

The Use of Artificial Intelligence in Developing English Writing Skills: A Study of Bangladeshi Tertiary Level EFL Students' Perceptions



Afrida Lubaba Khan

201013006

Department of English and Humanities

Spring 2024

**The Use of Artificial Intelligence in Developing English Writing Skills: A Study of
Bangladeshi Tertiary Level EFL Students' Perceptions**

A Thesis Submitted to
The Department of English and Humanities
University of Liberal Arts, Bangladesh

In Partial Fulfillment
of the Requirements for the Degree of
BA in English

Afrida Lubaba Khan

201013006

Thesis Supervisor: Dr. Md. Mahadhi Hasan
Assistant Professor, Department of English & Humanities (DEH)
University of Liberal Arts Bangladesh (ULAB)

Date of Submission: Spring 2024

CERTIFICATE OF APPROVAL

I hereby declare that this thesis is the student's own work and effort. All sources of information incorporated here have been duly acknowledged. This thesis has been submitted with my approval.



Dr. Md. Mahadhi Hasan

Assistant Professor

Department of English & Humanities (DEH)

DECLARATION

This thesis is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions.



Afrida Lubaba Khan

201013006

Department of English and Humanities (DEH)

Dedication

I would like to dedicate my thesis to my parents and my brother who have always been supportive towards my preferences and their tireless efforts made the completion of this research successful. Their constant encouragement and unconditional love gave me the confidence to continue my project. This thesis would have been incomplete without their inspiration and patience.

Acknowledgements

I would first like to express my sincere gratitude and heartfelt appreciation to the Almighty above for bestowing me with courage, strength, and endless patience to carry out the research project. I am also eternally grateful to my supervisor, Dr. Md. Mahadhi Hasan, Assistant Professor at the Department of English & Humanities (DEH), for his invaluable guidance throughout this academic pursuit. He gave me the courage to complete my dissertation by always inspiring me with his positivity, giving me the freedom to explore my own ideas, and at the same time motivating me to complete my thesis.

In addition, I would also like to express my heartfelt gratitude to the Department of English and Humanities, & the students of other institutions as well for displaying utmost cooperation during the phase of my Data Collection and In-depth Interview for the Research.

Last, but not least, I feel myself being one of the luckiest as a matter of fact, this university has flourished my life with wonderful supporters and friends (Shahriyer, Habib & Nandita) who have always created a positive and lighthearted environment for me. They not only understood the overwhelming pressure during the 4 months of the thesis, but also, supported and motivated me wholeheartedly.

Table of Contents

Abstract	x
Chapter 1: Introduction	1-11
1.1: Introduction	
1.2: Background of the Study	
1.3: Problem Statement	
1.4: Research Objectives	
1.5: Research Questions	
1.6: Theoretical Framework	
1.7: Scope of the Study	
1.8: Significance	
1.9: Definition of Terms	
1.10: Chapter Overview	
1.11: Chapter Summary	
Chapter 2: Literature Review	12-20
2.1: Introduction	
2.2: Writing Challenges of the EFL Students at the Tertiary Level	
2.3: Perception of Tertiary-Level Students Regarding AI	
2.4: The Contribution of AI in Writing Development	
2.5: Students' Perception of the Effect and Potential of AI	
2.6: AI and Critical Thinking Skills for EFL Learners	
2.7: Chapter Summery	
Chapter 3: Methodology.....	21-26
3.1 Introduction	

3.2 Research Design	
3.3 Population	
3.4 Sampling Technique	
3.5 Sample Size	
3.6 Instrument (Survey and Interview)	
3.6.1 Developing Survey Questionnaire and In-depth Interview Protocol	
3.7 Data Collection Process	
3.8 Data Analysis	
3.9 Research Ethics	
3.10 Chapter Summary	
Chapter 4: Findings	27-42
4.1 Introduction	
4.2 Findings from the Survey	
4.2.1 Demographic Profile of the Students	
4.2.2 Perceptions of EFL Students Regarding AI for Writing Development	
4.2.3 Challenges in Utilizing AI for English Writing	
4.3 Findings from the In-depth Interview	
4.3.1 Demographic Profile of the Students	
4.3.2 Perception of Using AI Writing Tools in Enhancing English Writing Skills	
4.3.2.1 Instrumental Role of AI	
4.3.2.2 Understanding and Application of English Writing Concepts	
4.3.2.3 Altering Traditional Methods of Learning English Writing Skills	
4.3.3 Challenges of Utilizing AI Tools	
4.3.3.1 Understanding and Implementing AI-Generated Recommendations	
4.3.3.2 Balancing Coherence with Personal Style	

4.3.3.3 Misconceptions about AI Writing Tools	
4.4 Chapter Summary	
Chapter 5: Discussion	43-47
5.1 Introduction	
5.2 Perception of the Tertiary-level EFL Students of Utilizing AI Writing Tools	
5.3 Implementing AI in Developing Writing Skills	
5.4 Existing Misconceptions Related to AI	
5.5 Altering Traditional Learning Methods	
5.6 Chapter Summary	
Chapter 6: Conclusion	48-50
6.1 Limitation of the Study	
6.2 Recommendations for Future Study	
6.3 Conclusion	
Reference List.....	51-55
Appendices	56-61

Abstract

Artificial intelligence technologies are advancing rapidly and this advancement led to the infiltration of AI tools in various educational sectors worldwide, influencing teaching methodologies and learning experiences. Bangladeshi tertiary-level EFL students, the demographic being Bangladesh due to the educational and technological landscape encounter unique challenges and a multitude of perceptions. This study aims to address the gap in factual investigations concerning AI tools' effectiveness and acceptance among Bangladeshi tertiary-level EFL students. Previous studies focused on language learning at a general level and put limited attention on AI's usability in improving writing skills and even less on the Bangladeshi context. Therefore, this study addresses this gap by exploring Bangladeshi tertiary-level EFL students' perception of the usage and the challenges concerning the usability, accessibility and integration of AI tools in developing their writing skills. The study employs a mixed method, quantitative and qualitative methods which comprehensively analyses students' attitudes and experiences as these approaches provide numerical data and contextual insights. The findings of the survey and the in-depth interviews reveal that AI tools have various effects on students in regard to their learning and enhancing English writing skills. Although the data strongly support AI's assistance as an invaluable resource in the educational context, several barriers were also identified including technical issues, the potential for plagiarism, prevalent misconceptions, encompassing critical thinking skills. The findings contribute to the ongoing discourse of AI integration in language learning and provide suggestions on the usability of AI tools as complimentary aids, rather than as replacements for traditional learning methods.

