT, several concerns may arise when students become too dependent on AI tools. Issues related to ethics and academic integrity are notable concerns, as unregulated use of AI may lead to plagiarism or academic misconduct (Ofusori & Hendradi, 2025). To mitigate the risks, teachers play an important role in guiding and supervising students' use of AI tools such as ChatGPT, thus, providing a clear guidelines and protocol is essential to ensure that AI integration can support learning.

Several systematic reviews also reinforce the role of AI tools in supporting learner autonomy in EFL classrooms. Manzoor et al. (2025) confirmed that AI-based learning tools such as ChatGPT can enhance students' engagement in EFL classroom activities leading to promote learner autonomy. Likewise, Zhang (2025) conducted an experimental study to investigate the impact of AI tools in improving Chinese EFL students' resilience, self-regulated learning, and learner autonomy. The findings revealed that the integration of AI tools in EFL classrooms significantly improved students' self-regulation, resilience, and autonomous learning, highlighting the substantial role of AI tools in language learning classrooms. Similarly, Mohebbi (2025) stated that integrating AI-mediated learning tools in EFL classroom is beneficial in promoting student's classroom participation, as it facilitates a real time feedback and offers personalized learning opportunities. These activities are believed to be able to improve students' motivation and willingness to study, resulted in improved overall learning outcomes.

Consequently, the above studies indicate that AI-mediated learning environment is beneficial in facilitating students' independent learning, particularly by offering adaptive feedback and personalized learning, which contribute to provide a greater learner autonomy in EFL classrooms.

Regardless of these benefits, teachers support remains pivotal in guiding the direction of the teaching and learning process to maintain meaningful and pedagogically based activities. Without this consideration, the students will likely get confused and misdirected in their learning process. Therefore, the integration of AI tools in learning should be accompanied by teachers' guidance to ensure the teaching and learning run smoothly.

METHODS

Research Design

This study took a qualitative descriptive research design with a comparative classroom observation strategy (Creswell, 2013). In other words, the researchers directly observed how students appeared to enact learner autonomy when using ChatGPT during English as a Foreign Language learning in three schools. A qualitative descriptive study design was appropriate because researchers were not attempting to measure the statistical effect of ChatGPT on achievement but sought to describe and compare behaviours related to learner autonomy across authentic classroom settings (Bernard, 2006). It seemed reasonable to use a qualitative approach to understand naturalistic classroom behaviours such as initiating tool use, setting goals, revising work based on feedback, persisting when responses were unclear, or exploring learning versus chatting functions.

Setting and Participants

Research sites for this study included SMAN 3 Banda Aceh, SMAN 4 Banda Aceh, and SMAN 5 Banda Aceh. These three senior high schools were chosen because the researchers visited them and observed classrooms as comparative sites for the purposes of this study. Each classroom observation session was done four times synchronized with the school's instructional schedule. Observations were conducted during regular English subject hours at each school. Each observation session lasted for 2 lesson periods (2 x 45 minutes), matching the standard schedule of the schools. Total observation time accumulated across all three sites was approximately 18 hours over the course of the study. Data were collected from students who participated in EFL learning activities taking place in the observed classrooms.

The participants of interest in this study were aggregated at the class level. Specifically, researchers observed one intact 10th-grade EFL class at each school (SMA 3, SMA 4, and SMA 5 Banda Aceh). The average class size ranged from 30 to 35 students per class, resulting in a total pool of approximately 100 students observed across the three settings. During the data collection process, the researchers adopted the role of non-participant (passive) observers. The observers sat quietly at the back of the classroom to minimize the Hawthorne effect, taking descriptive field notes on students' digital behaviors without disrupting or intervening in the ongoing teaching and learning process. Data collection spanned over a one-month period. Observations were carried out with a frequency of three times per school, leading to a total of nine classroom observation sessions for the entire comparative study. The following table shows the starting and ending times of the observation data collection at the research location.

