

REPUBLIC OF TURKEY
CUKUROVA UNIVERSITY
THE INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF ENGLISH LANGUAGE EDUCATION

**INVESTIGATING THE IMPACT OF CHATGPT ON EFL STUDENT
ENGAGEMENT, AUTONOMY, AND WRITING SKILLS**

Derin GÖRMÜŞ

MASTER THESIS

ADANA / 2025

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Supervisor : Prof. Dr. Yasemin KIRKGÖZ
Member of Examining Committee : Assoc. Prof. Dr. Abdurrahman KİLİMCİ
Member of Examining Committee : Assoc. Prof. Dr. Muhammed BAŞ

MASTER THESIS

ADANA / 2025

To the Directorship of the Institute of Social Sciences; Çukurova University

We certify that this thesis is satisfactory for the award of the degree of
MASTER OF ARTS in the Department of English Language Teaching.

Supervisor: Prof. Dr. Yasemin KIRKGÖZ

Member of Examining Committee: Assoc. Prof. Dr. Abdurrahman KİLİMCİ

Member of Examining Committee: Assoc. Prof. Dr. Muhammed BAŞ

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ABSTRACT

INVESTIGATING THE IMPACT OF CHATGPT ON EFL STUDENT ENGAGEMENT, AUTONOMY, AND WRITING SKILLS

Derin GÖRMÜŞ

Master Thesis, Department of English Language Teaching

Supervisor: Prof. Dr. Yasemin KIRKGÖZ

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This study examines the integration of ChatGPT, an AI-powered language model, into English as a Foreign Language (EFL) writing instruction for young learners and investigates its impact on student engagement, learner autonomy, and writing performance. Conducted over a ten-week period in a private primary school in Türkiye, the research involved twenty-four fourth-grade students who participated in a structured ChatGPT-supported writing program. Using a mixed-methods, quasi-experimental design, data were collected through pre- and post-test writing tasks, engagement and autonomy questionnaires, ChatGPT perception items, and systematic classroom observations. The findings indicate that ChatGPT meaningfully enhanced students' behavioral and emotional engagement, as learners demonstrated increased willingness to participate in writing tasks, sustained attention during lessons, and greater enthusiasm for drafting and revising their texts. Autonomy also developed progressively, with students taking more initiative in planning ideas, revising their own sentences, and using ChatGPT strategically for vocabulary support and idea generation. Writing performance improved notably in areas such as paragraph structure, coherence, topic development, and supporting details, although gains in mechanics such as grammar, punctuation, and spelling remained minimal, reflecting the instructional focus on organization rather than linguistic accuracy. Students expressed highly positive perceptions of ChatGPT, viewing

it as a helpful, motivating, and easy-to-use tool that reduced writing anxiety and supported their confidence. Observation data further revealed that learners interacted collaboratively around the tool and adapted AI-generated suggestions into their own language. Overall, the study demonstrates that when integrated thoughtfully with teacher scaffolding, ChatGPT can serve as an effective pedagogical support in primary EFL writing classrooms, enhancing engagement, fostering emerging autonomy, and improving the overall quality of students' written output.

Keywords: ChatGPT, artificial intelligence (AI), English foreign language (EFL), writing, student engagement, learner autonomy, artificial intelligence (AI) supported instruction



ÖZET

CHATGPT'NİN İNGİLİZCEYİ YABANCI DİL OLARAK ÖĞRENEN ÖĞRENCİNİN KATILIMI, ÖZERKLİK VE YAZMA BECERİLERİ ÜZERİNDEKİ ETKİSİNİN İNCELENMESİ

Derin GÖRMÜŞ

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Bu çalışma, ChatGPT adlı yapay zeka destekli dil modelinin yabancı dil olarak İngilizce (EFL) yazma öğretimine entegrasyonunu incelemekte ve bunun genç öğrencilerin derse katılımı, öğrenen özerkliği ve yazma performansı üzerindeki etkisini araştırmaktadır. Türkiye’deki bir özel ilkokulda on haftalık bir dönem boyunca yürütülen araştırma, yapılandırılmış bir ChatGPT destekli yazma programına katılan yirmi dört dördüncü sınıf öğrencisini kapsamaktadır. Karma yöntemli, yarı deneysel bir desen kullanılarak, veriler ön test ve son test yazma görevleri, katılım ve özerklik anketleri, ChatGPT algı maddeleri ve sistematik sınıf gözlemleri aracılığıyla toplanmıştır. Bulgular, ChatGPT’nin öğrencilerin davranışsal ve duygusal katılımını anlamlı biçimde artırdığını göstermektedir; öğrenciler yazma görevlerine katılma konusunda daha istekli davranmış, dersler boyunca dikkatlerini daha uzun süre korumuş ve metinlerini taslak hâline getirip gözden geçirirken daha fazla coşku göstermiştir. Özerklik de kademeli olarak gelişmiş; öğrenciler fikir planlama, cümlelerini bağımsız şekilde düzeltme ve ChatGPT’yi kelime desteği ile fikir üretimi için stratejik biçimde kullanma konusunda daha fazla girişimde bulunmuştur. Yazma performansı paragraf yapısı, tutarlılık, konu geliştirme ve destekleyici detaylar gibi alanlarda belirgin biçimde ilerleme göstermiş olsa da, organizasyona odaklanılan öğretim tasarımı nedeniyle dilbilgisi, noktalama ve yazım gibi mekanik alanlarda kaydedilen ilerleme sınırlı kalmıştır. Öğrenciler, ChatGPT’yi yazma kaygısını azaltan ve özgüvenlerini destekleyen yardımcı, motive edici ve kullanımı kolay bir araç olarak görerek oldukça olumlu algılar bildirmiştir. Gözlem verileri ayrıca

öğrencilerin araç etrafında işbirlikçi etkileşimde bulunduklarını ve yapay zekâ tarafından üretilen önerileri kendi dillerine uyarladıklarını ortaya koymuştur. Genel olarak çalışma, öğretmen yönlendirmesiyle bilinçli bir şekilde entegre edildiğinde ChatGPT'nin ilkökul EFL yazma sınıflarında etkili bir pedagojik destek işlevi görebileceğini; katılımı artırdığını, gelişmekte olan özerkliği desteklediğini ve öğrencilerin yazılı çıktılarının genel kalitesini iyileştirdiğini göstermektedir.

Anahtar Kelimeler: ChatGPT, yapay zeka, yabancı dil olarak İngilizce, yazma, öğrenci katılımı, öğrenen özerkliği, yapay zeka destekli öğretim



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ABBREVIATIONS

AI	:Artificial Intelligence
EFL	:English as a Foreign Language
CT	:Critical Thinking
CTD	:Critical Thinking Disposition
FL	:Flipped Learning
LLM	:Large Language Model
L1	:First Language
L2	:Second Language
AWE	:Automated Writing Evaluation
NLP	:Natural Language Processing
ITS	:Intelligent Tutoring System
ZPD	:Zone of Proximal Development
ICT	:Information and Communication Technologies
TOEFL	:Test of English as a Foreign Language
IELTS	:International English Language Testing System

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CHAPTER I

INTRODUCTION

1.1. Introduction

This chapter presents a general overview of the background to the study, and proceeds with the statement of the problem, purpose of the study, research questions, significance of the study, and ends with limitations.

1.2. Background of the Study

The digital revolution has dramatically transformed the landscape of education, catalyzing new pedagogical paradigms and redefining traditional teacher-learner dynamics. As information and communication technologies (ICTs) have become deeply integrated into educational practices, language learning, particularly English as a Foreign Language (EFL), has also evolved, embracing various digital tools to enhance student outcomes. Among these innovations, the emergence of generative artificial intelligence (AI) technologies, such as ChatGPT, has introduced unprecedented opportunities and challenges for language instruction, particularly in the domains of writing, student engagement, and learner autonomy.

Historically, writing has been viewed as a cognitively demanding skill in foreign language acquisition due to its complex interplay of grammar, vocabulary, coherence, and creativity (Chenoweth & Hayes, 2001; Weigle, 2002). In the context of EFL, learners often struggle with expressing abstract ideas, constructing arguments, and organizing their thoughts logically. Writing is not simply a linguistic act but a cognitive process that demands planning, drafting, reviewing, and revising, all of which rely heavily on higher-order thinking skills such as analysis, synthesis, and evaluation (Brown & Abeywickrama, 2010). These cognitive demands create an avenue for integrating technologies that can scaffold and support learners in articulating their thoughts effectively.

Artificial intelligence tools, especially large language models (LLMs) like ChatGPT developed by OpenAI, offer language learners immediate feedback, language suggestions, and content generation capabilities. ChatGPT is trained on vast corpora and uses deep learning to generate human-like responses in natural language (Brown et al., 2020). Since its release in 2022, educators and researchers have explored its potential in educational settings ranging from idea generation and grammar correction to tutoring and essay writing (Cotton et al., 2023). In language learning, particularly in the writing process, AI tools such as ChatGPT can provide students with continuous assistance, empowering them to write more fluently and confidently.

To better leverage ChatGPT in EFL classrooms, it is crucial to understand its relationship with three core constructs of effective learning: student engagement, learner autonomy, and writing proficiency. Student engagement, defined by Fredricks et al. (2004) as the emotional, behavioral, and cognitive involvement in learning activities, is a key predictor of academic success. In the EFL context, disengagement often arises due to linguistic difficulties, fear of making mistakes, and lack of motivation (Abrar et al., 2024). AI tools may help by making writing tasks more interactive and less intimidating, thereby improving emotional and behavioral engagement.

Autonomy, meanwhile, is central to lifelong learning and is particularly valued in language education (Little, 2007). Autonomous learners take responsibility for their learning, monitor their progress, and make informed decisions about learning strategies (Capital & Sabat, 2023). However, autonomy is not innate; it must be fostered through supportive environments that allow students to experiment, reflect, and self-correct. ChatGPT, when used judiciously, can serve as a scaffold for autonomy by enabling students to explore language options, seek feedback independently, and revise their work based on self-evaluation.

Integrating ChatGPT into writing instruction aligns with sociocultural theories that view learning as a mediated process involving tools and interactions (Vygotsky, 1978). It also reflects the principles of constructivist and learner-centered pedagogies, which emphasize active participation, personalization, and the co-construction of knowledge. Recent research has suggested that when AI is integrated with appropriate pedagogical strategies, such as writing rubrics, peer feedback, and reflective practices. These can

enhance not only performance but also metacognitive awareness and motivation (Jiao et al., 2023; Enfield, 2013).

Despite its potential, the integration of AI in education is still in its infancy. Most studies to date have been exploratory or theoretical. Few empirical studies have systematically examined the effects of ChatGPT on writing outcomes, student autonomy, and engagement in controlled settings. This gap in the literature is particularly pronounced in primary or secondary EFL contexts, where cognitive maturity, digital literacy, and teacher support significantly influence technology adoption and learning outcomes.

1.3. Statement of the Problem

In the 21st century, Critical Thinking (CT) has emerged as an essential skill to be fostered across educational domains, particularly in language learning, where learners are expected not only to acquire linguistic competence but also to engage with texts and ideas at a deeper, evaluative level (Todorovska, 2024). The increasing recognition of CT as a foundational academic and life skill has prompted educators to rethink instructional strategies and course design. Li and Chano (2024) emphasized that unless courses are redesigned to promote deep, meaningful, and critical engagement, students may fail to reach the cognitive depth necessary for effective learning.

In the domain of EFL, writing stands out as a productive skill that closely aligns with the development of critical thinking. Writing tasks demand that learners analyze prompts, evaluate the reliability of sources, generate coherent arguments, and reflect on multiple perspectives, key indicators of CT (Weigle, 2002; Fahim & Mizraii, 2014). However, mastering writing in EFL contexts is particularly challenging, as students must simultaneously develop genre awareness, linguistic accuracy, rhetorical structures, and higher-order cognitive strategies. This multifaceted nature of writing, combined with limited instructional time and rigid curricular demands, often leads to learner frustration, disengagement, and superficial learning (Zhou & Yu, 2023).

Moreover, writing classes typically require sustained teacher support and iterative feedback, which becomes difficult to implement within time-constrained educational systems. Instructors may experience stress and anxiety when trying to balance writing instruction with other curriculum obligations, particularly when learners possess varying levels of writing competence and confidence. According to Hand et al. (2016), the lack of pedagogically adaptive structures that promote both cognitive engagement and writing skill development leads to fragmented learning experiences and unproductive classroom environments.

Against this backdrop, integrating AI tools such as ChatGPT into writing instruction emerges as a promising pedagogical innovation. ChatGPT can act as a real-time, low-stakes writing companion, offering suggestions on vocabulary, structure, coherence, and tone, thereby easing the cognitive burden on learners during the composing process (OpenAI, 2023; Jiao et al., 2023). More importantly, it allows students to engage in repeated cycles of drafting, receiving feedback, and revising at their own pace, supporting the gradual development of CT, learner autonomy, and engagement.

This research thus seeks to address these pedagogical tensions by investigating how the integration of ChatGPT in an EFL writing course influences students' paragraph writing performance, engagement levels, and learner autonomy. By designing a classroom experience that positions ChatGPT as a cognitive and collaborative partner rather than a replacement for thinking, the study aims to uncover whether AI can serve as a pedagogical bridge to deeper learning outcomes. Within this framework, the study also explores whether the use of ChatGPT empowers students to take ownership of their learning process, think more critically about their written outputs, and stay actively involved in writing tasks over time.

1.4. Significance of the Study

Technological developments in the 21st century have fundamentally altered the landscape of education, empowering educators and learners to engage with content in more flexible, dynamic, and personalized ways. In the field of EFL, these changes have

fostered innovative pedagogical models that prioritize student-centered learning, interactivity, and the development of higher-order thinking skills. One of the most promising advancements in this context is the integration of AI tools such as ChatGPT into language instruction, particularly in writing-focused courses.

As writing is a cognitively and linguistically demanding skill, EFL students often struggle with organizing their ideas, expressing themselves clearly, and revising their texts effectively. Traditional classroom instruction, often constrained by time and curriculum coverage, may not offer sufficient opportunities for individualized feedback, reflection, and skill development (Brown & Abeywickrama, 2010). ChatGPT, as a generative AI language model, offers an accessible support system that can provide immediate suggestions, corrections, and stylistic improvements, thereby reducing cognitive load and enhancing learner confidence (OpenAI, 2023; Jiao et al., 2023). This technology allows learners to work at their own pace, revise iteratively, and engage in self-regulated learning practices, key components of learner autonomy.

Furthermore, ChatGPT holds significant potential to promote student engagement. By interacting with an intelligent agent that simulates human conversation, learners are more likely to feel motivated and involved in the writing process, especially when the AI provides personalized feedback or prompts further thinking. This aligns with current theories of engagement that emphasize emotional, behavioral, and cognitive involvement in the learning process (Fredricks et al., 2004). Additionally, by encouraging learners to critically assess the suggestions offered by AI rather than accept them passively, ChatGPT use can foster the development of critical thinking skills within writing tasks (Rogerson & McCarthy, 2017).

This study is significant in that it offers a timely exploration of how ChatGPT may reshape EFL writing instruction. Despite the growing interest in AI-powered educational tools, empirical research on their impact on language education, especially in the context of primary and secondary education in Türkiye, remains scarce. Most existing literature focuses on higher education or theoretical discussions, with limited attention paid to actual classroom practices, learner perceptions, and writing outcomes in EFL settings. Thus, the present research addresses a clear gap in the literature and responds to calls for data-driven insights into how emerging technologies affect language learning processes

(Cotton et al., 2023).

In addition to its theoretical contributions, this study is practically significant for educators in Türkiye and beyond. As AI technologies become increasingly ubiquitous and students gain more access to tools like ChatGPT, language teachers will need research-informed strategies for guiding their students in the ethical and effective use of these tools. The study's results may inform professional development programs, teacher training curricula, and institutional policies regarding AI-supported language instruction.

Ultimately, this research is expected to contribute to the global discourse on the digital transformation of education. By focusing on the intersection of AI, writing pedagogy, and learner development, it sheds light on how technology can be harnessed to create more inclusive, engaging, and learner-driven educational experiences in EFL contexts.

1.5. Research Questions

In the rapidly evolving landscape of language education, integrating AI tools into the classroom has become an area of growing interest. ChatGPT, as a prominent AI-powered language model, presents new possibilities for enhancing EFL writing instruction. It offers immediate feedback, promotes learner interaction with written content, and provides support that can lead to more autonomous and engaged learning. As the educational context moves toward student-centered and technology-enhanced learning, it is essential to examine the pedagogical value of ChatGPT in fostering key 21st-century skills such as learner autonomy, sustained engagement, and proficient writing abilities.

In alignment with the goals of fostering effective and self-directed EFL learners through AI-enhanced pedagogical strategies, the following research questions guide this study:

1. What impact does integrating ChatGPT as a writing assistance tool in an EFL classroom have on student engagement, motivation, and autonomy in the writing process?

2. What are EFL students' perceptions of ChatGPT's role in their writing process?
3. Does ChatGPT influence the quality of students' written output? If so, how?

1.6. Limitations

While this study aims to provide valuable insights into the integration of ChatGPT in EFL writing instruction, several limitations should be acknowledged regarding the research context, participant characteristics, and methodological procedures:

1. The writing lessons in the participating school were scheduled for a limited number of class hours per week. This required the researcher to adapt existing curricular materials and design AI-integrated lesson plans that would fit within the allotted instructional time. As a result, only a ten-week period was dedicated to the intervention. This may have limited the depth of exposure to ChatGPT and the potential for observing long-term changes in writing performance, engagement, and autonomy.
2. Due to school schedule constraints and ethical considerations, the study employed a purposive sampling method and included only students who regularly attended and completed all writing tasks over the intervention period. Consequently, the final sample size was significantly reduced, limiting the statistical generalizability of the findings to wider EFL populations.
3. The participating students' prior experience with digital tools and AI technologies such as ChatGPT varied significantly. While efforts were made to train all students equally before the intervention, individual differences in digital literacy may have affected how effectively students engaged with ChatGPT as a writing support tool.
4. As ChatGPT and similar tools continue to develop at a rapid pace, the version used during this study (e.g., GPT-3.5) may differ in capabilities and interface from

future iterations. This temporal limitation affects the replicability and relevance of the findings in the long term, especially as new features or pedagogical affordances are introduced.

5. Another limitation is related to the possible novelty effect of using ChatGPT in the classroom. Since the integration of an AI tool was a completely new and exciting experience for most students, their initial curiosity and motivation might have temporarily increased their engagement and writing performance. This short-term boost, driven by the excitement of trying something unfamiliar, may not reflect lasting improvements in their skills or autonomy. Therefore, the observed progress should be interpreted with caution, as part of it may stem from the novelty of technology rather than its long-term educational impact.
6. One of the concerns is the specific focus of the study on paragraph structure as the primary indicator of writing development. While this focus allowed for an in-depth examination of how ChatGPT supports students in organizing topics, supporting, and concluding sentences, it did not address other essential aspects of writing, such as vocabulary use, grammatical accuracy, or overall content quality. As a result, the findings mainly reflect learners' progress in paragraph organization rather than broader writing proficiency. Future studies could adopt a more comprehensive analytical framework to explore how ChatGPT influences multiple dimensions of writing performance.

CHAPTER II

LITERATURE REVIEW

2.1. Introduction

This chapter presents a review of the related literature in four main areas: the use of artificial intelligence in education, the emergence of ChatGPT in language learning, writing as a productive skill in EFL contexts, and learner-related factors such as engagement and autonomy. Each section addresses theoretical foundations and current research findings that inform the pedagogical potential of ChatGPT in improving EFL students' writing performance, encouraging their active involvement, and supporting self-directed learning. These concepts are explored both individually and in relation to one another to provide a framework for the present study.

2.2. Technology Integration in Language Education

2.2.1. The Role of Educational Technology in Language Learning

The increasing integration of educational technology into language learning has reshaped both pedagogical practices and learner experiences across diverse contexts. As global access to digital devices and the internet has expanded, so too has the role of technology in EFL classrooms, offering new ways to deliver content, support interaction, and individualize instruction (Reinders & White, 2010; Hockly, 2012). Educational technology now encompasses a wide array of tools from multimedia materials and online platforms to mobile applications and virtual learning environments, each contributing to different aspects of language acquisition.

One of the key contributions of educational technology in language education is its capacity to facilitate accessibility and flexibility. Learners can now engage with materials beyond the constraints of time and space, enabling self-paced learning and allowing for repeated exposure to authentic language use (Warschauer & Healey, 1998). This flexibility is particularly important in EFL contexts, where classroom time may be

limited, and opportunities for real-life language practice are often scarce. Multimedia content such as videos, podcasts, and interactive exercises can simulate real-world communication and expose learners to diverse linguistic input, which is crucial for developing listening and comprehension skills (Mayer, 2009; Stockwell, 2012).

Furthermore, technology enhances learner engagement and motivation, which are key predictors of successful language learning. According to Fredricks et al. (2004), engagement includes behavioral, emotional, and cognitive dimensions, all of which can be supported through the strategic use of digital tools. For example, gamified platforms such as Kahoot or Quizlet promote active participation, while collaborative tools like Padlet and discussion forums encourage peer interaction and social presence (Dörnyei & Ushioda, 2011). Research has shown that such tools not only increase learner motivation but also contribute to more sustained involvement in learning tasks (Burston, 2015).

Another critical role of educational technology lies in supporting differentiated instruction and learner autonomy. In traditional classrooms, it is often challenging for instructors to meet the needs of students with diverse proficiency levels, learning styles, and goals. Technology addresses this challenge by allowing learners to choose their own pathways, access supplementary materials, and receive immediate feedback (Benson, 2013; Güngör, 2021). Web-based platforms and learning management systems (e.g., Moodle, Google Classroom) also facilitate teacher monitoring, enabling more tailored support and progress tracking. In this sense, educational technology plays a significant role in fostering learner independence and encouraging self-regulated learning strategies (Little, 2007).

The integration of mobile learning (m-learning) has further amplified the role of technology in language education. Mobile devices offer portable, on-demand access to language content, supporting informal and incidental learning opportunities outside the classroom (Kukulska-Hulme & Shield, 2008; Viberg & Grönlund, 2012). Applications focused on vocabulary building, pronunciation, grammar practice, and language games make it possible for learners to engage with the target language during transit, breaks, or downtime, turning everyday moments into learning opportunities. Recent studies have shown that learners using mobile apps exhibit higher frequency of interaction with the language, improved vocabulary retention, and greater learning satisfaction (Burston,

2015; Liu & Chu, 2010).

In addition to direct language learning, educational technology plays an essential role in facilitating communication and interaction, particularly in remote or hybrid learning environments. Synchronous and asynchronous tools such as Zoom, Microsoft Teams, and Edmodo have become standard means of connecting learners and teachers across distances. These tools support speaking practice, collaborative projects, and real-time feedback, thereby mitigating some of the interactional limitations of face-to-face instruction in monolingual or non-immersive contexts (Hampel & Stickler, 2005; Blake, 2013). In this regard, technology mediates language learning not only through content but also through interaction, which is central to communicative language teaching.

However, several studies emphasize that the success of educational technology in language learning is contingent upon effective pedagogical integration, rather than mere access to digital tools. Warschauer and Grimes (2007) argue that technology should serve clear instructional goals and be embedded in meaningful tasks aligned with learning outcomes. Without appropriate guidance and planning, digital tools can lead to distraction, cognitive overload, or superficial engagement. Furthermore, there are challenges related to digital equity, teacher preparedness, and contextual factors such as infrastructure, especially in under-resourced educational settings (Selwyn, 2016).

As educational technology serves as a powerful enabler of innovation in language learning, it supports accessibility, personalization, engagement, and learner autonomy, components that align closely with the evolving needs of EFL learners and the demands of 21st-century education. Nonetheless, its effectiveness relies not only on the capabilities of the technology itself but also on the pedagogical vision of instructors and institutions that implement it. As this study focuses on the integration of advanced digital tools in EFL classrooms, understanding the broader educational value of technology provides an essential foundation for evaluating newer, more specialized tools like ChatGPT.

2.2.2. Artificial Intelligence in Education

AI has emerged as one of the most transformative forces in contemporary

education, reshaping traditional pedagogical models and introducing new approaches to learning, assessment, and curriculum design. Defined as the capacity of machines to perform tasks that typically require human intelligence, AI encompasses technologies such as machine learning, natural language processing (NLP), data mining, and pattern recognition, all of which hold significant implications for teaching and learning (Luckin et al., 2016; Holmes et al., 2019). The increasing presence of AI in educational settings marks a shift from static digital content delivery to dynamic, adaptive, and data-informed learning environments.

One of the most widely recognized applications of AI in education is intelligent tutoring systems (ITS), which aim to replicate the functions of a human tutor by diagnosing learners' strengths and weaknesses and providing real-time, individualized feedback. Research has shown that ITS can improve learning outcomes, particularly in domains requiring procedural knowledge, by adapting instruction to the learner's pace and responses (VanLehn, 2011; Ma et al., 2014). In language learning contexts, systems like Duolingo, Carnegie Speech, or WritetoLearn incorporate AI components to tailor vocabulary, grammar, or pronunciation tasks to the learner's needs, making learning more personalized and efficient.

Another significant application is predictive learning analytics, where AI processes large sets of learner data to identify patterns that may predict academic performance or behavioral tendencies. These tools are used to flag at-risk students, personalize content sequencing, or recommend interventions, thereby improving learner support and institutional decision-making (Ifenthaler & Yau, 2020). In higher education, predictive AI models have been deployed to anticipate student dropouts or tailor learning pathways based on past behaviors and performance metrics (Zawacki-Richter et al., 2019). This data-driven approach aligns with broader shifts toward competency-based education and flexible learning trajectories.

AI also plays a growing role in automated assessment and feedback. Natural language processing algorithms are used to evaluate essays, short answers, or even spoken responses, offering both summative and formative assessments at scale (Burstein et al., 2013). These systems can provide instant scoring and targeted feedback, which is particularly beneficial in large classes or online learning environments where human

grading may not be feasible. However, researchers have cautioned that such systems may still struggle with assessing creativity, argument structure, or cultural nuance, highlighting the need for human oversight in AI-supported evaluation (Crossley et al., 2016).

Furthermore, AI facilitates adaptive learning environments, which adjust instructional content in real time based on learners' interactions. For example, platforms like Smart Sparrow or ALEKS adapt the difficulty and type of questions according to learners' progress, ensuring that learners neither plateau nor become overwhelmed. This adaptivity supports not only improved performance but also increased motivation, as learners receive tasks that are appropriately challenging (Pane et al., 2014; Chen et al., 2020). From a pedagogical perspective, such systems embody Vygotsky's concept of the Zone of Proximal Development by offering scaffolding that is just within the learner's reach.

Despite its benefits, the implementation of AI in education is not without ethical and pedagogical concerns. Critics have pointed to the risks of data privacy breaches, algorithmic bias, and reduced teacher agency (Williamson & Eynon, 2020; Selwyn, 2019). Moreover, the opaque nature of many AI systems, often referred to as "black-box" models, makes it difficult for educators to understand or critique the decision-making processes behind adaptive recommendations or grading outcomes (Geethanjali & Umashankar, 2024). These issues have prompted calls for greater transparency, human-in-the-loop designs, and AI literacy training for educators and learners alike.

Another critical concern is the digital divide, which may be exacerbated by uneven access to AI-powered tools. Institutions with limited infrastructure, funding, or training capacity may not benefit equally from AI innovations, potentially widening existing inequalities in educational opportunity (Warschauer & Matuchniak, 2010). In response, researchers have emphasized the need for inclusive design principles and equitable deployment strategies that consider the socio-economic contexts of learners.

Importantly, AI should be viewed not as a replacement for teachers, but as a collaborative partner that enhances instructional effectiveness when integrated with thoughtful pedagogy. Luckin et al. (2016) argue that the most impactful AI applications

are those that work alongside educators, freeing up time for human teachers to focus on the relational and creative aspects of teaching, such as fostering discussion, empathy, and higher-order thinking. As AI becomes more prevalent in education, there is an urgent need to develop pedagogical models that leverage its strengths while preserving the human values at the heart of teaching and learning.

2.2.3. AI-Powered Writing Tools in EFL Contexts

In recent years, the integration of AI into writing instruction has become a growing area of interest, particularly in EFL contexts where learners often struggle with linguistic accuracy, coherence, and fluency. AI-powered writing tools, such as automated feedback systems, grammar checkers, and writing evaluation platforms, have been increasingly adopted to support students in the drafting and revision process. These tools offer timely, individualized feedback, lower affective barriers, and provide learners with opportunities for self-directed improvement (Ranalli, Link, & Chukharev-Hudilainen, 2017). Their growing presence in educational settings suggests a shift toward more learner-centered, data-informed instruction that enhances both access to and quality of writing support.

One of the earliest forms of AI-assisted writing support is the automated writing evaluation (AWE) system, which analyzes students' written input and provides formative feedback on grammar, mechanics, coherence, and organization. Tools such as Criterion, PEG, and IntelliMetric use NLP and machine learning algorithms to evaluate written texts and return scores or comments. Research has shown that such systems can be effective in improving writing quality, particularly when used in conjunction with human instruction (Chapelle et al., 2015; Wang et al., 2013). According to Grimes and Warschauer (2010), students who used AWE tools over multiple writing cycles demonstrated greater revisions and improvements in grammar and clarity than those in control conditions.

AI-based writing tools have also been praised for their role in promoting learner autonomy and self-regulation, which are especially important in EFL writing development. Learners can receive immediate, non-judgmental feedback and use the suggestions to revise their work independently, without relying solely on teacher input (Link et al., 2020). This aligns with Benson's (2013) framework for autonomy in language learning, where control over cognitive strategies and learning outcomes

empowers students to become active participants in their own writing development. In contexts where teacher feedback is limited by time constraints or class size, these systems can offer scalable solutions that support individualized writing practice (Zhand & Hong, 2025).

Several studies have explored how EFL students perceive and benefit from AI-powered writing tools. For instance, Cheong (2024) found that students appreciated the immediacy and precision of automated feedback, especially in areas such as word choice, sentence structure, and grammar. Similarly, Niu, Shan, and You (2021) reported that EFL learners using WriteToLearn® valued the ability to revise multiple drafts and receive targeted suggestions on how to strengthen their arguments. These systems also promote writing fluency by encouraging risk-taking and experimentation, as learners feel less anxious when revising based on machine feedback rather than direct teacher criticism (Wang, Shang, & Briody, 2013).

Nonetheless, there are several limitations and concerns regarding the pedagogical validity of AI-powered writing tools. Critics argue that automated feedback may emphasize surface-level features (e.g., grammar, spelling) at the expense of content development, critical thinking, or creativity (Stevenson & Phakiti, 2014; Chen & Cheng, 2008). Furthermore, students may become overly reliant on these tools, leading to reduced attention to deeper aspects of rhetorical structure or audience awareness. A related concern is the lack of transparency in the scoring algorithms, which may prevent students from understanding why certain corrections are made, thereby limiting the educational value of the feedback (Wilson & Roscoe, 2019).

Moreover, some researchers emphasize the importance of human mediation in the use of AI tools for writing. Automated systems are most effective when paired with teacher support, peer review, or reflective activities that encourage learners to process and internalize the feedback (Link, Mehrzad, & Rahimi, 2020). In this regard, AI tools should be seen not as replacements for instructors but as supplementary resources that enhance the writing process when embedded within sound pedagogical frameworks. Hyland and Hamp-Lyons (2002) caution against decontextualized writing instruction, arguing that feedback, whether human or automated, should align with task purpose, genre expectations, and learner needs.

Despite these concerns, AI-powered writing tools offer considerable promise, particularly in under-resourced or large-class EFL contexts. They reduce teacher workload, extend learning opportunities beyond the classroom, and foster writing habits that promote iterative development. As NLP technologies improve, newer tools now incorporate semantic analysis, discourse structure evaluation, and coherence modeling, bringing automated writing support closer to human-like assessment (Crossley, Kyle, & McNamara, 2016). These advances make it increasingly possible to provide feedback not only on linguistic accuracy but also on idea development, transitions, and cohesion, components that are critical to effective writing in academic and professional settings.