Keywords: Artificial Intelligence, EFL Learners, Tertiary-Level, English Writing Skills, Student Perceptions, Challenges, Language Learning, AI Integration, Bangladesh

Chapter One: Introduction

1.1 Introduction

The global use of English escalates the demand for proficient English communication skills. People use English as a means of cross-cultural communication. Educators explore different methods in order to empower students in acquiring and mastering English. To master one language, writing skill is always considered an essential skill for the communication mechanism. Writing skill plays a vital role in a student's academic life in order to bring out satisfactory results at the tertiary level of education. Acquiring a second language is a challenge for people whose first language is completely different; Bangladeshis are no exception, particularly when it comes to expressing themselves in English, as their mother tongue is Bangla. However, Bangladeshi tertiary-level students often find themselves in academic environments, where lectures are delivered in English and they are expected to submit their written work in English as well (Rahman, et al., 2020). Therefore, this language barrier can hinder their writing ability effectively and clearly, resulting in less satisfactory academic outcomes (Mridha & Muniruzzaman, 2020).

The integration of Artificial Intelligence into every sphere of life has become a transformative force in an era that is characterized by technological advancements. Students use AI tools to assist themselves academically and personally. In Bangladesh, after the COVID-19 pandemic, the rise of using AI tools has been noticed by students from different levels in order to write their academic papers as the classes were conducted online, having to submit their papers on online platforms, which eventually showed “online learning” having positive effects on students in countries like Bangladesh (Rahman, et al., 2021, p. 36). The rise of AI has already emerged as a significant tool for the ones who find comfort in using it, which is changing traditional methods, and giving rise to more personalized learning

experiences. According to Laanpere et al., “critique towards a technology-driven approach to e-learning has been widespread for more than a decade, there are only a few attempts to formalize the pedagogy-driven design of new online learning tools” (2014). There are a multitude of AI tools that are designed for developing English writing skills as people listen, and speak, they tend to apply it when they write. Artificial intelligent writing aids like Google Translator, Grammarly, QuillBot, and ChatGPT are the most famous among recent Bangladeshi youth. This research seeks to explore tertiary-level students’ attitudes, concerns, and expectations regarding the use of AI in developing English writing skills. Moreover, this research will examine different dimensions of technology and writing language acquisition while providing valuable insights that can influence pedagogical practices, linguistic proficiency, curriculum development, and policy formulation in Bangladeshi tertiary-level EFL education.

1.2 Background of the Study

English as a Foreign Language in Bangladesh has gone through significant transformations in recent years while keeping pace with the technology-driven world. To align with global standards, in Bangladesh, tertiary-level EFL classrooms encounter diverse challenges, however, AI technologies present an opportunity to address specific challenges associated with writing proficiency, encompassing natural language processing, machine learning, and automated feedback systems. In Bangladesh, technological advancement is increasing day by day and also the influence of these advancements in every sector, therefore, the perception of AI in the educational sphere is important, especially among students. The students use AI tools for developing or mending their thoughts into words and therefore the alignment of the tools with students’ expectations and cultural context is essential as well. However, the relevance of AI in regard to the acceptance and implication of language

learning is a comparatively new frontier. The EFL students of Bangladesh encounter many challenges due to the linguistic barrier between Bangla, their native language, and English, a foreign language. They struggle with “grammar, vocabulary, coherence, and cohesion” in their writing (Rahman & Hasan, 2019, p. 152). In tertiary level EFL classrooms, traditional learning methods are effective but students face challenges in larger classrooms where individualized attention is limited. The AI writing assistants offer a unique opportunity to bridge this gap as “AI can provide feedback on grammar, spelling, and syntax by analyzing essays, reports, and other written assignments” (Owan, et al., 2023, p. 3). AI in language learning includes technologies such as Natural Learning Processes (NLP) which are used to teach computers to understand human spoken or written language and to also generate contextual and coherent language such as chatbots and AI writing assistants (Nadkarni, et al., 2011, p. 544). AI language learning also encompasses adaptive learning systems that change based on the user's needs, hence ensuring personalized learning. AI tools also learn from examples, by spotting patterns, making decisions, and updating over time (Marr, 2019, p. 326). The effectiveness of AI tools in developing tertiary EFL students’ writing skills depends on their technical capabilities and also their ways of perceiving and utilizing the tools.

This research specifically targets tertiary-level Bangladesh EFL students’ whereas the previous studies have researched broader contexts or other specific AI tools. Moreover, this research only focuses on the impact of AI tools on specifically English writing skills. The researcher will collect perceptions and opinions of the targeted set of students which will provide more intimate data of the students integrating AI. Owing to the same, the researcher will also focus on the suggestions for traditional principles and methodologies for educators and institutions by exploring the pedagogical implications of AI integration.

1.3 Problem Statement

Currently, AI in students' writing development, has successfully gained the attention of researchers and scholars in the field of research. AI is revolutionizing various sectors and presents a unique combination of technological advancements in educational sectors. Hang (2023) highlighted the positive outlook of the teachers at Van Lang University, Vietnam, on the utilization of ChatGPT in writing classes and the necessity for professional training and awareness of using AI tools. According to Shahriar and Laboni, Grammarly has a positive effect on enhancing English writing skills, particularly because it enhances learners' grammar accuracy and overall writing proficiency (2023). Following this, Seraj and Oteir exemplified that "AI-based instruction promotes students' trust, self-confidence, open-mindedness, and maturity in English, and it can help them improve their critical thinking skills" (2022). Kurniati and Fithriani showed in their study that the utilization of QuillBot which is an AI-powered tool enhances the quality of academic writing of the post-graduate students majoring in English (2022). Shahriar found that Google Translate is an effective tool for learning new words, complex sentence structures, and spelling of words (2023). Huang et al., (2023) illustrated that technology-enhanced language learning and AI-enhanced approaches address challenges that the learner faces. In Bangladesh the students of tertiary-level are most familiar with AI writing tools as the reliance of these tools are not only limited to their academic use, they integrate the AI tools for personal usage as well. Furthermore, the educational institutions specifically universities in Bangladesh due to Covid-19 underwent a huge shift to online-based learning, however, due to limited knowledge on technologies the students from different levels faced challenges. According to Livberber & Ayvaz (2023), "Artificial

Intelligence (AI) and machine learning technologies have become increasingly prevalent in the academic world.”