Table 1. Research Schedule

No	Location	I	II	III	IV
1.	SMAN 3 Banda Aceh	12 August 2025	19 August 2025	26 August 2025	2 September 2025
2.	SMAN 3 Banda Aceh	14 August 2025	21 August 2025	28 August 2025	4 September 2025
3.	SMAN 3 Banda Aceh	16 August 2025	23 August 2025	30 August 2025	6 September 2025

However, since this study presents its results aggregated at the class level, the participants of interest here were school groups rather than individual students. All three schools were located in Banda Aceh and featured EFL classrooms in which students used ChatGPT. This setting permitted direct comparisons across schools while holding relatively constant observation focus and conceptual lenses.

Instruments

The main instrument used in this study was an observation sheet designed to examine ChatGPT use and learner autonomy in EFL classrooms. The sheet covered ten indicators: initiative in using ChatGPT, goal-setting behaviour, persistence in facing challenges, exploration of ChatGPT features, response to feedback, use of ChatGPT beyond classroom assignments, metacognitive awareness in evaluating AI suggestions, peer collaboration, engagement and motivation, and tool preference and digital independence. These indicators were selected because they represent key aspects of learner autonomy and self-regulated learning in technology-assisted language learning. To support consistent observation, a four-point rubric was used: Beginner (1), Developing (2), Proficient (3), and Excellent (4). The rubric helped the researchers assess the extent to which each indicator appeared during classroom activities. For example, students who used ChatGPT only after teacher instruction received lower scores, while students who used it independently and strategically received higher scores. The instrument was validated by two senior lecturers in EFL pedagogy and educational technology. Their feedback was used to revise the wording and rubric descriptors. A pilot observation was then conducted in another Grade 10 EFL classroom. Two observers scored the behaviours independently, and inter-rater agreement reached 85%. Scoring differences were resolved through discussion.

Data Collection

Researchers collected data for this study by visiting each school and observing students using ChatGPT during English learning. More specifically, they took notes on how students appeared to use ChatGPT and whether they exhibited certain behaviors related to the previously mentioned ten indicators of learner autonomy. Observers paid close attention to indicators like taking the initiative to use ChatGPT, setting one's own purposes for using the tool, trying again when provided with unclear responses, revising answers based on feedback, exploring the tool's learning function versus its chatting function, and using ChatGPT independently of teacher instruction.

During the initial phase of analysis, researchers checked off each autonomy indicator as either being present or not present in each school using a Yes/No observation format. The focus here was on simply identifying whether students at SMA 3, SMA 4, and SMA 5 were seen doing certain things related to learner autonomy so that researchers could begin to generate a comparative profile of each school. Researchers recorded descriptive field notes when appropriate.

Data Analysis

Study data were analysed in two stages as suggested by Miles et al. (2014) and Christou (2023) for qualitative approach. The first stage was a qualitative description of observational results based on each of the ten learner autonomy indicators. During this phase of analysis, researchers interpreted students' use of ChatGPT to accomplish behaviours like taking the initiative, setting goals, handling difficulties, responding to corrective feedback, and reflecting on quality of responses. As one example, students might retry writing prompts or change their sentence structure if given vague or wrong answers, which could be interpreted as evidence of persistence. As another example, students who consulted their textbooks or reached out to friends when they felt uncertain about ChatGPT's responses might be deemed higher on metacognitive awareness. The second stage of analysis required researchers to translate qualitative descriptions into rubric scores for each indicator within each school. These ten indicator scores were summed and converted into percentages to create an overall learner autonomy profile score for each school.

Ethics

Ethical procedures were followed throughout the study. Before data collection, the researchers obtained approval from the administrative boards of SMA 3, SMA 4, and SMA 5 Banda Aceh, as well as from the English teachers involved. Written informed consent was obtained from the students and their legal guardians. Participants were informed about the purpose of the study, the observation

process, and their right to withdraw at any time. Student identities were anonymized, and findings were reported only at the school-group level.

FINDINGS AND DISCUSSION

This section presents findings from comparative classroom observations of learner autonomy during AI-assisted EFL activities. The results are described qualitatively and evaluated using a four-point rubric, followed by a discussion linking the observed behaviours to self-regulated learning and generative AI use.

