High School Students' Perceptions of Using ChatGPT with the RACE Framework to Support Autonomous Learning in Writing English

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Abstract

Abstract: This study explores high school students' perceptions of using ChatGPT with the RACE Framework (Role, Action, Context, Execute) to support autonomous learning in English writing. Employing a qualitative case study design, data were collected from class XI-7 students at SMAN 1 Mojosari through classroom observations and semi-structured interviews. Analysis followed Miles, Huberman, and Saldaña's thematic approach, focusing on cognitive, affective, and conative domains within Bloom's Taxonomy. Findings reveal that ChatGPT, when integrated with the RACE Framework, facilitates progressive development in all three domains. Cognitively, students advanced from remembering vocabulary to creating original works that synthesize AI-generated content with personal ideas. Affectively, they moved from curiosity toward AI-assisted learning to internalizing the value of independent learning, demonstrating increased motivation and self-confidence. Conatively, students progressed from imitating teacher demonstrations to achieving naturalization, using AI tools automatically, strategically, and reflectively. The results highlight the RACE Framework's role in guiding purposeful AI use, promoting critical thinking, creativity, and independence rather than over-reliance on technology. Theoretically, the study enriches AI-assisted language learning literature by providing domain-specific insights at the secondary school level. Practically, it offers educators a structured model for integrating AI into writing instruction to strengthen learner autonomy.

Keywords: Autonomous Learning; Bloom's Taxonomy, ChatGPT, RACE Framework, secondary education, writing skills.

Introduction

The rapid development of Artificial Intelligence (AI) in recent years has had a significant impact on various aspects of life, including education. AI technology has revolutionized the traditional learning environment through the introduction of adaptive learning platforms, intelligent tutoring systems, and tailored feedback mechanisms. AI-based systems are able to provide personalized learning experiences that are tailored to learners' characteristics, thereby improving academic achievement and class participation (Fitzpatrick, Fox, & Weinstein, 2023).

One of the main contributions of AI in education is its ability to promote autonomous learning, which is the skill of students to take responsibility for their own learning process, from setting goals, choosing strategies, to organizing study habits. Technology-based approaches emphasize students' self-engagement with digital learning media, thus providing opportunities for AI to strengthen learners' learning autonomy (Benson, 2011). In the context of English language learning, understanding students' perceptions is important because it will influence how they utilize AI technology to support learning autonomy.

However, the implementation of autonomous learning is not free from challenges. Many students have difficulty setting learning goals and monitoring progress independently (Schunk, 2012). Lack of confidence in one's own abilities can also hinder the optimal utilization of AI (Zimmerman, 2002). In addition, over-reliance on AI-generated feedback can reduce the ability to think critically and solve language problems independently (Luckin, 2018). This suggests the need for learning strategies that not only integrate AI, but also encourage students' independence and full control over the learning process.

Based on this gap, this study aims to: describe students' perceptions of the use of ChatGPT with RACE framework in learning to write English text. The research findings are expected to make theoretical and practical contributions. Theoretically, the results of this study enrich the study of learning autonomy in the context of AI-based learning in the digital era. Practically, this research provides recommendations for educators in integrating AI effectively to promote autonomous learning.

This research framework is based on the relationship between student perception, autonomous learning, and AI integration through the RACE framework. AI acts as a mediating factor that influences student perception, which in turn influences autonomous learning behavior. The RACE framework is used as a guide to make students' interactions with AI more purposeful, relevant, and supportive of learning objectives. With this framework, the research is expected to map how students utilize AI to improve narrative writing skills independently, while maintaining a balance between technological support and critical thinking skills. Thus, this study not only fills a gap in the literature related to the use of AI in English language learning at the high school level, but also provides practical insights for teachers and education policy makers on the importance of learning designs that integrate technology and self-directed learning strategies in a balanced way.