However, there is limited research on using technology-powered AI as a digital tool to improve the writing skills of Bangladeshi tertiary-level EFL students. Moreover, previous studies such as Alharbi (2023), Roe et al. (2023), Imran & Almusharraf (2023), Nazari et al. (2021), Shahriar, A (2023), Shahriar & Laboni (2023), Huang et al. (2023), Kurniati & Fithriani (2022), AbdAlgane & Othman (2023) have extensively examined the effectiveness of AI tools in language education, focusing primarily on their technical capabilities and the overall improvement in language proficiency. Furthermore, these studies predominantly center around the technical and pedagogical aspects of AI and often overlook the subjective experiences and perceptions of the learners themselves, which is the main target of this research. Therefore, this research aims to minimize the notable gap in understanding how AI is perceived by tertiary-level learners, particularly in the context of writing in non-English-speaking countries like Bangladesh. Hence, an investigation should be conducted for evaluating the effects of AI tools on the writing development of EFL tertiary-level students offering new insights into AI's acceptance, and challenges. The findings of this research will be beneficial to a broad range of contributors primarily educators, and curriculum developers as they can gain insights into the students' perception of how they are integrating the AI tools for their writing tasks and the effective integration of these tools into language learning programs. Following this, policymakers can utilize these perceptions to guide decisions on educational technology investments and implementations of AI tools. Following this, the provided information can be used by the technology developers to refine AI tools to better meet the needs of EFL learners. Finally, the students themselves will benefit from the improved AI tools and methodologies that are more closely aligned with their writing preferences and challenges.

1.4 Research Objectives

The objectives of this research are–

I. To identify the perception of Bangladeshi tertiary-level EFL students about the usage of AI on developing writing skills.

II. To identify the challenges related to usability, accessibility, and integration of AI into tertiary-level students' writing development.

1.5 Research Questions

I. What are the perceptions of Bangladeshi tertiary-level EFL students about the use of AI in developing their writing skills?

II. What challenges do tertiary-level EFL students face when utilizing artificial intelligence tools for English writing tasks?

1.6 Theoretical Framework

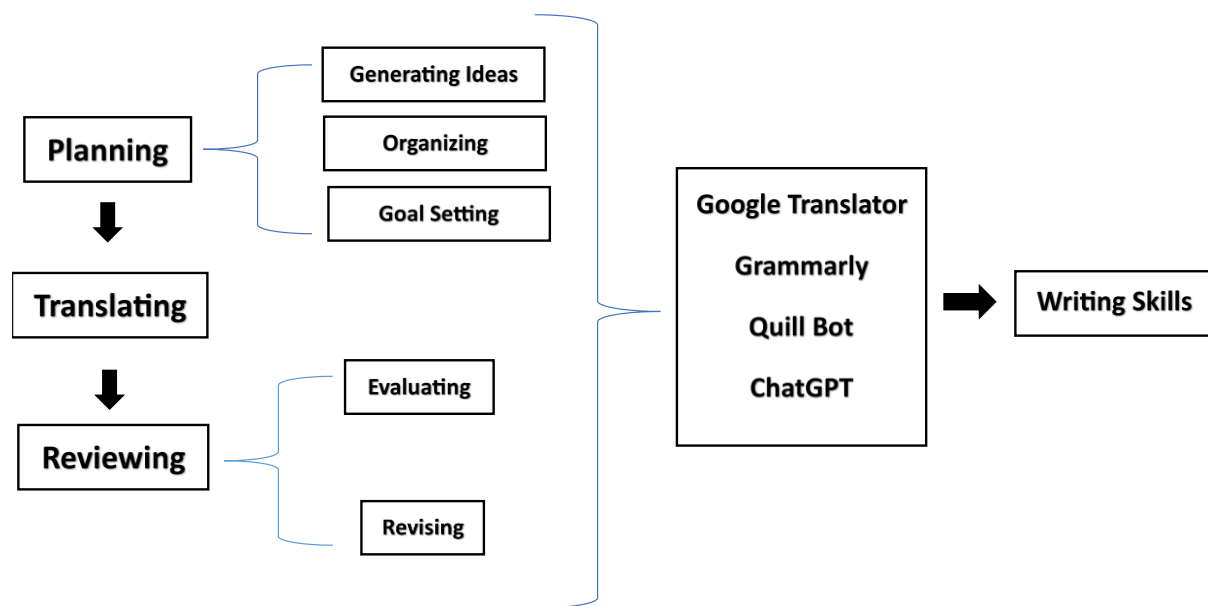
The cognitive theory of learning emphasizes the process involved in composing for more detailed study of how thinking process works in writing. It highlights the importance of “planning (pre-writing)” and “revising (re-writing)” as clear cut stages of the writing process (Flower & Hayes, 1981, p. 367). Moreover, the theory also focuses on the role of translating and reviewing under which evaluation and revision fall. According to the hypothesis, writing involves content interaction according to the writer's objectives, the audiences need and the text itself (1981, p. 378). The writing process does not specifically follow any order like plan, translate and review, “writers may spend more time in planning at the beginning of a composing session” (1981, p. 375). Usually while planning, a writer generates ideas, organize thoughts and set a goal, then translate these ideas into text and lastly, review the final text.

Throughout the whole process a writer juggle with various constraints and the most challenging is the desire to effectively communicate their thoughts into the writing process. Writing across all levels is a skill that involves cognitive processes that are complex and retrieve relevant information from long term memory, include problem solving and critical thinking. Non-native speakers may struggle with planning and translating ideas into coherent text, however, advanced writers mostly focus on refining and organizing their ideas. According to Nawal, 2018, cited in Gayed et al., AI tools reduce the cognitive load on writers (2022). Hence, AI tools such as grammar checkers, predictive text, content analysis and generated content platforms can significantly support the writing skills. By providing suggestions for grammar, form, AI tools can facilitate brainstorming by offering prompts, suggesting developments for storylines, generating outlines based on initial ideas that are provided by the user (Alharbi, 2022). Therefore, this idea reflects that AI tools can assist writers in generating a flow of ideas while overcoming primary blocks which aligns closely with the cognitive theory of learning as it focuses the generative nature of writing. In addition, by suggesting sentence completions, improved words, grammar correction, beyond brainstorming, AI tools can assist the actual writing process (Roe, et al., 2023). Furthermore, AI writing tools have the ability to perform complex analyses of texts, suggest improvements for clarity, style and tone (Alharbi, 2022). AI tools can identify areas that need to be altered while keeping the user's input intact. Thus, directly supporting the cognitive process of "reviewing" and "revising" that cognitive theory of learning describes (Flower & Hayes, 1981, p. 374).