Observation Results of the Use of ChatGPT on Students' Learning Independence

The following table presents observations regarding indicators of student learning independence in using ChatGPT in three high schools (SMA 3, SMA 4, and SMA 5). Each indicator describes a specific aspect of independence, such as initiative, goal-setting, persistence, feature exploration, motivation, and tool preference. Data are presented as "Yes" and "No" options, indicating the extent to which students in each school met each indicator. Therefore, this table serves to provide a comparative overview of the level of student independence in utilizing ChatGPT as a language learning tool.

Table 2. *ChatGPT Usage Observation*

No	Learner Autonomy Indicator	SMA 3		SMA 4		SMA 5	
		Yes	No	Yes	No	Yes	No
1	Students use ChatGPT on their own initiative without being asked by the teacher.	√			√		√
2	Students set personal learning goals when using ChatGPT (e.g.: "I want to improve my speaking skills")	√			√		√
3	Students demonstrate persistence when faced with difficulties (e.g., retrying prompts, changing sentence structure)	√		√			√
4	Students explore various features/functions of ChatGPT (e.g.: asking about grammar, vocabulary, practice questions)	√		√			√
5	Students respond actively to feedback from ChatGPT (e.g., revising work)	√		√			√
6	Students use ChatGPT to learn beyond assigned assignments.	√			√		√
7	Students evaluate or reflect on feedback from ChatGPT before accepting it.	√		√			√
8	Students collaborate or share findings from ChatGPT with peers.	√		√			√
9	Students appear confident or motivated when using ChatGPT	√		√			√
10	Students prefer ChatGPT over other tools for language learning	√		√			√

Comparative Profile of Learner Autonomy Across Schools

The integration of ChatGPT across the three senior high schools (SMA 3, SMA 4, and SMA 5 Banda Aceh) reveals a highly uneven profile of learner autonomy. The consolidated data from the observations and the ten-indicator rubric (Table 2, 3, 4, and Figures 1, 2, 16) demonstrate a clear descending gradient of independent learning behaviour from SMA 3 to SMA 5. Rather than exhibiting uniform digital autonomy, students across these institutions fall into three distinct archetypes: internally-driven autonomy (SMA 3), teacher-directed competence (SMA 4), and superficial/infant engagement (SMA 5).

Furthermore, feature exploration and critical reflection were minimal, with students passively accepting AI feedback without evaluation. A lack of collaboration and low self-confidence resulted in

suboptimal ChatGPT utility. Overall, these findings highlight the need for pedagogical strategies that foster active, independent engagement with AI technology.

The following table of indicators for student learning independence in using ChatGPT is compiled based on the assessment results using Rubric B. This rubric provides a structured evaluation framework through ten main indicators, including aspects of goal setting, initiative, persistence, feature exploration, response to feedback, metacognitive awareness, motivation, collaboration, out-of-class use, and tool preference. Each indicator is described in four levels of achievement, namely Beginner (1), Developing (2), Proficient (3), and Excellent (4), which reflect the variation in student behaviour from the most basic to the most independent level.

Table 3. Learning Independence Indicator Rubric

Indicator	1 – Beginner	2 – Developing	3 – Proficient	4 – Excellent
Goal setting behaviour	Not setting clear goals	Setting vague or teacher-directed goals	Set short-term learning goals independently	Consistently set clear and realistic language learning goals with ChatGPT
Initiatives in using ChatGPT	Use only when instructed.	Sometimes used independently	Frequently use ChatGPT without being asked	Always use ChatGPT independently and look for additional opportunities
Perseverance in the face of challenges	Easily give up or avoid tasks	Minimal effort to solve the problem	Try alternative input or seek help	Demonstrate perseverance and resilience in overcoming challenges related to AI
Effective use of ChatGPT features	Just using basic functions	Try a few choices or prompts	Explore different features for different skills (writing, speaking, etc.)	Using ChatGPT interactively and creatively in various tasks
Response to feedback	Ignoring ChatGPT feedback	Sometimes revise based on feedback	Frequently improve results with ChatGPT guide	Consistently conduct critical revisions and improvements
Metacognitive awareness (self-evaluation of AI suggestions)	Accept all feedback without question	Sometimes question feedback	Frequently compare feedback with your own ideas or other sources.	Critically evaluate, accept or reject ChatGPT feedback with clear reasons.
Engagement and motivation	Less interested or avoiding ChatGPT	Engaged with low motivation	Engaged with moderate interest and focus	Highly motivated, focused and enthusiastic during ChatGPT sessions
Collaborate or share with friends	Never discuss or share findings from ChatGPT	Rarely discuss or help friends	Sometimes collaborating or sharing prompts is helpful.	Actively support friends and contribute to the shared knowledge of ChatGPT
Using ChatGPT outside the classroom	Never used outside of class	Rarely used outside of class	Sometimes used independently after class	Regularly use ChatGPT for personal learning outside of assignments
Tool preferences and digital independence	Rely solely on teachers or printed materials	Prefer traditional tools over ChatGPT	Consider ChatGPT as a helpful complement	Choosing ChatGPT as your preferred self-paced language learning tool