Literature Review

One strategy that could potentially address these issues is the integration of AI with structured approaches such as the RACE framework (Role, Action, Context, Execute). ChatGPT, as one of the popular AI applications, can be utilized to provide a flexible learning experience, allowing students to practice writing, get instant feedback, and improve language skills at their own pace. With the RACE framework, student interactions with AI are directed through systematic stages: assigning AI roles, determining desired actions, providing relevant context, and executing learning outcomes with critical evaluation. This approach ensures that students remain in creative control of the learning process, especially in writing (Lee & Lee, 2024). The application of the RACE framework to narrative writing learning allows students to use AI as a brainstorming tool, organize prompts according to writing objectives, provide context to maintain story coherence, and write while critically analyzing AI-generated content. Thus, students can optimize the benefits of AI without being trapped in dependency, while improving their writing skills and self-regulation abilities.

Bloom's Taxonomy framework is an important theoretical basis in this study because it provides a hierarchical structure of learning objectives, ranging from the simplest to the most complex thinking skills, where mastery of higher levels requires mastery of skills at previous levels (Anderson & Krathwohl, 2001; Bloom, 1956). The cognitive domain emphasizes the mental skills and intellectual abilities required for learning and problem-solving, encompassing six levels: Remembering (C1) for recalling facts or information, Understanding (C2) for interpreting and explaining ideas, Applying (C3) for applying knowledge in new situations, Analyzing (C4) for

breaking down information into parts and understanding relationships, Evaluating (C5) for assessing quality or value based on specific criteria, and Creating (C6) for combining ideas into original products. The affective domain focuses on attitudes, values, and motivation, consisting of five levels: Receiving (A1) for willingness to receive information, Responding (A2) for active participation, Valuing (A3) for appreciating certain values, Organization (A4) for integrating various values into a belief system, and Characterization (A5) for behaving consistently with internalized values. Meanwhile, the conative/psychomotor domain highlights physical skills and coordination in applying knowledge and attitudes in practice, consisting of: Imitation (P1) for imitating actions, Manipulation (P2) for carrying out instructions with guidance, Precision (P3) for performing tasks with accuracy, Articulation (P4) for combining various skills, and Naturalization (P5) for achieving automatic mastery. The integration of these three domains enables a comprehensive analysis of the learning process, from critical and creative thinking skills, the development of attitudes and learning motivation, to students' practical skills in effectively operating ChatGPT to support self-directed learning.

Several previous studies have examined the role of AI in supporting autonomous learning in various educational contexts. The first study by (Quinde et al., 2024) examined university students' perceptions towards the use of AI tools in autonomous learning using constructivism and Technological Acceptance Model (TAM) approaches. The results showed that AI is beneficial in providing real-time feedback and personalized learning materials, despite challenges such as ethical issues and digital literacy. The second study by (Mahendra, Nurkamilah, & ..., 2023) evaluated the use of AI-based applications to improve learning independence through a mixed methods approach. The findings showed that AI apps improved motivation, learning pacing, and engagement with materials, especially in language learning. However, AI is recommended as a complementary tool, not a replacement for conventional learning methods. Next, research by (Herawati, Yusuf, Ilfiandra, Taufik, & Ya Habibi, 2024) examined AI-powered personalized learning and found that AI increased student engagement and motivation with customized learning paths. However, the researcher highlighted the limitations of interpersonal interaction when AI is the main focus. There was also research (Keumalasari, Iqbal, Aulia, & Pranata, 2024) examining the perceptions of MTsN 4 North Aceh students towards AI tools for English learning. As a result, AI helps improve language skills, motivation, and comprehension through flexible learning experiences and real-time feedback. However, the role of the teacher remains important to maximize the benefits of AI. Research by (Khairuddin, Shahabani, & Ahmad, 2024) analyzed students' perceptions of AI as academic support. AI was considered to help organize study schedules, access learning resources, and provide instant feedback, although there are still obstacles to the digital divide and access to adequate AI resources.

While these studies show the benefits of AI in increasing motivation, engagement, and self-learning support, there are some research gaps. First, most of the studies used quantitative methods and thus lacked in-depth student experiences. Second, the focus of the research is more on university students than high school students. Third, AI studies in English language learning, especially in the aspect of autonomous learning at the secondary school level, are still limited. The research gap is also evident in the methods used. Most of the previous studies used a quantitative approach that produced an overview, but did not explore students' in-depth experiences. In addition, the focus of previous research tends to be on university students, not high school students. In fact, at the high school level, the formation of independent learning skills is crucial as a preparation for higher education. AI-related research has also mostly highlighted the impact on

learning engagement or academic outcomes in general, rather than specifically on the autonomous learning aspect of language learning.