Figure 1

Theoretical Framework

Cognitive Theory of Learning



1.7 Scope of the Study

The research aims to emphasize personal viewpoints, the specific examination of AI's impact on writing skills, and the potential contributions to pedagogical practices in the context of English written language education of tertiary-level students in Bangladesh. The geographical scope is confined to Bangladesh and the target audience is students from different private universities. Given the constraint of one semester, the study will be done in a way that fits within three months. The research activities, including survey design, administration, and data analysis, will be strategically planned to be completed within this time frame. Moreover, the study explores the varied landscape of AI integration while investigating the prevalence and the perceived impact on the quality and efficiency of written

skills by adopting the quantitative approach. It will also refer to the tools commonly used by tertiary EFL students and the challenges they face in using AI tools in academic practices.

1.8 Significance

This study will have significant aspects in the field of both academia and the broader landscape of language education in Bangladesh. In addition, this study will contribute to the emerging discourse on the connection between technology and language learning by examining the perspective of Bangladeshi tertiary-level EFL students on the utilization of AI in developing writing skills. The findings will provide suggestions to enhance students' engagement and proficiency in English writing with AI as complementary tools, without altering the traditional methods. In addition, it will inform educational policies, providing evidence-based recommendations for the integration of AI tools in language instruction. This research has the potential to influence pedagogical practices carrying practical implications to the ethical dimensions of writing and research practices. The significance of the research is that it aligns with the broader aspects of promoting academic integrity and encouraging students to utilize AI tools as aids for acquiring vocabulary and enhancing their writing proficiency.

1.9 Definition of Terms

1.9.1 Tertiary Level: Tertiary level students refer to the students enrolled in higher education, in the case of Bangladesh, the University students, who are doing their undergraduate.

1.9.2 English Language Skills: Language skills refer to the Receptive skills (listening and reading) and Productive skills (speaking and writing) in English.

1.9.3 Artificial Intelligence: According to, Webster's New World Dictionary "intelligence" is defined as "the ability to learn or understand from experience; to acquire and retain knowledge, to respond quickly and successfully to a new situation, solve problems, directing conduct, etc., effectively." (1988) Hence, Artificial Intelligence refers to the computer system capable of performing tasks such as learning from data, problem-solving, creating contents, writing papers, understanding natural language, speech, image recognition and so on.

1.10 Chapter Overview

Chapter One provides an overview of the research outlining the purpose of the study and key research questions. It also defines the tentative challenges and other problem statements of the research. This chapter states the specific goals and objectives of the research and formulates appropriate research questions while defining the limitations of the research. In addition, it also describes the specific context, timeframe, and broader implications and relevance of the research. It also examines the findings that can be an aid to the existing EFL education. Chapter two includes a literature review of the existing research on AI, and writing development of EFL tertiary-level students including Bangladesh and other countries as well. Chapter three includes the methodology, while Chapter four discusses the findings from the survey and the in-depth interview. Chapter five and six relatively contain discussions and the limitations, scope for further research and conclusion.

1.11 Chapter Summary

The first chapter of this research served as a comprehensive introduction and outlined a detailed framework in the aspect of incorporating AI for the writing development of Bangladeshi tertiary-level EFL students. Among the aspects of language proficiency, writing skills hold a central position that influences language competence. This research seeks to address the writing skills of tertiary-level EFL students, aiming to identify key challenges,

expectations, and potential strategies for optimizing the integration of AI in their educational context. Also, it addressed the existing gap between traditional pedagogical approaches and the increasing invention of AI for language development. The study has the potential to raise awareness among students about responsible and ethical writing practices by exploring the perceptions of tertiary-level EFL students in Bangladesh regarding the use of artificial intelligence (AI) in developing writing skills. In essence, the study will contribute to the cultivation of a culture that values technological tools as aids in the learning process and emphasizes the ethical dimensions of their usage.

Chapter Two: Literature Review

2.1 Introduction

The integration of Artificial Intelligence (AI) in educational settings has gathered significant interest, particularly in the context of English as a Foreign Language (EFL) learning at different levels in several countries along with Bangladesh. By examining the existing body of research, this review seeks to shed light on the effectiveness, challenges, and potential of AI in transforming English writing education for Bangladeshi students.

2.2 Writing Challenges of the EFL Students at the Tertiary Level

Academic writing skill is an essential part of study for any student at any level; primary, secondary, and tertiary. English, being the medium of instruction at the tertiary level, necessitates proficiency in writing for academic success. The research by (Mustafa, et al., 2022) utilized a survey to identify the specific writing difficulties encountered by international students whose second language is English and to ascertain effective teaching strategies from their perspective. At the tertiary level, the students in need to master a second language, grapple with a limited vocabulary, inadequate grasp of grammatical structures, difficulties in understanding and summarizing reading texts, and challenges in paraphrasing. These issues underscore the complexity of academic writing, which involves not only linguistic skills but also “cognitive activities” such as “organizing ideas, drafting, revising, and editing” (Khattar, 2019 as cited in Mustafa, et al., 2022, p. 42). Mustafa (2022) stated that writing in English and mastering academic writing is one of the complex processes for international learners (Shukri, 2014 & Mallia, 2015, p. 43).