Based on the rubric, this school is in the "Proficient-Excellent" category. Students demonstrate a fairly high level of learning independence in utilizing ChatGPT, particularly in terms of persistence, motivation, and tool usage preferences. However, there is still room for development in critical reflection and broader feature exploration.

Table 4. Total Value of Learning Independence Indicators (Based on Rubric)

No	Indicator	SMA 3	SMA 4	SMA 5
1	Goal setting behaviour	3	1	1
2	Initiatives in using ChatGPT	3	2	1
3	Perseverance in the face of challenges	4	2	1
4	Effective use of ChatGPT features	3	3	2
5	Response to feedback	3	3	1
6	Metacognitive awareness (self-evaluation of AI suggestions)	3	1	1
7	Engagement and motivation	3	2	1
8	Collaborate or share with friends	3	2	3
9	Using ChatGPT outside the classroom	4	4	2
10	Tool preferences and digital independence	4	2	2
Total		33	22	15
Percentage		82,5%	55%	37,5%

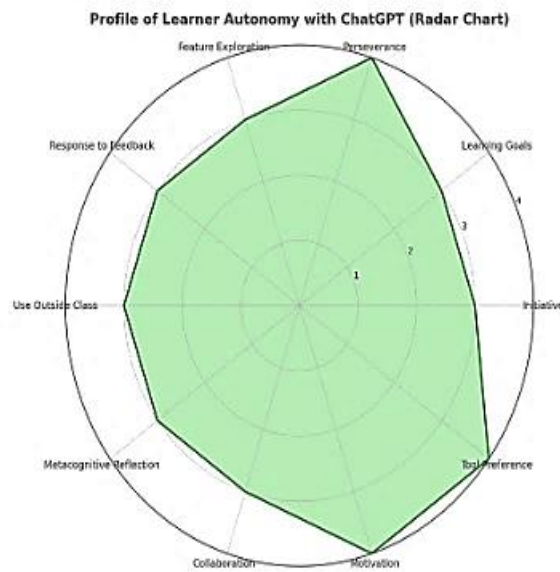


Figure 1. Profile of Learner Autonomy with ChatGPT SMA 3

Key Behavioral Patterns in AI-Mediated Autonomy Initiative, Goal Setting, and Out-of-Class Volition

A sharp contrast emerges in how students initiate ChatGPT usage. At SMA 3, students exhibit strong internal motivation, spontaneously accessing the AI tool before teacher instructions to fulfill personalized, long-term linguistic goals (such as vocabulary enrichment and structural analysis). Conversely, at SMA 4 and SMA 5, student initiative is extremely low (scoring 1 on the rubric). In these settings, ChatGPT usage is entirely passive and strictly task-oriented; students only activate the tool when explicitly commanded by the teacher, viewing it merely as a classroom chore rather than a voluntary resource for out-of-class personal development.