Methodology

This research uses a qualitative design with a case study approach to explore students' perceptions of AI-assisted independent learning. This approach was chosen because it allows researchers to deeply understand students' experiences, views and learning strategies in a real context (Creswell, 2013). Case studies are considered relevant for examining phenomena in natural environments, especially in complex and contextual situations (Fraenkel, Wallen, & Hyun, 2012). The study was conducted at SMAN 1 Mojosari, Mojokerto, in the 2024/2025 school year, with a focus on students in class XI-7 who actively use AI applications, particularly ChatGPT, in supporting independent learning. The school supports the utilization of technology in English language learning, making it an appropriate context to examine the role of AI in enhancing students' learning autonomy. The research participants were selected using purposive sampling technique based on the criteria: (1) students of class XI-7 SMAN 1 Mojosari, (2) have experience using AI in English learning, and (3) actively implement AI-assisted self-learning. These criteria ensured that the data obtained were relevant and in-depth according to the research objectives.

The research instruments included classroom observations and semi-structured interviews. Observations were used to observe students' interactions with the AI in the self-learning process, while interviews were designed based on Bloom's taxonomy to explore the cognitive, affective, and psychomotor aspects of students' perceptions of the AI. Data collection was conducted through two main techniques: (1) open-ended observations of English learning activities utilizing AI, and (2) face-t to-face interviews with questions exploring the experiences, benefits, and challenges of self-paced learning using AI.

Data analysis followed the (Miles, Huberman, & Saldana, 1994) model, which includes data reduction, data presentation, and conclusion drawing and verification. Data reduction was done by selecting and focusing relevant information, data presentation was done in the form of thematic narratives, while conclusions were verified through triangulation between observations and interviews to ensure the validity of the findings. This methodology is designed to provide a comprehensive picture of students' perceptions of AI-assisted independent learning, so that the results of the study can make theoretical and practical contributions related to the integration of technology in language education.

Results and Discussion

The results of the research analysis on high school students' perceptions of ChatGPT usage with the RACE Framework to support independent learning in English writing are described in the following sections. The analysis was conducted based on the three domains in Bloom's Taxonomy, which include cognitive, affective, and conative/psychomotor aspects. Each domain was analyzed based on findings from interviews and observations, accompanied by the researcher's interpretations and their relevance to theories of autonomous learning and the use of AI in language education.

Cognitive Aspects

The results of the study indicate that students' cognitive abilities in using ChatGPT with the RACE Framework developed gradually from the level of remembering to creating. This process shows that AI can function as a catalyst for higher-order thinking skills if its use is structured.

Table 1. Cognitive Aspects

Cognitive Level	Students Statements & Code	Key Findings
C1 – Remembering	"I remember the vocabulary that ChatGPT used in the example, and I can use it in my own sentences." (S1Q1)	Remembering the vocabulary and structure of AI output.
C2 – Understanding	"I can explain what the AI's answer means and how it connects to my topic." (S2Q2)	Understanding and relating information from AI to the topic of the writing.
C3 – Applying	"ChatGPT gives me ideas. Then I develop the ideas with my own thinking." (S3Q3)	Applying AI ideas in new contexts.
C4 – Analyzing	"I check which parts from ChatGPT are relevant and which I don't need." (S3Q4)	Analyzing the relevance of AI information.
C5 – Evaluating	"I give specific prompts and revise the results to match my writing style." (S2Q5)	Evaluating and refining AI output.
C6 – Creating	"I'm proud because it's a collaboration between my ideas and the AI." (S2Q10)	Creating original text that is a collaboration of personal ideas and AI.