Similarly, in Bangladesh, English is a compulsory subject at different levels of education; however, even at the tertiary level students’ writing skills could be more

satisfactory. So, the importance of addressing the difficulties faced by students couldn't be ignored in order to overcome and help future generations. According to Akhter, 2022 "Writing English smartly like English-speaking people is underscored in the tertiary level, besides learning some grammatical rules" (p. 30). Moreover, she addressed the limited time for English classes in secondary and higher level, which eventually hinders Bangladeshi students whose first language is Bangla from comprehending the necessary number of grammatical rules, vocabulary and other general skills that the learners need to acquire a second language. Akhter (2011) cited in Kayum and Khan (2015) that there are some basic skills that learners need to develop in their writing such as organization of "vocabulary," "correct spelling and structure," "punctuation," "paraphrasing," "presentation and style" of language and "coherence" (p. 32). However, in the private universities of Bangladesh, the semesters are confined to 4 months and teachers get only a week or two to provide extensive feedback. Akhter stated that student's writing skills can be developed by "identifying and correcting errors" (2022, p. 33). Lastly, she mentioned that at the tertiary level, the focus on developing writing abilities lessens, as students become preoccupied with their major courses. Therefore "writing qualifications" become less important in such major courses which hinders the scope for developing writing skills (Akhter, 2022, p. 34).

2.3 Perception of Tertiary-Level Students Regarding AI

The study by Grájeda et al. explored the perceptions of tertiary-level students regarding the adoption and impact of Artificial Intelligence (AI) tools in higher education, with a particular focus on a private university in Latin America (2023). According to Grájeda et al. (2023), students have a generally positive perception of AI tools across all dimensions, they 'somewhat agree' that the tools have impacted their learning and teaching (p.13). They mentioned that AI tools have the potential to enhance academic experiences by "enhanc[ing]

comprehension, productivity and creativity” (Grájeda et al., 2023, p. 2). This study moreover, explored the viewpoint and understanding of high and low AI-generated content which beneficially suggested a need for improvements in AI literacy among learners and educators. Furthermore, the survey data from the study revealed that AI tools in terms of learning experience are seen as beneficial; hence, reflecting the acceptance and utility in academic settings.

2.4 The Contribution of AI in Writing Development

The paper by Shahriar and Laboni (2023) has relevance in the context of EFL education and the authors found with real-time data that Grammarly as an AI writing assistant contributes to the improvement of writing skills. Moreover, they found that the AI tool has helped the tertiary-level students who are studying at the Daffodil International University by correcting their “grammatical structure,” “spelling mistakes,” “punctuation mistakes” and “capitalization errors” (2023, p. 68). The participants of this study agreed that Grammarly which is an AI tool, has positive effects on developing the students’ writing skills. Furthermore, Shahriar and Laboni’s (2023) study highlighted the positive implications of using AI for language learning, as in boosting EFL students’ “confidence,” and increasing their “motivation” to write “complex” and “compound” English sentences, (p. 72). Again, this study explored the contribution of AI in language learning and examined the localized impact of such technologies in enhancing English writing skills among Bangladeshi tertiary-level students. Overall, this paper is related to the idea of the perception of tertiary-level EFL students concerning the usage of AI in developing their writing skills.

Additionally, Barrot (2023) presented in a study that the AI, ChatGPT’s role in developing writing skills for EFL learners is crucial as it engages the learners in natural, interactive experiences. Moreover, the paper also explored the positive effects of ChatGPT on

generating necessary language input and output which aids language learners in developing language skills. Furthermore, Barrot reflected that AI tools specifically assist in developing “writing skills” and are “accessible on devices” like “computers and mobiles” (2023). In recent times, one noteworthy AI-powered tool is “ChatGPT, an AI-assisted Chatbot created by OpenAI” (2023). He also mentioned positive aspects such as the “natural and human-like interactive experience,” contextual relevance, and differentiated feedback according to the user’s input question (2023). Also, he explored the concerns and challenges of ChatGPT and addressed the issues revolving around the ban on the implementation of AI in universities. The paper advocated a balanced approach in L2 writing instruction suggesting incorporating AI tools judiciously as complementary resources. The findings of the study showed the effectiveness of utilizing ChatGPT to “enhance learners’ writing abilities” in diverse language learning courses (2023).

Likewise, the paper by Kurniati and Fithriani (2022) explored the skill of academic writing in various disciplines and levels of education and examines the integration of AI e.g., QuillBot in solving common issues in writing faced by post-graduate EFL students. Moreover, Kurniati and Fithriani also examined that Indonesian students are well aware of AI writing tools; however, among various digital tools, the majority of postgraduate students constantly use QuillBot to assist them in writing their academic papers. Furthermore, the paper talked about the challenges the EFL students face to master academic writing skills such as coherence, organization of words/ phrases, and cohesion which is acknowledged by the invention of AI writing tools like Quillbot. The findings of the study highlighted the significant role of QuillBot in enhancing students’ writing skills while offering “user-friendly features” and “aiding students’ language development” (2022, p. 437). The authors not only shed light on students’ perceptions of QuillBot but also suggest broader implications for EFL

learning and instruction in Indonesia, advocating for a tech-inclusive approach to addressing the complexities of academic writing, which is relevant to the researcher's aim of the study.

In addition, the research explored tertiary-level students' perceptions of machine translators, specifically Google Translate, in facilitating English language learning (Shahriar, 2023). The findings revealed that students utilize Google Translate for understanding academic and non-academic texts, translating between English and Bengali. It underscored the tool's effectiveness in learning new vocabulary, sentence structures, spelling, and pronunciation (2023, p. 77). In Bangladesh, the need for English language competence for tertiary-level students is a must as it is used extensively in the syllabus. According to Dagilienė, AI can fulfil many activities, however, translating tools are frequently used for "improving English language proficiency and knowledge" and it has relevance in tertiary-level classrooms (2012, p. 76). The findings of the study collectively asserted Google Translator's role in improving English "language skills," including "writing, pronunciation, and vocabulary acquisition" (2023, p. 83). However, the study did not provide empirical evidence on how the use of machine translators directly influences language acquisition and proficiency.

The research by Huang, et. al. (2023) provided a comprehensive bibliometric analysis of 516 studies from 2000 to 2019. Huang, et al, aims to map the integration of Artificial Intelligence (AI) in language learning and highlight the paper's key findings, discussions, and contributions to the field of language education and AI. The findings found out the increasing use of AI in language education. Moreover, the authors pointed out the varied roles of AI, such as automated evaluation, personalized learning and user flexibility while suggesting AI's advanced language learning system which can influence and improve student's learning outcomes. Also, the study underscored AI's ability to motivate its users and the potential

growth in language educational sectors. Moreover, it highlighted AI's capability to address long-term challenges in "technology-enhanced language learning (TELL)" (2023).