2.3. ChatGPT and Language Learning

2.3.1. Definition and Capabilities of ChatGPT

ChatGPT is a conversational AI model developed by OpenAI, based on the Generative Pre-trained Transformer (GPT) architecture. First released in late 2022 and continuously improved in subsequent versions (e.g., GPT-3.5 and GPT-4), ChatGPT represents a significant advancement in NLP, allowing for dynamic, coherent, and contextually appropriate human-like responses in real time (OpenAI, 2023). As a large language model, ChatGPT is trained on massive datasets of human language, enabling it to generate meaningful and context-sensitive responses to prompts ranging from casual questions to complex academic or professional queries (Brown et al., 2020).

The model operates on the principles of deep learning, particularly transformer-based neural networks, which analyze word patterns, sentence structures, and discourse coherence to predict and generate the most probable output in a given context (Vaswani et al., 2017). This allows ChatGPT to perform a wide variety of tasks including summarization, paraphrasing, answering questions, code generation, translation, and text completion. Unlike rule-based chatbots or keyword-matching systems, ChatGPT exhibits a much more flexible understanding of language, making it capable of handling open-ended tasks and sustaining multi-turn conversations with semantic consistency.

One of the core strengths of ChatGPT is its versatility and adaptability across

domains. In educational settings, it can respond to prompts in various disciplines, simulate tutoring sessions, explain concepts in simpler terms, and support problem-solving or brainstorming. Because it can generate syntactically and semantically well-formed texts, learners and educators have begun to explore its use in writing assistance, academic planning, personalized feedback, and language practice (Kasneci et al., 2023). These capabilities make ChatGPT particularly suitable for integration into learner-centered and inquiry-based pedagogies.

Another notable feature of ChatGPT is its dialogic interface, which allows users to interact with the model in a conversational format. This format supports recursive learning, in which users can refine their queries based on previous responses, mimic real-life communication scenarios, and develop a more nuanced understanding of content. Its design encourages engagement and active participation, providing learners with a sense of agency in shaping the learning interaction (Abdelhalim & Almaneea, 2025). Moreover, ChatGPT supports multiple languages and registers, making it accessible to learners from various linguistic backgrounds and educational levels.

Despite its strengths, ChatGPT also has limitations. As a probabilistic model, it does not “understand” language in the human sense, nor does it have awareness of truth or factuality. Its responses are based on pattern recognition rather than reasoning or factual verification, which means it can occasionally generate confident but incorrect or misleading answers, commonly referred to as “hallucinations” in AI research (Bender et al., 2021). Furthermore, ChatGPT does not retain memory between sessions unless explicitly designed to do so via system prompts or persistent memory in advanced versions. This restricts its use for long-term learning tracking unless embedded in more complex educational platforms.

Security, privacy, and ethical considerations also accompany ChatGPT's deployment in educational contexts. Concerns about academic integrity, overreliance, data handling, and biased outputs necessitate careful instructional framing and guidance (Baidoo-Anu & Owusu Ansah, 2023). As such, while ChatGPT offers substantial capabilities, its use must be mediated by critical pedagogical practices and digital literacy training.

2.3.2. Pedagogical Uses of ChatGPT in Writing Instruction

The integration of ChatGPT into writing instruction represents a novel yet increasingly explored dimension of educational practice, particularly in EFL contexts. As a generative language model capable of producing well-structured, context-sensitive texts, ChatGPT offers educators and learners new opportunities to engage with the writing process in more interactive, supportive, and reflective ways (Kasneci et al., 2023). Its pedagogical use is grounded in its ability to assist with brainstorming, organization, language accuracy, vocabulary enhancement, and iterative revision, all critical elements in the development of writing skills.

One of the most commonly cited benefits of ChatGPT in writing instruction is its capacity to support idea generation and pre-writing activities. Students frequently struggle with initiating writing tasks, particularly when asked to produce extended, coherent texts in a second language. ChatGPT can serve as a brainstorming partner by offering topic suggestions, outlining structures, and generating introductory paragraphs or guiding questions (Baidoo-Anu & Owusu Ansah, 2023). This immediate and on-demand support can help reduce writer's block and anxiety, thereby facilitating smoother entry into the writing process. It also aligns with process-based approaches to writing, which emphasize planning, drafting, and revision over the production of a perfect first draft (Hyland, 2003).

Moreover, ChatGPT can provide formative linguistic feedback, especially in areas such as grammar, syntax, cohesion, and lexical variation. While not a substitute for teacher feedback, the model can help learners notice and correct errors, paraphrase sentences, and improve word choice, thus functioning as a scaffold during independent writing (Geng & Razali, 2020). For intermediate to advanced EFL learners, such real-time interaction with language structures encourages noticing and self-editing strategies, both of which are essential for language development (Muftah et al., 2023). The ability to ask "Why is this sentence incorrect?" or "Can you suggest a better way to say this?" further supports learner autonomy and metacognitive engagement with writing.

In academic writing settings, ChatGPT has been used to model various genres and text types, such as argumentative essays, reports, reflections, and summaries. Students

can prompt the tool to generate examples of thesis statements, topic sentences, or counterarguments, which they can then analyze, critique, or adapt to their own writing purposes (Cotton et al., 2023). This modeling can be particularly beneficial in contexts where exposure to high-quality academic writing is limited. Instructors may also use ChatGPT collaboratively in class to co-construct texts, critique AI-generated samples, or highlight textual features that align with genre expectations, activities that promote critical literacy and rhetorical awareness (Pandey & Bhusal, 2024).

Another important pedagogical use of ChatGPT is its role in supporting iterative writing and revision. Traditional classroom instruction often limits the amount of feedback learners can receive due to time constraints. ChatGPT fills this gap by offering immediate suggestions for improvement at any stage of writing. Research by Jiao et al. (2023) and Dwivedi et al. (2023) suggests that students using ChatGPT to revise their drafts tend to make more substantial content-level changes compared to those receiving only peer feedback. When guided properly, this process reinforces the cyclical nature of writing and encourages learners to see revision not as correction, but as refinement.

Despite these pedagogical affordances, several challenges and considerations must be addressed in the use of ChatGPT for writing instruction. Overreliance on AI-generated content may lead to superficial engagement or undermine the development of critical thinking and authorial voice (Untsa & Nuha, 2025). Some students may copy AI responses verbatim or fail to evaluate the quality and relevance of the generated text. To mitigate these risks, teachers should adopt pedagogical strategies that encourage active reflection on the tool's output. For example, learners can be asked to compare AI-generated and human-written texts, explain their revisions, or justify why certain suggestions were accepted or rejected (Solak, 2024).

Instructors also play a crucial role in setting ethical guidelines and fostering AI literacy. Educators must clarify the appropriate boundaries of ChatGPT use in writing tasks, when it is acceptable to use AI for brainstorming or language feedback, and when independent work is required. Embedding AI literacy into the curriculum helps learners understand the affordances and limitations of the tool and cultivates responsible digital citizenship (Subrahmanyam, 2025). In addition, collaborative classroom activities involving ChatGPT, such as guided group writing, peer review of AI-assisted drafts, or

discussions about bias and credibility, can further enhance engagement and reflection.

2.3.3. Risks, Challenges, and Ethical Concerns of Using ChatGPT

As ChatGPT becomes increasingly integrated into educational environments, particularly in writing instruction and language learning, it is essential to consider the accompanying risks, challenges, and ethical dilemmas associated with its use. While the pedagogical benefits of ChatGPT are well documented, its deployment in academic settings introduces a complex set of concerns related to academic integrity, data privacy, authorship, overreliance, and algorithmic bias. These issues must be carefully addressed by educators, institutions, and policymakers to ensure responsible and effective integration of such tools into learning environments.

One of the most pressing concerns is the potential for academic dishonesty and misuse. ChatGPT's ability to generate fluent, coherent, and well-structured texts raises questions about authorship and originality. Students may be tempted to submit AI-generated writing as their own, blurring the lines between assistance and plagiarism (Baidoo-Anu & Owusu Ansah, 2023). This has sparked widespread debate in academia about what constitutes acceptable use of generative AI. Cotton et al. (2023) found that many instructors expressed concerns about the difficulty of detecting AI-generated assignments, particularly when students slightly edit ChatGPT's output to pass as original work. This risk challenges conventional approaches to assessment and requires the development of new frameworks for transparency and responsible use.

Related to this is the issue of overreliance, where learners may depend too heavily on ChatGPT for idea generation, language accuracy, or text organization. While the tool can scaffold writing, excessive dependence may hinder the development of critical thinking, problem-solving, and linguistic competence, skills that are central to EFL education (Kasneci et al., 2023). If students begin to view ChatGPT as an authoritative source, they may bypass reflective learning processes, reduce engagement with course materials, or fail to develop their individual writing voice. In such cases, rather than acting as a support mechanism, the tool may inadvertently contribute to skill erosion or superficial learning.

Another significant concern involves data privacy and user security. ChatGPT interacts with users through prompt-based dialogue, and while OpenAI asserts that personal data is not stored or used for training without consent, there remains uncertainty about how user input is processed, stored, and possibly exploited because transparency about data handling and retention practices is limited (OpenAI, 2025). In educational settings, particularly those involving minors or vulnerable populations, issues of consent, data ownership, and digital surveillance become even more critical. Institutions must implement clear data protection policies and educate students on how their interactions with AI platforms are governed.

In addition to technical and behavioral concerns, ChatGPT also poses risks associated with algorithmic bias and content reliability. Since the model is trained on vast, publicly available datasets, it inevitably inherits the biases embedded in those texts. This may include cultural stereotypes, gender imbalances, or regionally skewed language use (Bender et al., 2021). Furthermore, ChatGPT can produce confidently stated but factually incorrect information, commonly referred to as “hallucinations”, which may mislead learners or distort understanding if not critically evaluated (Papageorgiou, Chronis, Varlamis, & Himeur, 2024). In academic writing, where evidence-based reasoning is central, such inaccuracies can undermine the validity of students’ arguments or analytical rigor.

From a pedagogical standpoint, the use of ChatGPT also challenges traditional roles of teachers and evaluators. As AI tools take on more instructional functions, providing explanations, generating examples, or correcting grammar, there is a risk that the teacher’s role may be diminished or reframed. While some view this as an opportunity to shift toward more facilitative, coaching-based models of teaching (Dadhich, Yadav, Yadav, Huzoore, & Dewasiri, 2025), others warn against de-skilling educators and over-automating the learning process. Educators must therefore receive adequate training and support to integrate AI in a way that complements rather than displaces their professional judgment and pedagogical expertise (Mudgal & Panjani, 2025).

Another layer of complexity involves ethical literacy and equitable access. Not all students may have equal access to ChatGPT or the digital infrastructure required to use it effectively. This digital divide can exacerbate existing inequalities in education,

particularly in under-resourced regions or institutions (Williamson & Eynon, 2020). Furthermore, students may vary in their understanding of how AI works and how it should be used responsibly. Without deliberate instruction in AI literacy, including how to critically evaluate AI-generated content, learners may either misuse the tool or develop an overly deterministic view of its authority (Kasneci et al., 2023).

To address these concerns, researchers and educators have proposed several ethical guidelines and practical strategies. These include developing clear policies on acceptable AI use, designing assessments that emphasize process over product, encouraging reflective writing practices, and embedding AI literacy into curricula (Cotton et al., 2023). Collaborative classroom activities that involve critically analyzing ChatGPT outputs, such as evaluating the strengths and weaknesses of AI-generated texts, can also cultivate a more conscious and informed use of the tool.

2.3.4. Research Studies on ChatGPT in Education

As ChatGPT rapidly gains popularity in educational contexts, a growing body of empirical research has emerged to investigate its pedagogical implications. These studies span various educational levels, disciplines, and methodological approaches, collectively exploring how ChatGPT influences learning processes, student performance, engagement, ethical concerns, and instructional practices. The research is still in its early stages, but initial findings provide valuable insights into both the affordances and limitations of integrating generative AI tools like ChatGPT into teaching and learning environments.

Several studies have explored students' perceptions and usage patterns of ChatGPT in higher education. For instance, Kasneci et al. (2023) conducted a mixed-methods study involving university students from multiple countries and found that a majority of participants viewed ChatGPT as a useful academic tool, particularly for idea generation, language support, and summarization tasks. However, many students also expressed uncertainty about the boundaries between acceptable and inappropriate use, indicating a lack of institutional clarity regarding AI-assisted learning. Similarly, Paradedá, Torres, and Takahashi (2025) reported that students appreciated the accessibility and responsiveness of ChatGPT, but raised concerns about reliability, factual accuracy, and

the ethical implications of relying on AI-generated content.

In the field of language education, ChatGPT has been examined for its potential to support writing development and critical thinking. Jamshed, Ahmed, Sarfaraj, and Warda (2024) conducted a quasi-experimental study with EFL learners and found that students who received writing support via ChatGPT outperformed their peers on organization, coherence, and grammatical accuracy in essay writing. Learners reported that the tool helped them explore alternative phrasings, clarify ideas, and refine sentence structure. However, the same study also noted that students often struggled to evaluate the appropriateness of ChatGPT's feedback, highlighting the need for teacher guidance in AI-mediated writing tasks.

Research has also investigated ChatGPT's performance in academic assessments. Ibrahim et al. (2023) evaluated ChatGPT's ability to respond to typical university-level assignments across disciplines such as law, medicine, and business. The model consistently produced responses that received passing or even high scores when evaluated by human graders. This raised alarms about the potential for misuse and underscored the need for assessment redesign. Cotton et al. (2023) similarly found that both students and faculty were concerned about ChatGPT's capacity to bypass traditional plagiarism detection tools, prompting institutions to reconsider their academic integrity policies.

A number of studies have assessed the tool's impact on teaching practices and educator perceptions. Bower et al. (2024) conducted interviews with instructors in the UK and Australia, revealing ambivalence toward ChatGPT. While many acknowledged its potential for reducing workload (e.g., generating sample prompts or feedback), they also emphasized concerns about content accuracy, overreliance, and the loss of critical thinking. The study recommended AI literacy training for both students and educators, as well as the incorporation of reflective tasks that prompt learners to critically assess AI outputs.

On the other hand, some research emphasizes collaborative uses of ChatGPT in classroom settings. Su, Lin, and Lai (2023) explored how students interacted with ChatGPT-generated feedback during peer review sessions. Findings showed that when guided by reflective prompts, learners were able to identify strengths and weaknesses in

AI suggestions, revise their writing more effectively, and engage in critical discussions about voice, clarity, and evidence use. These results suggest that ChatGPT can be a productive part of collaborative learning environments when structured pedagogically.

However, not all studies report unequivocally positive outcomes. For example, Dwivedi et al. (2023) synthesized interdisciplinary research on ChatGPT and cautioned that, while the tool supports productivity and access to information, it can also reinforce surface-level learning if not coupled with human oversight. Their review advocates for balanced integration, where AI tools augment rather than replace traditional forms of learning interaction and assessment.

Across many of these studies, a recurring theme is the importance of context and framing. The effectiveness of ChatGPT varies significantly depending on how it is introduced, supported, and monitored within instructional design. Researchers agree that ChatGPT is not a standalone solution but a tool whose impact depends on the pedagogical ecosystem in which it is embedded (Mohebi, 2024). For this reason, many scholars have called for further longitudinal and classroom-based studies that go beyond technical performance to examine how students interact with, reflect on, and learn from AI-generated input over time.

2.4. Writing Skills in EFL Education

2.4.1. Cognitive Demands of Writing in a Foreign Language

Writing in a foreign language is widely acknowledged as one of the most cognitively demanding tasks in second language acquisition. Unlike receptive skills such as listening or reading, writing requires the active coordination of multiple linguistic, cognitive, and metacognitive processes, all of which must operate simultaneously and with precision (Kellogg, 2001; Sasaki, 2004). For learners of EFL, this complexity is further intensified by limited lexical resources, underdeveloped syntactic control, and varying degrees of rhetorical awareness, which collectively contribute to increased cognitive load during writing tasks.

At the core of the writing process are three interrelated cognitive activities:

planning, translating, and reviewing. According to Flower and Hayes' (1981) cognitive process model of writing, writers must plan the content of their message, transform that content into linguistic form (translating), and then revise or monitor the text for clarity and accuracy. In L2 contexts, each of these components becomes more resource-intensive. For example, planning may be constrained by limited vocabulary or cultural knowledge, translating may be slowed by syntactic interference from the first language (L1), and reviewing may be compromised by insufficient grammatical awareness (Manchón, 2009).

A key challenge for L2 writers is managing limited attentional resources. Skilled L1 writers can often automatize lower-level processes such as spelling or grammar, thereby freeing up cognitive capacity for higher-order concerns like argumentation or coherence (McCutchen, 2000). However, EFL learners often expend significant effort on formulating grammatically correct sentences, which reduces their ability to focus on content, organization, and voice. This bottleneck effect leads to writing that is mechanically accurate but lacks depth, cohesion, or critical engagement (Silva, 1993).

Additionally, the interplay between language proficiency and writing proficiency is a well-documented source of cognitive strain. Learners with lower English proficiency often face difficulties in lexical selection, verb conjugation, and syntactic complexity, all of which limit their expressive range (Roca de Larios, Murphy, & Manchón, 1999). In such cases, students may resort to simplification strategies, avoidance of complex structures, or direct translation from L1, resulting in texts that are grammatically correct but pragmatically or rhetorically weak (Kormos, 2012).

Another factor contributing to cognitive demand is the need for genre awareness and discourse-level control. Effective writing in academic or formal contexts requires adherence to specific genre conventions, argument structures, and audience expectations. For EFL learners unfamiliar with these conventions, producing an acceptable piece of writing involves not only composing sentences but also mastering the macrostructure of written discourse (Hyland, 2004). This demands additional cognitive effort in organizing ideas, selecting appropriate connectors, and developing logical progression, all of which must occur concurrently with language encoding.

Moreover, writing in a foreign language often requires greater metacognitive engagement, including goal setting, self-monitoring, and self-evaluation (Zimmerman & Bandura, 1994). Skilled writers must continuously evaluate whether their output aligns with their communicative intentions, revise accordingly, and manage emotional responses such as frustration or anxiety. These self-regulatory behaviors are essential for effective writing, but they place further strain on working memory, especially when linguistic competence is still developing (Tarman, Teng, Wang, & Zhang, 2022).

The sociocognitive dimensions of writing should also be considered. Learners write not only for linguistic practice but also to fulfill academic, interpersonal, or professional purposes. This sociocultural framing requires writers to consider tone, register, and cultural appropriateness, adding another layer of complexity. Leki (1992) emphasizes that L2 writers must navigate not just grammar and vocabulary, but also the expectations of new discourse communities, which may be unfamiliar or implicitly defined.

2.4.2. Writing Assessment: Criteria and Rubrics

Assessing writing in a foreign language context is a multifaceted endeavor that involves the evaluation of both linguistic form and communicative function. In EFL settings, writing assessment plays a crucial role not only in measuring learner performance but also in guiding instructional focus and supporting learner development (Weigle, 2002). To ensure reliability, validity, and pedagogical usefulness, assessments must be grounded in clearly defined criteria and operationalized through well-designed rubrics that capture the complexity of written production.

Assessment criteria in EFL writing generally encompass several core dimensions: content, organization, vocabulary, grammar, and mechanics. Some models also include task fulfillment, coherence and cohesion, and lexical variety (Hamp-Lyons, 1991; Hyland, 2003). These criteria are selected based on the writing task's purpose, whether academic, narrative, descriptive, or persuasive, and the proficiency level of the learners. For instance, in academic writing tasks, more weight may be given to argument structure and use of evidence, while in informal writing, creativity and fluency might be emphasized (Bacha, 2001).

A widely accepted approach to writing evaluation is the use of analytic rubrics, which provide separate scores for individual components of writing. Analytic rubrics are favored in EFL contexts because they offer detailed feedback to learners, helping them identify specific strengths and areas for improvement (Knoch, 2009). For example, a typical rubric may assign individual scores to aspects such as content relevance, paragraph development, grammatical accuracy, and use of transition devices. Research has shown that analytic rubrics not only improve scoring reliability among raters but also promote greater transparency in the evaluation process (Andrade, 2005; East, 2009).

In contrast, holistic rubrics provide a single overall score based on an impressionistic judgment of the entire piece of writing. While faster to apply and often used in large-scale assessments, holistic rubrics may obscure important differences between various dimensions of writing quality, making them less informative for formative assessment purposes (White, 1994). However, in high-stakes testing environments like TOEFL or IELTS, holistic scoring is often supplemented with benchmark descriptors to improve inter-rater consistency (Ono, Yamanishi, & Hijikata, 2019; Veerappan & Sulaiman, 2012).

In classroom contexts, rubrics also serve important instructional and developmental functions. When shared with students before a writing task, rubrics act as scaffolding tools that clarify teacher expectations and guide learner planning (Jonsson & Svingby, 2007). This transparency supports metacognitive development, allowing learners to monitor their own progress and engage in self-assessment. Furthermore, rubrics encourage more consistent and objective feedback, reducing potential bias and ensuring that learners are evaluated according to predetermined standards rather than personal preference or impression (Menzala Peralta, Ortega-Menzala, & Zanabria Vargas, 2024).

Recent developments in writing assessment have also emphasized dynamic and process-based evaluation, where the emphasis is placed not only on the final product but also on the stages of writing, such as outlining, drafting, and revising (Cho & Schunn, 2007). In such models, rubrics may include criteria for peer review participation, revision effort, or reflective commentary. This approach aligns with constructivist views of learning and acknowledges that writing proficiency develops over time through cycles of practice and feedback (Ferris & Hedgcock, 2014).

The advent of digital tools and online platforms has further transformed how writing is assessed. Learning management systems now often include built-in rubrics that facilitate streamlined grading and consistent documentation. Moreover, AI-supported writing assistants and automated scoring systems (e.g., Criterion®, WriteToLearn®) incorporate embedded rubrics to provide real-time, criterion-based feedback. While these systems offer speed and scalability, researchers caution that human judgment remains essential, particularly for evaluating content originality, rhetorical strategy, and voice, elements that are challenging to capture algorithmically (Attali & Burstein, 2006; Wilson & Roscoe, 2019).

Importantly, writing assessment must also account for construct validity, the extent to which a task and its scoring criteria accurately measure the writing ability they intend to assess. Misalignment between task design and assessment rubrics can lead to construct underrepresentation (excluding essential elements) or construct-irrelevant variance (assessing unintended features), thereby reducing the validity of the evaluation (Weigle, 2002; Bachman & Palmer, 1996). For EFL learners, whose linguistic and cultural backgrounds may influence rhetorical patterns and text organization, culturally responsive rubrics are necessary to ensure fair and meaningful assessment (Peter & Lopush, 2025).

2.4.3. Genre-Based vs. Process-Based Writing Instruction

Writing instruction in EFL has historically been shaped by a variety of pedagogical approaches, with the process-based and genre-based models emerging as two of the most influential. Each of these frameworks reflects different assumptions about how writing is learned and taught, and each offers distinct benefits and limitations when applied to EFL classrooms. Understanding their respective orientations is essential for designing effective instruction that responds to learners' linguistic, cognitive, and sociocultural needs.

The process-based approach, which gained prominence in the 1980s, emphasizes writing as a recursive and developmental activity rather than a one-time product (Raimes, 1985). This model breaks down writing into stages, prewriting, drafting, revising, editing,

and publishing, encouraging students to view writing as a process of discovery and improvement (Seow, 2002). It focuses on fluency, self-expression, and the gradual refinement of ideas, with teacher feedback playing a formative role throughout the process. In EFL contexts, the process approach has been shown to reduce writing anxiety, increase learner autonomy, and support the internalization of key writing strategies (Matsuda, 2003).

Despite its strengths, the process approach has been criticized for underemphasizing the social and cultural dimensions of writing. Learners may produce texts that are grammatically and logically sound but fail to align with the conventions or expectations of particular discourse communities (Wang & Xie, 2022). This limitation has led to the emergence of the genre-based approach, which focuses on the structural and rhetorical features of texts written for specific purposes. Grounded in Systemic Functional Linguistics (SFL) and the work of scholars such as Halliday (1994), genre pedagogy teaches students how language functions in different contexts, be it argumentative essays, lab reports, or formal letters, by explicitly modeling these genres and their communicative goals (Martin & Rose, 2008).

The genre-based model typically involves three stages: deconstruction of model texts, joint construction, and independent construction (Derewianka & Jones, 2016). Instructors first analyze exemplar texts with students, identifying typical patterns in structure, lexis, and grammar. Then, students co-write similar texts with the teacher before eventually attempting to write independently. This approach has proven effective in helping EFL learners understand textual organization, disciplinary discourse, and the expectations of academic writing (Tardy, 2009). It is especially valuable for learners who struggle with task fulfillment in standardized writing assessments or academic settings.

Comparative research between these two approaches suggests that they serve complementary functions. For example, Badger and White (2000) argue that writing instruction should not be framed as an “either/or” choice, but rather as an integrative pedagogy that draws on the strengths of both. While the process approach supports idea development, fluency, and peer interaction, the genre-based model provides explicit scaffolding for structure, formality, and purpose. This dual emphasis has been adopted in many contemporary EFL curricula, where students are taught not only how to write but

also what to write in specific communicative contexts.

Furthermore, genre awareness contributes significantly to learners' academic literacy, especially at the tertiary level where success often depends on the ability to produce discipline-specific texts (Hyland, 2004). However, genre-based instruction can be overly prescriptive if not balanced with opportunities for creativity and personal expression. In contrast, the process approach may produce texts that are rich in voice but weak in genre conformity, especially among lower-proficiency learners who need clearer models (Yasuda, 2011).

In teacher practice, the choice between these approaches often depends on learner needs, institutional expectations, and assessment demands. For example, test-oriented programs may prioritize genre instruction aligned with exam rubrics, while language development courses may emphasize the recursive, student-centered nature of process writing. Some studies advocate for a genre-process hybrid, where writing tasks are contextualized within authentic genres but completed through iterative drafts and peer feedback (Paltridge, 2001).

2.4.4. AI's Role in Supporting L2 Writing Development

AI has emerged as a transformative force in L2 writing instruction, offering innovative solutions to longstanding pedagogical challenges. In the context of EFL, where learners often struggle with vocabulary development, syntactic accuracy, genre awareness, and self-editing skills, AI technologies present new opportunities to scaffold and personalize the writing process. From intelligent tutoring systems and automated writing evaluation tools to generative language models, AI is increasingly being positioned as both a tutor and collaborator in L2 writing development (Link, Redmon, Shamsi, & Hagan, 2024).

One of the primary contributions of AI to L2 writing is its ability to provide immediate and individualized feedback. Tools such as Grammarly, Criterion, and Write & Improve use NLP algorithms to analyze learners' texts and return feedback on grammar, vocabulary, coherence, and mechanics (Chen & Cheng, 2008; Wang et al., 2013). This kind of real-time feedback supports formative assessment and allows students

to revise and refine their texts autonomously, which aligns with process-oriented writing pedagogies. Unlike traditional teacher feedback, which may be delayed or limited by classroom logistics, AI offers constant and scalable support that can be accessed on demand (Roscoe et al., 2019).

AI can also function as a language scaffold, helping learners generate, organize, and evaluate their ideas. For example, ITS like AWE-Tutor and MI Write are capable of guiding students through various stages of the writing process, offering hints, prompts, and targeted suggestions (Abinaya, Alphonse, Indira, & Lavanya, 2024). These systems can be especially helpful for learners who lack confidence in their ability to develop coherent arguments or who need assistance with rhetorical structure. Research indicates that such AI-enhanced tools can increase writing fluency, encourage revision behaviors, and improve grammatical accuracy over time (Zhou, 2025).

In addition to linguistic feedback, AI tools also support metacognitive development, fostering greater awareness of the writing process. For instance, some platforms allow learners to track their own progress, set writing goals, and reflect on feedback received, practices that contribute to enhanced learner autonomy and self-regulation (Godwin-Jones, 2018). This dimension of AI use aligns with constructivist approaches to language learning, where learners actively construct knowledge through interaction with tools and tasks.

Another important role of AI is its ability to model authentic language use. Advanced AI models can generate sample texts in different genres, simulate academic discourse, and provide examples of cohesive and coherent writing. These features are particularly valuable in EFL contexts where learners may have limited exposure to high-quality writing in English. By analyzing and emulating these models, students can develop greater genre awareness and improve their control over register, tone, and stylistic conventions (Zagoto, Suhono, & Ndraha, 2025).

However, the role of AI in supporting L2 writing is not without limitations and pedagogical caveats. One concern is that learners may become overly reliant on AI-generated suggestions without fully engaging in the cognitive work required for writing (Georgiou, 2025). If learners passively accept feedback or copy outputs without critical

evaluation, the opportunity for language development may be diminished. Instructors must therefore frame AI use within pedagogical strategies that promote reflection, analysis, and active language processing.

Another challenge is the varying quality and transparency of AI feedback. While many tools can accurately flag surface-level errors, they may struggle with deeper discourse-level issues such as argument coherence, critical stance, or cultural appropriateness. Additionally, the algorithms behind these tools are often proprietary and opaque, making it difficult for educators to understand how feedback is generated or whether it is pedagogically sound (Sadiqzade, 2025).

To mitigate these issues, researchers emphasize the importance of teacher mediation and integration. AI tools are most effective when embedded within a broader instructional framework that includes teacher feedback, peer review, and guided revision tasks. For example, Li & Wilson (2025) found that learners who used AI tools in combination with teacher scaffolding demonstrated greater improvements in writing quality than those who used AI alone. This hybrid model of instruction ensures that AI supports rather than replaces human teaching, aligning with socio-cognitive theories of language learning (Lantolf & Thorne, 2006).

Lastly, the use of AI in L2 writing must be approached with critical attention to ethics and equity. Issues such as access to technology, algorithmic bias, and data privacy can shape the extent to which different learners benefit from AI tools. In under-resourced contexts, learners may lack access to stable internet or premium AI platforms, thereby exacerbating educational inequalities. Ethical AI use requires educators to consider these structural barriers and advocate for inclusive and responsible implementation (Zawacki-Richter et al., 2019).

2.4.5. Paragraph Structure in EFL Writing

A fundamental component of effective writing instruction in English as a Foreign Language (EFL) classrooms is the development of paragraph organization. Paragraph structure serves as the building block of coherent written discourse, allowing learners to organize ideas logically and communicate meaning effectively. For young EFL learners,

mastering paragraph structure entails understanding the functional relationship between topic sentences, supporting details, and concluding sentences (Oshima & Hogue, 2007). Without this organizational awareness, even grammatically correct sentences can fail to convey a unified message, leading to fragmented and incoherent texts (Hyland, 2003). Thus, explicit instruction in paragraph structure forms the foundation upon which higher-level writing skills, such as essay composition and argumentation, are later constructed.

Research emphasizes that paragraph writing requires both linguistic knowledge and discourse-level awareness. According to Grabe and Kaplan (2014), writing development involves the integration of syntax, vocabulary, and rhetorical organization within culturally specific expectations for coherence and cohesion. In many EFL contexts, students tend to produce sentence-level writing that lacks unity or fails to develop a single main idea (Raimes, 1983). This difficulty often stems from limited exposure to authentic English texts and insufficient practice with organizational models. Consequently, explicit modeling and guided practice of paragraph elements are essential to help learners internalize the conventions of English discourse (Ferris & Hedgcock, 2014).

A well-structured paragraph typically begins with a topic sentence that expresses the main idea, followed by supporting sentences that provide details, explanations, or examples, and ends with a concluding sentence that reinforces the main point (Hogue, 2008). Instructional frameworks that teach paragraph writing in this linear fashion have been shown to enhance young learners' comprehension and written output (Nation, 2009). When learners are trained to identify and construct each component, they begin to see writing as an organized process rather than a collection of isolated sentences. This structured approach also promotes metacognitive awareness, enabling learners to plan, monitor, and evaluate their writing more effectively (Zimmerman, 2000).