The development of students' cognitive abilities in utilizing ChatGPT with the RACE Framework shows clear progress from level C1 (Remembering) to C6 (Creating) according to Bloom's Taxonomy framework. At the C1 stage, students are able to remember vocabulary, phrases, or sentence patterns provided by AI. This ability to remember is not just passive memorization, but rather a starting point that influences subsequent cognitive stages. Some students consistently use ChatGPT's example sentence feature to store new vocabulary in their memory, which they then apply in their own writing. One student stated, "I remember the vocabulary that ChatGPT used in the example, and I can use it in my own sentences." This statement confirms that AI functions as a lexical input provider, making it easier for students to access the appropriate language when writing.

At the C2 (Understanding) stage, students not only remember information but also understand the meaning of the content generated by AI, then connect it to the topic of their writing. This ability is evident when students are able to re-explain the ideas provided by AI using their own words. As a researcher, I believe that this understanding is an important transition point from memorization to interpretation, where students begin to process information internally before using it. For example, a student says, "I can explain what the AI's answer means and how it connects to my topic." This shows that ChatGPT is not only positioned as a source of information but as a thinking partner that helps shape the framework of the writing.

At C3 (Applying), students begin to apply ideas obtained from AI in new contexts. For example, when ChatGPT provides a general explanation of "environmental problems," a student develops that idea into a concrete example related to environmental conditions in Mojokerto. This process demonstrates the adaptation of ideas from a global to a local context, strengthening the relevance of the writing. This proves that the use of AI has shifted the role of students from passive recipients to active users who can convert information into more contextual works.

C5 (Evaluating) marks a higher level of metacognitive awareness. At this stage, students not only assess the quality of AI responses but also revise them to align with their own writing style. Some students actively provide more specific prompts to obtain appropriate results, then edit them to ensure coherence with the overall text. This attitude reflects the ability to evaluate based on clear criteria, as emphasized by (Anderson & Krathwohl, 2001; Bloom, 1956) Bloom (1956) and Anderson & Krathwohl (2001).

The peak stage, C6 (Creating), indicates that students are able to produce original written work resulting from the collaboration of their own ideas and AI assistance. At this stage, AI acts as a creative partner, not a replacement. A student remarked, "I'm proud because it's a collaboration between my ideas and the AI." This demonstrates that they have achieved higher-order thinking skills, where the final outcome is a synthesis of external input and internal reflection.

These findings aligns with the principles of the RACE Framework, which guides students' interactions with AI in a structured manner—starting with determining the role of AI (Role), desired actions (Action), relevant context (Context), and finally execution and evaluation (Execute). This framework helps students avoid superficial use of AI, instead encouraging them toward critical, creative, and independent use. From a cognitive theory perspective, this development aligns with the view that learning is a constructive process that builds knowledge through active interaction between prior knowledge and new information. ChatGPT, within the RACE framework, functions as scaffolding that facilitates assimilation and accommodation while supporting the development of metacognitive awareness, which is at the core of independent learning. Thus, this interaction not only expands declarative knowledge (knowing what) but also strengthens procedural knowledge (knowing how) and conditional knowledge (knowing when and why), which are crucial in language learning.

The analysis results show that students' cognitive abilities develop progressively through the use of ChatGPT with the RACE Framework. At the basic level (C1 and C2), students rely on AI to remember and understand vocabulary and sentence structures, which form the foundation for their writing skills. Next, at C3 and C4, students begin to apply and analyze information, demonstrating active engagement in processing content. Finally, at C5 and C6, students evaluate and create works that combine AI input with personal ideas, reflecting higher-order thinking skills. This process confirms Bloom's theory that effective learning must move from basic skills to greater complexity in a gradual manner. In the context of this research, ChatGPT functions not only as a source of information but as a thinking partner that accelerates the development of students' cognitive skills. With the guidance of the RACE Framework, AI use becomes directed, relevant, and focused on strengthening learning independence. Thus, the appropriate integration of AI in English language learning can be an effective strategy for enhancing higher-order thinking skills while fostering critical and creative attitudes in the writing process.

Affective Aspects

The results of the study indicate that students' affective abilities in using ChatGPT with the RACE Framework developed progressively from the stage of simply receiving new ideas to fully internalizing and consistently applying the value of autonomous learning. This progression demonstrates that AI, when integrated with structured guidance, can increas positive attitudes, intrinsic motivation, and long-term behavioral change toward independent learning.