2. 5 Students' Perception of the Effect and Potential of AI

Alharbi (2023), conducted a systematic review to explore the effect of AI writing tools in educational settings and underscored the fast-progressing image of these tools. This study also showed AI tools' effects in enhancing students' writing abilities. He analyzed 104 peer-reviewed papers from the Scopus database and categorized these AI tools into four groups such as automated writing evaluation (AWE), automated writing corrective feedback (AWCF), machine translators, automated text generators (GPT-3) (pp. 7-9). According to Alharbi (2023), "incorporating these tools into the language classroom has been controversial" (p. 2). Moreover, the research showed that AI digital writing tools go beyond "vocabulary" and "grammar," instead they offer "human-like" help and for this reason, language educators and researchers encounter problems in recognizing authentic writing submitted by students (2023, p. 2). Also, Grammarly and ProWritingAid offer automated written corrective feedback which is used by educational, professional, and personal domains. Similarly, the advancement of AI has the potential to provide instant online translations like Google Translate, hence making the tools more accessible and effective for EFL students than ever (2023, p. 4). The research further explored educators' and researchers' perceptions of these tools, emphasizing the need for integrating AI writing assistants thoughtfully into the curriculum to maximize their potential benefits.

Also, research by Nazari et. al. (2021), showed that the integration of Artificial Intelligence (AI) in educational settings can help enhance English academic writing skills among non-native postgraduate students. The study explored the effect of an AI-powered writing tool on English second postgraduate students' engagement, self-efficacy, and

emotional states. The findings showed that among 120 students, compared to the non-equipped AI (NEAI) group, the students who use AI tend to improve multiple dimensions of engagement e.g. behavioral, emotional, and cognitive; as well as in self-efficacy for writing, positive emotions, and a reduction in negative emotions (2021, p. 6). This study highlighted the role of immediate feedback and review (revision) in enhancing students' engagement and writing skills. Moreover, the study underscored the fact that "self-evaluation and review" are aligned with "writing proficiency and higher writing scores" (p. 7). Furthermore, writing assistance like Grammarly has shown the potential to improve English as a Foreign Language with competencies and also highlighted AI's effect on enhancing engagement and writing proficiency. Additionally, Nazari et al. pointed out the pedagogical challenges when AI tools are integrated into educational aspects which included the "lack of support for teachers," importance of "competencies," limited AI literacy and technological support (2021, pp. 7,8).

According to Roe et al. (2023), the fast-developing digital writing tools have varied usage for academic purposes within educational sectors, primarily for language learning. The authors explored multiple AI writing aids that go beyond traditional tools such as spell correctors and grammar checkers. Moreover, it is found from the study that, machine translators, digital writing tools and automated paraphrasers have "pedagogical uses" in the language learning classroom (2023, p. 27). Furthermore, the rapid technological advancement and the enhanced usage of these AI tools might outdo the implementation of academic integrity policies in educational institutions. Hence, the misalignment regarding the ethical use of AI tools potentially leads to uncertainty, confusion and a general lack of awareness among the stakeholders including educators, students, and administrative bodies. The study showed that MTs and DWAs are valuable for "ESL learners and can assist all students to write in line with academic integrity principles" (2023, p. 27). The paper also categorized large language model-based (LLM) tools apart from ChatGPT, which served as a

basis for discussion, focusing on distinct features and potential pedagogical impacts of each category.

2. 6 AI and Critical Thinking Skills for EFL Learners

The study by Muthmainnah et al. addressed the convergence of Artificial Intelligence (AI) and critical thinking within the context of English as a Foreign Language (EFL) learning (2022). It underscored the transformative potential of AI in enhancing critical thinking skills among university-level English students. Additionally, Muthmainnah et al. highlighted the role of AI in promoting a learning environment while fostering “self-confidence,” “open-mindedness,” and “maturity” (2022, p. 9). According to Klimova, Ghaemi and Mirsaeed, cited by Muthmainnah et al., EFL students at the tertiary level need to use critical thinking skills to generate quality written work (2022, p. 3). The study applied both qualitative and quantitative methods that revealed that AI tools aid in language proficiency and boost the learners’ critical thinking skills. It also highlighted AI’s role in creating personalized and interactive learning experiences which eventually lead to the encouragement of students to engage deeply with the learning process. Moreover, it also suggested when AI is combined with well-designed instructional strategies, it can significantly enhance learners’ “analytical” skills (Muthmainnah et al., 2022, p. 12). Hence, this combination would allow the learners to articulate their thoughts better, they can engage in logical reasoning and critically evaluate information. Furthermore, the study underscored the necessity to incorporate AI in inquiry-based learning; and also encouraged a more active approach to education that would align with the development of critical thinking skills.

2.7 Chapter Summary

The second chapter explored various dimensions between English as a Foreign Language (EFL) students at the tertiary level and artificial intelligence (AI). This chapter focused on the existing literature exploring the prevalent writing challenges faced by the EFL students and their perceptions of using AI in educational context. Following this, the discussion further extended to AI's contribution to writing development and highlighted the impact on the both writing process and enhancement of critical thinking skills. Also, the existing works referred AI as a transformative tool for EFL learners by reflecting on the cognitive theory of learning.

Chapter Three: Methodology

3.1 Introduction

Research methodology refers to all these areas which represent the philosophy of the whole research process (Ogunbameru, 2004). The methodology section describes how the research is going to be conducted. Through the methodology, a reader gets information on whether the approach is dependable or not (Chris, 2021). In this chapter, the research method, design and instrument are explained and the units of data collection are identified. The population, sampling technique, sampling size, developing survey questionnaire, data collection process, data analysis, and research ethics are also described in this chapter.

3.2 Research Design

This study aims to identify the perception of Bangladeshi tertiary-level EFL students about using AI to develop writing skills. By using both quantitative and qualitative methods, the study has been done. According to Chris (2021), quantitative research includes a collection of numerical data and employing mathematical analyses to make predictions, study the trends, examine hypotheses and run experiments. A survey research design was adapted to meet the objective of the study. Survey research is a collection of data obtained by asking a set of questions to a person, individuals, or groups on paper or online (Chyung et al., 2017). It is a form of primary research used to collect the opinions, beliefs, and feelings of the participants (Hollweck, 2015). Then, qualitative research seeks to explain outcomes by investigating the frequency with which they are factually associated with possible causes while employing a type of reasoning similar to riddle-solving (Martyn, 2012). Both of the research designs are appropriate to fulfil the purpose of this study.