Studies with young EFL learners indicate that paragraph writing instruction improves not only organizational quality but also motivation and engagement. Abdel Latif (2019) found that teaching paragraph components explicitly helped students gain confidence in their ability to express ideas coherently. Similarly, Arici and Kaldırım (2022) reported that structured writing instruction enhanced students' sense of accomplishment, leading to greater willingness to write in English. In this sense, paragraph structure instruction contributes to both cognitive and affective dimensions of

writing development. By offering a clear framework, it reduces the cognitive load associated with planning and sequencing ideas, allowing learners to focus on language form and creativity (Flower & Hayes, 1981).

Recent pedagogical research also highlights the value of visual and collaborative scaffolds in teaching paragraph organization. Graphic organizers, sentence frames, and color-coding techniques help learners visualize how ideas connect within a paragraph (Rahmat, 2018). Collaborative writing tasks further allow students to negotiate meaning, compare organizational choices, and provide peer feedback on unity and coherence (Storch, 2013). Such strategies align with the process-oriented view of writing, in which paragraph construction is practiced as a recursive skill, drafting, revising, and reorganizing until the message becomes clear (Hyland, 2003).

In the context of digital and AI-supported writing environments, paragraph structure remains a central focus. Tools like ChatGPT and other generative AI systems can model well-organized paragraphs and provide real-time feedback on coherence and logical flow. However, as Hyland (2022) cautions, technological assistance should complement rather than replace human instruction, ensuring that learners develop an internalized understanding of paragraph unity and progression. When integrated thoughtfully, AI can serve as a scaffold for learners to recognize the relationship between ideas and enhance their control over paragraph organization (Li & Wilson, 2025).

2.5. Student Engagement in EFL Classrooms

2.5.1. Definitions and Dimensions of Engagement

Student engagement refers to the degree of attention, interest, curiosity, and involvement that learners show while participating in the learning process. In the context of second or foreign language education, engagement is essential not only for maintaining learner motivation but also for ensuring sustained interaction with the language. Engagement is not a singular or fixed quality; rather, it encompasses multiple dimensions that together shape the learner's overall involvement with learning tasks and classroom dynamics.

The most commonly accepted framework defines engagement through three core dimensions: behavioral, emotional, and cognitive (Fredricks, Blumenfeld, & Paris, 2004).

- Behavioral engagement refers to observable actions such as attendance, participation, task completion, and collaboration. Students who are behaviorally engaged are attentive, follow instructions, and actively contribute to learning activities.
- Emotional engagement involves affective responses to learning, such as interest, enjoyment, or a sense of belonging. Emotionally engaged learners often feel connected to the classroom, the teacher, and their peers, which positively influences persistence and effort.
- Cognitive engagement pertains to the mental investment and self-regulated learning strategies that learners use. It includes effortful processing, elaboration, and the use of metacognitive strategies such as planning, monitoring, and evaluating one's own learning.

A fourth dimension, agentic engagement, was later proposed by Reeve and Tseng (2011) to capture learners' proactive role in shaping their own learning experience. This includes asking questions, expressing opinions, and contributing to classroom decisions, behaviors that reflect student initiative and autonomy.

Engagement is contextual, dynamic, and interactional. It fluctuates based on task demands, classroom climate, teacher behavior, and learner goals. For example, a learner may show strong behavioral engagement during a structured grammar task but demonstrate low emotional or cognitive engagement if the activity lacks relevance or challenge. Because of this, engagement is best understood as a multi-dimensional and situational construct rather than a stable learner trait.

The relationship among the dimensions of engagement is interdependent rather than hierarchical. Emotional engagement can influence behavioral choices, and both can affect

cognitive investment. Conversely, deep cognitive engagement can increase emotional satisfaction and encourage greater behavioral effort. For this reason, instruction aimed at fostering one dimension often enhances the others.

In language education research, high levels of engagement have been linked to improved learning outcomes, especially in activities that require sustained attention and output, such as reading comprehension and academic writing. However, disengagement, whether through passivity, emotional withdrawal, or minimal effort, can disrupt progress and contribute to negative attitudes toward language learning.

In sum, engagement is a foundational element of effective language learning. By recognizing and supporting its behavioral, emotional, cognitive, and agentic components, educators can create learning environments that stimulate active, motivated, and reflective learners who are more likely to succeed in language acquisition.

2.5.2. Engagement in Technology-Supported Learning Environments

Student engagement in EFL classrooms is shaped by a complex interplay of cognitive, emotional, social, and contextual variables. While general models of engagement emphasize behavioral, emotional, cognitive, and agentic dimensions (Fredricks et al., 2004; Reeve & Tseng, 2011), in EFL settings, engagement is particularly sensitive to factors such as linguistic proficiency, cultural background, classroom environment, teacher behavior, task type, and motivation.

A primary factor influencing engagement in EFL contexts is language proficiency. Learners with limited vocabulary or grammatical knowledge may experience anxiety, confusion, or cognitive overload, which can reduce their willingness to participate in activities (MacIntyre & Gardner, 1991). On the other hand, students with higher proficiency are often more confident and more likely to take linguistic risks, engage with challenging tasks, and sustain attention. Teachers need to calibrate task difficulty to learners' proficiency levels to avoid disengagement stemming from frustration or boredom (Ellis, 2003).

Teacher behavior and instructional style are consistently identified as key

determinants of engagement. Teachers who provide clear instructions, positive reinforcement, timely feedback, and emotional support create psychologically safe environments that foster learner involvement (Patrick et al., 2007). In EFL settings, where students may already feel uncertain about their communicative abilities, the teacher's demeanor plays a crucial role in reducing anxiety and building rapport (Williams & Burden, 1997). Moreover, the use of scaffolding strategies, such as modeling language, eliciting responses, and using visual aids, contributes to greater task comprehension and cognitive engagement.

Task design and classroom activities also significantly influence engagement. Communicative and interactive tasks that involve real-life language use, such as role plays, group projects, or problem-solving activities, tend to generate higher levels of both behavioral and emotional engagement than rote grammar drills or passive exercises (Littlewood, 2004). Learners are more likely to invest effort when they perceive tasks as meaningful, relevant, and appropriately challenging (Dörnyei & Ushioda, 2011). In this respect, the alignment between task type and learner goals is vital for sustained engagement.

Peer dynamics and social context further shape how students engage with EFL instruction. Positive peer relationships, opportunities for collaboration, and a supportive group atmosphere can enhance participation and reduce the fear of making mistakes (Mercer & Howe, 2012). Conversely, competitive or judgmental classroom climates may inhibit students from speaking or expressing themselves, particularly in oral tasks. Research has shown that collaborative learning environments promote not only social engagement but also deeper cognitive processing and greater retention of new language (Storch, 2005).

Motivational factors such as intrinsic interest, self-efficacy, and goal orientation play a substantial role in determining the intensity and quality of student engagement. According to self-determination theory, learners are more likely to be engaged when their needs for autonomy, competence, and relatedness are met (Deci & Ryan, 1985). In the EFL context, learners with strong integrative or instrumental motivation, such as the desire to study abroad or pursue a global career, tend to demonstrate more consistent effort and involvement (Gardner, 1985). Teachers who connect language learning to real-

world outcomes can help strengthen this motivational engagement.

Cultural and institutional factors also mediate engagement in EFL settings. In some educational cultures, students are conditioned to be passive recipients of knowledge and may initially resist active participation or critical discussion (Cortazzi & Jin, 1996). Institutional policies, curriculum rigidity, and large class sizes can also restrict opportunities for individualized attention or creative task design. In such contexts, fostering engagement requires deliberate pedagogical choices that adapt instructional strategies to local norms while gradually encouraging learner agency.

Finally, emotional variables, such as anxiety, boredom, or enjoyment, have been shown to influence both momentary and sustained engagement. Foreign language anxiety, in particular, has a negative impact on oral participation and task involvement (Horwitz, Horwitz, & Cope, 1986). On the other hand, enjoyment and pride in one's progress are positively associated with effort and persistence (Pekrun, 2006). Thus, teachers must attend not only to the cognitive demands of language learning but also to the emotional climate of the classroom.

2.5.3. Enhancing Engagement through AI-Supported Writing Tasks

Fostering student engagement in EFL settings requires a strategic and holistic approach that considers the learners' linguistic needs, emotional states, motivational drivers, and sociocultural contexts. As engagement is multifaceted, encompassing behavioral, emotional, cognitive, and agentic dimensions, effective strategies must aim to activate and sustain all aspects simultaneously. In EFL classrooms, this involves creating meaningful learning experiences, building supportive classroom relationships, and offering opportunities for active, purposeful language use.

A foundational strategy is the design of meaningful and authentic tasks. Learners are more likely to invest cognitively and emotionally when they perceive the activity as relevant to their real-world interests or future goals (Nunan, 2004). Tasks such as writing a letter to a real audience, creating a class blog, or preparing a travel guide to their hometown encourage purposeful language use and a sense of ownership over the learning process. Authenticity can also be achieved by integrating learner-generated content and

allowing some level of choice or personalization in the topics and formats used (Carless, 2009).

Task variety and interaction are equally important. Repetitive or overly structured activities may stifle engagement, while diverse, interactive tasks, such as jigsaw reading, information gap activities, debates, and project-based learning, can stimulate curiosity and active involvement (Ellis, 2003). When learners are given the chance to negotiate meaning, express opinions, and co-construct knowledge, they are more likely to remain cognitively engaged and emotionally invested.

Goal-setting and self-regulation support also contribute to sustained engagement. Teaching students how to set achievable goals, monitor their progress, and reflect on their learning increases their sense of control and motivation (Zimmerman, 2002). Simple strategies such as learning journals, progress checklists, or peer feedback forms help learners become more self-directed. These practices not only promote agentic engagement but also cultivate metacognitive skills that are crucial in second language acquisition.

Instructors play a central role in shaping classroom climate, which strongly affects emotional and behavioral engagement. Supportive, respectful, and inclusive environments where learners feel safe to make mistakes encourage risk-taking and participation (Walqui, 2006). Teachers can foster this atmosphere by using positive reinforcement, showing empathy, incorporating humor, and validating students' efforts. Building rapport and demonstrating cultural sensitivity are particularly important in multilingual, multicultural EFL settings (Dörnyei, 2001).

Scaffolding language input and output is another critical strategy. Learners are more likely to remain engaged when tasks are challenging yet achievable. Teachers can support comprehension and production by pre-teaching key vocabulary, providing models or sentence frames, and using visual aids or gestures to reinforce meaning (Nation & Newton, 2009). This scaffolding reduces frustration, supports cognitive engagement, and enables learners to participate more confidently in complex tasks.

Collaborative learning techniques such as pair work, group discussions, and peer

feedback sessions are known to enhance both engagement and language development. These methods promote social interaction and provide opportunities for shared responsibility and negotiation, which in turn increase learner motivation and accountability (Jacobs & Ball, 1996). Structured group roles, rotating leadership, and reflection on group dynamics can enhance the effectiveness of such activities.

Integrating learner interests and providing autonomy are also vital for promoting intrinsic motivation and sustained engagement. Allowing students to choose topics, select materials, or decide how to present their work gives them a sense of agency and ownership (Little, 2007). Even within a fixed syllabus, small choices, such as choosing between two writing prompts or selecting a role in a group task, can have a significant impact on engagement levels.

Continuous and constructive feedback helps learners stay engaged by reinforcing progress and highlighting areas for improvement. Feedback should be timely, specific, and framed positively to maintain motivation and support growth (Hyland & Hyland, 2006). Peer and self-assessment techniques can also be integrated to encourage learner reflection and responsibility.

2.6. Learner Autonomy in Language Learning

2.6.1. Theoretical Foundations of Learner Autonomy

The concept of learner autonomy has become a cornerstone of modern language education, particularly in contexts that emphasize learner-centered instruction and lifelong learning. Broadly defined, learner autonomy refers to the ability to take charge of one's own learning, encompassing goal-setting, strategy use, self-monitoring, and self-evaluation (Holec, 1981). Although the term is now widely used in second and foreign language education, it is grounded in several theoretical traditions that inform both its definition and pedagogical implementation.

The most influential definition of learner autonomy is provided by Henri Holec, who conceptualized it as “the ability to take responsibility for one's own learning” (Holec, 1981, p. 3). This seminal definition, developed in the context of adult language learning

in Europe, emphasizes learner agency, viewing autonomy not as a fixed trait but as a capacity that can be developed through appropriate pedagogical support. Holec's work laid the groundwork for autonomy to be seen as both a goal and a means of language education.

Following Holec, David Little (1991, 2007) expanded the theoretical foundations of learner autonomy by linking it to learner reflection and metacognitive awareness. Little argues that autonomy requires learners to engage actively in planning, monitoring, and evaluating their learning, and that this reflective involvement promotes deeper learning and increased motivation. He also stresses that autonomy is socially mediated, meaning that it develops through interaction with others rather than in isolation. This view aligns with Vygotsky's (1978) sociocultural theory, which holds that cognitive development, including self-regulated learning, is facilitated by social interaction and scaffolding within the learner's Zone of Proximal Development (ZPD).

Phil Benson (2001, 2011), another key figure in autonomy research, frames learner autonomy within a broader sociopolitical and critical pedagogy perspective. He identifies three dimensions of autonomy: autonomy of learning management (choosing what and how to learn), autonomy of cognitive processes (thinking about learning), and autonomy of content (deciding what is worth learning). Benson emphasizes the contextual and cultural factors that shape autonomy, arguing that learners' capacity for independent learning is influenced by institutional norms, classroom practices, and broader power structures.

The theoretical basis for learner autonomy also draws on constructivist learning theory, which posits that learners build knowledge through active engagement with content, rather than passively receiving information (Piaget, 1970). Constructivism underpins many pedagogical strategies associated with autonomy, such as task-based learning, project work, and portfolio assessment, all of which allow learners to make decisions and reflect on their learning process.

In addition, learner autonomy is closely linked to self-determination theory (SDT), proposed by Deci and Ryan (1985), which identifies autonomy as one of three basic psychological needs, alongside competence and relatedness, that support intrinsic

motivation. In this framework, when learners feel a sense of control over their learning, they are more likely to engage deeply and persist in the face of challenges. This connection between autonomy and motivation has been particularly influential in language education, where maintaining long-term learner engagement is often a challenge.

It is also important to distinguish between autonomy as a capacity and as a right. According to Littlewood (1996), autonomy involves both the ability and the freedom to make choices about learning. In some contexts, learners may be capable of self-directed learning but are constrained by curriculum structures, assessment systems, or teacher-centered methodologies. Thus, fostering autonomy requires not only developing learners' metacognitive skills but also restructuring educational environments to provide meaningful opportunities for choice and control.

While the theoretical foundations of learner autonomy are rich and varied, they converge on the idea that autonomy is a dynamic, context-sensitive construct that involves a gradual transfer of responsibility from teacher to learner. This transfer must be scaffolded through guided reflection, strategy training, and supportive feedback, rather than assumed or imposed prematurely (Dam, 1995). Ultimately, learner autonomy empowers students to become active participants in their learning journeys, equipped with the skills and dispositions necessary for lifelong learning and adaptation in diverse linguistic and cultural environments.

2.6.2. Fostering Autonomy in EFL Writing

While learner autonomy is conceptually grounded in theories of self-regulation, motivation, and constructivism, its successful implementation in EFL classrooms depends on practical strategies and classroom models that gradually transfer responsibility to the learner. In practice, autonomy is not a binary state but a developmental process that varies in degree and form depending on learners' readiness, context, and pedagogical design (Littlewood, 1999).

One widely recognized model is the Staged Development of Learner Autonomy proposed by Nunan (1997), which outlines a five-level continuum: from awareness

(knowing about learning) to involvement (participating in decisions), intervention (modifying learning paths), creation (designing tasks), and ultimately, transcendence (applying autonomy beyond the classroom). This model allows teachers to scaffold autonomy by starting with structured choices and gradually offering more freedom as learners build confidence and skills.

In classroom practice, fostering autonomy involves integrating student choice, reflection, and responsibility into instructional routines. Activities such as goal-setting exercises, self-assessment checklists, learning logs, and peer feedback sessions enable learners to monitor their own progress and take ownership of outcomes (Dam, 1995; Little, 2004). These practices not only develop metacognitive skills but also strengthen learners' motivation by involving them in meaningful decision-making.

Project-based learning (PBL) is another effective method to promote autonomy. In PBL, learners take control over planning, researching, and presenting their projects, often working collaboratively. This approach promotes authentic use of language, sustained engagement, and a sense of achievement, all key ingredients of autonomous learning (Beckett & Slater, 2005).

Additionally, portfolio assessment is commonly used to support autonomy. Learners collect, select, and reflect on their work over time, which helps them evaluate their progress and set future goals. Portfolios encourage learners to view language learning as an ongoing, self-directed process rather than a series of isolated tasks (Barrett, 2007).

Importantly, autonomy-supportive instruction does not imply the absence of teacher guidance. On the contrary, it involves strategic scaffolding, where the teacher functions as a facilitator, providing tools and feedback that empower learners to assume greater responsibility. Teachers may guide learners in choosing strategies, negotiating content, or evaluating performance, all while maintaining a supportive classroom climate (Borg & Al-Busaidi, 2012).

In EFL contexts, especially where teacher-centered education is dominant, applying autonomy-based practices requires cultural sensitivity and incremental change.

Autonomy can be cultivated even in constrained environments through small steps: giving learners choices in topics, encouraging independent vocabulary notebooks, or involving students in setting class rules or goals (Chan, 2001).

2.6.3. ChatGPT as a Scaffold for Independent Writing

In EFL instruction, writing is often seen as one of the most cognitively and emotionally demanding skills. It requires not only control over linguistic forms but also planning, organization, evaluation, and revision. Learner autonomy plays a vital role in supporting these complex processes by fostering independence, metacognitive awareness, and motivation, key elements in effective writing development (Hyland, 2003; Andrade & Evans, 2013).

Autonomous learners are more likely to engage in goal-setting, self-monitoring, and self-evaluation, processes that closely mirror the stages of writing, particularly in process-based instruction. For instance, when learners set their own writing goals, they are more invested in the task and more likely to revise drafts carefully or seek additional input. Similarly, autonomous learners are more inclined to reflect on their writing weaknesses and actively pursue improvement through self-access resources or feedback (Li & Zhang, 2021; Jitpaisarnwattana & Saville, 2025).

Research shows that when students are given more control over their writing choices, such as selecting topics, deciding on structure, or choosing sources, they demonstrate increased ownership and creativity in their work (Lee, 2017). This autonomy not only improves the quality of their writing but also builds confidence and engagement. In contrast, overly prescriptive or teacher-led writing instruction can limit learners' sense of agency, reduce motivation, and discourage risk-taking, an essential aspect of writing in a second language (Oxford, 2003).

In classroom practice, autonomy in writing can be supported through writing portfolios, peer review, and self-assessment activities. Portfolios, for example, allow learners to document their progress over time, select representative work, and reflect on their development. These practices encourage self-direction and help learners see writing as a recursive, evolving process rather than a one-off product (Barrett, 2007).

Furthermore, peer feedback activities provide opportunities for learners to evaluate writing critically, both their own and their classmates', while developing analytical and rhetorical awareness. When structured effectively, these activities promote both cognitive and agentic engagement, contributing to learners' ability to self-correct and make informed choices during revision (Min, 2006).

Digital tools and learning management systems can also play a role in fostering writing autonomy by enabling learners to draft, revise, and track their own progress asynchronously. However, autonomy does not imply working alone; rather, it involves making informed decisions, using resources effectively, and seeking help when needed (Little, 1995). Teachers, in this context, act as facilitators and strategy guides, offering models, frameworks, and feedback that support learners' independent writing development.

2.7. Research Studies on the Use of AI Tools in EFL Contexts

2.7.1. Empirical Findings on ChatGPT in Language Classrooms

As the use of artificial intelligence tools like ChatGPT becomes increasingly common in educational settings, a growing body of empirical research has emerged examining its implementation and impact in language classrooms. These studies explore how ChatGPT affects various aspects of language learning, including writing performance, learner engagement, vocabulary development, and critical thinking skills. Most findings suggest that when integrated thoughtfully, ChatGPT can support language development by providing real-time feedback, modeling target language use, and promoting learner autonomy.

One of the most consistent findings across empirical studies is that ChatGPT has a positive effect on EFL learners' writing performance. In a quasi-experimental study, El-Demerdash and Ahmed (2023) investigated the impact of ChatGPT on paragraph writing among intermediate EFL learners in Egypt. The experimental group, which used ChatGPT as a writing assistant, outperformed the control group on post-tests in terms of coherence, lexical variety, and grammatical accuracy. Learners in the experimental group

also reported greater confidence and satisfaction with their writing tasks.

Similarly, Jiao et al. (2023) found that EFL learners who used ChatGPT during revision phases produced essays with more content-level improvements and clearer structure compared to those who relied solely on peer feedback. The study emphasized that learners benefited most when they were explicitly guided on how to critically evaluate AI feedback rather than accept it passively.

Several studies have also explored student perceptions and engagement with ChatGPT. For instance, Kasneci et al. (2023) conducted a mixed-methods study across multiple European universities and found that students perceived ChatGPT as a helpful tool for brainstorming, summarizing texts, and improving grammar. However, they also expressed concerns about dependency, accuracy, and the potential for overuse, suggesting a need for clear pedagogical frameworks and ethical guidelines in its use.

Anjum, Raheem, and Ghafar (2025) focused on learner engagement and reported that students who used ChatGPT in writing tasks showed higher levels of task persistence and motivation. The tool's instant responses and natural language processing capabilities seemed to reduce writing anxiety and foster a more exploratory approach to language production. However, the study also highlighted the importance of teacher scaffolding, as learners were more effective when teachers discussed limitations of AI output and encouraged reflection.

Beyond writing, some studies have begun to examine ChatGPT's role in vocabulary learning and reading comprehension. A study by Alsagoor, Albakri, Alaudan, and Alyami (2025) involved university students using ChatGPT to generate vocabulary explanations and example sentences.

Findings indicated that students retained new vocabulary better when it was contextualized and actively explored through AI-generated examples. Nonetheless, researchers warned that ChatGPT's suggestions are not always pedagogically accurate or level-appropriate, reinforcing the need for teacher mediation.

Another recurring theme in the literature is the need to develop AI literacy among

both students and teachers. In Kostka and Toncelli's (2023) study, instructors voiced concern over the lack of training on how to use ChatGPT meaningfully in language instruction. Some teachers reported that while ChatGPT could assist in generating model texts or grammar exercises, it was not always aligned with curricular objectives or student levels. This gap points to the importance of professional development programs that help educators evaluate and integrate AI tools pedagogically.

Ethical issues such as plagiarism, authorship, and critical thinking erosion are increasingly being raised in empirical work. Cotton et al. (2023) found that while students often used ChatGPT responsibly, some viewed it as a shortcut rather than a support tool. The researchers concluded that students need explicit instruction not only on how to use ChatGPT but also on when and why to use it, emphasizing academic integrity and critical engagement with AI output.

2.7.2. Comparative Studies: Traditional vs. AI-Supported Writing

As ChatGPT and other AI-powered tools gain popularity in educational settings, researchers have increasingly turned to comparative studies to examine how AI-supported writing instruction measures up against traditional approaches. These studies typically assess writing quality, learner perceptions, engagement levels, and revision practices, offering valuable insights into the affordances and limitations of each method.

One of the main themes in the literature is that AI-supported writing tends to enhance surface-level accuracy, such as grammar, spelling, and sentence structure, more effectively than traditional instruction alone. For example, in a study by El-Demerdash and Ahmed (2023), EFL students who used ChatGPT as a writing assistant produced more grammatically accurate and lexically varied texts compared to those taught using traditional teacher feedback. The AI group also reported reduced writing anxiety and increased task confidence. However, the researchers noted that while surface features improved, deeper aspects of writing, such as argument development or critical thinking, required sustained teacher guidance.

Other comparative studies focus on revision behaviors. Jiao et al. (2023) found that learners using ChatGPT for feedback during revision made more global and content-level

changes than those receiving peer feedback alone. Traditional revision, often focused on teacher comments or peer suggestions, tended to prioritize surface corrections. In contrast, the AI-assisted group engaged in more structural reorganization and elaboration of ideas, suggesting that ChatGPT may stimulate a more recursive and reflective revision process when used critically.

That said, some researchers caution that AI-assisted writing may lead to overdependence and passive learning. In a mixed-methods study by Cotton et al. (2023), students using ChatGPT showed high performance in mechanical aspects of writing, but some admitted to relying on AI-generated content without fully understanding or processing it. By contrast, learners engaged in traditional drafting and teacher-led feedback reported deeper engagement with content generation, albeit with more linguistic errors. These findings raise important concerns about authorship, critical thinking, and learner agency in AI-supported contexts.

From a motivational standpoint, AI-supported writing has generally been associated with higher learner engagement and task persistence, especially among lower-proficiency students. Delcker et al. (2024) found that students using AI tools reported increased enjoyment, confidence, and perceived competence. However, traditional approaches were perceived as more personalized and relational, qualities that many learners valued for emotional support and sustained improvement over time.

In terms of instructional time and teacher workload, AI-assisted writing can ease some burdens by automating basic error correction or generating writing prompts. This frees up classroom time for higher-order discussions and individualized support. However, several studies emphasize the need for teacher mediation to ensure students do not blindly accept AI outputs and that writing remains a cognitively demanding, learner-driven activity (Teng & Huang, 2025)

In summary, comparative studies suggest that AI-supported writing holds clear advantages in improving linguistic accuracy, encouraging revision, and boosting confidence. Yet, traditional instruction remains critical for fostering deep thinking, rhetorical development, and human interaction. The optimal approach appears to be a hybrid model, where AI tools are used to support, not replace, core pedagogical

principles, with teachers guiding learners in making reflective, ethical, and strategic use of technology.

2.7.3. Gaps in the Literature and the Need for Current Study

While research on artificial intelligence, particularly ChatGPT, in language education is rapidly expanding, the current body of literature remains limited in several important respects, both in scope and depth. Most empirical studies to date have focused on university-level learners, often in general English or academic writing courses, with little attention to specific learning contexts such as EFL learners at different proficiency levels or in diverse cultural settings. Moreover, much of the available research is exploratory in nature, highlighting perceptions and initial outcomes, but lacking in longitudinal, classroom-based investigations with well-defined experimental controls.

A notable gap exists in studies that examine the integration of ChatGPT into structured writing curricula, particularly those that emphasize higher-order thinking skills such as critical thinking, argument construction, and metacognitive awareness. While some research shows that ChatGPT can support lexical accuracy and fluency (Jiao et al., 2023), few studies have explored how it can be leveraged to foster critical thinking dispositions (CTDs) or contribute to students' engagement with the writing process at a deeper cognitive level. This is particularly relevant in the context of EFL learners, who often require explicit scaffolding to develop not only language forms but also academic thinking skills ((Arora, Al-Wadi, & Afari, 2024).

Furthermore, there is limited evidence on the pedagogical frameworks required to use ChatGPT effectively in classroom settings. Many studies acknowledge the need for teacher mediation and reflective use of AI tools (Kasneci et al., 2023; Cotton et al., 2023), but few have systematically examined how instructors can structure pre-, during-, and post-task activities to maximize the pedagogical benefits of ChatGPT. This includes how students are introduced to the tool, how they are taught to evaluate AI-generated feedback, and how such technologies are aligned with curriculum goals and assessment practices.

Additionally, most comparative studies focus on outcomes rather than learning processes. There is a lack of process-oriented research that investigates how students

interact with ChatGPT during drafting, revising, or reflecting stages of writing. Understanding these micro-level behaviors is essential for designing instructional interventions that promote not only performance but also autonomy and critical engagement.

Lastly, in the context of Türkiye and similar EFL contexts, local research on ChatGPT use in language education remains scarce, especially in undergraduate-level writing courses. The sociocultural, technological, and curricular realities of these settings may affect how AI tools are perceived and used, underscoring the importance of contextualized studies that can inform context-sensitive pedagogical decisions.



CHAPTER III

METHODOLOGY

3.1. Introduction

This chapter presents the research design employed in the study, including information about the participants and the educational setting. It also details the implementation process of the study step by step. Furthermore, the chapter explains the data collection tools used to gather both quantitative and qualitative data and describes the procedures followed. Lastly, it outlines the methods applied to analyze the data in order to answer the research questions.

3.2. Research Design

This study adopted a quasi-experimental research design to investigate the impact of ChatGPT on EFL learners' engagement, autonomy, and writing performance. Given the contextual limitations related to classroom setting and non-random participant assignment, a non-equivalent pre-test–post-test control group design was selected, which is a widely used quasi-experimental approach in educational research when true randomization is not possible (Creswell & Guetterman, 2019). In order to explore the research questions more comprehensively, a mixed methods approach was employed, combining both quantitative and qualitative data collection techniques. Mixed methods approach is defined as the systematic integration of quantitative (e.g., surveys, performance scores) and qualitative (e.g., interviews, observations) data within a single study to deepen understanding of educational phenomena (Creswell, 2005; Tashakkori & Teddlie, 2003). While quantitative tools allowed for objective measurement of learners' performance and shifts in autonomy and engagement, qualitative tools enabled the researcher to gather insights into learners' lived experiences and perceptions during the ChatGPT-integrated instruction. This combination of data types reflects what Greene, Caracelli, and Graham (1989) describe as methodological triangulation, which enhances validity and ensures a more nuanced interpretation of the findings. By utilizing both approaches together, the study aimed to produce a holistic analysis of how AI tools like

ChatGPT can influence the language learning process in real classroom conditions (Tashakkori & Teddlie, 1998).

3.3. Participants and Setting

The participants in this study were fourth-grade students enrolled in a private primary school located in Türkiye. The research was conducted in one intact classroom consisting of students aged 9–10 who were already receiving EFL instruction as part of their regular curriculum. The sample size of 24 was determined naturally by the existing class size, as the school granted access to only one intact group due to administrative, scheduling, and instructional constraints. Because random assignment or restructuring of classes was not feasible in this real-school setting, the study employed convenience sampling based on the available population.

The English proficiency levels of the students were estimated to be around the A2 level of the Common European Framework of Reference for Languages (CEFR). According to the Council of Europe (2020), learners at the A2 level are considered basic users of the language who can understand sentences and frequently used expressions related to areas of immediate relevance such as family, school, shopping, and local geography. They are able to communicate in simple and routine tasks requiring a direct exchange of information on familiar topics and can describe aspects of their background, immediate environment, and daily routines in simple terms. Within the CEFR framework, A2 proficiency represents the stage at which learners move beyond recognition of isolated words and phrases toward constructing coherent and meaningful sentences to express personal experiences and basic opinions.

Since the groups were already formed by the school administration prior to the study, and the researcher did not randomly assign students, the sampling technique employed was convenience sampling. This method was chosen because the participants were selected based on accessibility and the suitability of the classroom setting for implementing the ChatGPT-supported writing activities.

3.4. Data Collection Tools

The study used both quantitative and qualitative data collection methods to comprehensively address the three research questions. This mixed-methods approach provided a well-rounded understanding of how ChatGPT integration influenced young EFL learners' engagement, motivation, autonomy, and writing performance, while also capturing their perceptions and attitudes toward the use of AI in the writing process.

Several tools were used to investigate the first research question, which looked at how ChatGPT affected students' motivation, autonomy, and involvement. A researcher-developed questionnaire consisting of five-point Likert-scale items was administered before and after the intervention to measure changes in students' affective and behavioral engagement, motivation to write, and sense of autonomy.

To further support and contextualize the quantitative findings, the researcher conducted systematic classroom observations throughout the intervention. Observation notes focused on students' participation levels, attention, collaboration, and responses to ChatGPT prompts during writing tasks. These observations helped capture aspects of motivation and autonomy that might not be fully reflected in questionnaire responses, thereby enriching the overall interpretation of the data.