Table 2. Affective Aspects

Affective Level	Students Statements & Code	Key Findings
A1 – Receiving	"I was curious when the teacher said we would use AI in writing class." (S1Q6)	Willingness to accept new ideas and stimuli related to the use of AI.
A2 – Responding	"I like to ask ChatGPT about topics I don't understand." (S2Q7)	Active participation by showing interest and initiative.
A3 – Valuing	"Using ChatGPT makes me more motivated to write because it feels easier to find ideas." (S3Q8)	Appreciating the benefits of AI and demonstrating intrinsic motivation.
A4 – Organization	"I plan my writing by deciding which parts should come from my own ideas and which can be supported by AI." (S2Q9)	Integration of the value of independence with structured use of technology.
A5 – Characterization	"Even if I don't have AI, I will still be confident to write because I know the process now." (S3Q15)	Consistent behavior that reflects the internalization of the value of independent learning.

The development of students' affective aspects in utilizing ChatGPT with the RACE Framework approach shows significant changes in terms of attitude, motivation, and internalization of the value of independent learning. These changes occur gradually from A1 (Receiving) to A5 (Characterization) according to Bloom's revised affective domain as adapted by (Anderson & Krathwohl, 2001). Overall, this pattern indicates that students not only experience technical skill improvement but also emotional transformation that influences how they interact with learning.

At A1 (Receiving), this initial stage emphasizes students' willingness to accept new ideas, stimuli, or methods. The use of AI especially ChatGPT is still new to most students, so curiosity is the first reaction that emerges. They are interested in trying it because of its novelty and technological aspects. One student said, "I was curious when the teacher said we would use AI in writing class." This quote reflects their openness to learning innovations, which Krathwohl identifies as a critical early stage in developing emotional and intellectual engagement. From the perspective of emotional engagement theory, this stage is crucial because curiosity serves as the gateway to deeper learning motivation.

Entering A2 (Responding), students begin to move from simply receiving to actively participating. This response is evident when they begin to interact directly with AI to find answers, verify understanding, or explore new topics. One student stated, "I like to ask ChatGPT about topics I don't understand." At this stage, motivation to learn increases as students begin to realize that technology can help bridge their knowledge gaps. According to the principle of active engagement in constructivism, this active participation indicates a two-way interaction that can strengthen understanding while building confidence in learning.

Stage A3 (Valuing) marks the point where students not only use AI but also begin to appreciate its benefits. They realize that ChatGPT simplifies the process of finding ideas, reduces barriers to writing, and even enhances intrinsic motivation. One respondent shared, "Using ChatGPT makes me more motivated to write because it feels easier to find ideas." This aligns with self-determination theory (Deci & Ryan, 2000), which emphasizes the importance of intrinsic motivation as a driver of long-term engagement. At this stage, AI is no longer seen merely as a tool but as a learning partner that facilitates the creative process.

Moving on to A4 (Organization), students begin to integrate the values they believe of the independent learning with more structured AI usage strategies. They begin to distinguish the role of AI in the writing process and are able to combine technological input with their original ideas. One student explains, "I plan my writing by deciding which parts should come from my own ideas and which can be supported by AI." This reflects maturity in self-regulated learning, where students

consciously manage their learning strategies, set goals, and control the use of resources. At this stage, AI is no longer the center of the process but rather one component within a larger learning system.

At the peak, in A5 (Characterization), the value of independent learning has been fully internalized in students. They demonstrate consistent behavior that reflects the ability to write independently even without AI assistance. One student stated, "Even if I don't have AI, I will still be confident to write because I know the process now." This stage indicates that they have developed strong self-efficacy, as described by Bandura (1986) in social cognitive theory. At this point, the role of AI shifts from a primary tool to an optional resource, while full control over the learning process remains in the hands of the students.