3.3 Population

According to Banerjee and Chaudhury (2010), the target population is the inference from which a sample refers to the defined population from whom the sample has been properly selected. Saunders et al. (2009) stated that the target population identifies the elements for which the findings of the survey are intended to generalize. According to Hair et al., (2016), the population must be particularly defined based on the objectives of the research. Therefore, for this study, the target population was defined as the EFL students of tertiary-level studying in Bangladeshi private universities who are being introduced to new AI writing tools that have an effect on their critical thinking skills, eventually developing their writing skills. The study covers different private universities in Dhaka. This is very expensive and unfeasible to use the study's total population (Saunders et al., 2009). Therefore, a proper sampling technique is acknowledged next.

3.4 Sampling Technique

The Sampling technique is the strategy or plan for designing the selection of the study samples that can differ between random selection and systematic one. In quantitative studies, mainly probability sampling is used because, in this method, all the population members can be selected. According to Knaub (2021), sampling technique means various ways of implementing the sample of the study considering the data collection procedure and the estimation phase. In this study, a simple random sampling technique is used by the researcher for the collection of quantitative data. The researcher employed simple probability sampling so that each member of the population gets the same chance of being chosen. For the qualitative data, a purposive sampling technique has been used.

3.5 Sample Size

The tertiary EFL students from different private universities in Bangladesh are the samples of the study. Succeeding Krejcie and Morgan (1970), the sample size in this study is

138 EFL students and the interview population size is 4, who are the residents of Bangladesh and are studying in Bangladesh at tertiary level. This sample size is appropriate because it covers other tertiary-level EFL students who are using AI writing tools. A total number of 138 students from both the Bachelor and Master's Program of different universities participated in the survey. Moreover, an in-depth interview was conducted among 4 interviewees to gather individual perspective. 107 participants from University of Liberal Arts Bangladesh, 10 participants from BRAC University, 6 participants from North South University, 4 participants from Independent University and 7 from other universities combined were taken as samples. Lastly, the interviewed students' number is four.

3.6 Instrument (Survey and Interview)

In this research, a questionnaire was used to identify the perspective and challenges related to the usability, accessibility, and integration of AI into tertiary-level students' writing development. The survey consists of 25 questionnaires and is divided into three sections. The first section is the demographic profile, while the second part perceptions about AI in developing writing skills and the last section asks about the challenges in utilizing AI for English writing. The survey questions used a 5-point Likert Scale; with responses varying from strongly disagree to strongly agree to respond to their agreement stage. Meanwhile, the in-depth interview was also divided into two sections each carrying 3 open ended questions to explore the individual perspectives on AI writing tools and the challenges of utilizing the tools for writing development.

3.6.1 Developing Survey Questionnaire and In-depth Interview Protocol

The design of the survey questionnaire of the study is developed into some particular steps considering the objective of the study. The survey questionnaire is divided into four parts. Firstly, the researcher employed the results of past studies that are related to the

relevant variables. Secondly, the design of the survey questionnaire was compared with similar studies. Thirdly, the researcher employed multi-measures to capture the meaning of each construct. Finally, the researchers collected observations from the tertiary level EFL students who are using AI tools for their writing tasks.

According to Zikmund (1997), reducing the respondent's confusion through careful management of the survey to achieve a higher response level is significant. Wording principles were used while drafting the questionnaire (Cooper and Schindler, 2001). Moreover, the researcher developed the questionnaire in an easier way so that the respondents do not feel uneasy to answer the items. The researcher employed close-ended structured response formats based on the nature of the questions, to avoid response bias and encourage participation. To get optimal results in this study, a total design approach, combining both practical and theoretical considerations was used. The longest time required for any respondent to complete this survey was less than 10 minutes.

The in-depth interview protocol is adapted based on the existing literature and some of the questions have been adapted from the research of Alharbi, (2022) and Fithriani, (2022).

3.7 Data Collection Process

The data collection procedure is fully online-based due to the easiness of reaching the participants. The survey is shared with the respondents through E-mail and other social media platforms. The survey data was collected from 138 participants to fill in the Google Forms questionnaire. The participants who voluntarily took part in the survey would enter the link provided in the E-mail. The data collection method online is very convenient for the participants. As the smartphones are available to everyone, the respondents can answer the survey easily anytime and anywhere. The respondents need to complete all questions to submit the survey before they exit as all questions were set with the function 'required'. This

is also to avoid incomplete responses in the survey. The qualitative data was collected through face-to-face and online interviews. The interviews have been recorded and preserved.

3.8 Data Analysis

The collected data were remodeled, transformed, and revised to attain the purpose of the study. The researcher used both quantitative and qualitative methods to collect the data. Descriptive statistics have been used to conduct the study. The data obtained through the survey were analyzed by means of percentages. At first, the responses of the participants were tabulated using Google spreadsheet as the outcome of Google Forms. Secondly, the percentage of each item from all dimensions was resolute to represent the general picture of the tertiary EFL students' perspective of the usage of AI in writing development. Thirdly, the percentage of each dimension was further examined for use as the main basis of conclusion drawing. The percentages presented in the tables were used to determine the criteria to conclude whether the AI writing tools are developing the tertiary-level EFL student's writing skills or not. The survey questionnaire is attached in the Appendix. The in-depth interviews have been analyzed manually following Cresswell (2015).

3.9 Research Ethics

To maintain the confidentiality and privacy of each research participant, the researcher planned did not mention any name while giving some argumentations, explanations, and depictions in the next section. By considering this matter, more authentic data collection would potentially be obtained since the research participants felt secure and became more versatile while revealing about academic ethics while incorporating AI writing tools.

3.10 Chapter Summary

The chapter starts with an introduction to the methodology of the study. In this chapter, the research method is explained thoroughly. A survey questionnaire as an instrument and the data collection are identified. The population is determined to attain the purpose of the study. Sampling technique, sampling size, developing survey questionnaire, data collection process, data analysis, and research ethics are also illustrated in this chapter. Total 142 students were targeted as the sample for conducting the study.