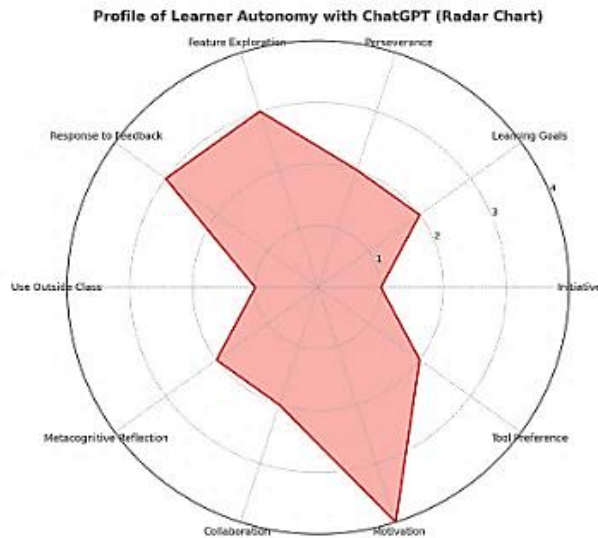


Figure 2. Profile of Learner Autonomy with ChatGPT SMA 4

Technical Persistence and Feature Exploration

When faced with unsatisfactory AI responses, student behaviors diverge significantly based on their level of independence. Highly autonomous learners (SMA 3) display robust persistence by independently modifying prompt variations, experimenting with sentence structures, and exploring multi-functional features (essays, grammar drills, and conversational practice). Meanwhile, intermediate learners (SMA 4) show developing persistence but easily experience frustration, requiring teacher intervention when prompts fail. At the lowest spectrum (SMA 5), persistence is virtually non-existent; students immediately abandon the task or wait passively for traditional guidance when the AI output is sub-optimal.

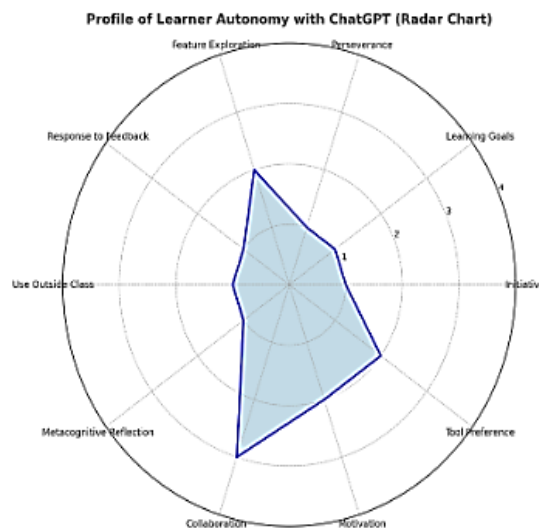


Figure 3. Profile of Learner Autonomy with ChatGPT SMA 3
"Profile of Learner Autonomy with ChatGPT SMA 5"

Critical Reflection vs. Passive Acceptance

The most critical area requiring development across all proficiency tiers is metacognitive awareness and response to feedback. While SMA 3 students demonstrate advanced critical reflection—revising their work based on AI suggestions and cross-referencing outputs with printed textbooks—this behavior is absent in the other schools. Students at SMA 4 and SMA 5 exhibit a high risk of passive

compliance, uncritically trusting and copy-pasting ChatGPT's outputs without verification. At SMA 4, any attempt at validation is fully shifted to the teacher's authority, while at SMA 5, feedback is accepted without any cognitive evaluation.

Affective Factors: Motivation, Collaboration, and Tool Preference

Across all three profiles, affective barriers are noticeably lowered by AI adoption. Motivation and engagement remain relatively high across the board, proving that ChatGPT reduces performance anxiety and increases student confidence. Interestingly, collaboration acts as a unique equalizer; even in the least independent environment (SMA 5), peer collaboration emerged as the single strongest proficiency, where students spontaneously shared prompts and discussed findings. However, tool preference remains deeply tied to autonomy: autonomous students overwhelmingly prefer ChatGPT for its speed and practicality over traditional print dictionaries, whereas dependent learners still default to textbooks and teacher notes unless coerced to use the AI tool.

In short, the diagram highlights that students' independence with ChatGPT is still in its infancy. The class demonstrates growing collaborative potential and motivation, but intensive teacher support is still needed to strengthen independence, critical reflection, and voluntary use of ChatGPT both in and outside of the classroom.