The second research question, which explored students' perceptions of ChatGPT's role in their writing process, was addressed through a set of additional items incorporated into the post-intervention questionnaire. These perception-oriented questions were administered only to the experimental group and aimed to uncover students' views on ChatGPT's usefulness in generating ideas, improving vocabulary, revising sentences, and enhancing their confidence in writing.

Finally, to examine the third research question, which investigated the influence of ChatGPT on the quality of written output in terms of language proficiency, coherence, and creativity, students completed four paragraph writing tasks during the ten-week period. The first and last paragraphs functioned as pre- and post-tests, while two intermediate tasks allowed for ongoing assessment of students' development. The topics

were aligned with the school’s curriculum and designed at an A2 level to ensure accessibility. Each paragraph was evaluated using an analytic writing rubric focusing on content relevance, organization, vocabulary, language use, and creativity. These scores provided quantitative evidence of progress and offered insight into how ChatGPT-supported instruction shaped students’ written performance over time.

By combining structured quantitative tools with rich qualitative observations, the study achieved methodological triangulation and generated a holistic picture of the pedagogical, cognitive, and affective dimensions of ChatGPT integration in the EFL writing classroom. Table 1 summarizes the alignment between each data collection instrument and the corresponding research questions.

Table 1.

Data Collection Tools

Research Questions	How (Data Collection Tools)
1) What impact does integrating ChatGPT as a writing assistance tool in an EFL classroom have on student engagement, motivation, and autonomy in the writing process?	Questionnaire Observation
2) What are EFL students' perceptions of ChatGPT's role in their writing process?	Questionnaire
3) Does ChatGPT influence the quality of students’ written output, if so how?	Writing Tasks

3.4.1. Engagement and Autonomy Questionnaire

To measure students’ levels of engagement and autonomy in the writing process, a researcher-developed Engagement and Autonomy Questionnaire was administered before and after the ten-week intervention. The instrument consisted of eleven five-point Likert-scale items (1 = Strongly Disagree, 5 = Strongly Agree), designed to assess

affective, behavioral, and self-regulatory aspects of engagement and autonomy in English writing lessons. The questionnaire was developed in Turkish to ensure linguistic clarity and comprehension, as the participants were young EFL learners with A2 proficiency levels.

The first part of the questionnaire targeted affective and motivational engagement, focusing on students' enjoyment, interest, and willingness to improve in writing (e.g., "I like writing in English," "I want to become better at writing"). The second part measured behavioral engagement, which refers to students' active participation, effort, and concentration during classroom writing tasks (e.g., "I participate in writing activities," "I pay attention while writing"). The final section explored learner autonomy, reflecting students' perceived ability to make independent decisions and take responsibility for their writing process (e.g., "I decide what to write about," "I try to correct my own writing," "I set my own writing goals"). These three dimensions align with the engagement framework proposed by Fredricks, Blumenfeld, and Paris (2004) and the self-determination principles outlined by Deci and Ryan (1985, 2000), which emphasize the interplay of motivation, self-regulation, and autonomy in learning.

All questionnaire items were written in clear, age-appropriate language and were accompanied by visual symbols representing each response category to make the scale more comprehensible for primary school students (as suggested by Dornyei & Taguchi, 2010). Prior to implementation, the initial version of the questionnaire was subjected to a pilot study involving a group of 18 students from a similar age and proficiency background at the same school. The aim was to assess the clarity, internal consistency, and construct validity of the instrument. The internal consistency reliability (Cronbach's alpha) of the full scale was found to be .89, with the engagement subscale scoring .87 and the autonomy subscale .84, indicating strong reliability across dimensions.

Based on the pilot findings, several targeted revisions were made to refine the instrument. First, a number of items were reworded to avoid abstract or vague expressions that younger learners struggled to interpret. For instance, phrases such as "*I take responsibility for my writing process*" were simplified to more concrete statements like "*I try to fix my writing by myself.*" Second, items that included two behaviors in one sentence (double-barreled items) were separated into single, clearer statements to reduce

cognitive load. Third, response-scale visuals were adjusted: the original three-point scale was replaced with a five-point smiley-based continuum because pilot students found the middle categories difficult to distinguish. Additionally, one engagement item and one autonomy item were removed due to low item–total correlations, indicating redundancy and limited contribution to the underlying construct. Finally, minor typographical and layout improvements were made such as increasing font size and spacing to support readability for young learners.

The data gathered from this instrument were used to identify potential changes in students’ engagement and autonomy levels between the pre- and post-intervention stages. By comparing mean scores across the two administrations, the researcher aimed to determine whether ChatGPT-supported writing activities contributed to higher levels of sustained engagement, motivation, and learner independence during the writing process.

3.4.2. Writing Tasks and Analytic Rubric

To address the third research question, which investigates the impact of ChatGPT integration on the quality of students’ written output, paragraph writing tasks were administered as both pre- and post-tests to the experimental and control groups. These writing tasks were closely aligned with the students’ ongoing curriculum and English proficiency level to ensure content familiarity and reduce cognitive overload. Each participant completed two paragraph writing tasks, one at the beginning and one at the end of the ten-week intervention. Both prompts were thematically connected to the units taught in class, such as Back to School and Good Sports, maintaining equivalent difficulty levels while avoiding topic repetition. The tests were conducted under classroom conditions and supervised by the researcher, with identical time limits and instructions for all students to ensure standardization and fairness.

The students’ written paragraphs were assessed using the “Rubric for a Well-Written Paragraph” developed by the Saskatchewan Literacy Network (2019). This analytic rubric evaluates paragraph quality across key dimensions of effective writing, Focus (Main Idea), Supporting Details, Organization, Language Use, and Conventions. Each category is described through progressive performance levels (Beginning, Developing, Proficient, and Advanced), providing clear, observable indicators of writing

competence. The rubric emphasizes paragraph unity, logical progression of ideas, and the accurate use of English grammar and mechanics, making it highly suitable for evaluating the writing of young EFL learners who are still developing awareness of paragraph structure and cohesion.

The selection of this rubric was guided by both pedagogical and empirical considerations. Unlike traditional essay-based rubrics (e.g., Jacobs et al., 1981), the Rubric for a Well-Written Paragraph focuses specifically on single-paragraph composition, offering a more developmentally appropriate assessment for primary-level EFL learners. Analytic scoring systems such as this one allow teachers and researchers to capture multidimensional aspects of writing performance, including idea development, coherence, and language accuracy (Weigle, 2002; Knoch, 2009). Moreover, the rubric's clear performance descriptors facilitate transparent feedback and formative assessment practices, enabling young learners to understand their strengths and areas for improvement (Andrade, 2000; Brookhart, 2018).

The scoring process was conducted by two independent raters, the researcher and a certified EFL instructor working at the same institution. Prior to rating, both raters participated in a norming session to ensure consistent interpretation of rubric descriptors and to establish inter-rater reliability. During this session, several sample paragraphs were jointly analyzed and discussed until consensus was reached on scoring criteria. To maintain objectivity, all student paragraphs were anonymized and randomized before evaluation. The final score for each student was determined by averaging the two raters' scores across all rubric dimensions. Inter-rater reliability was later calculated to confirm the consistency and validity of the scoring process.

3.4.3. ChatGPT Perception Items

To address the second research question, which explores learners' perceptions of ChatGPT as a writing tool in the EFL classroom, a set of perception items was incorporated into the post-treatment questionnaire and administered exclusively to the experimental group. These items were developed by the researcher and focused on gathering student opinions regarding the usefulness, usability, and perceived impact of ChatGPT on their writing experience and engagement during the treatment period.

The perception section consisted of 4 items written in students' own language, designed to match the linguistic level of the participants. A 5-point Likert scale ranging from 1 (agree) to 5 (disagree) was used to record responses.

The perception items were piloted as part of the main questionnaire during the pre-study phase to ensure clarity and appropriateness for the age group. Revisions were made based on student feedback and expert opinion from two EFL instructors.

3.4.4. Classroom Observations

To complement the quantitative data and to deepen the interpretation of students' behaviors and experiences during the intervention, structured classroom observations were conducted throughout the ten-week treatment period. This qualitative instrument was primarily designed to support the interpretation of all three research questions by capturing contextual data regarding how students interacted with ChatGPT, with their peers, and with the writing tasks. Observations served as a non-intrusive method to examine engagement, autonomy, and attitudes in real-time classroom interactions, offering insights that questionnaire responses alone could not fully capture.

The observations were guided by a structured observation checklist developed by the researcher and informed by previous studies on technology-enhanced language learning environments (e.g. McWhaw & Abrami, 2001; Lai, 2015). The checklist included categories such as on-task behavior, peer collaboration, teacher support-seeking, autonomous decision-making during writing, and frequency and manner of ChatGPT use. It also included open fields for anecdotal notes, allowing the researcher to record unexpected or significant behaviors and interactions. Observations were carried out twice per week, during scheduled English writing classes of the experimental group, each session lasting approximately 40 minutes.

To reduce observer bias, the researcher maintained a non-participant role and focused strictly on observable actions rather than inferred intentions. The use of structured observation forms ensured consistency across sessions. After each session, the notes were transcribed and categorized according to thematic codes related to engagement,

autonomy, and technology integration. The observation data not only provided triangulation for the questionnaire and writing performance findings but also revealed affective dimensions such as student enthusiasm, hesitation, and peer influence, which enriched the overall interpretation of the study.

3.5. Data Analysis

Regarding the data analysis procedure, both quantitative and qualitative instruments provided comprehensive insights into the implementation of the ChatGPT-supported writing process, students' engagement and autonomy levels, and their writing performance. The quantitative data obtained from the pre- and post-intervention questionnaires and writing tasks were analyzed using the Statistical Package for the Social Sciences (SPSS, version 22.0). Descriptive and inferential statistical analyses were conducted to examine mean differences, measure reliability, and determine the significance of observed changes between the experimental and control groups. The qualitative data derived from classroom observations and students' written reflections were analyzed through content analysis, allowing for the identification of recurring patterns and themes related to learner engagement, autonomous behaviors, and perceptions of ChatGPT use in the writing classroom. This combination of quantitative and qualitative analysis ensured methodological triangulation, enhancing the validity and depth of the study's findings.

3.6.1. Quantitative Data Analysis Procedure

The quantitative data of the study were obtained from three primary instruments: the Engagement and Autonomy Questionnaire, the paragraph writing tasks evaluated through the analytic rubric, and the ChatGPT perception items. All numerical data were analyzed using the Statistical Package for the Social Sciences (SPSS, version 22.0). The quantitative analyses aimed to determine whether the integration of ChatGPT into the writing process led to statistically significant improvements in students' engagement, autonomy, and writing performance, as well as to identify possible attitudinal shifts toward the use of AI in EFL writing instruction.

Before conducting any statistical tests, all data were carefully screened and prepared to ensure accuracy and reliability. The researcher checked all entries for completeness, corrected any typographical errors, and examined the data for missing or extreme values. Descriptive statistics, including means, standard deviations, and ranges, were computed to summarize students' overall performance across instruments. The internal consistency reliability of the Engagement and Autonomy Questionnaire was verified through Cronbach's alpha coefficients, with values above .70 considered acceptable indicators of reliability (Field, 2013). Similarly, the inter-rater reliability of the writing scores was examined using the Intraclass Correlation Coefficient (ICC) to ensure that both raters evaluated student paragraphs consistently across rubric dimensions. These preliminary checks confirmed that the dataset met the basic requirements for further statistical analysis.

To address the first research question, which explored the influence of ChatGPT on students' engagement, motivation, and autonomy, pre- and post-test questionnaire results were compared both within and between groups. Changes within each group (experimental and control) were examined using paired-samples t-tests to determine whether students showed significant improvement after the intervention. To compare the two groups' progress, independent-samples t-tests were performed to assess whether the experimental group's mean gains were statistically greater than those of the control group. When the assumptions of normality or homogeneity of variance were not met, non-parametric equivalents such as the Wilcoxon signed-rank test and the Mann-Whitney U test were used.

For the third research question, which focused on the effect of ChatGPT on the quality of students' written output, paragraph scores from the pre- and post-tests were analyzed in a similar manner. Each paragraph was evaluated analytically according to five dimensions, Focus, Supporting Details, Organization, Language Use, and Conventions, based on the Rubric for a Well-Written Paragraph (Saskatchewan Literacy Network, 2019). Average scores were calculated for each category and for the total writing score. Paired-samples t-tests were applied to determine whether each group demonstrated significant improvement from pre- to post-test, while independent-samples t-tests compared the post-test results between the experimental and control groups. To control for initial differences between the groups and obtain a more accurate estimate of

the treatment effect, an Analysis of Covariance (ANCOVA) was conducted, using the pre-test writing score as a covariate and the group (experimental or control) as the independent variable (Pallant, 2020). This allowed the researcher to examine whether the ChatGPT-supported writing instruction produced statistically significant gains in writing quality after adjusting for baseline disparities.

To further understand students' attitudes toward ChatGPT, descriptive analyses were carried out on the perception items that were administered to the experimental group at the end of the study. The mean scores, standard deviations, and response distributions were calculated for each item to provide an overview of students' opinions regarding the usefulness, ease of use, and motivational impact of ChatGPT during the writing lessons. Although inferential statistics were not applied due to the small number of items, these descriptive findings served as supplementary evidence to support the interpretation of the quantitative and qualitative results.

All parametric analyses were preceded by statistical assumption testing. The normality of score distributions was examined using the Shapiro–Wilk test, as well as visual inspections of histograms and Q–Q plots. The homogeneity of variances between groups was tested through Levene's test, and when these assumptions were violated, non-parametric procedures were adopted. Beyond statistical significance, effect sizes were calculated to determine the practical importance of observed differences. Cohen's *d* was used for t-tests, with values of .20, .50, and .80 representing small, medium, and large effects respectively (Cohen, 1988). For ANCOVA analyses, partial eta squared (η^2) was reported as the measure of effect size to indicate the proportion of variance explained by the intervention.

The results obtained from these quantitative analyses were later interpreted alongside qualitative findings from classroom observations. This integration of data sources allowed the researcher to identify convergences and discrepancies between observed classroom behaviors and measured outcomes, thus providing a more comprehensive understanding of the ChatGPT-supported writing process. Through this mixed-methods approach, the study was able to validate the quantitative results with qualitative evidence, ensuring a balanced and in-depth interpretation of how AI-assisted

instruction influenced engagement, autonomy, and writing performance in a real EFL classroom context.

3.6.2. Qualitative Data Analysis Procedure

The qualitative data collected through structured classroom observations were analyzed using content analysis, a systematic technique for identifying, coding, and interpreting patterns within qualitative data (Miles, Huberman, & Saldaña, 2014). The primary aim of this analysis was to explore how students engaged with the ChatGPT-supported writing activities, how they demonstrated autonomy during classroom tasks, and how their behaviors and attitudes evolved throughout the ten-week intervention. Qualitative data served a complementary role to the quantitative findings, providing contextual depth and offering a more comprehensive understanding of how AI-assisted writing instruction influenced student behavior and learning processes.

The observation notes were first transcribed and organized chronologically according to the weekly sessions. Each record included both structured checklist data and open-ended descriptive notes that captured students' actions, interactions, and verbal expressions. Following the principles of qualitative content analysis (Elo & Kyngäs, 2008), the researcher engaged in a multi-stage process of data reduction, coding, and categorization. Initially, the researcher read through all field notes several times to gain a holistic sense of the classroom dynamics and identify recurrent patterns. Next, open coding was performed manually to highlight meaningful units of data related to engagement (e.g., on-task behavior, participation, and collaboration), autonomy (e.g., self-initiated decision-making and independent use of ChatGPT), and affective responses (e.g., excitement, frustration, or curiosity).

After open coding, similar codes were grouped together into broader categories and subthemes that reflected the main constructs of the study, engagement, autonomy, and perceptions of AI integration. This process followed an inductive approach, allowing themes to emerge from the data rather than being imposed a priori (Braun & Clarke, 2006). However, some deductive elements were also incorporated, as the coding framework was informed by established theoretical models such as Fredricks et al.'s (2004) tripartite model of engagement and Deci and Ryan's (2000) self-determination

theory, which emphasize motivation, self-regulation, and autonomy as core components of active learning. The integration of both inductive and deductive strategies enhanced the depth and interpretive validity of the analysis, ensuring that the emerging themes were both data-driven and theoretically grounded.

To ensure the trustworthiness and credibility of the qualitative findings, several strategies were employed in line with the criteria proposed by Lincoln and Guba (1985). The researcher maintained a reflective journal throughout the data collection period to record insights, questions, and potential biases. To establish dependability, a second experienced EFL instructor reviewed a subset of the observation notes and independently applied the coding scheme. Inter-coder agreement was then discussed until consensus was reached, thereby enhancing the reliability of the categorization process. Triangulation across data sources (observation notes, quantitative results, and students' written performance) further strengthened the internal validity of the study by confirming that patterns identified in one data set were supported by evidence from another.

Once coding and categorization were completed, the emerging themes were synthesized and interpreted in relation to the research questions. The final themes represented key aspects of students' experiences with ChatGPT, such as increased engagement during brainstorming, more self-directed revisions, and collaborative exchanges while using the AI tool. Selected excerpts from the observation notes were included in the findings chapter to illustrate these themes and to provide authentic examples of students' interactions during ChatGPT-supported writing sessions. The qualitative analysis thus served not only to explain the mechanisms behind the quantitative outcomes but also to capture the dynamic classroom context in which those changes occurred.

Overall, the qualitative analysis procedure followed a rigorous, systematic, and transparent process that allowed for a nuanced interpretation of students' behaviors and attitudes. By combining inductive and theory-driven coding, maintaining reflexivity, and incorporating reliability checks, the analysis provided trustworthy insights into how ChatGPT integration influenced learner engagement, autonomy, and writing development in a real EFL classroom setting.

3.7. Reliability and Validity

To ensure the reliability and validity of the study, several procedures were implemented throughout the data collection and analysis stages. The reliability of the writing assessments was established through inter-rater reliability analysis. Two experienced EFL teachers independently rated some students' pre-test paragraphs using the same analytic rubric, which evaluated topic sentence/main idea, supporting sentences, concluding sentence, organization/fluency, and mechanics/word choice. Before scoring, both raters participated in a calibration session in which they practiced scoring sample paragraphs and discussed the rubric criteria to ensure a shared understanding of each descriptor. Following the independent scoring process, the degree of agreement between the raters was analyzed statistically using Cohen's Kappa coefficient (κ). The results revealed a significant positive correlation between the raters regarding their paragraph ratings ($\kappa = 0.622$; $p = 0.000 < 0.05$), indicating a substantial level of agreement and confirming the reliability and consistency of the scoring process. In cases where a discrepancy greater than one point occurred, the raters discussed their evaluations and reached a consensus score, which was then used in the final analysis.

Table 2.

Kappa (κ) Coefficient Evaluation Criteria (Landis and Koch, 1977)

Kappa(κ)	Interpretation
< 0	No Agreement
0.0 - 0.20	Slight Agreement
0.21 - 0.40	Fair Agreement
0.41 - 0.60	Moderate Agreement
0.61 - 0.80	Substantial Agreement
0.81 - 1.00	Almost Perfect Agreement

The reliability and validity of the Engagement and Autonomy Questionnaire were ensured through a pilot study conducted with a similar group of students prior to the main implementation. The pilot aimed to examine the clarity, internal consistency, and construct validity of the instrument. Based on the pilot results, minor revisions were made to improve item wording, remove redundancy, and ensure that all items were comprehensible and age-appropriate for young learners. The internal consistency

reliability (Cronbach's alpha) of the final questionnaire was found to be .89 for the overall scale, with the engagement subscale scoring .87 and the autonomy subscale .84, indicating strong reliability across all dimensions. These procedures collectively enhanced the trustworthiness and credibility of the study by ensuring that all instruments measured the intended constructs consistently, accurately, and in alignment with the study's objectives.

3.8. Implementation of 10-Week ChatGPT Supported Writing Course

The intervention was implemented over a ten-week period during the fall semester of the 2025–2026 academic year in one intact fourth-grade EFL classroom at a private primary school in Türkiye. The class represented a typical EFL learning environment in which English was taught as a foreign language through a combination of communicative and task-based activities. The instructional design of the study followed a carefully structured progression aligned with the school's existing English curriculum and targeted the development of students' paragraph writing skills, specifically focusing on topic sentences, supporting details, and concluding sentences. The overall objective of the course was to help young learners internalize the organizational structure of a coherent paragraph while simultaneously fostering higher levels of engagement and learner autonomy through the pedagogical integration of ChatGPT.

The intervention was designed to ensure a balance between teacher guidance and AI-supported learning. Each week consisted of three 40-minute writing lessons, amounting to a total of 30 sessions across the ten-week period. The lessons were sequenced to follow a gradual, scaffolded approach in which students first explored paragraph components individually and later integrated them into full, cohesive paragraphs. Lessons were designed and delivered by the researcher, who also served as the class's regular English teacher. This dual role was instrumental in maintaining classroom consistency, minimizing external disruptions, and enabling the natural integration of AI-based learning tasks into the regular curriculum. The familiarity between teacher and students further contributed to a supportive learning atmosphere, allowing the introduction of ChatGPT to be perceived not as a disruptive novelty, but as an extension of the existing classroom practice.

Prior to the implementation, a preparatory phase was carried out to ensure that all participants were ready to use ChatGPT effectively and ethically. Both students and their parents were informed about the study's aims, duration, and procedures through a parental consent form and an informational meeting. Ethical approval for the research was obtained from the school administration and the relevant university ethics committee. Following these formal procedures, students participated in a training session that introduced them to the basic functions and appropriate use of ChatGPT. During this orientation, the researcher provided demonstrations on how to enter English prompts correctly, interpret AI-generated responses critically, and verify the accuracy of suggestions rather than accepting them passively. Examples were given to highlight ChatGPT's role as a supportive writing assistant rather than a substitute for students' own thinking or creativity.

Each student accessed ChatGPT individually through a school-provided tablet using the web interface under the researcher's supervision. To keep the process organized, the researcher created a shared digital workspace named "ChatGPT Classroom" that contained a personal folder for each student, labeled with the learner's first name or student ID (for example, 4A_Student01_Name). Throughout the ten-week intervention, students consistently used the same personal folder to store their weekly work. After each writing session, the researcher saved screenshots or exported copies of their ChatGPT interactions and written paragraphs in this folder. This system provided a clear and consistent record of each learner's development across the entire study, allowing the researcher to track progress, compare early and later writing samples, and analyze how students engaged with ChatGPT at different stages of the writing process.

At the beginning of each lesson, the researcher guided the class through the process of opening a new ChatGPT session in their browsers. Before students began typing, the researcher orally reminded them of how to use the tool appropriately, emphasizing that ChatGPT was a helper to support their thinking, not a writer that would produce their paragraphs. Students were instructed to ask ChatGPT for short ideas, feedback on clarity, or simple suggestions, and to always rewrite the final sentences in their own words. These rules were consistently reinforced at the start of every writing lesson to promote responsible and independent use of AI.

Students were provided with a Weekly Prompt Sheet, distributed both digitally and in print, which contained short, age-appropriate examples of how to communicate with ChatGPT. For example, in topic sentence lessons, students were encouraged to type prompts such as “Give me two topic sentences about school,” or “Check if my topic sentence is clear.” In supporting sentence lessons, they used questions like “Give me three ideas to support this sentence,” or “Do my sentences match my topic?” During conclusion-focused lessons, prompts included “Suggest two sentences to end my paragraph,” or “Does my conclusion match my topic sentence?” These prepared prompts ensured that students remained focused on the week’s writing objective and interacted with ChatGPT in a safe, structured, and pedagogically meaningful way.

The researcher monitored all ChatGPT interactions closely by walking around the classroom and observing how students formulated their prompts and responded to feedback. When needed, brief explanations were provided to clarify AI-generated suggestions or to help students decide whether a suggestion was relevant to their paragraph topic. After each session, students’ ChatGPT conversations and their written paragraphs were saved in their weekly folders for later analysis. This procedure ensured transparency, data traceability, and consistent documentation of how each learner engaged with AI support during the ten-week intervention. To facilitate equitable access and participation, all activities involving ChatGPT were conducted using school-provided tablets under teacher supervision. The classroom was equipped with an interactive smartboard and a secure Wi-Fi connection, enabling students to work individually or in small groups during AI-supported writing tasks. Students were reminded of digital citizenship principles, including respectful use, avoidance of personal data sharing, and responsible evaluation of online information. These procedures ensured that the use of AI remained pedagogically meaningful and ethically compliant throughout the study.

In this part of the methodology, the instructional stages will be presented in detail.

3.7.1. Week 1 - Pre-Test and Orientation Phase

The first week of the intervention was dedicated to the pre-assessment and orientation phase, serving as the foundation for the subsequent ten-week ChatGPT-supported writing instruction. The primary objectives of this stage were to collect baseline

data regarding students' paragraph-writing abilities and attitudes, and to prepare them for the effective and ethical use of ChatGPT during the upcoming instructional period. All three lessons during this week were therefore focused on diagnostic assessment, familiarization with the writing task format, and an introduction to the responsible use of AI tools in language learning.

At the beginning of the first lesson, the researcher provided an overview of the ten-week writing program and explained to the students that they would learn how to write well-organized paragraphs consisting of topic sentences, supporting details, and concluding sentences. The concept of a paragraph was briefly reviewed through examples taken from the Back to School theme, as this topic was familiar to the learners and aligned with the school's curriculum. The researcher emphasized that the aim of the upcoming lessons was to help students improve their ability to express one clear idea in a structured paragraph. After this short discussion, students were informed that they would write a paragraph as part of a pre-test to show what they already knew about paragraph writing before beginning the course.

During the second session, students completed the writing pre-test, which required them to produce a short paragraph (six to seven sentences) on the topic "Back to School." They were instructed to write independently, without receiving any assistance from peers, the teacher, or ChatGPT. The task aimed to assess their initial ability to organize ideas logically, develop supporting details, and conclude appropriately within a paragraph. While students wrote, the researcher observed their writing behaviors, such as the time spent planning, difficulties in generating ideas, and hesitations in structuring sentences, and recorded these observations in field notes. The completed paragraphs were collected and later evaluated using the analytic paragraph-writing rubric developed for the study, which focused on three main dimensions: topic sentence clarity, coherence of supporting details, and effectiveness of the concluding sentence. These pre-test results provided a baseline measure of the participants' paragraph organization skills prior to the intervention.

In the final lesson of Week 1, students completed the pre-intervention questionnaire designed to measure their initial levels of engagement and learner autonomy in English writing tasks. The researcher explained each questionnaire item in age-appropriate

English and Turkish to ensure full comprehension. Students responded individually, and the researcher clarified any questions related to the Likert-scale items. The questionnaire results served as quantitative data to determine students' initial motivational and behavioral engagement in writing.

After the questionnaire, the researcher conducted a brief orientation to ChatGPT. Using the classroom smartboard, students were introduced to the AI tool they would use in the following weeks. The teacher demonstrated how to access ChatGPT safely through school devices, how to write simple prompts in English (e.g., "Give me three topic sentences about school"), and how to interpret AI-generated feedback critically. Ethical guidelines were also reviewed, emphasizing responsible use, avoidance of personal data, and the importance of independent thinking. The session concluded with a short discussion on how ChatGPT could serve as a helper to support their writing, rather than completing tasks on their behalf.

By the end of Week 1, students had completed all necessary preparatory steps for the intervention. They produced a diagnostic writing sample and completed the engagement and autonomy questionnaire, both of which provided valuable baseline data for subsequent comparison. Additionally, the orientation ensured that students entered the program with a clear understanding of how ChatGPT would be used as an educational tool to enhance their paragraph writing throughout the upcoming weeks.

3.7.2. Week 2 - Topic Sentence Focus (Back to School Unit)

The second week of the intervention marked the beginning of the first instructional unit, Back to School, which aimed to develop students' understanding of the topic sentence as the starting point of a well-organized paragraph. This was the first week in which ChatGPT was fully integrated into the writing process and served as an interactive scaffold for idea generation, feedback, and revision. The week consisted of three 40-minute lessons that blended short teacher guidance with extensive, hands-on ChatGPT use through structured prompts.

At the beginning of the first lesson, students were reminded that ChatGPT would act as their writing helper, a partner that could answer questions, give small ideas, and

help them decide whether a sentence was clear. Each learner opened ChatGPT on their tablet and located their personal folder inside the ChatGPT Classroom workspace. The researcher provided the target theme (“Back to School”) and guided students to start by typing one of the week’s model prompts from the printed prompt sheet:

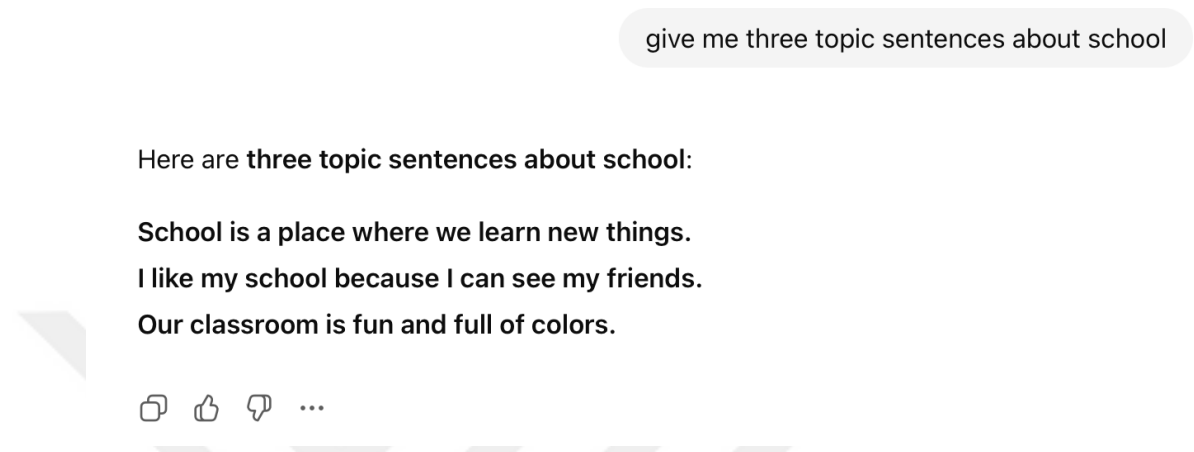


Figure 2

Students compared the examples with their partners and discussed which sentences sounded clearer or more focused. The researcher encouraged them to ask follow-up questions to the AI, such as “Which topic sentence is the best? Why?” ChatGPT’s brief explanations, e.g., “The first one is best because it gives one clear idea about learning.”, helped students understand what made a sentence effective. These interactions allowed the young learners to receive instant, personalized feedback in simple English, which kept them engaged and gave them confidence to experiment with new ideas.

In the second lesson, ChatGPT became the primary feedback source during students’ individual writing practice. Each student wrote two original topic sentences in their notebooks based on their personal school experiences, such as “I like going back to school.” or “My classroom is very nice.” Then they switched to ChatGPT to evaluate their sentences using structured prompts from the prompt sheet:

I like going back to school. check if my topic sentence is clear and about one idea. Answer yes or no

Yes, it is clear. You can make it stronger by adding one reason.



Figure 3

My classroom is very nice. Check if my topic sentence is clear and about one idea. Answer yes or no.

No, this is too short. Say why you like your classroom.



Figure 4

Check is my topic sentence is clear I like going to school

No. Say why you like school. Example: I like going to school because I learn and see my friends.



How I make strong

****Add one feeling word. For example: *Going back to school is exciting because I can see my friends again.* ****



Figure 5

Students immediately revised their sentences and rechecked them with ChatGPT, creating an iterative feedback loop. For instance, a student's original sentence "I like going to school." evolved into "Going back to school is exciting because I see my friends." As they interacted, learners began to understand that ChatGPT could be "asked" for reasoning, not just answers. The researcher circulated around the classroom, helping students interpret feedback and reminding them to write in their own words.

During the third lesson, ChatGPT was used to support peer review and collaborative refinement. Students worked in pairs and took turns showing each other their topic sentences before consulting the AI together.