These findings demonstrate developments that are highly consistent with the principles of the RACE Framework. The Role–Action–Context–Execute structure guides students to build emotional engagement gradually, starting from curiosity (A1), active participation (A2), appreciation of benefits (A3), integration of values (A4), to the formation of independent learning character (A5). From an affective theory perspective, these findings demonstrate that technology integrated with a targeted approach can transform not only skills but also students' mindsets and learning dispositions. This also supports the idea that learning is a holistic process involving cognition, emotion, and action that interact with one another.

The analysis results indicate that students' affective development in using ChatGPT with the RACE Framework occurs gradually but consistently. In the early stages (A1 and A2), students demonstrated openness and active participation in AI-based learning innovations. In the intermediate stages (A3 and A4), they began to appreciate the benefits of AI and integrate its use with the value of independent learning. In the highest stage (A5), students exhibited independent and confident behavior in writing, even without AI assistance. These findings reinforce Krathwohl's view that effective learning not only changes knowledge but also students' attitudes, motivation, and values. In this context, ChatGPT acts as a facilitator that strengthens intrinsic motivation and self-efficacy, while the RACE Framework ensures that such emotional engagement is directed toward enhancing sustainable independent learning behavior. The implication is that the integration of AI in English language learning should be designed not only to enhance cognitive skills but also to foster positive attitudes, self-confidence, and independence in students. With the right approach, technology can serve as a catalyst in building a strong affective foundation, which ultimately supports the achievement of optimal learning outcomes.

Conative Aspects

he results of the study indicate that students' psychomotor abilities in using ChatGPT with the RACE Framework developed progressively from the initial stage of imitating others to the highest stage of naturalization, where they could use AI tools automatically, flexibly, and reflectively. This progression demonstrates that AI, when integrated with structured guidance, can enhance students' practical skills, technical fluency, and long-term ability to apply independent learning strategies.

Table 3. Conative Aspects

Conative Level	Students Statements & Code	Key Findings
P1 – Imitation	At first, I followed exactly what the teacher showed when using ChatGPT." (S1Q4)	Imitate the teacher's example of using AI.
P2 – Manipulation	"I can follow the steps myself, but sometimes I still need guidance." (S3Q4)	Use AI with minimal assistance.
P3 – Precision	"Now I can write prompts correctly and get the results I want." (S2Q6)	Use AI with accuracy and consistent results.
P4 – Articulation	"I brainstorm first, make an outline, then ask ChatGPT to help structure." (S2Q11)	Integrate planning skills and the use of AI.
P5 – Naturalization	"Don't be afraid to experiment, and don't depend too much on AI." (S4Q15)	Use AI wisely and reflectively.

The development of students' conative/psychomotor aspects in utilizing ChatGPT with the RACE Framework approach shows a significant improvement in technical skills, strategy integration, and technology use automation. This change occurs gradually from P1 (Imitation) to P5 (Naturalization) as described in Bloom's expanded psychomotor domain (Simpson, 1972). Overall, this pattern indicates that students not only master the steps of using AI but also integrate it with critical thinking processes and maintain independence in learning.

At stage P1 (Imitation), students are in the early phase where their skills are formed through direct imitation of the teacher's instructions. A student stated, "At first, I followed exactly what the teacher showed when using ChatGPT." This quote illustrates that they need a clear model or example to begin with. This stage is important because the imitation process allows students to understand basic procedures before developing further skills.

Entering stage P2 (Manipulation), students begin to perform actions independently, although they still occasionally require assistance. The statement, "I can follow the steps myself, but sometimes I still need guidance," indicates that they are already able to repeat the process of using ChatGPT, but it is not yet fully automatic. This phase is still within the zone of proximal development, where external guidance helps to strengthen independence.

Stage P3 (Precision) reflects improved accuracy and consistency in technical skills. Students admit, "Now I can write prompts correctly and get the results I want." This shows that they have mastered how to construct effective prompts to obtain the desired output. This skill is important because it determines the quality of the results from interactions with AI. This stage marks the transition from declarative knowledge to procedural knowledge, where skills are executed more efficiently and rarely require external intervention.