DISCUSSIONS

The empirical findings of this study provide critical insights into how generative AI tools, specifically ChatGPT, reshape the enactment of learner autonomy (LA) in high school EFL classrooms. To address the multi-dimensional nature of LA, the following discussion shifts away from isolated institutional descriptions to evaluate the overarching behavioral patterns across the ten established indicators. Specifically, this synthesis details how the technological attributes of AI act as a double-edged sword, demonstrating that ChatGPT functions as an effective catalyst for learner autonomy if, and only if, students anchor their digital engagement within three non-negotiable behavioral pillars: proactive initiative, operational persistence, and rigorous critical reflection.

The Indispensability of Proactive Initiative and Goal-Setting Volition

The baseline pattern emerging from this investigation reveals that the mere presence of advanced conversational AI does not automatically engender proactive learning behaviors. When analyzing the intersection of student initiative (Indicator 1), goal-setting (Indicator 2), and out-of-class utilization (Indicator 6), the data underscores that digital tools remain inert without internal agentic drive. ChatGPT supports learner autonomy only when students demonstrate the spontaneous volition to initiate interaction based on personalized, self-determined learning targets rather than relying on external institutional mandates. In scenarios where high autonomy is manifested, learners utilize the interface to pursue individualized linguistic queries, such as idiom mastery and lexical expansion, before any teacher instruction is issued. This specific behavioral pattern directly aligns with Zimmerman's (2002) forethought phase of self-regulated learning (SRL), where proactive goal-setting serves as the psychological engine that fuels intrinsic motivation and transforms a digital tool into an autonomous learning space.

The primary technological attribute of generative AI that enables and rewards this proactive initiative is its on-demand, 24/7 availability coupled with a zero-judgment interface. Unlike traditional teacher-led classrooms where students frequently experience debilitating foreign language communication anxiety (Botes et al., 2025), ChatGPT provides a psychologically safe, low-stakes environment for spontaneous linguistic experimentation. This conversational safety effectively shifts tool preference (Indicator 10) toward AI assistants, leading to voluntary out-of-class utilization (Indicator 6) beyond the physical confines of the classroom. When students actively recognize the immediate utility of an interactive, responsive interface over static printed dictionaries, they voluntarily extend their learning boundaries (Benson, 2013). However, the critical pedagogical

interpretation of this pattern is that the tool itself does not create initiative; it merely rewards it. Without pre-existing student volition, the technological affordance of the AI remains entirely dormant, reducing a sophisticated cognitive assistant to an underutilized, teacher-driven digital worksheet.

Operational Resilience and Adaptive Learning: The Role of Persistence

The second critical pattern identified in this study relates to the conditional nature of operational resilience, specifically how ChatGPT tests student persistence (Indicator 3) and stimulates feature exploration (Indicator 4). The core finding indicates that ChatGPT successfully fosters learner autonomy only when students possess the behavioral persistence to navigate ambiguous, complex, or sub-optimal AI outputs. In highly autonomous digital environments, when the chatbot generates unsatisfactory or overly complex syntactical responses, independent learners do not abandon the task. Instead, they demonstrate resilience through strategic prompt engineering—actively rephrasing commands, adjusting input criteria, and systematically breaking down complex essays into smaller, manageable textual fragments. Within the framework of SRL theory, this adaptive behavior represents the hallmark of resilient learners who flexibly modify their behavioral and cognitive strategies to overcome immediate environmental obstacles (Zimmerman, 2002).

This self-regulated persistence is actively driven by ChatGPT's recursive conversational architecture. Because the large language model can process iterative prompt modifications and yield instantaneous variations of grammar, vocabulary paradigms, and sample texts, it implicitly invites open-ended exploration and rewards student tenacity. However, this technical affordance comes with a steep psychological cost; it demands high operational confidence. If students lack baseline resilience and technological self-efficacy, unsatisfactory or confusing AI outputs quickly lead to cognitive frustration and immediate task abandonment. Instead of capitalizing on the tool's interactive functions or exploring its diverse features, passive learners immediately revert to absolute teacher dependency. This bifurcation in student behavior underscores the main interpretation of the pattern: ChatGPT cannot scaffold persistence where it does not exist. The tool provides a conversational space that rewards iterative problem-solving, but the student must supply the behavioral stamina to engage with the machine recursively.