Pairs discussed which suggestions were meaningful and edited their sentences accordingly. The researcher selected several examples of "before and after" sentences to project on the smartboard and asked the class to comment on what changed. For instance, "My school is good." became "My school is a place where I learn new things." Through this process, students saw how ChatGPT's feedback could help transform a vague idea into a focused, detailed topic sentence.

By the end of Week 2, ChatGPT had become an integral part of students' writing routines. Learners no longer saw it as a novelty but as a collaborative writing assistant that responded to their language level and helped them think more critically about clarity and focus. They demonstrated noticeable improvement in identifying and constructing topic sentences that expressed one main idea connected to the paragraph theme. The integration of ChatGPT fostered engagement, supported independent reflection, and created a low-anxiety environment where even hesitant writers could test ideas safely before sharing them with peers.

3.7.3. Week 3 - Supporting Sentences Focus (Back to School Unit)

Week 3 continued the Back to School unit and centered on developing students' ability to write supporting sentences that make their paragraphs clearer, richer, and more connected to the main idea. Having learned how to write topic sentences in Week 2, students now used ChatGPT as a scaffold to generate examples, test the relevance of their ideas, and strengthen the link between their sentences. Across three 40-minute lessons,

ChatGPT became a consistent feedback partner, helping students brainstorm, refine, and verify the unity of their paragraphs.

At the beginning of the first lesson, the researcher reminded students that a paragraph needs more than a topic sentence; it also needs “helping” sentences that explain why or how something is true. The class reviewed one of the sentences written the previous week: “I like going back to school.” On the smartboard, the teacher asked: “What could we say to show why school is nice?” Students volunteered short ideas such as “I see my friends,” “I play games at break,” and “I learn new things.” Then, to demonstrate how ChatGPT could provide additional examples, the researcher entered a prompt on the board:

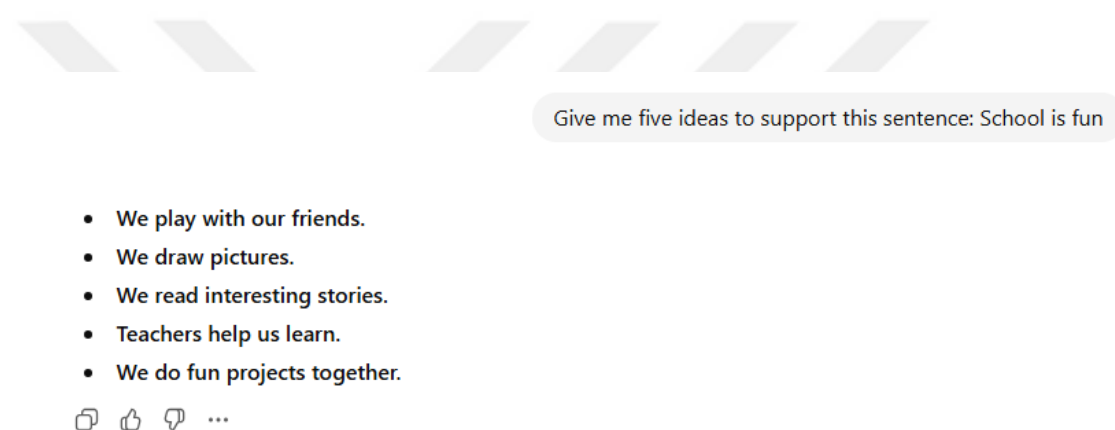


Figure 6

The class read the responses together and discussed which ideas sounded most relevant. Students quickly noticed that some sentences were too general or repetitive, which led to a short discussion on choosing ideas that truly matched their own topic sentence. Through this demonstration, learners began to see ChatGPT as a brainstorming helper that offered many possibilities but still required them to think critically about which ideas to keep.

In the second lesson, students worked more independently. Each learner wrote one topic sentence from the previous week at the top of their notebook page and then tried to add three supporting sentences. After a few minutes, they opened ChatGPT on their tablets and began testing and expanding their ideas using age-appropriate prompts such as:

give me three ideas to support this sentence: i like my school.

Here are **three ideas to support the sentence "I like my school."**

- I can see my friends every day.
- My teachers are kind and helpful.
- We do fun activities in class.

📄 👍 🗨️ ...

Figure 7

make three sentences about classroom

Here are **three sentences about a classroom:**

- Our classroom is bright and colorful.
- We have many books and posters on the walls.
- I like learning with my friends in our classroom.

📄 👍 🗨️ ...

Figure 8

Students compared ChatGPT's suggestions with their own writing, chose one or two that fit best, and rewrote them in their own words. The researcher observed the interactions closely, occasionally pausing the class to highlight good examples of how ChatGPT's feedback could help clarify ideas. For example, one student's original sentence "I like school." was expanded into: "I like school because I can see my friends. I play games in the garden. I learn new things every day." These short exchanges helped learners see how adding details creates a stronger paragraph body.

The third lesson focused on combining topic and supporting sentences into a single, coherent paragraph. To begin, the researcher projected a model example that had been created earlier through ChatGPT interaction:

Topic sentence: "I like going back to school."

Supporting sentences: "I see my friends every day. I play games at break time. My teacher teaches fun lessons."

Students analyzed the model and identified that all sentences were connected to one main idea. They then wrote their own short paragraphs in their notebooks and used ChatGPT to test the connection between sentences. Typical prompts included:

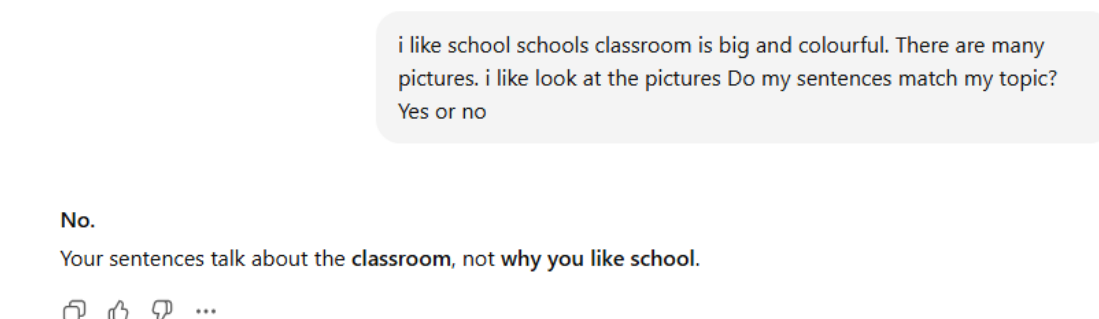


Figure 9

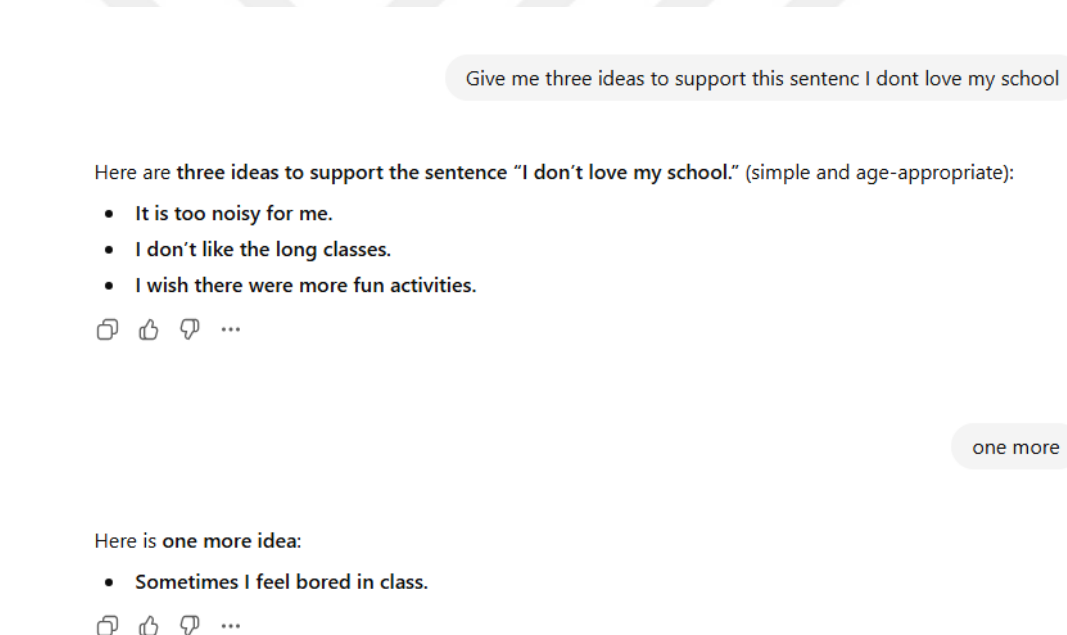


Figure 10

Students discussed whether these additional ideas were suitable, which naturally led to conversations about relevance and unity. As they revised, several learners noticed that removing unrelated ideas made their paragraphs clearer and easier to read.

By the end of Week 3, ChatGPT had become a daily tool for checking connection and coherence between sentences. Students demonstrated growing independence in asking purposeful questions and making decisions about which AI suggestions to accept

or modify. The process allowed them to generate ideas freely while still maintaining ownership of their writing. ChatGPT thus functioned as a personalized feedback partner, offering instant, level-appropriate guidance that complemented the teacher's classroom support. This week successfully strengthened the "middle" of the paragraph and prepared students for Week 4, when they would learn to write concluding sentences and assemble a complete paragraph.

3.7.4. Week 4 - Concluding Sentence and Full Paragraph (Back to School Unit)

Week 4 marked the final stage of the Back to School unit and focused on helping students write concluding sentences and combine all paragraph components, topic, supporting, and concluding sentences, into a complete, coherent paragraph. After learning to write clear topic and supporting sentences in previous weeks, students were now guided to understand how a strong conclusion gives a paragraph a sense of completeness. ChatGPT continued to function as a feedback partner and reflective tool, allowing students to test the accuracy and unity of their writing through short, structured prompts.

At the start of the first lesson, the researcher introduced the concept of a concluding sentence in simple language: every paragraph needs an ending that shows the idea is finished. To make this concept visible, the researcher wrote the following example on the smartboard:

Topic sentence: "I like my school."

Supporting sentences: "I have kind teachers. I play with my friends. We read and draw in class."

Missing conclusion: (No final sentence.)

Students immediately noticed that the paragraph felt incomplete. When the teacher added the line "School is a happy place for me," the class agreed that the paragraph now sounded finished and satisfying. Together, they summarized the main rules for writing conclusions: (1) restate the main idea, (2) do not add new information, and (3) end the paragraph with a feeling of closure.

Once the concept was clear, ChatGPT was introduced as a practice partner for generating and comparing concluding sentences. Students opened ChatGPT on their tablets and were asked to type the model prompt:

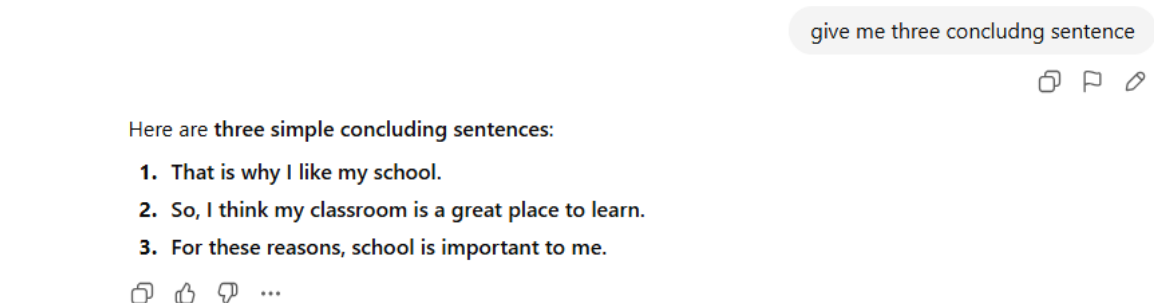


Figure 11

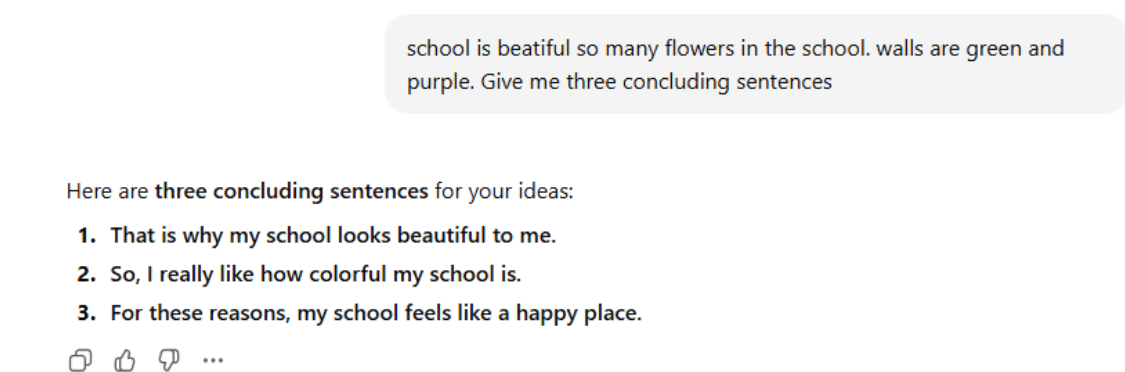


Figure 12

The class read the responses aloud and discussed which ones best matched the topic and supporting sentences. Students realized that some conclusions sounded too general, while others successfully restated the main idea. This activity helped them see how ChatGPT could serve as a mirror for evaluating the suitability of their concluding ideas rather than as a generator of final answers.

In the second lesson, students returned to the paragraphs they had written in Week 3 and worked to add their own concluding sentences. After writing one possible conclusion, they switched to ChatGPT and used short evaluation prompts such as:

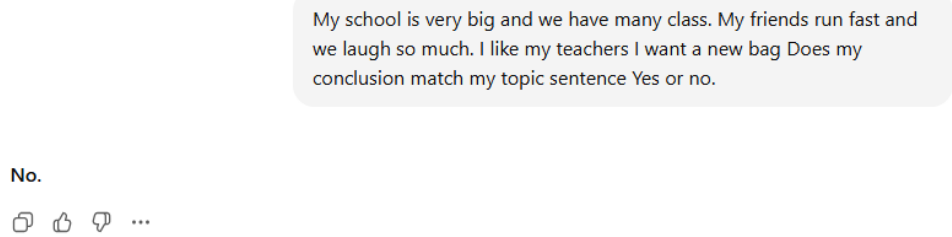


Figure 13

Using this quick feedback, students revised their conclusions immediately. One student’s paragraph originally ended with “I want a new bag,” which ChatGPT identified as unrelated to the main idea. After reflection, the student changed it to “That is why I like my school.” This simple exchange demonstrated how ChatGPT helped students self-correct in real time and maintain paragraph unity.

The third lesson focused on integrating all paragraph parts into one complete piece of writing. The researcher reviewed the full paragraph structure chart, topic sentence, three supporting sentences, and concluding sentence, and explained that students would now write a complete Back to School paragraph on their own. Learners were reminded that they could use ChatGPT for feedback and revision but not to write entire paragraphs. Example prompts included:

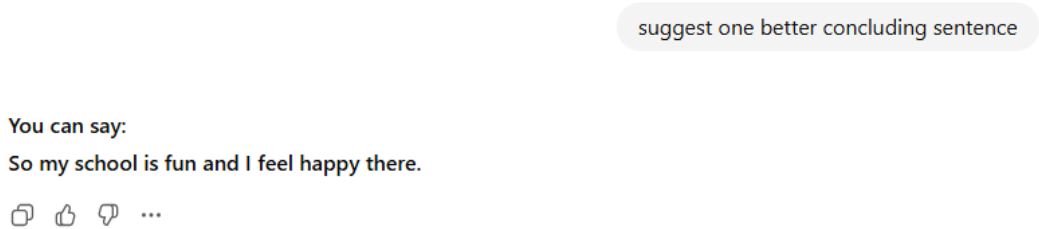


Figure 14



Figure 15

Students adjusted their final sentences accordingly and reread their full paragraphs for flow and clarity. The researcher observed a noticeable increase in students' confidence and engagement, many eagerly asked ChatGPT clarifying questions, compared their responses with peers, and celebrated improvements in their writing.

By the end of Week 4, each student was able to produce a well-organized paragraph with a clear topic sentence, logically connected supporting sentences, and an appropriate concluding sentence. ChatGPT played a central role in encouraging reflection and independent revision by offering instant, simple feedback aligned with each learner's proficiency level. Students developed not only the ability to structure their writing but also the habit of checking and improving their work autonomously. This week marked the successful completion of the first instructional unit and prepared students for the next theme, Health Matters, where they would apply the same structure to new, meaningful topics.

3.7.5. Week 5 - Topic Sentence Focus (Health Matters Unit)

Week 5 marked the beginning of the second instructional unit, Health Matters, which extended students' paragraph-writing skills to a new and meaningful theme. While the Back to School unit had focused on teaching the basic structure of a paragraph, this unit aimed to help learners apply the same organizational principles, topic, supporting, and concluding sentences, to a fresh context. The theme of health was intentionally chosen because it related to the students' daily routines and familiar experiences, such as eating, exercising, and sleeping. During this week, ChatGPT once again served as a key scaffold for generating ideas, evaluating clarity, and guiding revisions, while students began to show greater independence in managing their AI interactions.

At the beginning of the first lesson, the researcher introduced the new theme by showing colorful pictures of fruits, vegetables, sports, and everyday routines on the smartboard. Through simple questions such as "What is healthy?" and "What is not healthy?" the class activated prior knowledge and built vocabulary around the topic. After this warm-up, students compared three sample topic sentences projected on the board:

Eating fruit is good for you.

Health is very important for everyone.

I like apples.

The class discussed which sentence worked best for a paragraph about health. With guidance, students agreed that the first sentence was the strongest because it was clear and specific, while the second was too general and the third too narrow. The researcher then explained that a good topic sentence tells one clear idea related to health and helps the reader know what the paragraph will talk about.

Next, students opened ChatGPT on their tablets to explore more examples through guided interaction. They were asked to type the prompt:

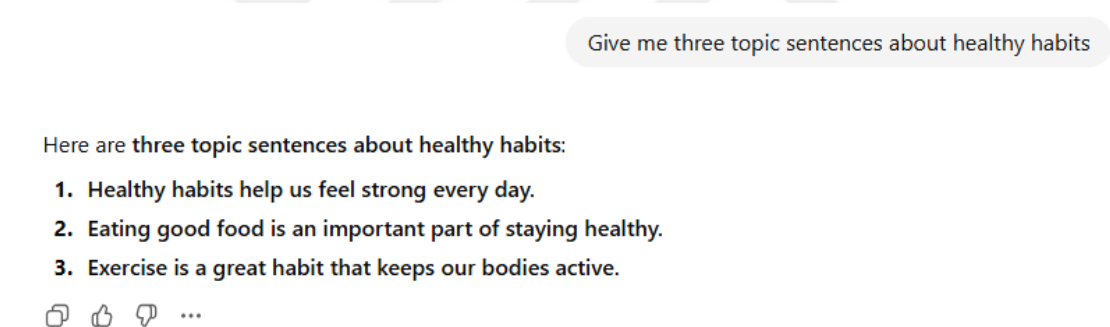


Figure 16

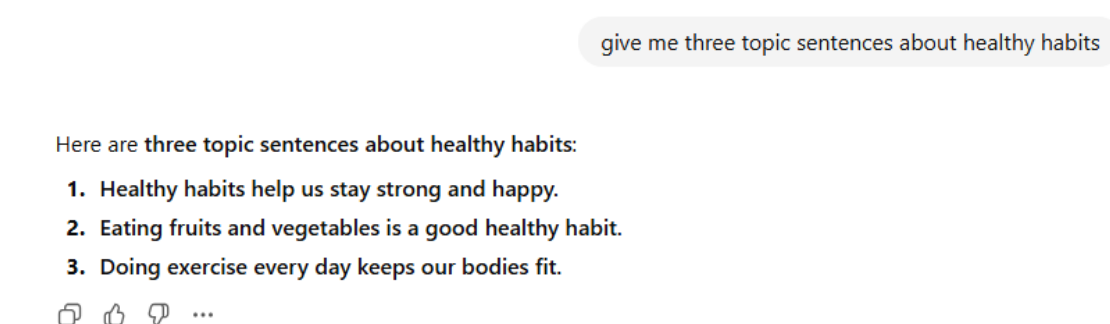


Figure 17

Students read these examples on their screens and discussed in pairs which sentences they liked most and why. The researcher walked around, encouraging learners

to talk about which ideas matched their real lives and which ones were too broad. This simple, structured use of ChatGPT allowed students to observe how different topic sentences could vary in focus and clarity, and it helped them start thinking about how to personalize ideas for their own writing.

In the second lesson, the focus shifted to independent creation and AI-assisted evaluation. Students were asked to write one or two original topic sentences about healthy living in their notebooks. Prompts like “What is one thing you do to stay healthy?” and “Why is it good for you?” guided their thinking.

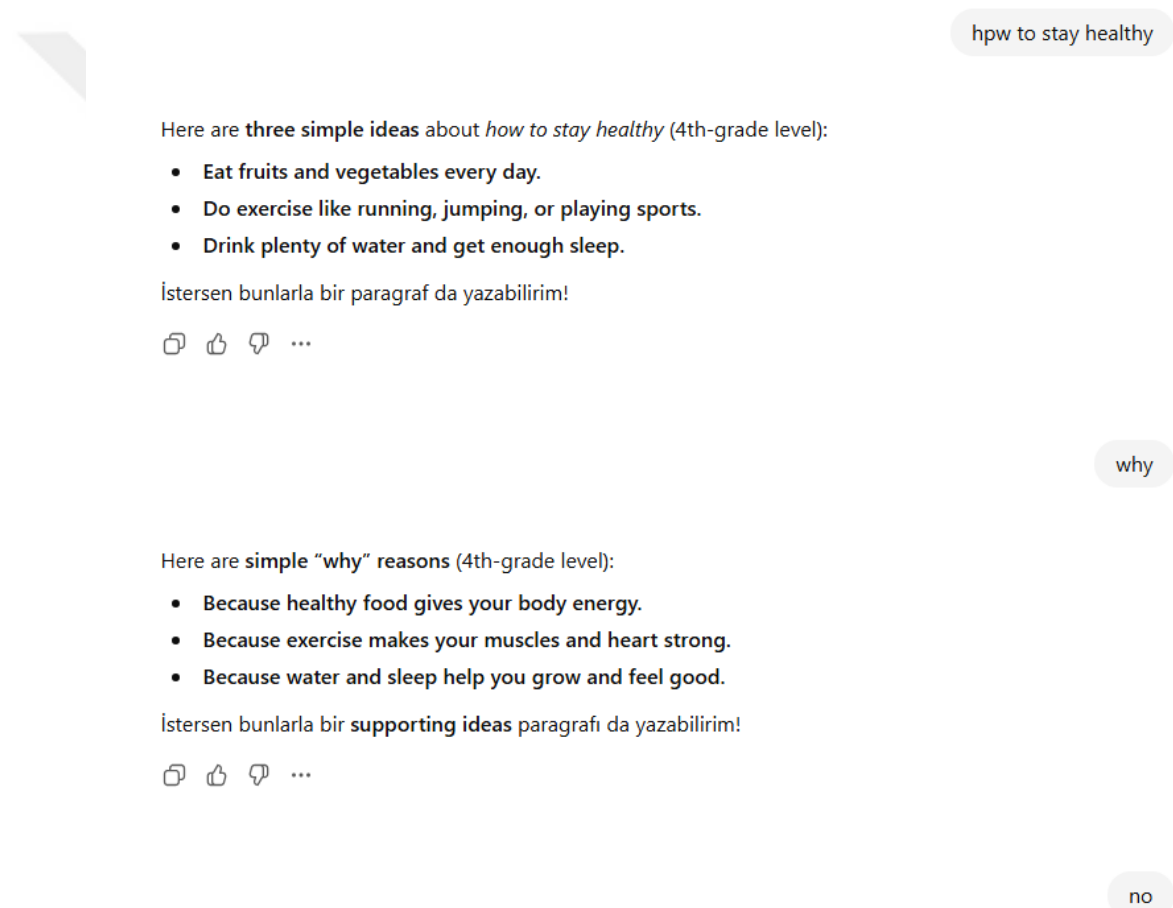


Figure 18

After drafting, they used ChatGPT as a self-check tool, entering short evaluation prompts such as:

Check if my topic sentence is clear I eat fruit

No. Add one reason why. Example: I eat fruit every day to stay healthy.



Figure 19

Check I eat vegetable every day because stay healthy

Yes, it is clear, but there are small mistakes.

A correct version would be: "I eat vegetables every day because I want to stay healthy."



Figure 20

Students immediately revised their sentences based on this feedback. For instance, one student changed "I eat fruit." to "I eat fruit every day to stay healthy." Others refined general statements like "Being healthy is good." into "Drinking water every day helps my body stay strong." The researcher provided minimal but targeted support, focusing on ensuring that students understood the AI's suggestions and applied them appropriately.

In the third lesson, students worked in pairs to compare their topic sentences and further refine them using ChatGPT collaboratively. They were encouraged to use the prompt "Suggest two stronger topic sentences about healthy habits."

suggest two strong topic sentences about healthy habits

Here are two strong topic sentences about healthy habits:

1. Healthy habits help our bodies grow strong and stay active.
2. Eating good food and exercising every day keeps us feeling happy and healthy.



Figure 21

suggest two stronger topic sentences about healthy habits

Here are **two stronger topic sentences about healthy habits** (clear, focused, and specific):

1. **Healthy habits are important because they help us feel energetic and strong every day.**
2. **Making good choices like eating well and exercising can keep our bodies healthy for a long time.**

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Figure 22

Pairs discussed these examples and decided which ideas could make their own sentences clearer or more specific. The classroom atmosphere was highly interactive, students often shared their screens with each other to compare ChatGPT's answers, laugh at unusual suggestions, and collectively choose better ones. The researcher guided the discussion by asking reflective questions such as "Does your sentence tell the reader what your paragraph will be about?" and "Is it focused on one main idea?" This collaborative reflection helped students internalize the idea that ChatGPT's feedback should be used thoughtfully, not copied.

By the end of Week 5, students demonstrated an improved ability to produce clear and meaningful topic sentences related to healthy habits and daily routines. They interacted confidently with ChatGPT, using it to brainstorm, self-check, and revise their writing while maintaining their own voice. ChatGPT functioned as both a cognitive and motivational scaffold, providing immediate, language-appropriate feedback that reinforced autonomy and engagement. This week solidified students' understanding of how to introduce a paragraph effectively and prepared them for Week 6, when they would expand their writing with supporting sentences about healthy living.

3.7.6. Week 6 - Supporting Sentences Focus (Health Matters Unit)

Week 6 continued the Health Matters unit and focused on helping students develop supporting sentences that add clear and meaningful details to their topic sentences. Building on the previous week's work on writing focused topic sentences, this stage guided learners to explain their main ideas with relevant, simple, and concrete information. ChatGPT played an active role throughout the week as both an idea

generator and a self-check tool, helping students test the connection between their sentences and the topic.

At the beginning of the first lesson, the researcher briefly revisited the topic sentences students had written in Week 5. The class discussed why a paragraph needs “helping sentences” that give reasons, details, or examples. To model this concept, the researcher presented the following example on the smartboard:

Topic sentence: “Eating fruit is good for you.”

Supporting sentences: “Fruit has vitamins. It helps you stay strong. Apples and oranges are my favorite.”

Students read the model aloud and identified how each supporting sentence provided additional information about the main idea. To demonstrate how ChatGPT could assist in this process, the class opened the application together and typed the collective prompt:

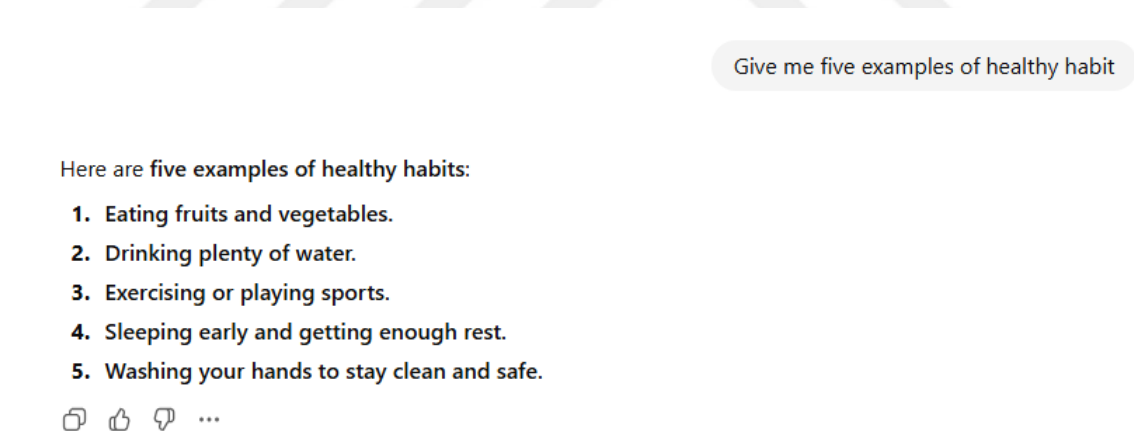


Figure 23

Give me five examples of healthy habits

- I eat healthy food.
- I drink water.
- I play outside.
- I sleep early.
- I brush my teeth.



Figure 24

The class reviewed the list and discussed which ideas could support different topic sentences. Students noticed that some examples were more specific than others and that selecting the right ones made a paragraph stronger. This activity helped them understand that ChatGPT could be used to gather ideas quickly but that human judgment was still needed to decide which details fit best.

The second lesson focused on independent practice. Each student selected one of their topic sentences from the previous week such as “I eat fruit every day” or “Drinking water keeps me healthy.” After reviewing their choice, students were instructed to write three supporting sentences in their notebooks. Once they had initial ideas, they opened ChatGPT on their tablets and used prompts like:

make thre sentences about drinking water

Here are **three simple sentences about drinking water**:

- I drink water to stay healthy.
- Water helps my body feel good.
- I drink water when I am thirsty.



Figure 25

Give me three simple sentences about eating healthy food

Here are three simple sentences about eating healthy food:

- I eat healthy food to stay strong.
- Healthy food gives me energy.
- I feel good when I eat fruits and vegetables.



Figure 26

Students compared these answers with their own and decided which ideas to adapt. One student, for instance, expanded “I eat fruit every day” into “I like apples and bananas. My mother put fruit in my lunch box.” The researcher walked around the classroom, observing the conversations between students and ChatGPT and asking guiding questions such as “Do all your sentences talk about the same idea?” and “Can your reader understand why it is healthy?” These short teacher interventions ensured that AI use remained focused and pedagogically meaningful.

The third lesson was dedicated to integrating topic and supporting sentences into short paragraphs. The researcher modeled the process on the smartboard using an example that combined ideas from the week’s practice:

Topic sentence: “Drinking water keeps me healthy.”

Supporting sentences: “I drink water after I play. Water helps my body stay strong. I feel happy when I drink water every day.”

Students read the example and identified how each supporting sentence stayed connected to the main idea. Then they were asked to expand their own paragraphs and use ChatGPT to refine or extend their ideas with prompts such as:

suggest two details for my paragraph about drinking water

Here are **two simple details** for your paragraph about drinking water:

- Water helps my body stay cool and fresh.
- I drink water so I can play and run without getting tired.

📄 👍 🗨️ ...

Figure 27

These ideas were discussed in pairs. Students decided which additions were useful and which were unnecessary. Some learners deleted off-topic suggestions, demonstrating that they were beginning to critically evaluate AI output rather than copy it.

By the end of Week 6, students were able to write coherent supporting sentences that clearly explained their main idea. They interacted confidently with ChatGPT to brainstorm, check, and refine their sentences while maintaining their own language. The AI functioned as an idea-generation and reflection partner, providing immediate, age-appropriate feedback that helped learners understand how details make writing stronger. This week deepened their understanding of paragraph unity and prepared them for Week 7, when they would focus on writing concluding sentences and producing a complete paragraph about healthy living.