In P4 (Articulation), students are already able to combine technical skills with more complex cognitive skills. Students explain, "I brainstorm first, make an outline, then ask ChatGPT to help structure." This strategy demonstrates the integration of independent idea planning and the use of AI as a writing structure support tool. Here, ChatGPT becomes a collaborative tool that is not only used to generate text but also helps improve the logical flow of writing. This stage shows that technical skills have been combined with strategic decision-making, which is a characteristic of advanced independent learning.

The highest stage, P5 (Naturalization), is marked by the automation of AI use accompanied by critical reflection. The students' statement, "Don't be afraid to experiment, and don't depend too much on AI," indicates that they are not only proficient in using AI without overthinking, but also have the awareness not to rely on it entirely. According to (Zimmerman, 2002) self-regulated

learning model, this stage represents a mature phase of self-reflection, where students can evaluate when and how to use AI optimally.

Overall, the progression from P1 to P5 demonstrates consistency in that technical skills do not stand alone but are integrated with metacognitive awareness and the value of independent learning. The role of the RACE Framework here is crucial because each step: Role, Action, Context, and Execute provides a systematic path for students to develop from mere imitation to autonomous, strategic, and reflective use of AI.

The analysis results show that students' psychomotor development in using ChatGPT with the RACE Framework occurs gradually but consistently. At the initial stage (P1 and P2), students still rely on examples and guidance to master the procedures for using AI. The intermediate stage (P3 and P4) shows a significant improvement in accuracy, consistency, and the ability to integrate technical skills with critical thinking strategies. At the highest stage (P5), AI use has become automatic and is complemented by critical awareness to maintain learning independence.

These findings support the views of (Simpson, 1972) that mastery of complex motor skills requires progression from imitation to reflective automation. In the context of English language learning, these skills not only help students in writing, but also equip them with the ability to manage technology strategically. ChatGPT, in this case, acts as a catalyst to accelerate the transition from basic skills to advanced skills, while the RACE Framework ensures that this development occurs in a structured and self-directed learning-oriented manner.

The implication is that the integration of AI in language education needs to consider the gradual development of students' psychomotor skills, starting with providing clear models, opportunities for independent practice, and space for experimentation with high flexibility. Teachers are not only providers of instruction but also mentors who help students internalize technical skills while instilling the value of using technology wisely. With the right approach, this psychomotor development will contribute to the formation of learners who are not only technically proficient but also critical, independent, and adaptive in facing the challenges of 21st-century learning.

Conclusion

This study explored high school students' perceptions of using ChatGPT with the RACE Framework to support autonomous learning in English writing, focusing on the cognitive, affective, and conative domains based on Bloom's Taxonomy. The findings reveal that ChatGPT, when integrated with the RACE Framework, facilitates a gradual and structured development of higher-order thinking skills, enhance positive learning attitudes, and enhances practical writing strategies. From the cognitive aspect, students progressed from basic remembering of vocabulary and sentence structures to creating original written works that synthesize their ideas with AI-generated input. This shows that the RACE Framework effectively directs AI use toward critical and creative engagement rather than passive consumption of content. From the affective aspect, students' attitudes evolved from curiosity toward AI-assisted learning to a fully internalized value of independent learning. They demonstrated increased motivation, confidence, and the ability to maintain writing independence even without AI, indicating the development of sustainable learning dispositions. From the conative aspect, students advanced from imitating teacher demonstrations to achieving naturalization where they use AI tools automatically, flexibly, and reflectively. They

integrated technical proficiency with strategic planning and maintained a balanced approach to technology use, avoiding overdependence on AI.

Theoretically, this study contributes to the growing literature on AI-assisted language learning by providing a detailed, domain-based analysis of how structured AI integration can enhance learner autonomy at the secondary school level. Practically, the findings offer insights for educators on how to integrate AI tools like ChatGPT with the RACE Framework to support skill development while safeguarding critical thinking and independence in students. In conclusion, when ChatGPT used through a structured prompting model such as RACE, it can serve as an effective scaffold for independent learning, helping students to engage critically, creatively, and confidently with English writing tasks. This research affirms the importance of purposeful AI integration in education, ensuring that technology acts as a partner in learning rather than a crutch that fosters dependency.

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