Metacognitive Engagement: The Absolute Necessity of Critical Reflection

The most vital dimension separating superficial AI utility from authentic digital autonomy lies in the domain of metacognitive engagement, specifically responses to feedback (Indicator 5) and critical reflection (Indicator 7). The empirical pattern demonstrates that ChatGPT supports true learner autonomy only when students actively treat the AI not as an infallible authority, but as a fallible conversational interlocutor. Autonomous learners manifest this critical stance by scrutinizing AI-generated grammar corrections, questioning stylistic suggestions, and rigorously cross-referencing suspicious syntax against traditional printed textbooks. This advanced evaluative capacity exemplifies Benson's (2013) critical level of autonomy, where independent learners exercise ultimate semantic control by judging the validity and reliability of digital resources before internalizing them into their interlanguage system.

The specific technological aspect of AI that invites this level of reflection is its sophisticated explanatory feedback mechanism. Unlike a standard spellchecker or automated grammar tool that merely highlights errors mechanically, ChatGPT can elaborate on the underlying linguistic rules, explain why a certain phrase is contextually inappropriate, and suggest multiple stylistic alternatives. This explanatory depth prompts highly autonomous students to consciously compare the AI's suggestions with their prior linguistic knowledge, fostering deep metacognitive monitoring. Nonetheless, a major behavioral vulnerability observed across the student cohorts is the widespread presence of "automation bias"—a dangerous pedagogical blind spot where dependent students blindly accept and copy-paste AI outputs without any cognitive validation. This widespread passivity confirms that while AI feedback provides the structural opportunity for reflection, the actual execution of critical

assessment is not inherent to the tool. Without active, critical reflection on the part of the student, the use of ChatGPT degenerates into a superficial shortcut that stifles cognitive development rather than fostering independent mastery.

Socio-Behavioral Dynamics and Affective Equalization

Finally, the classroom dynamics observed across the different proficiency spectrums demonstrate that AI-mediated learning enhances social collaboration (Indicator 8) and affective engagement (Indicator 9) in unique ways. A key finding is that even among student groups displaying low levels of individual independence, peer collaboration emerges as a prominent collective strength. Students spontaneously pool their digital knowledge, share successful prompt formulations, and co-evaluate ChatGPT's responses in small groups. This pattern strongly refutes the traditional misconception that technology-enhanced autonomous learning induces student isolation or damages social interaction. Instead, it validates the social turn in learner autonomy, confirming that digital independence thrives within a vibrant community of practice through collaborative knowledge construction (Benson, 2013).

The technological catalyst for this collaborative behavior is ChatGPT's highly shareable and visual output format. Because prompt formulations and textual answers can be easily shared across devices or compared directly on screen, they serve as instant social artifacts for peer discussion and collaborative critique. This cooperative sharing lowers affective barriers, increases student self-efficacy, and generates an enthusiastic, highly motivated classroom environment across all proficiency levels. Ultimately, the successful orchestration of these ten indicators demonstrates a profound pedagogical reality: when guided strategically, the conversational flexibility of AI can effectively ground classical autonomy frameworks within the digital age. However, the overarching truth remains that the AI is not the instructor; it is merely an advanced mirror of the user's behavior. ChatGPT serves as a powerful instrument for learner autonomy only when the students themselves supply the vital psychological currency of proactive initiative, operational persistence, and rigorous critical reflection.

CONCLUSION

This study demonstrates that while ChatGPT has strong potential to facilitate learner autonomy in EFL contexts by encouraging initiative, persistence, exploration, and critical reflection, its effectiveness is highly variable and conditional upon students' internal readiness and pedagogical guidance. Comparative evidence across three Indonesian high schools reveals a distinct gradient of digital autonomy, ranging from internally-driven, proficient self-regulation to passive, teacher-dependent engagement. Ultimately, ChatGPT successfully supports authentic autonomy only when students actively transition from passive consumers to resilient, reflective users who supply their own cognitive initiative; without this student-driven drive, the tool's pedagogical affordances remain largely dormant. To overcome the limitations of this study's small sample size and observational scope, future research should employ mixed-methods approaches across a broader, more diverse institutional spectrum to deeper investigate students' internal cognitive processes when collaborating with generative AI.

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