3.7.7. Week 7 - Concluding Sentence and Full Paragraph (Health Matters Unit)

Week 7 marked the final stage of the Health Matters unit and focused on teaching students how to write concluding sentences and combine all components of a paragraph, topic, supporting, and concluding sentences, into a complete and unified piece of writing. The main objective of this week was to help learners understand that every paragraph needs a strong ending that restates the main idea in a new way and gives the paragraph a feeling of closure. As in previous weeks, ChatGPT was used in every lesson as a tool for guided practice, feedback, and self-evaluation, supporting students as they developed independence in monitoring their own writing.

In the first lesson, students explored the function of a concluding sentence by comparing two short paragraphs, one without an ending and one with a complete conclusion. On the smartboard, the researcher displayed the following example:

Topic sentence: “Eating fruit is good for you.”

Supporting sentences: “Fruit has vitamins. It helps you stay strong. Apples and bananas are my favorite.”

Missing conclusion: (No final sentence.)

The class read the paragraph together and agreed that it felt unfinished. The researcher then added the line “That is why I like eating fruit every day.” and asked students if the paragraph now sounded complete. Students quickly noticed the difference, identifying that the added sentence “closed” the paragraph by restating the main idea in a new way. Together, they summarized three key rules for good concluding sentences: (1) restate the main idea, (2) do not add new information, and (3) give the paragraph a finished feeling.

After this discussion, the class explored how ChatGPT could assist with conclusion writing. Each student opened ChatGPT on their tablet and typed the prompt:

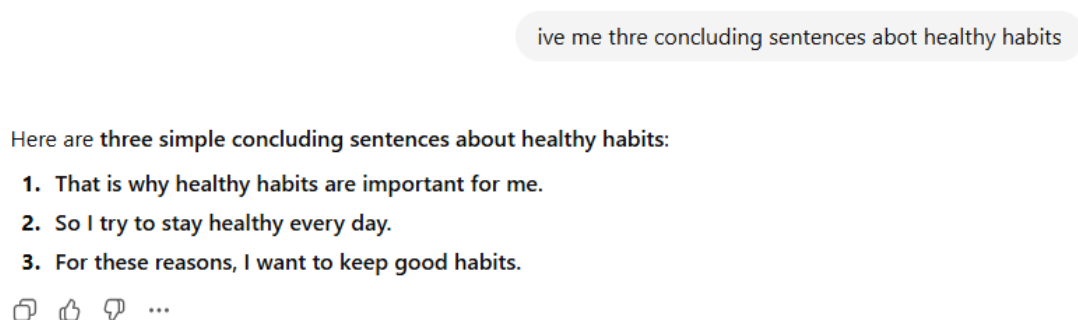


Figure 28

give me three concluding sentences about healthy habits

Here are three concluding sentences about healthy habits:

1. That is why I try to have healthy habits every day.
2. So staying healthy is important for me.
3. For these reasons, I want to keep making good choices.



Figure 29

Students reviewed these examples in pairs, discussed which ones matched their earlier paragraphs, and highlighted those that best restated the main idea. The researcher emphasized that ChatGPT should be used for idea comparison and evaluation, not direct copying. This activity helped students recognize that AI feedback could guide them in choosing sentences that truly fit their writing purpose.

In the second lesson, students worked individually to add a concluding sentence to the paragraphs they had created in Week 6. They reread their topic and supporting sentences carefully and then used ChatGPT to check whether their chosen conclusion was suitable. Prompts included:

check if my conclusion matches my topic sentence I eat vegetables every day. My conclusion I want to play basketball

No. Your topic sentence is about **eating vegetables**, but your conclusion is about **playing basketball**, so they don't match.



my conclusion I want so I stay healthy and strong

Yes. Your conclusion matches because it explains *why* you eat vegetables — to stay healthy and strong.



Figure 30

One student's paragraph originally ended with "I eat vegetables every day." ChatGPT responded, "Add a reason or feeling." The student revised it to "I eat vegetables every day because I want to be healthy." and rechecked it. ChatGPT replied, "Your sentence is clear, ' Through these instant feedback loops, students became more aware of how conclusions functioned and learned to reflect on the unity of their paragraphs.

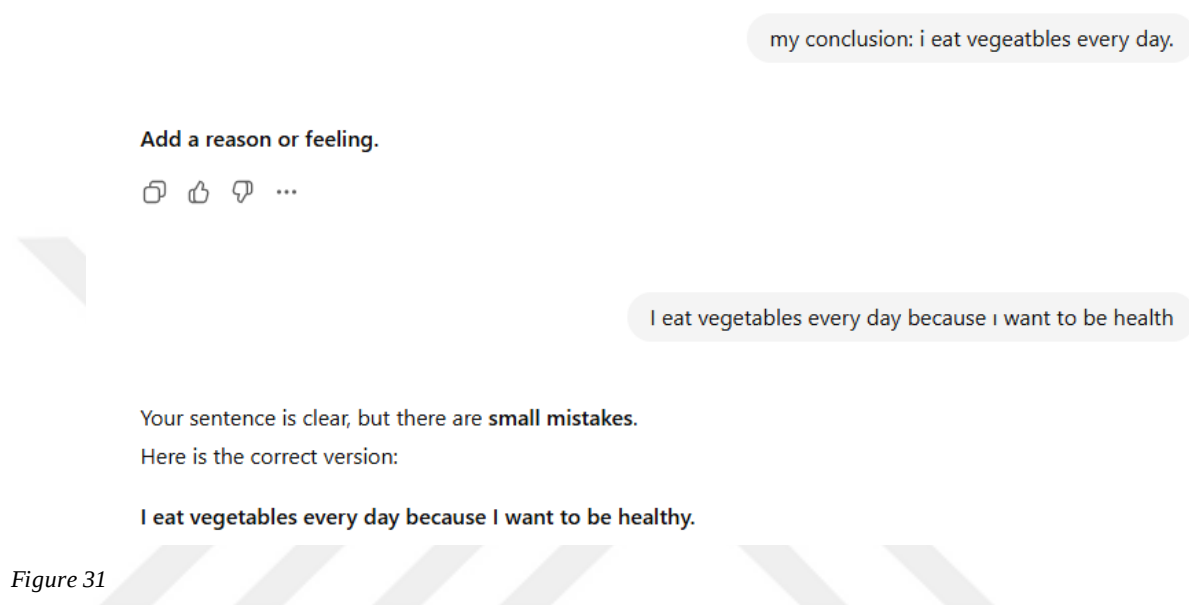


Figure 31

The third lesson combined all paragraph parts into a complete piece of writing. Students chose their own health-related topics, such as Healthy Food, Sleeping Early, or Drinking Water, and wrote full paragraphs containing one topic sentence, three supporting sentences, and one concluding sentence. ChatGPT was used as a revision partner, allowing students to verify clarity and completeness. Example prompts included:

Students made final adjustments and shared selected paragraphs with the class. A typical example of a student's final paragraph was:

"I eat fruit every day. It helps my body stay strong. Apples are my favorite. That is why I love fruit."

As the class listened to these examples, they discussed what made each paragraph sound complete. The researcher observed that students were increasingly comfortable using ChatGPT to check their work independently and critically.

By the end of Week 7, students successfully produced coherent and logically organized paragraphs with clear beginnings, middles, and endings. ChatGPT functioned as a reflective writing partner that helped learners evaluate their sentences, identify missing parts, and improve their final output. The students demonstrated greater autonomy, engagement, and confidence in using AI responsibly for writing support. This week concluded the Health Matters unit and prepared the class for the final unit, Good Sports, in which they would apply their paragraph-writing skills more fluently and independently across new topics.

3.7.8. Week 8 - Topic Sentence Focus (Good Sports Unit)

Week 8 introduced the final instructional unit, Good Sports, which aimed to help students transfer their paragraph-writing skills to a new and engaging theme about sports and physical activities. After completing the Back to School and Health Matters units, students were already familiar with paragraph structure and the three main components, topic, supporting, and concluding sentences. The goal of this week was to strengthen students' ability to produce strong and specific topic sentences related to sports while promoting more independent interaction with ChatGPT as a self-evaluation and idea-generation tool.

At the beginning of the first lesson, the researcher led a short warm-up to activate students' background knowledge about sports. Using colorful pictures of football, basketball, running, and swimming on the smartboard, the researcher asked simple questions such as "What sports do you like?" and "What games do you play at school?" Students eagerly responded in English with short sentences like "I like football," "I play basketball with my friends," and "I can swim fast." This brief discussion created a positive atmosphere and prepared students for the writing task. The researcher reminded them that every paragraph starts with a topic sentence that tells the reader what the paragraph will talk about.

To illustrate, the researcher wrote three sample sentences on the smartboard:

Sports are good for us.

Football is my favorite game.

We play games.

The class analyzed the examples and decided that the first and second sentences were clear and focused, while the third was too general. The researcher summarized that a good topic sentence gives one clear idea and connects to something the writer knows or enjoys.

Students then opened ChatGPT on their tablets to explore how it could be used to generate more ideas. They typed the collective prompt:

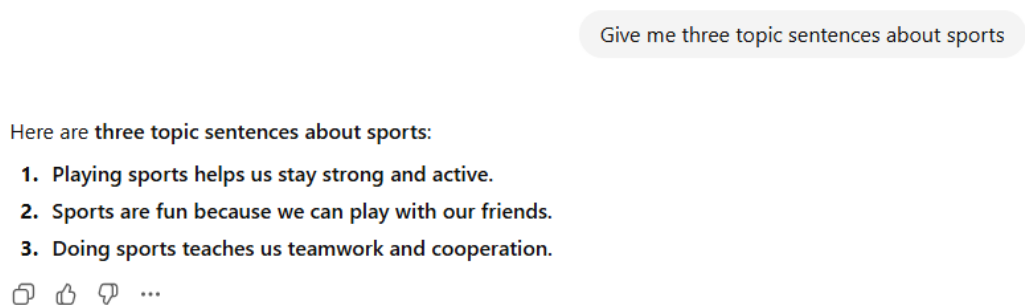


Figure 32

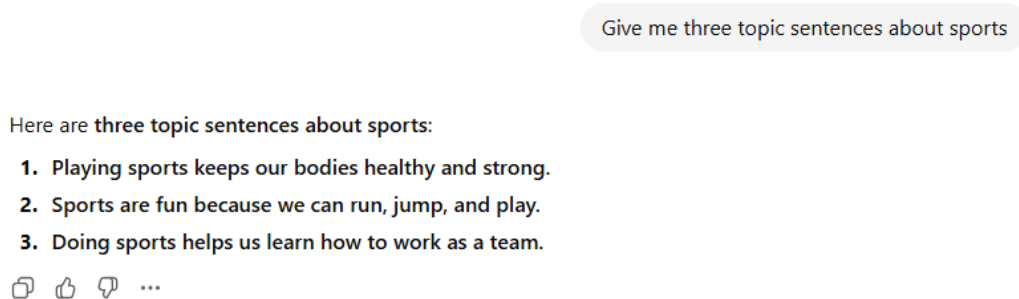


Figure 33

The class compared the examples and discussed which one sounded most specific and interesting. The researcher modeled how to make a sentence more personal and vivid by adding details, for example, turning “Playing sports makes me strong” into “Playing football makes me strong and happy.” This activity showed students how to use ChatGPT not as a text producer, but as a thinking partner that offers options to choose from and adapt.

In the second lesson, students practiced writing two topic sentences about sports they personally enjoyed. They drew inspiration from their school life, weekend routines, or favorite activities. Examples of their first drafts included “I like basketball because it is fun,” “I like swimming because it is good,” and “I play football every weekend.” Once they had written their sentences, students used ChatGPT to evaluate and improve them through simple, structured prompts:

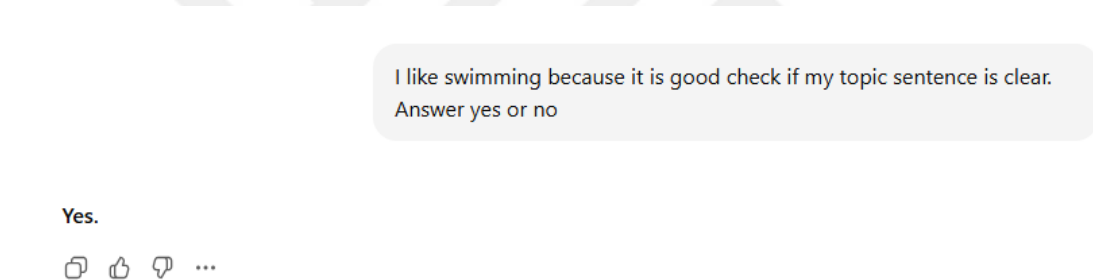


Figure 34

I play football every weekend

Cümleni gördüm ama ne yapmamı istediğini tam anlayamadım.

Kontrol etmemi mi istiyorsun?

"Check if my topic sentence is clear. Answer yes or no." şeklinde mi cevap vereyim?

📄 👍 🗨️ ...

one better sentence

Here is **one better sentence**:

I play football every weekend because it is fun.

📄 👍 🗨️ ...

Figure 35

Students revised their sentences immediately and often rechecked them with ChatGPT to confirm improvement. For instance, one learner's sentence evolved from "I play football" to "I like playing football with my friends after school." The researcher noted that students had begun to interact more independently with the AI, showing confidence in evaluating its suggestions rather than relying on them passively.

The third lesson emphasized collaboration and peer sharing. Students worked in pairs to read each other's topic sentences, discuss their clarity, and then use ChatGPT together for joint revision. Common prompts included:

I like basketball because it is fun make it interesting topic sentence

Here is a more **interesting topic sentence**:

I enjoy playing basketball because it makes me feel excited and active.

📄 👍 🗨️ ...

Figure 36

Pairs compared these ideas with their own and discussed which ones they could adapt. The researcher encouraged students to think critically by asking: “Does your sentence tell the reader what the paragraph will be about?” and “Is it about one sport or many?” These guiding questions helped learners evaluate both AI feedback and their own writing decisions.

By the end of Week 8, students demonstrated the ability to produce clear and specific topic sentences connected to sports and physical activities. They also showed increased autonomy in interacting with ChatGPT, using it not only to brainstorm but to analyze and refine their writing with minimal teacher intervention. ChatGPT effectively acted as a formative assessment tool, allowing students to receive instant, level-appropriate feedback while maintaining ownership of their writing. This week successfully transferred previously learned paragraph skills to a new and motivating theme and laid the groundwork for Week 9, when learners would focus on developing supporting sentences to describe the benefits and enjoyment of playing sports.

3.7.9. Week 9 – Supporting Sentences Focus (Good Sports Unit)

Week 9 continued the Good Sports unit and focused on helping students develop supporting sentences that explained and gave examples for their topic sentences. Building on their progress from Week 8, this stage guided students to add simple, relevant, and logically connected details that made their paragraphs more complete and engaging. As in previous weeks, ChatGPT was fully integrated into the learning process to assist with idea generation, reflection, and self-checking, while encouraging learners to remain active decision-makers in shaping their writing.

At the beginning of the first lesson, the researcher led a brief review of the concept of supporting sentences. Students were reminded that the topic sentence tells the main idea, while the supporting sentences “help the reader understand it better.” On the smartboard, the researcher displayed a familiar example from the previous week:

Topic sentence: “Playing sports makes me strong.”

The researcher then asked, “How does playing sports make you strong?” Students responded enthusiastically with short answers such as “I run and jump,” “I move my body,” and “I play every day.” The researcher explained that these were examples of supporting sentences because they gave reasons and details related to the main idea. To model how ChatGPT could provide further examples, the class opened ChatGPT together and entered the prompt:

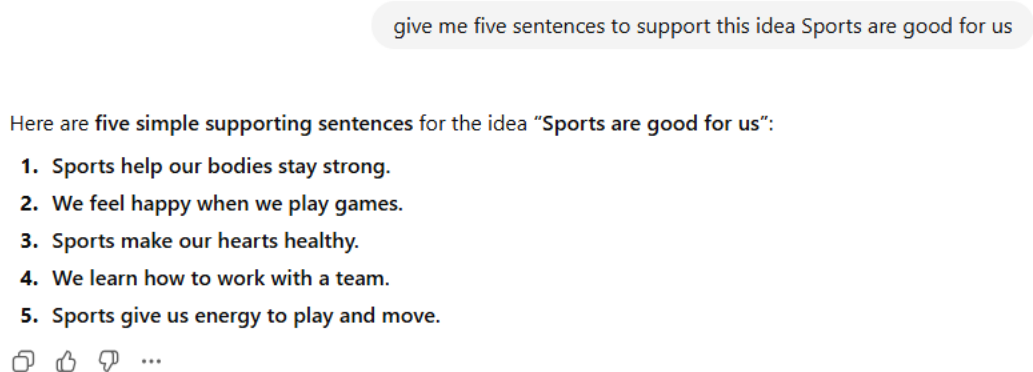


Figure 37

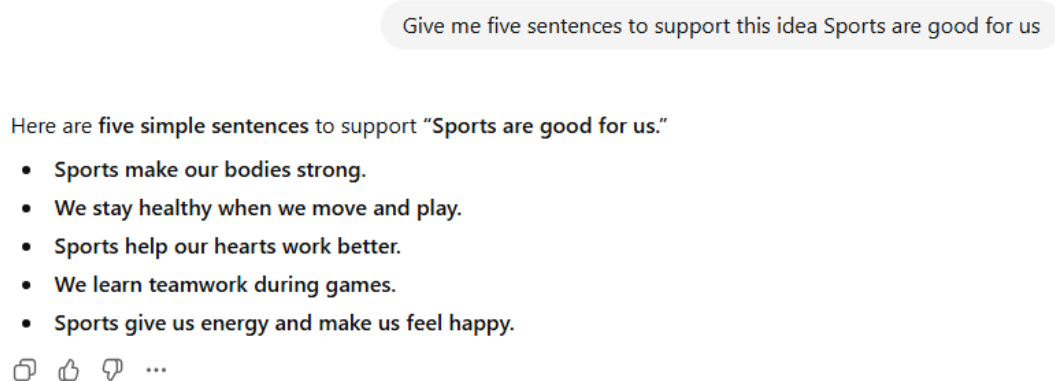


Figure 38

The class read and discussed these suggestions, identifying which ideas were the most relevant or personally meaningful. Students commented on which ones matched their experiences, such as playing with friends or learning teamwork, and which were too general. This process helped learners understand how to use ChatGPT for brainstorming connected details, rather than copying ready-made sentences.

In the second lesson, students practiced generating and checking their own supporting sentences using ChatGPT as a writing partner. Each learner chose a topic sentence they had written in Week 8, such as “Football is my favorite game.” They were reminded to include short details that described what they did, why they liked it, or how it made them feel. To support this process, the researcher provided example prompts for students to type into ChatGPT:

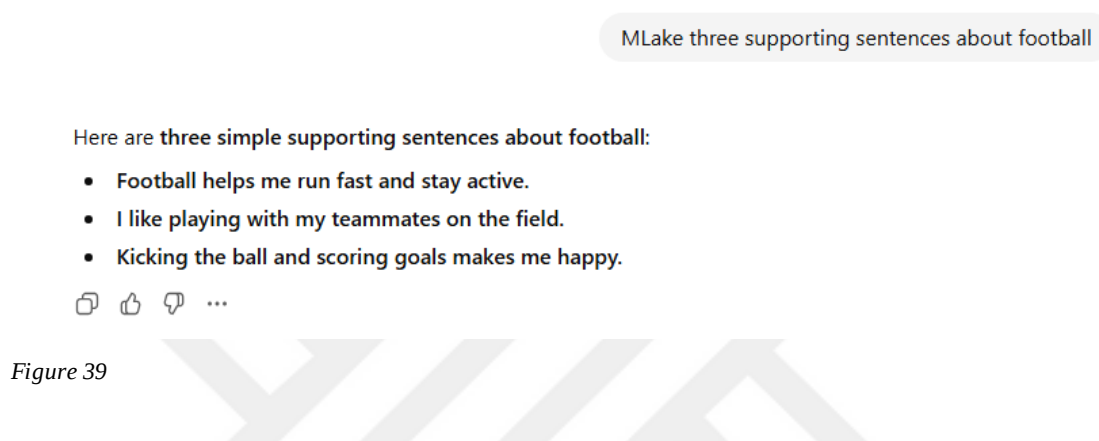


Figure 39

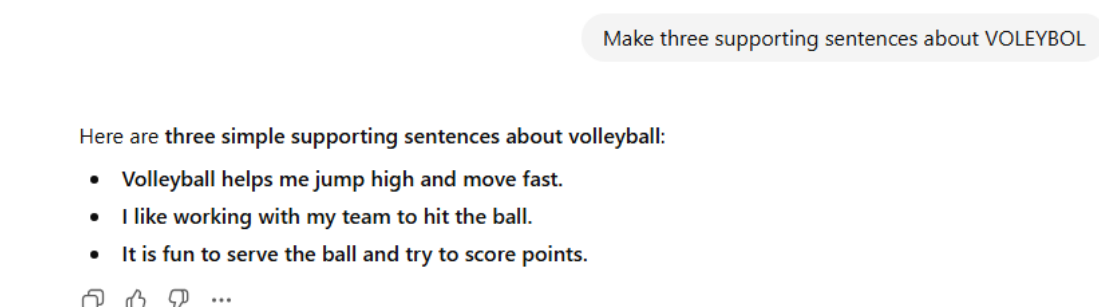


Figure 40

Students compared ChatGPT’s examples with their own writing and decided which ideas to adapt or reject. The researcher observed that many learners began to ask ChatGPT additional follow-up questions to improve their clarity, such as “Can you make my sentence stronger?” This interaction showed growing awareness of how to use the AI strategically rather than mechanically. As they worked, the researcher moved around the classroom, helping students interpret feedback and reminding them to rewrite ideas in their own words.

can you make my sentence stronger tennis is playing very good and fun

Here is a **stronger and clearer sentence**:

Playing tennis is very good for me because it is fun and helps me stay active.



Figure 41

The third lesson focused on combining topic and supporting sentences into short, cohesive paragraphs. The researcher projected an example paragraph on the smartboard that had been built with the help of ChatGPT in a previous class:

Topic sentence: “Basketball is fun.”

Supporting sentences: “I play basketball at school. I run and jump in the game. My team tries to win every match.”

Students read the paragraph and identified how each supporting sentence connected to the topic. They then wrote their own short sports paragraphs in their notebooks, using ChatGPT for extra ideas or refinement with prompts such as:

give me two ideas for my paragraph about basketball

Here are **two simple ideas** for your paragraph about basketball:

- **Basketball helps me run, jump, and stay active.**
- **I have fun playing with my friends on the court.**



Figure 42

Give me ideas for my paragraph volleyball

Here are **three simple ideas** for your paragraph about **volleyball**:

- Volleyball helps me move fast and jump high.
- I like working with my team to hit the ball.
- It is fun to serve the ball and try to score points.

İstersen bunlarla bir paragraf da yazabilirim!



Figure 43

Students discussed whether these ideas fit their paragraph or not and decided which to include. For instance, one learner writing about football chose to add “I practice every weekend with my friends” while discarding “Football is popular in many countries” because it sounded too general. These choices demonstrated that students were developing the ability to evaluate AI feedback critically and prioritize ideas that supported their own writing goals.

By the end of Week 9, students showed clear improvement in elaborating on their topic sentences with coherent, focused supporting details. They demonstrated greater independence in using ChatGPT for idea generation, relevance checking, and revision, consistently treating it as a supportive learning partner rather than a source of finished text. The week strengthened students’ awareness of paragraph unity and logical flow, providing a solid foundation for Week 10, the final week of the course, when they would write full paragraphs, add concluding sentences, and complete their post-test writing assessment.

3.7.10. Week 10 - Concluding Sentence and Final Post-Test (Good Sports Unit)

Week 10 marked the final stage of the Good Sports unit and the completion of the ten-week ChatGPT-supported writing course. The main objectives of this final week were to help students consolidate their understanding of paragraph structure by writing a complete, coherent paragraph with a clear concluding sentence, and to measure the progress made during the intervention through the post-test writing task and reflection activity. The lessons emphasized independence, critical thinking, and responsible use of ChatGPT, as students transitioned from guided support to autonomous writing.

At the beginning of the first lesson, the researcher reviewed the purpose of the concluding sentence and its role in giving a paragraph closure. To remind students of what they had learned in previous weeks, the researcher displayed the following example on the smartboard:

Topic sentence: “Playing sports is good for me.”

Supporting sentences: “I run and move my body. I feel happy when I play with my friends. I learn to work in a team.”

Concluding sentence: “That is why I love playing sports.”

Students read the paragraph aloud and discussed how the last sentence made the paragraph sound finished and connected to the main idea. The researcher highlighted that a good conclusion restates the main point in a new way rather than adding new information, and it often includes a personal feeling or opinion. This discussion also served as a review of the three core components of a paragraph, topic, supporting, and concluding sentences, which students were now expected to integrate independently.

In the second lesson, students began their final practice paragraphs on sports-related topics of their choice, such as football, basketball, swimming, or running. They were encouraged to plan their ideas first using short outlines or key words before starting to write. The researcher guided them through the steps:

Write one topic sentence that tells your main idea.

Add three supporting sentences that give reasons or examples.

End with one concluding sentence that restates your idea.

During this writing stage, ChatGPT was available in a limited and carefully controlled way. Since the goal was to assess how much independence students had gained, they were only permitted to use ChatGPT for brief idea checking or clarification, not for generating or rewriting paragraphs. Common prompts included: “Is my paragraph clear?”, “Does my conclusion match my topic sentence?”

Students used this limited feedback to make small adjustments, ensuring their paragraphs were cohesive and balanced. The researcher observed their writing behavior closely, taking notes on how confidently students wrote without relying on AI suggestions. Most learners used ChatGPT only once or twice for verification, indicating increased self-reliance in writing and editing.

In the third and final lesson of the study, students completed the post-test writing task, which served as the primary measure of their writing development. The post-test required each learner to write a six- to seven-sentence paragraph about a sports-related topic independently, without any ChatGPT or peer support. They were allowed to use their notebooks for brainstorming and planning but could not type or ask for feedback on ChatGPT. The test assessed their ability to produce a coherent and complete paragraph with proper organization, logical flow, and a suitable conclusion.

After completing the post-test, students participated in a short reflection activity designed to capture their perceptions of using ChatGPT during the course. They wrote or shared simple responses to prompts such as:

“What did you like about using ChatGPT in writing lessons?” and

“How did ChatGPT help you write better?”

Students expressed comments such as “ChatGPT gives ideas fast,” “It helps me check my sentences,” and “I learned to write better paragraphs.” These reflections provided qualitative insight into students’ engagement and attitudes toward AI-assisted learning.

By the end of Week 10, students demonstrated a strong grasp of paragraph structure and improved ability to write independently. Many learners were able to construct complete paragraphs with clear topic, supporting, and concluding sentences without relying on teacher or AI prompts. ChatGPT had served throughout the intervention as a scaffold for engagement, motivation, and self-regulation, helping students internalize paragraph organization through guided yet reflective practice. The final week confirmed that learners could transfer these skills to independent writing tasks, marking the successful completion of the ten-week ChatGPT-supported paragraph writing course.

CHAPTER IV

FINDINGS

4.1. Introduction

This chapter will introduce the findings of the quantitative and qualitative data instruments implemented in the study respectively through a series of data collection techniques. Data driven from the tools will be presented in the order of their administration. Excerpts will be also provided to give concrete examples and verify both quantitative and qualitative data.

4.2. Findings from the Quantitative Data Tools

4.2.1. Paragraph Structure Rubric

To determine the effect of ChatGPT-supported writing instruction on learners' paragraph-level writing skills, the students' pre- and post-test paragraphs were evaluated using the Rubric for a Well-Written Paragraph developed by the Saskatchewan Literacy Network (2019). The rubric consists of five interrelated dimensions: Topic Sentence / Main Idea, Supporting Sentences / Related Ideas, Concluding Sentence, Organization / Fluency, and Mechanics / Word Choice / Presentation. Each dimension is rated on a four-point developmental scale ranging from Beginning (1) to Advanced (4). The pre-test was conducted in Week 1 on the topic "Back to School," while the post-test took place in Week 10 using "Good Sports." Both topics were aligned with the students' ongoing curriculum and designed for A2-level proficiency to ensure that measured progress reflected genuine writing development rather than topical knowledge.

All paragraphs were independently rated by the researcher and an additional experienced EFL instructor. Prior to scoring, the raters participated in a norming session to calibrate their understanding of rubric descriptors. Inter-rater reliability was examined through the Intraclass Correlation Coefficient (ICC) and found to be 0.88 ($p < .001$), indicating high consistency across scorers. To evaluate pre- to post-test differences, the

Wilcoxon Signed-Ranks Test (WSRT) was performed, as the ordinal nature of the rubric scores and small sample size (N = 24) warranted a non-parametric approach.

Table 3.

Wilcoxon Signed-Ranks Test Results for the Students' Writing Performance Pre- and Post-Test Sub-Scale Scores (N=24)

Sub-Skill	Pre-Test		Post-Test		Z	P
	M	SD	M	SD		
Topic Sentence	1.92	0.49	3.13	0.58	-3.942	0.001
Supporting Sentences	1.79	0.54	3.04	0.60	-3.884	0.001
Concluding Sentence	1.54	0.59	2.67	0.64	-3.622	0.002
Organization	1.75	0.52	2.96	0.57	-3.731	0.001
Mechanics/Word Choice	1.83	0.48	2.46	0.51	-2.116	0.052

The results demonstrated statistically significant improvement in four of the five assessed areas.

One of the most substantial improvements observed after the ChatGPT-supported writing intervention was in students' ability to produce a clear and relevant topic sentence, which forms the foundation of paragraph unity. According to the rubric, paragraphs at the Beginning level typically lack a controlling idea or contain multiple unrelated thoughts, while those at the Proficient and Advanced levels open with a single, clear statement that introduces the paragraph's focus. In the pre-test writings, most learners were unable to articulate a focused main idea. Their opening sentences often described random details or emotions without signaling what the paragraph would be about. For instance, Student 1 began their pre-test with,

"I go school again. My bag is blue and heavy. I play with my friends and talk many."

Although the sentences are grammatically simple and understandable, they fail to establish a coherent topic. Similarly, Student 4's paragraph started with

"I school go every day now. My bag big and color pink."

This is an example about the set of disconnected observations that do not introduce a unifying idea. Student 7 also reflected this early-stage pattern, writing;

"School start again. I see my old friend but I forget her name. Teacher give us homework already."

These examples illustrate that, before the intervention, students tended to list isolated ideas rather than compose a meaningful introduction that signals paragraph direction.

By contrast, the post-test paragraphs written after ten weeks of ChatGPT-supported instruction showed remarkable gains in establishing a focused topic sentence. The mean rubric score for this category increased from 1.92 to 3.13, indicating a statistically significant improvement ($Z = -3.942$, $p = .001$). Nearly all students began their final paragraphs with a clear statement of purpose, often presenting their topic explicitly and maintaining it consistently throughout the paragraph. For example, Student 1's final paragraph opened with

"Playing sports is good,"

This sentence effectively set the theme for the entire piece and guided the subsequent sentences. Student 3 started with

"Sports are good for kids,"

While Student 10 wrote

"Playing sport is good me. I like tennis because it is fun."

Both of the examples show a clear main idea and personal relevance. Even students who had struggled with focus at the start of the study, such as Student 16, demonstrated improvement; their pre-test

“I in school again. Teacher write on board. I sleepy” evolved into “My best sport is football. I run very fast. I play with my team.”

This is a coherent and engaging start that clearly established the topic. The shift from vague, fragmented beginnings to unified, purposeful topic sentences indicates that students developed greater awareness of paragraph structure and the communicative function of an opening statement.

Qualitative observation data also supported these quantitative findings. During the writing lessons, students often used ChatGPT to model or check their topic sentences before beginning their drafts. When prompted with questions such as *“What is my paragraph about?”* or *“Can you help me start my paragraph?”*, ChatGPT provided examples like *“Playing sports is fun for kids”* or *“Going back to school is exciting.”* These model sentences served as scaffolds, helping learners internalize the pattern of beginning with a clear idea. Over time, students began to imitate this structure independently, even without AI assistance. For instance, Student 13, who initially opened with

“School is open again. I meet my friend Ali,” later began their post-test with *“Playing basketball is very fun,”*

successfully transferring the learned skill to a new topic. Such improvement demonstrates that exposure to AI-generated models and guided classroom practice enhanced students’ understanding of how to construct effective topic sentences.

Another area in which students demonstrated substantial growth was in their use of supporting sentences, which are essential for developing and elaborating the main idea of a paragraph. According to the Rubric for a Well-Written Paragraph (Saskatchewan Literacy Network, 2019), paragraphs at the Beginning level include few or irrelevant supporting details, whereas those at the Proficient and Advanced levels provide connected, detailed, and meaningful information that strengthens the main idea. In the

pre-test paragraphs, most students either repeated the main idea using slightly different words or added unrelated information. The mean score for this dimension increased from 1.79 (SD = 0.54) in the pre-test to 3.04 (SD = 0.60) in the post-test, indicating a statistically significant improvement ($Z = -3.884$, $p = .001$).

In the initial writing task, supporting sentences were often random and disconnected. For example, Student 2 wrote:

“I have pencil case and ruler. Teacher is nice but Math is hard.”

Although grammatically simple and comprehensible, these sentences did not extend the paragraph’s topic (Back to School) in a cohesive way. Similarly, Student 9 wrote:

“I have blue bag and small cat. I like eat pizza.”

The abrupt shift in topic that lacked logical flow can be clearly seen. Student 11 produced a similar pattern:

“I go school with my friend. I have toy in my bag.”

While the sentences were structurally correct, they did not develop a single idea, instead listing unrelated thoughts. The same tendency appeared in Student 15’s pre-test paragraph:

“My classroom is big. I sit with my friend. I like TV.”

The final sentence being completely irrelevant to the topic. These examples reflect the typical early-stage writing of young EFL learners who have not yet internalized the principle of idea elaboration within a paragraph.

By the post-test, however, students’ use of supporting sentences became significantly more logical, connected, and relevant to the main idea. After ten weeks of guided practice and AI-assisted scaffolding, most learners could generate at least two or three sentences that expanded upon the topic in a cohesive manner. For instance, Student

2, whose pre-test had contained unrelated school-related statements, produced the following in the post-test:

“My favorite sport is basketball. I can jump and throw the ball. I play in the school garden.”

The paragraph now included meaningful and sequential ideas that supported the topic sentence. Student 5, who initially wrote

“School start I am sleepy. I forget my homework.”

developed a much stronger post-test paragraph:

“My favorite sport is football. I run fast and kick the ball. My team win sometimes. I am happy I play football.”

Here, the details are clearly linked to the main idea (football as a favorite sport), showing understanding of elaboration.

Similarly, Student 7 advanced from

“School start again. I see my old friend but I forget her name.” to *“I like swimming. I go to pool with my dad. I can swim fast. It is fun.”*

The supporting details logically followed one another and directly reinforced the topic. Student 12 showed comparable progress: in the pre-test they wrote

“I go to school. My teacher is funny. I like eat cake.”

a collection of unrelated ideas. In contrast, their post-test paragraph read:

“I like basketball. I play with my friends. We throw the ball in the basket. We laugh together.”

The new version clearly connected every supporting sentence to the topic. Student 16, who had written

“I am in school. Teacher write on board. I sleepy.”

in the pre-test, produced a coherent and unified paragraph after the intervention:

“My best sport is football. I run very fast. I play with my team. We are strong and happy.”

Each idea reinforced the central theme, demonstrating clear understanding of paragraph development.

These examples illustrate how the ChatGPT-supported lessons helped students internalize the concept of elaboration by guiding them to produce ideas that were both semantically related and logically ordered. During class sessions, the researcher often prompted students to use ChatGPT for idea generation by typing simple questions such as “What can I write about football?” or “Give me sentences about swimming.” ChatGPT’s model outputs, often lists of short, relevant examples, acted as cognitive scaffolds, providing learners with thematic vocabulary and structures that they could adapt. Over time, learners began to produce similar supportive details without direct AI assistance. For example, Student 20 initially relied on ChatGPT for brainstorming phrases such as

“I can play in a team” or “Sports make me strong,”

but by the final week, they wrote independently:

“I love football. I play with my cousin in park. It make me strong and happy.”

Furthermore, observational data revealed that as students’ understanding of supporting sentences improved, their engagement and participation in writing activities also increased. Learners frequently discussed with peers whether their ideas “fit the topic,” indicating emerging metacognitive awareness of paragraph coherence. These behaviors were particularly evident in the later weeks of the intervention, when students

began to self-correct irrelevant sentences. For instance, Student 13 deleted an off-topic sentence (“I like ice cream”) after the researcher asked, “Does that help your paragraph about sports?” and replaced it with “I like football because I can run fast.” Such self-regulated decisions were rarely observed in the early sessions.

Overall, the analysis of supporting sentences demonstrated that the ChatGPT-assisted instruction effectively enhanced students’ ability to develop their main ideas with relevant and logically connected details. The progression from isolated, unrelated statements to cohesive idea elaboration reflects both linguistic growth and improved awareness of paragraph structure. This outcome supports previous findings that AI-assisted modeling can help young EFL learners visualize paragraph logic and generate thematically consistent content (Ho, 2025). The combination of guided human instruction and ChatGPT scaffolding appears to have enabled students to build richer, more unified paragraphs by Week 10, indicating substantial improvement in their control of supporting details.

One of the most notable qualitative shifts observed in students’ writing over the ten-week intervention was the emergence and improvement of concluding sentences. According to the *Rubric for a Well-Written Paragraph* (Saskatchewan Literacy Network, 2019), paragraphs at the *Beginning* level typically lack closure or end abruptly, while *Proficient* and *Advanced* paragraphs include a final sentence that summarizes or reinforces the main idea. In the pre-test paragraphs, very few students were able to produce an ending that wrapped up their ideas. Most writings stopped suddenly after two or three sentences, giving the impression of an incomplete thought. The mean score for this category increased from 1.54 (SD = 0.59) in the pre-test to 2.67 (SD = 0.64) in the post-test, representing a statistically significant gain ($Z = -3.622, p = .002$).

In the pre-test samples, the majority of students either omitted the final sentence entirely or wrote a line unrelated to the topic. For example, Student 3 ended their paragraph with

“Teacher talk and talk. I draw cat in my notebook.”,

which bore no connection to the main idea or preceding sentences. Similarly, Student 5 concluded with

“I am sleepy.”,

ending the paragraph without closure. Student 14 wrote

“I like my new bag. It is red.”

A simple description that neither summarized nor reflected on the topic. In many cases, students appeared to stop writing once they ran out of ideas, unaware that a paragraph typically requires an ending that “wraps up” the message. Even more advanced learners, such as Student 9, wrote paragraphs like

“I go school with my friend. We play in break time.”

and then stopped, leaving the text open-ended. These early examples highlight a lack of awareness of the structural role of a concluding sentence in maintaining paragraph unity. After ten weeks of structured writing instruction and ChatGPT-supported practice, however, a clear improvement was observed in students’ ability to end their paragraphs appropriately. The post-test writings revealed that most students had internalized the idea that a paragraph should have a “final thought” that connects back to the topic. For instance, Student 3, who had previously ended abruptly, concluded their final paragraph with

“It is fun and I learn new sports.”,

demonstrating a basic but relevant closure. Student 1 wrote,

“That is why I love playing sports.”,

while Student 7 finished with

“Swimming makes me feel happy.”,

both of which echoed the paragraph's main idea effectively. Student 15, who wrote about volleyball, ended with

"We play every week and it is the best part of my day.",

expressing a personal evaluation that reinforced the topic. Similarly, Student 12 concluded their paragraph with

"Playing with my friends makes me strong and happy.",

summarizing their earlier points while maintaining emotional tone.

These examples demonstrate how the ChatGPT-assisted activities helped learners conceptualize the function of a conclusion as more than a final sentence, it became a tool for reflection and emphasis. Throughout the intervention, students were explicitly reminded to "finish their paragraph with a last sentence" that linked back to their first idea. During several lessons, the researcher modeled examples with ChatGPT, asking the program to generate different endings for the same paragraph, such as *"That's why I like sports,"* or *"Sports are good for everyone."* This strategy familiarized students with simple yet effective concluding patterns, which they later adapted independently. For example, Student 4, who initially left their paragraph unfinished, added

"I love volleyball very much."

in the post-test, while Student 20 closed with

"I will play football forever.",

demonstrating both linguistic confidence and emotional ownership of the topic.

Observation notes from the classroom also supported these results. In the early stages of the intervention, students often asked the researcher, *"Is my paragraph*

finished?” or “*Do I need one more sentence?*”, suggesting uncertainty about paragraph boundaries. By the final weeks, however, students began spontaneously adding conclusion-like statements without prompting. During one lesson, a student read their paragraph aloud and another commented, “*You need one last sentence like ‘That’s why you like it.’*” Such peer feedback moments indicated not only individual progress but also a growing collective understanding of paragraph structure.

Another major area of development observed in students’ writing was Organization and Fluency, referring to the logical sequencing of ideas, smoothness of transitions, and overall readability of the paragraph. In the *Rubric for a Well-Written Paragraph* (Saskatchewan Literacy Network, 2019), paragraphs rated at the *Beginning* level often consist of disconnected or repetitive sentences, whereas those rated *Proficient* or *Advanced* display a logical order of ideas and coherent flow from the topic sentence through supporting details to the conclusion. The pre-test paragraphs clearly reflected early writing tendencies, where students listed unrelated ideas or shifted abruptly between topics. The mean score in this category increased from 1.75 (SD = 0.52) in the pre-test to 2.96 (SD = 0.57) in the post-test, indicating a statistically significant improvement ($Z = -3.731, p = .001$).

At the start of the study, students’ paragraphs frequently lacked a sense of progression. For instance, Student 4 wrote:

“I school go every day now. My bag big and color pink. I see many people.”

The sentences were grammatically simple but lacked order, connection, and flow. The reader could not easily follow a single storyline or idea. Similarly, Student 9 wrote:

“I have blue bag. I eat pizza. Teacher give us book.”

a sequence that jumped between unrelated actions without logical transitions. Student 10’s paragraph also demonstrated a lack of fluency:

“I like my teacher. I am tired. I have new shoes. I don’t like homework.”

Each statement introduced a new idea, resulting in a fragmented, list-like text. Many students, especially at A2 level, were unaware of how to connect sentences or use cohesive devices to show relationships between ideas. As a result, early paragraphs often felt abrupt, mechanical, and rhythmically inconsistent.

After ten weeks of ChatGPT-supported instruction, however, students showed substantial progress in creating smoother, more logically connected paragraphs. For example, Student 4, who initially wrote three disjointed sentences, produced the following post-test paragraph:

“My favourite sport is volleyball. I can hit the ball. My team is funny and kind. We play after school.”

The paragraph now followed a clear structure: a topic sentence, supporting details, and a natural conclusion. The sentences were arranged in a logical order that made the paragraph coherent and easy to follow. Student 10, whose earlier paragraph had been scattered, wrote in the post-test:

“I like tennis. I play with my sister at the weekend. It is fun and make me happy. I like to win.”

The progression from introducing the sport to describing who they play with, what they feel, and the outcome demonstrated an emerging sense of narrative sequence and fluency.

Similarly, Student 1 moved from

“I go school again. My bag is blue and heavy. I play with my friends.” to *“Playing sports is good. I like football because it make me happy. We run and kick the ball. Sport help me strong and not lazy.”*

The revised version displayed clear internal logic: the topic sentence was followed by examples and a concluding statement, and each sentence connected naturally to the next. Student 7 exhibited the same pattern: the pre-test

“School start again. I see my old friend. I forget her name.” evolved into “I like swimming. I go to pool with my dad. I can swim fast. It is fun.”

This improvement in organization and fluency was characteristic across the group, students began grouping related sentences, maintaining consistent tense, and following a more predictable rhythm.

A key contributing factor to these gains was the modeling and scaffolding provided by ChatGPT during writing sessions. The researcher frequently guided students in using ChatGPT to check or rearrange their sentences for better order. For instance, when students entered a short list such as *“I play basketball. I am strong. I like my friends.”*, ChatGPT sometimes replied with a more fluent version: *“I like playing basketball because it makes me strong. I play with my friends every week.”* Seeing such examples helped learners internalize sequencing and logical connectors like *because*, *and*, or *when*. Over time, this exposure supported students’ ability to self-organize their writing. During classroom observations, many learners were noted reading their drafts aloud and asking peers, *“Does this sound good?”* or *“Should I say this first?”*, indicating growing metacognitive awareness of textual flow.

Furthermore, the qualitative classroom data revealed that the improvement in fluency was closely linked to student confidence and motivation. As they gained control over structure, students began to see their paragraphs as “whole texts” rather than separate sentences. This shift was particularly visible during peer-sharing activities, where learners took pride in reading their paragraphs aloud with appropriate pauses and emphasis. For instance, during the Week 8 lesson, Student 12 proudly read: *“My favourite sport is basketball. I play with my friends after school. We throw the ball in the basket. We laugh together. It is the best game.”* The rhythm and sequencing showed clear improvement compared to their pre-test writing, where no logical order had been present.

The final dimension assessed through the *Rubric for a Well-Written Paragraph* (Saskatchewan Literacy Network, 2019) was Mechanics, Word Choice, and Presentation, which evaluates the accuracy of grammar, punctuation, capitalization, spelling, and the appropriateness of vocabulary. It also considers the overall neatness and visual presentation of the written work. Among all dimensions, this was the area where progress,

while noticeable, remained more limited compared to others. The mean score increased from 1.83 (SD = 0.48) in the pre-test to 2.46 (SD = 0.51) in the post-test, but the improvement did not reach statistical significance ($Z = -2.116$, $p = .052$). Despite this, the data and qualitative evidence suggest a positive trend toward greater linguistic control and awareness of written accuracy.

The results of the analysis indicated that mechanical accuracy, word choice, and presentation remained the least improved area of writing performance throughout the ten-week intervention. Although some minor progress was observed in punctuation, capitalization, and spelling, overall development in this category was limited. This finding was expected, since the instructional focus of the ChatGPT-supported writing course centered primarily on paragraph structure, namely, topic sentences, supporting details, and concluding sentences, rather than explicit grammar or mechanics instruction. As a result, students' attention during lessons was largely directed toward organizing ideas and constructing coherent paragraphs, while accuracy-oriented feedback was provided only incidentally.

In the pre-test paragraphs, students exhibited the typical range of mechanical difficulties characteristic of A2-level young EFL learners. Frequent errors appeared in verb forms, subject-verb agreement, and article use, as in sentences such as *"I go school again," "Teacher write on board,"* and *"My bag is blue and heavy. I play with my friends and talk many."* Punctuation was often omitted or used inconsistently, and capitalization rules were rarely applied. Many students produced their paragraphs as a continuous string of sentences without full stops, as seen in Student 9's writing:

"i like my school it big i play with my friend in break."

These errors reflect a developing awareness of English syntax and orthography, rather than carelessness, and are consistent with what Hyland (2022b) describes as "transitional stages of written control" in early L2 writing development.

After ten weeks of ChatGPT-supported practice, mechanical improvement was minimal. Students' post-test paragraphs continued to display inconsistent punctuation,

missing articles, and tense errors, and most learners still relied on simple, repetitive sentence patterns. For example, Student 1, who wrote

“I go school again. My bag is blue and heavy. I play with my friends,”

in the pre-test, produced

“Playing sports is good. I like football. It is fun.”

in the post-test. While the sentences were now separated and capitalized, accuracy in grammatical structures remained largely unchanged. Similarly, Student 12’s post-test writing,

“I like basketball. I play with my friends after school. It is very fun,”

showed improved sentence boundaries but little advancement in lexical diversity or syntactic range. The students’ word choice remained restricted to high-frequency adjectives such as good, fun, and nice, and only a few learners attempted to use more descriptive vocabulary such as strong or healthy. Observation notes recorded that many students simply reused words provided by ChatGPT without experimenting with synonyms or alternate expressions, indicating that vocabulary enrichment was not internalized to a significant extent.

The limited progress in mechanics and word choice can be attributed to both pedagogical and developmental factors. During lessons, ChatGPT was primarily used for generating ideas and model sentences rather than for grammar correction or vocabulary building. Although some students occasionally asked ChatGPT questions such as “how to spell basketball” or “another word for fun,” these instances were infrequent and typically prompted by curiosity rather than systematic instruction. Moreover, young learners at this proficiency level tend to prioritize meaning and idea flow over grammatical accuracy, especially when writing in a time-limited classroom environment. As Dörnyei (2001) and Hyland (2022) note, the acquisition of accuracy in writing develops more slowly than fluency and coherence, particularly when instructional focus is communicative rather than form-oriented.

In terms of presentation, small improvements were observed in handwriting and paragraph layout, largely due to teacher modeling and visual examples displayed on the smartboard. Students became more aware of how a complete paragraph should look and began leaving spaces between words, using margins, and writing more legibly. However, these gains were organizational rather than linguistic. The visual neatness of the paragraphs improved, but this did not necessarily correspond with higher mechanical accuracy or more sophisticated vocabulary use.

Overall, the data suggest that while the ChatGPT-supported instruction effectively enhanced students' understanding of paragraph organization and idea development, it had limited impact on the micro-linguistic features of their writing. Grammar, spelling, and lexical variety improved only slightly and inconsistently across participants. The minor changes that did occur were likely incidental outcomes of repeated writing practice rather than direct effects of AI feedback. This pattern aligns with prior research indicating that generative AI tools tend to support global writing skills, such as structure and cohesion, more effectively than surface-level accuracy (Jmaiel et al., 2025; Woo et al., 2025). As Hyland (2022a) emphasizes, expecting young EFL learners to achieve rapid accuracy gains without explicit instruction in mechanics is unrealistic; instead, gradual awareness and tolerance of minor errors are appropriate developmental outcomes. In this sense, the lack of sharp improvement in mechanical aspects does not represent a failure of the intervention but reflects the focus and pedagogical priorities of the instructional design.

4.2.2. Questionnaire

The Engagement and Autonomy Questionnaire was administered to 24 fourth-grade EFL learners before and after the ten-week ChatGPT-supported writing intervention. The instrument consisted of 11 items for pre- and post-test comparison and an additional 4 perception items (Items 12–15) included only in the post-test to explore students' attitudes toward ChatGPT. All items were rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), with higher scores indicating stronger engagement, motivation, and autonomy in English writing.

Data were analyzed using the Wilcoxon Signed-Ranks Test (WSRT) to determine whether there were statistically significant differences between pre- and post-intervention results. The findings revealed a clear upward trend across all three sub-dimensions, affective engagement, behavioral engagement, and writing autonomy, indicating that the integration of ChatGPT into the writing lessons positively influenced students' attitudes, participation, and self-regulation in writing tasks.

Table 4.

Engagement and Autonomy Questionnaire Results

	Pre-Test M	Post-Test M	SD	Min.	Max.
1. I enjoy writing in English.	3.33	4.08	0.76	1	5
2. I want to become better at writing.	3.71	4.29	0.69	1	5
3. I am willing to work on writing tasks.	3.50	4.00	0.73	1	5
4. I believe I can be successful in writing.	3.29	3.92	0.74	1	5
5. I participate in writing activities.	3.38	3.88	0.68	1	5
6. I pay attention while writing.	3.54	4.13	0.63	1	5
7. I express my thoughts in writing tasks.	3.08	3.71	0.71	1	5
8. I can decide what to write.	3.21	3.67	0.72	1	5
9. I try to correct my writing.	3.33	3.96	0.70	1	5
10. I try to solve problems I face while writing.	3.25	3.54	0.67	1	5
11. I can set my own writing goals.	3.08	3.38	0.65	1	5

The first sub-dimension, Affective Engagement and Motivation (Items 1–4), showed the clearest growth. The mean score increased from 3.46 to 4.07, and the WSRT revealed statistically significant differences for all four items ($p < .05$). This suggests that

students became more enthusiastic and confident about writing in English after using ChatGPT in the classroom. Observation data supported these results: by Week 8, students frequently volunteered to share their paragraphs aloud and used ChatGPT proactively to brainstorm opening sentences. Comments such as “ChatGPT gives me good ideas!” or “I like writing with help” reflected their rising motivation.

In contrast, the Behavioral Engagement dimension (Items 5–7) displayed moderate but mixed improvement. Mean scores rose from 3.33 to 3.91, yet only Items 6 and 7 reached statistical significance. Students reported paying more attention during writing activities and feeling more comfortable expressing their ideas, but their participation rates in class (Item 5) showed only a slight increase ($Z = -1.726$, $p = .084$). These findings align with observation notes indicating that while most students were more focused during lessons, a few still required prompting to stay on task. This pattern suggests that ChatGPT encouraged more consistent effort, though the overall behavioral change remained gradual.

For the Writing Autonomy and Self-Regulation dimension (Items 8–11), results revealed small but meaningful gains that were not statistically significant in all cases. The sub-dimension mean increased from 3.22 to 3.64, with only Items 8 and 9 (decision-making and self-correction) showing significant improvement ($p < .05$). Students began making more independent choices about what to write and demonstrated increased willingness to revise their paragraphs. For example, one student who initially asked, “Can you tell me what to write?” later commented during the post-test, “I can write by myself now; ChatGPT only checks my words.” However, goal-setting and problem-solving (Items 10–11) remained comparatively low, possibly due to the learners’ young age and limited metacognitive awareness.

In addition, four ChatGPT-specific perception items (Items 12–15) were included in the post-test to evaluate students’ attitudes toward the AI tool. Results indicated a generally favorable perception, as summarized in Table 5.

Table 5.

ChatGPT Questionnaire Results

	M	SD	Min.	Maks.
12. ChatGPT helped me while writing.	4.38	0.62	3	5
13. ChatGPT helped me come up with new ideas	4.25	0.65	3	5
14. Thanks to ChatGPT, I felt freer while writing.	4.04	0.71	2	5
15. ChatGPT helped me improve the quality of my writing.	4.21	0.67	3	5

Among the ChatGPT items, the highest mean ($M = 4.38$) was found for “ChatGPT helped me while writing,” indicating that students perceived the tool as a valuable form of assistance. High scores for Items 13 and 15 suggest that ChatGPT supported idea generation and enhanced the quality of students’ work. The slightly lower mean for Item 14 (“I felt freer while writing,” $M = 4.04$) may reflect that some students still relied on teacher confirmation before finalizing their paragraphs, a typical pattern for this age group.

Overall, the questionnaire results show a general positive shift in engagement, motivation, and emerging autonomy, though not all aspects reached statistical significance. The combination of AI support and teacher guidance appeared to strengthen students’ enjoyment and confidence while fostering gradual independence in writing. However, skills such as goal-setting and self-monitoring likely require longer-term development beyond the scope of a ten-week program.

4.3. Findings from the Qualitative Data Tool

4.3.1. Observations

The qualitative data gathered through structured classroom observations provided valuable insight into students’ behavioral and emotional engagement, autonomy

development, and their interaction with ChatGPT during the writing process. The observation data served as an essential complement to the quantitative findings, offering contextualized descriptions of how learners responded to AI-supported instruction in real classroom conditions. The researcher observed the experimental group three times a week across ten instructional weeks, maintaining a non-participant role to avoid influencing classroom dynamics. Observation notes were recorded using a structured checklist, which included categories such as on-task behavior, peer collaboration, teacher support-seeking, autonomous decision-making, and frequency and manner of ChatGPT use. In addition to these categories, open-ended anecdotal notes were used to document emerging patterns, affective reactions, and notable classroom interactions. After each session, the notes were transcribed and analyzed through a combination of deductive and inductive content analysis. Predefined codes related to engagement, autonomy, collaboration, and AI use were employed, while emergent codes were developed inductively to capture unanticipated behaviors such as “prompt refinement,” “novelty dip,” “AI over-reliance,” and “mechanics repair episodes.”

Overall, the observations revealed that students’ engagement with writing tasks increased noticeably as the ChatGPT-supported program progressed, though some fluctuations were observed. In the early sessions, particularly in Week 2, many students displayed hesitation and distraction during the prewriting stage. Several learners appeared unsure of how to use ChatGPT effectively and often waited for teacher guidance before initiating writing. However, by Week 4, engagement levels rose steadily, as students became more comfortable with the digital environment and the structure of the writing lessons. The classroom atmosphere grew more animated, with frequent comments such as, “Can I start my paragraph with this sentence?” or “ChatGPT gave me a good idea!” indicating that students were actively involved in the task. By Week 8, a consistent pattern of increased enthusiasm and participation emerged. Students began logging into ChatGPT independently and discussing their prompts with peers before the teacher’s instruction began. Despite this positive trajectory, a temporary decline in attention was observed around Week 6, coinciding with school-wide midterm examinations. During that week, students appeared more fatigued, and off-task conversations increased, suggesting that engagement was sensitive to external academic pressures. Nevertheless, by Week 7, engagement rebounded after the teacher reintroduced interactive activities such as “Best

Paragraph of the Week” and peer voting for effective concluding sentences, which rekindled interest and motivation.

A similar pattern of gradual improvement was observed in the area of learner autonomy, particularly in decision-making and self-revision behaviors. At the beginning of the intervention, most students demonstrated limited independence in initiating or revising their work. For instance, during the first two weeks, several students frequently asked, “What should I write?” or “Can you tell me the first sentence?” indicating a reliance on teacher direction. By mid-intervention (Weeks 5–6), however, learners began to show early signs of autonomous behavior, such as making content choices without prompting and attempting self-corrections. For example, one student stated, “I choose swimming, not football, because I know more words for swimming,” showing awareness of their linguistic resources. Another student revised their own sentence, changing “Sport make me strong” to “Sports help me be strong,” demonstrating developing grammatical self-awareness. By the final two weeks, self-initiated corrections had become a routine part of writing practice. During these sessions, nearly two-thirds of students spontaneously added missing capital letters, corrected verb endings, or reorganized word order without being reminded. However, autonomy related to goal setting and planning remained relatively weak. While many students revised and edited their writing during or after drafting, few verbalized plans such as, “Today I will add two details,” or “I want to write one more example.” This finding supports the quantitative results, which showed smaller gains in the autonomy dimension of the questionnaire, particularly for goal-oriented behaviors.

Students’ interactions with ChatGPT were central to the qualitative findings and reflected both effective use and occasional over-reliance. Initially, in Weeks 2–3, many students treated ChatGPT as a provider of answers rather than a writing assistant, often typing prompts such as “Write my paragraph for me.” When ChatGPT produced longer or linguistically complex responses, students either copied the text verbatim or expressed confusion. By Week 5, however, students had learned to refine their prompts and use ChatGPT more strategically. They began asking focused questions such as “Give me two sentences about basketball” or “Help me write one ending sentence.” This indicated growing prompt literacy, as students understood how to retrieve targeted support rather than complete texts. Over time, ChatGPT became a scaffold for idea generation,

vocabulary expansion, and model sentences, rather than a tool for substitution. Nonetheless, a small number of learners (approximately four out of twenty-four) occasionally copied advanced-level sentences directly into their paragraphs, resulting in language beyond their proficiency level (e.g., “Sports improve cardiovascular strength”). These cases were addressed during class discussions and individual feedback sessions. The teacher emphasized the importance of using “own words,” reminding students, “If the AI sentence is too hard, make it shorter and easier.” By Week 7, over-reliance decreased noticeably as learners began simplifying AI-generated content independently, turning long or abstract expressions into age-appropriate phrasing such as “Sports help me be strong.” This shift suggests a growing metacognitive awareness of ownership and adaptation in AI-assisted writing.

The observations also revealed considerable improvement in organization and fluency over time. During the first weeks, students’ drafts often appeared as disconnected lists of statements, reflecting minimal understanding of paragraph structure. For instance, a Week 2 observation note described one student’s writing as “a series of short, unrelated sentences with no clear sequence or conclusion.” By the mid-point of the program, students had begun to demonstrate logical progression between sentences, especially after class sessions that focused on identifying topic, supporting, and concluding sentences. By Week 8, many students were independently checking their paragraph order aloud, saying things like, “This sentence comes first,” or “I want to finish with this one.” Peer discussions during group writing activities further supported coherence; one student told another, “This sentence not about sports, delete it,” indicating that learners were beginning to monitor relevance and flow collectively. Read-aloud activities and peer sharing also played a key role in enhancing fluency. Students appeared increasingly aware of how a paragraph should “sound,” reading with natural pauses and adjusting word order to improve clarity. These behaviors aligned closely with the quantitative finding of significant gains in the organization/fluency rubric dimension.

With regard to mechanics and word choice, the data indicated gradual but uneven improvement. Throughout the observations, students became more attentive to capitalization, punctuation, and spelling, often using ChatGPT to check word forms. Instances such as “Is it swiming or swimming?” or “How to spell basketball?” were frequently noted in the researcher’s field notes. By Week 9, most students were able to

produce sentences with accurate capitalization and punctuation, although persistent grammatical errors, such as missing articles or incorrect verb forms (e.g., “He like football”), continued to occur. Additionally, while students’ vocabulary expanded moderately through repeated use of content-specific terms like strong, healthy, and exciting, many continued to rely heavily on high-frequency adjectives such as good and fun. A subset of learners tended to copy ChatGPT’s word choices directly, leading to mechanical repetition of phrases such as “That is why I love sports.” Despite these limitations, students exhibited clear awareness of linguistic accuracy and presentation by the end of the study. Handwriting and paragraph formatting also improved, suggesting that students began to view writing as a polished final product rather than a temporary exercise.

Another recurring theme observed across sessions was collaboration and teacher mediation. Early in the intervention, peer interaction was limited; students often worked individually and turned to the teacher or ChatGPT for help. Over time, collaboration increased significantly as students gained confidence and familiarity with paragraph writing. By Week 7, peer feedback moments were a regular part of the lessons, with students voluntarily reading their paragraphs aloud and offering comments to each other, such as “You forgot the last sentence,” or “I think this word doesn’t fit the topic.” These moments demonstrated not only language growth but also social engagement and shared responsibility for learning. Meanwhile, teacher mediation evolved from heavy scaffolding at the start, when instructions were explicit and step-by-step, to lighter guidance by the final weeks. The teacher’s role shifted toward monitoring, clarifying, and ensuring that ChatGPT was used ethically and appropriately. This gradual withdrawal of support reflected growing learner independence and mirrors the scaffolding and fading processes described in constructivist learning theory (Vygotsky, 1978).

Despite the overall positive trajectory, several challenges and limitations were observed throughout the intervention. A temporary decline in engagement around Week 6 coincided with increased off-task conversation and shorter drafts, suggesting that novelty effects and external academic factors can influence student attention. Occasional over-reliance on ChatGPT persisted among a small subset of students, particularly those who struggled with English proficiency or typing speed. Technical difficulties, such as slow internet connection or login errors, occasionally disrupted lesson flow. Additionally,

some students experienced difficulty comprehending ChatGPT's responses when they contained unfamiliar vocabulary or complex grammar. To address this issue, the teacher reminded students to ask ChatGPT for simpler sentences or to paraphrase AI-generated ideas in their own words. Finally, while group work promoted collaboration, a few dominant students tended to take control of decision-making, leaving quieter peers less active during joint writing activities. These minor challenges, though expected in a classroom integrating a new technology, highlight the need for continued teacher facilitation to ensure equitable participation and appropriate AI use.

In summary, the classroom observations revealed a clear developmental pattern in students' writing behavior. Learners gradually transitioned from teacher-dependent writers to more autonomous and confident participants in the writing process. Engagement increased as students became familiar with ChatGPT's functions, and autonomy was most evident in their growing ability to make writing-related decisions, revise sentences, and evaluate their own progress. Although mechanical accuracy and vocabulary sophistication developed more slowly, students' awareness of correctness and organization improved noticeably. These qualitative findings not only support the quantitative results obtained from the writing rubric and questionnaire but also illuminate the underlying classroom processes that explain how AI integration can enhance writing instruction. The findings suggest that ChatGPT, when integrated thoughtfully with pedagogical support, can foster motivation, collaboration, and structural understanding among young EFL learners, while continued teacher guidance remains essential to balance creativity, independence, and accuracy in the developing writing classroom.

CHAPTER V

DISCUSSION

5.1. Introduction

This section will discuss the findings in detail drawn from the analyses of the data collection tools in line with the data in the related literature based on research questions of the current study.

5.2. Discussion of Findings for Research Questions

This study primarily aimed to explore the effects of a ChatGPT-supported writing course on young EFL learners' engagement, autonomy, and writing performance within the context of a private primary school in Türkiye. Adopting a mixed methods research design, the study utilized both quantitative and qualitative instruments to examine the extent to which the integration of an AI-based writing assistant could influence students' affective and academic outcomes. Quantitative data were collected through a researcher-developed engagement and autonomy questionnaire administered before and after the intervention, along with analytic rubric evaluations of students' writing products. Additionally, classroom observations were conducted to gain qualitative insight into learner behaviors, interactional patterns, and the overall dynamics of the ChatGPT-supported learning environment. The analysis of these data sets provided a multi-dimensional perspective on how third-grade students responded to the integration of ChatGPT into their writing instruction. In the following sections, the findings will be discussed in relation to the existing literature, offering an in-depth interpretation of the results across each of the research questions.

5.2.1. R.Q.1: What impact does integrating ChatGPT as a writing assistance tool in an EFL classroom have on student engagement, motivation, and autonomy in the writing process?

The integration of ChatGPT into the EFL writing classroom revealed meaningful effects on learners' engagement, motivation, and autonomy, as evidenced by post-intervention questionnaires and qualitative classroom observations. The ten-week

implementation allowed students to engage with ChatGPT as a personalized writing assistant, offering real-time support, language feedback, and idea development throughout their writing process. These interactions fostered a more learner-centered environment, encouraging students to take initiative and control over their own learning process, key indicators of autonomy (Little, 1991; Benson, 2011).

One of the clearest outcomes of the intervention was the increase in behavioral and emotional engagement. Observation data highlighted that students were more active during collaborative tasks, contributed more frequently to peer discussions, and demonstrated sustained attention during writing sessions. These findings align with Fredricks, Blumenfeld, and Paris's (2004) multidimensional model of engagement, which emphasizes the interplay between behavioral, emotional, and cognitive aspects of learning. ChatGPT's ability to provide immediate, low-pressure responses appears to have reduced students' writing-related anxiety and encouraged risk-taking with language, a factor supported by prior studies on AI writing tools (Teng & Huang, 2025; Jamshed et al., 2024).

In terms of motivation, many students exhibited greater enthusiasm toward writing tasks as reported through observational notes and self-reported Likert scale items. Several students described ChatGPT as "helpful," "like a guide," or "like a friend," indicating a shift in emotional connection with the task. This is consistent with Deci and Ryan's (1985) Self-Determination Theory, which states that learners are more intrinsically motivated when they perceive autonomy, competence, and relatedness in learning activities.

Autonomy development was particularly evident in how students managed their writing process independently over time. As observed during the sessions, learners gradually began initiating their own questions to ChatGPT, revising texts without teacher prompting, and reflecting on multiple writing suggestions. These behaviors reflect key characteristics of autonomous learners, such as goal setting, monitoring progress, and seeking resources (Holec, 1981). Moreover, as ChatGPT offered diverse lexical and syntactic structures in response to student input, learners could compare alternatives and make informed choices, deepening their sense of agency in writing.

However, it should also be noted that the gains were not uniform across all students. A few learners demonstrated dependency on AI responses and needed support in critically evaluating the generated content. This suggests the importance of guided integration and digital literacy training to ensure students use AI tools as scaffolds rather than crutches (Teng & Huang, 2025; Untsa & Nuha, 2025; Subrahmanyam, 2025).

The integration of ChatGPT supported the development of student engagement, motivation, and autonomy by offering personalized, on-demand support and expanding opportunities for independent exploration and practice. These findings are consistent with earlier research on technology-mediated language learning and provide further support for incorporating AI tools into EFL instruction in pedagogically meaningful ways.

5.2.2. R.Q.2: What are EFL students' perceptions of ChatGPT's role in their writing process?

The study's findings show that students generally held positive perceptions of the role that ChatGPT played in their writing process, although their views were nuanced and included caveats about dependence and usability. After the intervention, when they responded to the post-questionnaire items and reflected during observation sessions, several themes emerged regarding how they perceived ChatGPT's help, its ease of use, its effect on their writing confidence, and its limitations.

First, students perceived ChatGPT as a helpful tool for idea generation and revision, which aligns with the quantitative post-intervention questionnaire results where the ChatGPT-specific items (e.g., "ChatGPT helped me while writing," "ChatGPT helped me come up with new ideas") obtained high mean scores (e.g., $M \approx 4.33$ on a 5-point scale). Many learners reported in classroom discussions that being able to ask ChatGPT for short opening sentences, example supporting sentences, or a concluding sentence reduced the initial "writer's block" feeling. One learner remarked, "When I asked ChatGPT: 'Give me a sentence about football I like', I could start faster and then I wrote more myself." This indicates that students viewed ChatGPT not as replacing them, but as scaffolding their writing process, aiding them in the preparatory and revision phases. In the literature, similar perceptions have been found: for example, in a study of EFL learners, participants described ChatGPT as useful for idea generation and structural suggestions (Su, Lin, &

Lai, 2023; Cheong, 2024; Teng & Huang, 2025). In another study, Solak (2024) found that less proficient learners used ChatGPT mostly for vocabulary/grammar corrections while more proficient students used it for coherence and organization, yet both groups held positive attitudes.

Second, many students emphasized the user-friendliness and accessibility of ChatGPT. They noted that the interface was simple, responses were quick, and they could iterate their prompts easily. For instance, several students commented, “It’s easier to ask ChatGPT what comes next than just sit thinking,” or “I can change the sentence ChatGPT gives me to my words.” This perception of ease of use corresponds with the Technology Acceptance Model (TAM) findings in the field (Delcker et al., 2024; Paradedda et al., 2025) as applied to L2 writing contexts: ease of use often predicts more favourable perceptions. A large-scale Turkish study (Aksakallı & Daşer, 2025) found that EFL learners rated ChatGPT as easy to use ($M \approx 4.15$) and had positive overall perceptions ($M \approx 3.91$). The parallels between those external studies and the present learners’ views suggest that the age level (fourth-grade) and proficiency did not hinder an overall positive usability perception, which is noteworthy.

Third, students reported that ChatGPT positively impacted their confidence and willingness to write, which reflects affective dimensions of perception. Several learners stated that they felt “less shy” about writing when they knew they could ask ChatGPT for ideas or check their text. For example, one student who usually ended their paragraph prematurely wrote in the post-intervention session: “I didn’t know how to finish; ChatGPT gave me an ending sentence, I then changed it, and I felt okay showing it.” This echo of reduced writing anxiety and increased willingness to attempt more complete paragraphs resonates with findings from recent studies which found that use of AI writing tools in EFL classes made students feel more willing to engage in writing tasks and less inhibited (Jamshed et al., 2024; Anjum, Raheem, & Ghafar, 2025; Teng & Huang, 2025).

However, the perceptions were not uniformly positive. Some students expressed concerns about over-reliance, authenticity of output, and language level mismatch. A few learners stated that sometimes ChatGPT sentences were “too difficult” or “too many big words,” so they had to simplify or ignore them. In the observations, one student typed “Help me write one easy sentence about sports,” then remarked, “The first answer was

too long, I changed it to my words.” This indicates that while learners appreciated the support, they also recognized the need to adapt AI output to their own proficiency level. In the literature, Untsa & Nuha (2025) and others warn about over-dependence and limited critical engagement when students use AI tools without proper scaffolding. Similarly, recent large-scale studies found that while usage frequency correlated with positive perceptions, some students questioned ChatGPT’s reliability for deep structure or nuanced writing tasks (Jamshed et al., 2024; Solak, 2024; Kasneci et al., 2023).

Another noteworthy perception related to ownership and agency. Some students initially felt that using ChatGPT meant they were “cheating” or that the paragraph was not completely theirs. Over the course of the intervention, teacher modelling and peer sharing helped shift this view: students began to say “I asked ChatGPT for a start; then I wrote and changed it to my style. This paragraph is mine.” This shift in perception aligns with research on machine-in-the-loop writing systems where learners engage with AI as a collaborator rather than a writer (Woo, Yu, & Guo, 2025; Teng & Huang, 2025). The emergence of this collaborative stance supports the idea that perceptions evolve when students are guided to treat AI as support rather than a substitute.

In sum, the study’s second research question reveals that EFL students’ perceptions of ChatGPT’s role in their writing process are overwhelmingly positive, with particular emphasis on idea generation, ease of use, and increased confidence. These perceptions are supported and enriched by observation data and align with recent empirical studies in EFL contexts. At the same time, the nuanced concerns about over-reliance, proficiency mismatch, and authorship authenticity underline the importance of thoughtful integration of AI tools. Thus, while students clearly see ChatGPT as a valuable aid in their writing process, their perceptions also reveal the need for instructional guidance and scaffolding so that AI use strengthens rather than undermines writing development.

5.2.3. R.Q.3: Does ChatGPT influence the quality of students’ written output, if so how?

The findings of this study indicate that the integration of ChatGPT into EFL writing instruction contributed positively to several dimensions of writing quality, namely language proficiency, coherence, and creativity, while also revealing nuanced patterns of

progress and limitations. Quantitatively, the analysis of student paragraph scores using the Rubric for a Well-Written Paragraph (Saskatchewan Literacy Network, 2019) showed statistically significant improvement in the categories of Topic Sentence/Main Idea, Supporting Sentences/Related Ideas, Organization/Fluency, and Concluding Sentence. These gains suggest that learners improved not only their structural awareness of paragraph writing but also their capacity to articulate clear main ideas and support them in coherent fashion. Qualitative observations further reinforce these findings: many students shifted from producing list-like, disconnected sentences to writing paragraphs with clear sequencing, topic focus, and closure. Students increasingly used ChatGPT prompts to generate initial sentences and then adapted or expanded them, which in turn appeared to stimulate more substantive writing rather than superficial text production.

In terms of language proficiency, the study revealed moderate but meaningful gains. While the Mechanics/Word Choice/Presentation dimension improved from a mean of 1.83 to 2.46 (on a 4-point scale), this change did not reach statistical significance. Observation data, however, showed that students more frequently made self-initiated punctuation, capitalization, and spelling repairs, and expanded their vocabulary slightly (e.g., using words such as strong, healthy, exciting instead of just good or fun). These findings align with recent empirical studies of generative AI in L2 writing contexts. For instance, recent studies with EFL learners found improvements in content generation and idea development but more modest changes in grammatical accuracy (El-Demerdash & Ahmed, 2023; Jamshed et al., 2024; Woo, Yu, & Guo, 2025). Similarly, Jmaiel et al. (2025) found in an ESP writing context that ChatGPT-assisted learners achieved substantial improvements across content, structure, grammar, and vocabulary. The convergence between our findings and these studies suggests that ChatGPT may function more effectively as a scaffold for higher-order writing processes (idea generation, organization) than for low-level linguistic accuracy, at least in the short term.

Regarding coherence, the integration of ChatGPT appears to have produced strong benefits. The Organization/Fluency dimension improved significantly (mean from 1.75 to 2.96; $Z = -3.922$, $p = .001$). Observational data attest to this: by Week 8, many students engaged in re-ordering sentences, using transitional phrases or considering paragraph structure aloud (“This sentence comes first... I’ll finish with a concluding idea”). In a comparative study, Woo, Yu, and Guo (2025) showed that EFL secondary students

editing AI-generated text improved coherence and overall scores when they actively engaged in revision rather than passively accepting the AI output. The present study supports this pattern: students initially used ChatGPT outputs as draft material, but over time they edited and reorganized them, thereby enhancing coherence. This suggests that ChatGPT can catalyse coherence improvements when embedded in a process-based instructional sequence that includes drafting, peer review, and revision.

With respect to creativity, the impact of ChatGPT on learners' creative expression is more complex. On the one hand, students' ability to produce a defined topic sentence and a concluding sentence improved markedly, which implies an expanded capacity to frame ideas and complete thought units. The qualitative field notes indicate students felt freer to generate ideas with ChatGPT support ("I asked ChatGPT for a sentence about football I like, then I wrote more myself"). On the other hand, some students showed formulaic reliance on model sentences and adjectives, sometimes substituting one generic word for another without deeper elaboration. This echoes findings from Zhou and Yu (2023), who compared ChatGPT-generated writing and learner writing and found that while ChatGPT excelled on surface linguistic metrics (lexical diversity, referential cohesion), it lagged behind learners in deep discourse cohesion and creative nuance. In our study, although some inventive expressions emerged ("Sports help me be strong and not lazy"), others remained somewhat uniform ("I like football. I can run fast. It is fun."). Thus, while ChatGPT may lower the threshold for idea generation and reduce writing anxiety, fostering genuine creativity still appears to require explicit scaffolding and opportunities for personalized conceptual development.

Comparing these findings to other research reveals some instructive patterns. Recent studies with EFL learners have shown similar outcomes: AI-assisted groups achieved significantly lower grammatical and lexical error rates and higher holistic scores in content and organization, though vocabulary variety did not differ significantly across groups (El-Demerdash & Ahmed, 2023; Jamshed et al., 2024; Woo, Yu, & Guo, 2025). The present study echoes this: learners improved in structure and coherence more than in word choice or mechanics. This consistency suggests that AI tools like ChatGPT may accelerate gains in macro-level writing features before micro-level accuracy catches up. Another recent work comparing automated writing feedback found that large language model (LLM) feedback produced high precision but only moderate recall for error

correction in ESL writing, highlighting that even advanced AI solutions are not fully effective at all levels of writing quality (Link, Mehrzad, & Rahimi, 2020; Zhang & Hong, 2025). In sum, the literature suggests that ChatGPT's greatest influence in EFL writing appears in brainstorming, drafting, and idea organization, rather than in independent mastery of grammatical conventions.

The present study contributes to this understanding in two key ways. First, by focusing on primary-level (fourth-grade) EFL learners at A2 proficiency, it demonstrates that even young learners benefit from AI-supported writing in structure and coherence, albeit with developmental limitations in mechanics and lexical sophistication. Second, the multistage design (pre-, mid-, post-writing tasks) and combined rubric evaluation plus observation afford a process-oriented view of how writing quality evolves when ChatGPT is integrated thoughtfully with teacher scaffolding, peer collaboration, and prompt-training. The pattern of results, strong gains in structural dimensions, moderate gains in mechanics/word-choice, and mixed creativity effects, mirrors current findings in tertiary and adult EFL contexts, suggesting a consistent effect across age and proficiency levels.

In practical terms, these findings have several implications. Teachers considering ChatGPT integration should emphasize process writing (drafting, revision, peer review) rather than treat ChatGPT as a text generator. Explicit instruction in prompt design and text adaptation is essential: learners must learn to modify rather than simply accept AI output. Moreover, instructional time should be allocated to micro-level features (grammar, word choice) even as ChatGPT accelerates macro-level gains. Finally, to nurture creativity, teachers should design prompts and follow-up tasks that push beyond the AI's default suggestions, encouraging learners to personalize and expand their paragraphs.

In conclusion, in response to the third research question, the integration of ChatGPT meaningfully improved the quality of students' written output in terms of structural coherence and idea development, while language proficiency and creativity gains were more moderate and mixed. These outcomes align with a growing body of research indicating that generative AI tools are strongest at facilitating higher-order writing processes (organization, idea generation) and less powerful as sole means for achieving lexical accuracy or creative depth. When embedded within well-designed pedagogy,

ChatGPT can serve as an effective scaffold in EFL writing classrooms, particularly for young learners, but it does not replace the need for teacher guidance, explicit instruction, and opportunities for revision, reflection, and personalization.



CONCLUSION

This chapter summarizes the main conclusions of the study based on the data gathered from the engagement and autonomy questionnaire, writing rubric scores, and classroom observations. It also offers practical implications for EFL teaching and learning with ChatGPT, and provides suggestions for future research on AI-supported writing instruction in primary school contexts.

6.1. Conclusions

The present study examined the integration of ChatGPT as a writing assistance tool in a fourth-grade EFL classroom, focusing on its impact on learner engagement, autonomy, and writing performance within a ten-week instructional period. By combining questionnaire data, writing task analysis, and classroom observations, the study offered a comprehensive understanding of how young learners interact with AI-supported writing environments and how such tools shape their learning behaviors and written output.

Regarding the first research question, the findings demonstrated that ChatGPT had a markedly positive effect on students' engagement and motivation in English writing. Questionnaire results revealed significant increases in affective and behavioral engagement, with students reporting greater enjoyment, interest, and willingness to participate in writing tasks. Observation notes supported this trend, showing that learners became increasingly eager to use ChatGPT, initiated writing with less hesitation, and collaborated more actively with peers during writing activities. Although autonomy development emerged more gradually, signs of emerging self-regulatory behaviors were evident: students began to formulate their own writing decisions, monitor their progress, and revise their sentences with decreasing reliance on teacher prompts. Together, these outcomes suggest that ChatGPT provided an accessible and supportive environment that fostered both engagement and early-stage autonomy in young EFL learners.

The second research question explored students' perceptions of ChatGPT's role in their writing process. Post-intervention perception items indicated overwhelmingly positive attitudes: students described ChatGPT as helpful, motivating, and easy to use. They valued the tool for generating ideas, offering example sentences, and supporting revision, which in turn increased their confidence to write. Observations showed that learners frequently sought clarification from ChatGPT, checked spelling, experimented with synonyms, and adapted AI-generated sentences into their own words. Importantly, the data revealed a shift from passive consumption of AI output toward more intentional and controlled use, as learners learned to simplify or modify ChatGPT suggestions to match their proficiency level. Thus, students' perceptions highlight ChatGPT as a non-judgmental and encouraging companion that enhanced their sense of agency throughout the writing process.

The third research question examined the extent to which ChatGPT influenced writing performance, with particular attention to content, organization, coherence, vocabulary, and mechanics. The analytic evaluation of pre- and post-test paragraphs revealed substantial improvements in topic sentences, supporting sentence relevance, and overall paragraph coherence. Students' ability to identify a clear main idea and elaborate on it improved consistently across the writing tasks, reflecting the benefits of repeated exposure to structured writing models and AI-generated examples. Gains in vocabulary richness were evident but moderate, while mechanical accuracy (punctuation, capitalization, spelling) showed only limited improvement, an anticipated outcome given that the instructional focus prioritized paragraph structure rather than grammar. Taken together, the findings indicate that ChatGPT supported macro-level writing development effectively, enabling students to produce more coherent, communicative, and structurally sound paragraphs, even if micro-level accuracy remained a challenge.

Synthesizing the results across all three research questions, the study concludes that ChatGPT can be a valuable pedagogical tool for supporting EFL writing instruction at the primary level. Its capacity to provide immediate feedback, generate ideas, and model correct structures contributed to enhanced learner engagement, increased confidence, and improved paragraph-level writing performance. While ChatGPT alone does not ensure accuracy in grammatical mechanics, its integration into a structured writing program, accompanied by teacher scaffolding and meaningful writing tasks, creates a supportive

environment where young learners feel empowered to write more, revise more, and take greater ownership of their learning.

Overall, this study provides evidence that the thoughtful incorporation of AI tools like ChatGPT can enrich the writing classroom, promote learner agency, and facilitate developmental gains in young EFL learners' writing abilities. The results underscore the potential of AI-assisted environments not as replacements for traditional instruction, but as complementary, motivating, and highly flexible supports that can enhance both the process and the product of writing at early stages of language learning.

6.2. Implications

The findings of this study offer several important pedagogical implications for English language teachers, curriculum designers, and educational researchers seeking to integrate AI-assisted tools into young learner EFL writing contexts. Across the ten-week intervention, ChatGPT proved to be a valuable resource for enhancing learner engagement, supporting early-stage autonomy, and fostering improved paragraph-level writing performance. These outcomes underscore the potential role of AI as a complementary tool within primary-level writing instruction, provided that its use remains guided, intentional, and pedagogically grounded.

First, the results demonstrate that AI-powered tools such as ChatGPT can significantly enhance learner engagement and motivation when embedded in structured writing routines. Students showed increased willingness to participate in writing activities, greater enthusiasm during drafting, and a more sustained focus on task completion. The immediacy of ChatGPT's responses and its non-judgmental tone appeared particularly effective in reducing writing-related anxiety, helping students initiate writing more confidently. These patterns align with the broader literature on learner-centered and technology-supported learning environments, which emphasizes that digital scaffolding can promote self-directed behaviors and increase students' emotional investment in academic tasks (Zimmerman, 1990; Wang et al., 2021).

Second, the study provides evidence that ChatGPT can serve as an effective formative writing assistant, especially for supporting idea generation, content expansion, and paragraph organization. Even though grammatical accuracy showed only limited improvement, students demonstrated meaningful gains in developing clear topic sentences, generating more relevant supporting ideas, and producing more coherent paragraphs overall. This indicates that AI tools can help young learners move beyond isolated sentence-writing toward more structured written discourse. Such findings align with recent research suggesting that AI-supported writing enhances coherence, fluency, and content richness by offering immediate models and feedback (El-Demerdash & Ahmed, 2023; Jamshed et al., 2024; Teng & Huang, 2025). For teachers, this suggests that ChatGPT can be used strategically to scaffold early drafting stages, especially when students struggle to initiate or develop their ideas.

Third, the findings emphasize the need for explicit instruction in how to use AI tools effectively and responsibly. While students embraced ChatGPT enthusiastically, early observations showed tendencies toward copying whole sentences or relying too heavily on the tool for content generation. Over time, guided modeling, teacher feedback, and classroom discussions helped learners transition toward adapting and personalizing AI suggestions rather than reproducing them verbatim. This highlights the essential role of educators in teaching critical digital literacy skills, including how to evaluate, modify, and integrate AI-generated text appropriately. Without such guidance, AI use runs the risk of promoting superficial or dependent engagement rather than meaningful learning (Baidoo-Anu & Owusu Ansah, 2023; Kasneci et al., 2023; Mudgal & Panjani, 2025; Sadiqzade, 2025).

Finally, the study underscores that AI tools are most beneficial when they are part of a broader pedagogical framework that includes teacher scaffolding, peer interaction, and iterative writing practice. Students made greater progress when ChatGPT-supported drafting was followed by collaborative discussions, teacher modeling of paragraph structure, and opportunities for guided revision. This finding parallels prior research emphasizing that AI is most effective when embedded within established instructional approaches such as process writing, dialogic teaching, and scaffolded practice. For curriculum designers, this suggests that integrating AI should not replace traditional

writing instruction but rather enrich it by providing accessible, real-time support that complements teacher feedback and encourages learner agency.

Overall, the pedagogical implications of this study point to the value of thoughtfully integrating AI tools into young learner EFL writing instruction. ChatGPT, when used with clear pedagogical intention and teacher oversight, can promote greater engagement, support idea development, strengthen paragraph structure, and foster early autonomy in writing. These insights offer meaningful guidance for educators and institutions seeking to incorporate AI responsibly and effectively into primary-level language learning environments.

6.3. Recommendations for Future Research

The findings and limitations of the present study suggest several avenues for future research on the integration of AI-assisted tools such as ChatGPT in EFL writing instruction. First, the study was conducted without a traditional control group due to contextual constraints, which limited the ability to make strong causal claims. Future research would benefit from adopting experimental or quasi-experimental designs with randomized assignment to compare AI-supported instruction with traditional pedagogical approaches. Such designs would enhance the internal validity of the findings and allow for a more robust understanding of ChatGPT's specific contribution to writing development.

In addition, the current study was conducted with a relatively small sample of fourth-grade learners from one primary school, which limits the generalizability of the results. Further research involving learners from different grade levels, school types, cultural contexts, and proficiency levels would help determine whether age and linguistic maturity mediate the effectiveness of ChatGPT-supported writing. Examining older or more proficient learners may also reveal different patterns of autonomy development or strategic AI use. Similarly, extending this line of inquiry to secondary, high school, or university EFL contexts could provide comparative insights into how learners at different developmental stages engage with AI tools.

The duration of the intervention in this study was ten weeks, which allowed for short-term observations but did not capture long-term effects. Longitudinal research conducted over a semester or an academic year may offer deeper insights into how sustained exposure to AI support influences learner autonomy, writing fluency, and engagement over time. Such studies could shed light on whether initial motivation is maintained, whether reliance on AI decreases or increases, and how learners' perceptions evolve with extended practice.

Another recommendation involves expanding the range of language skills examined. Because this study focused exclusively on writing, future research could investigate how AI-assisted tools support other language domains such as reading comprehension, speaking fluency, or listening skills. Integrating multiple modalities would help determine whether the benefits of AI-supported writing transfer to broader communicative competence. Additionally, exploring how AI feedback interacts with peer collaboration or project-based learning tasks may reveal new pedagogical opportunities.

The qualitative dimension of the present study relied primarily on classroom observations, which provided valuable insights into real-time behaviors but did not capture learners' internal cognitive and emotional processes. Future studies could incorporate student interviews, focus groups, or reflective journals to obtain richer accounts of how learners perceive, evaluate, and emotionally respond to ChatGPT-assisted writing tasks. Such data would contribute to a more nuanced understanding of learner agency, self-efficacy, and the socio-emotional dimensions of AI-supported learning.

Moreover, while ChatGPT served as the central tool in this investigation, the rapidly expanding landscape of educational AI suggests that comparative research is needed. Studies that evaluate the relative effectiveness of different AI platforms, such as Grammarly, Bing Chat, QuillBot, or emerging multimodal systems, could help educators identify which tools are most beneficial for specific writing skills or learner profiles. Comparative research could also examine the affordances and limitations of AI tools in relation to teacher feedback, peer review, or automated writing evaluation systems.

Finally, the growing relevance of digital literacy and ethical AI use in educational contexts highlights the need for research exploring how young learners perceive issues such as authorship, originality, privacy, and responsible use when interacting with AI. Investigating teacher perspectives would further enrich this area, as teachers play a crucial role in mediating AI integration, balancing support with autonomy, and addressing ethical concerns. Understanding teachers' experiences, challenges, and pedagogical strategies would support more informed and sustainable use of AI tools in EFL classrooms.



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Appendix C. Engagement and Autonomy Questionnaire

Adın ve Soyadın: _____
Sınıf: _____

Sevgili öğrenciler,

Bu anket, İngilizce yazma dersleri hakkındaki düşüncelerinizi öğrenmek için hazırlanmıştır. Lütfen her cümleyi dikkatlice okuyun ve sizin için **en doğru olan yüzü** işaretleyin.

Bu ankette **doğru ya da yanlış cevap yoktur**. Sadece kendi düşüncenizi seçmeniz yeterlidir.

Cevap seçenekleri aşağıdaki yüz ifadelerinden oluşmaktadır:

-  = Kesinlikle katılıyorum
-  = Katılıyorum
-  = Kararsızım / Emin değilim
-  = Katılmıyorum
-  = Kesinlikle katılmıyorum

1. Yazma hakkında ne hissediyorsun?

No	Cümle					
1	İngilizce yazı yazmayı severim.					
2	Yazarken daha iyi olmak isterim.					
3	Yazma görevlerine çalışmak için istekliyim.					
4	Yazı yazarken başarılı olacağıma inanırım.					

2. Derste yazarken nasıl davranırsın?

No	Cümle					
5	Yazma etkinliklerine katılırım.					
6	Yazarken dikkatimi veririm.					
7	Yazma görevlerinde düşüncelerimi anlatırım.					

3. Kendi başıma yazı yazabilir miyim?

No	Cümle					
8	Ne yazacağıma karar verebilirim.					
9	Yazımı düzeltmeye çalışırım.					
10	Yazarken karşılaştığım sorunları çözmeye çalışırım.					
11	Yazma hedeflerimi kendim belirleyebilirim.					

4. ChatGPT hakkında (Sadece Post-Test İçin)

No	Cümle	😞	😟	😌	😊	😄
12	ChatGPT bana yazı yazarken yardımcı oldu.					
13	ChatGPT bana yeni fikirler bulmamda yardımcı oldu.					
14	ChatGPT sayesinde yazarken daha özgür hissettim.					
15	ChatGPT yazımı daha güzel yapmamı sağladı.					

Appendix D. Observation Form

CLASSROOM OBSERVATION CHECKLIST

Section A. Behavioral Engagement

Rate each item: **Observed – Partially Observed – Not Observed**

No Indicator

O P N

- A1 The student remains on task throughout the writing activity with minimal off-task behavior.
 - A2 The student begins the task promptly without teacher prompting.
 - A3 When distracted, the student independently returns to the task.
 - A4 The student actively participates in whole-class or group writing discussions.
 - A5 The student engages proactively with ChatGPT (e.g., asking questions, requesting clarification).
 - A6 The student collaborates effectively with peers when required (sharing ideas, helping others).
-

Section B. Emotional Engagement

No Indicator

O P N

- B1 The student shows positive emotions during the writing task (e.g., enjoyment, curiosity).
 - B2 The student voluntarily shares completed or in-progress writing with peers or the teacher.
 - B3 The student expresses enthusiasm or interest when interacting with ChatGPT.
 - B4 When facing difficulty, the student persists rather than giving up.
 - B5 The student responds positively to feedback (teacher or ChatGPT) and uses it constructively.
-

Section C. Cognitive Engagement

No Indicator

OPN

- C1 The student engages in pre-writing planning (ideas, vocabulary, outline).
 - C2 The student demonstrates awareness of paragraph structure (topic sentence, supporting ideas, conclusion).
 - C3 The student revises content thoughtfully (adding details, improving clarity).
 - C4 The student evaluates ChatGPT's suggestions critically (accepts, rejects, or modifies outputs).
 - C5 The student independently searches for alternative wording or examples when needed.
 - C6 The student uses reasoning, explanation, or justification during writing or revision.
-

Section D. Learner Autonomy Indicators

No Indicator

OPN

- D1 The student attempts to correct linguistic or organizational errors independently.
 - D2 The student chooses when/how to consult ChatGPT purposefully (not automatically).
 - D3 The student identifies gaps in vocabulary, ideas, or structure on their own.
 - D4 The student re-reads their draft without being prompted.
 - D5 The student compares multiple options before deciding on final wording or structure.
 - D6 The student demonstrates increasing independence across sessions (less reliance on teacher support).
-

Section E. Strategic Use of ChatGPT

No Indicator

OPN

- E1 The student formulates clear, meaningful prompts for ChatGPT.
 - E2 The student paraphrases or adapts ChatGPT responses rather than copying directly.
 - E3 The student uses ChatGPT primarily for idea generation, vocabulary, or clarity—not full-text production.
 - E4 The student recognizes inaccuracies or inappropriate suggestions in ChatGPT output.
 - E5 The student asks ChatGPT metacognitive questions (e.g., “Is my topic sentence clear?”).
 - E6 ChatGPT is used as a *supporting tool* rather than replacing the student’s own writing.
-

Section F. Writing Process & Paragraph Quality Indicators

No Indicator

OPN

- F1 The student writes a clear topic sentence that reflects the central idea.
 - F2 Supporting sentences include relevant details, reasons, or examples.
 - F3 The student uses basic cohesive devices (e.g., because, also, then) appropriately.
 - F4 The concluding sentence effectively restates or reinforces the main idea.
 - F5 The paragraph demonstrates logical flow and basic coherence.
 - F6 The revised draft shows improvement over the first draft (idea development, organization).
-

Section G. Open-Ended Observation Notes