Chapter Four: Findings

4.1 Introduction

This chapter describes the data and the result of the study. This study aimed to investigate the perception of Bangladeshi tertiary-level EFL students of using AI in developing English writing skills and the responses of 138 students from nine private universities in Bangladesh. This section explored tertiary-level students' perception of AI writing tools and the challenges they faced while utilizing AI for English writing. This chapter also presented the demographic profile of the participants. The participants were provided with 25 questionnaires which were divided into two sections focusing on their perspectives on the usability and limitations of AI tools in their writing development.

4.2 Findings from the Survey

The findings from the survey conducted among 138 tertiary-level EFL students in different private universities of Bangladesh, aimed at understanding their perceptions of AI tools for English writing development. The survey was done online through Google Forms for ensuring accessibility and completion for participants. The questionnaire consisted of multiple-choice items that explored the familiarity of students with, the attitude towards the most used AI tools such as Google Translator, Grammarly, ChatGPT, and QuillBot. Responses were collected through a Likert scale which allowed the students to express degrees of agreement or disagreement with each statement. As the survey was conducted online, it was facilitated swiftly in regard to collection and analysis of the data.

4.2.1 Demographic Profile of the Students

Table 4.1 presents the demographic profile of the participants. The majority of the respondents were female; 42.6% were male and 56.6% were female, as seen in Table 4.1.

Following this, 94.20% of the participants were undergraduate students (Bachelor Program) and 5.80% of them were from the Master's Program. Hence, reflecting the survey had more participants from the Bachelor program.

Table 4.1

Demographic Profile of the Survey Students (%)

Sr. No	Items		
1.	Gender	Male	Female
		42.6%	56.6%
2.	Level of Study	Bachelor Program	Master's Program
		94.20%	5.80%

4.2.2 Perceptions of EFL Students Regarding AI for Writing Development

To determine the participants' perception of the AI tools in enhancing their writing skills, a list of 25 items was presented in Table 4.2 (presented below) the first 14 items of the questionnaire focused specifically on AI's usability. The participants were given open questionnaire and answered them anonymously using the impression of strongly agree, agree, neutral, disagree and strongly disagree. A large portion of participants, totaling 81.6%, confirmed the positive impact of AI tools like Google Translator, Chat GPT, Grammarly, and Quill Bot in enhancing English writing skills, as in response to the item "I recognize the usefulness of Artificial Intelligence (AI) tools such as Chat GPT, Google Translator,

Grammarly, and Quill Bot that help to improve English writing skills,” 37.5% strongly agreed, 44.1% agreed, 1.5% disagreed, 0.7% strongly disagreed and significantly, 16.2% of the respondents adopted a neutral stance. The survey results showed a strong agreement among participants in favour of AI tools’ potential in significantly improving their English language (vocabulary). Specifically, a notable 72.8% of respondents acknowledged the positive impact, 27.2% expressed strong agreement and 45.6% agreed with the statement. On the other hand, a minority of 8.8% was skeptical, divided between 6.6% who disagreed and 2.2% who strongly disagreed. Meanwhile, a significant 18.4% of participants remained neutral. In feedback to the item “I find confidence in my English writing while using AI tools,” 35.3% agreed on this, which is the highest percentage, 24.3% strongly agreed, 14% disagreed, 2.2% strongly disagreed and lastly, 24.3% were neutral participants. This indicated that students feel more confident when they use AI writing tools. “I believe writing and editing with AI tools such as the Chat GPT supports my writing skills with better-generated ideas,” in response to this item 30.9% strongly agreed, 42.6% agreed, 20.6% were neutral, 4.4% disagreed and the rest of 1.5% strongly disagreed. Regarding the item “Grammarly is effective to correct my grammar and punctuation in writing,” 37.5% and 42.6% thought that this specific tool assists them with grammar and punctuation, following this 16.9% were neutral and 0.7% and 2.2% found it not to be helpful. In response to the item “AI tools such as Google Translator help me understand complicated English phrases and idioms” 29.4% strongly agreed, 41.2% agreed, 18.4% were neutral, 6.6% disagreed and 4.4% strongly disagreed. Following this, most of the participants agreed on the item, “Quill Bot is a helpful AI tool to paraphrase my academic writing more professionally,” and the ratio is 40.4%, 20.6% also strongly agreed on this, 30.1% neutral and 5.9% and 2.9% and disagreed strongly disagreed.

In response to the item, “I believe, AI tools play a vital role for non-native English speakers to acquire better proficiency in English writing,” the highest rate of participants agreed and it was 52.2%, while 18.4% strongly agreed, only 20.6% were neutral and the rest of them disagreed. Regarding the item “AI tool has the potential to reduce the time to complete academic writing assignments,” 39.7% of the respondents agreed while 25.7% strongly agreed, 22.1%, 8.8% and 3.7% were the ones who were neutral, disagreed and strongly disagreed sequentially. For the notion “To me, AI assistance over traditional methods such as books and tutoring is preferable for improving my writing skills,” 15.4% and 5.1% disagreed and strongly disagreed and the ratio was the same who strongly agreed and were neutral about AI’s assistance over traditional methods which was 25.7%. Following this 27.9% of the participants agreed with this statement. In regards to the item “AI tools can create more interest in practicing English writing because of their flexible usage,” 23.5% strongly agreed, 34.6% agreed, 26.5% stayed neutral and a wide of them disagreed on this notion which was 11.8% and 3.7%. The item “I believe that the regular usage of AI tools can positively impact my academic writing performance,” 58.8% of participants either strongly agreed (23.5%) or agreed (35.3%) that it would be beneficial. A considerable portion, 26.5%, remained neutral, expressing neither agreement nor disagreement. Meanwhile, a smaller portion of the respondents, with 10.3% disagreeing and 4.4% strongly disagreeing with the statement, showed concern with this section. Following the item “The feedbacks from AI-generated tools tend to be more accurate and helpful,” the majority of the respondents agreed and it was 44.1%, 20.6% strongly agreed, 27.9% were neutral, 5.9% disagreed, and 1.5% strongly disagreed. Lastly, concerning the item “The AI-generated answers can be further discussed with peers or instructors to improve my learning,” a majority of participants see value in this collaborative approach as specifically, 60.3% of respondents affirmatively acknowledged the benefit, with 22.1% strongly agreeing and 38.2% agreeing to its positive

impact on learning. Meanwhile, 26.5% of participants were neutral. A smaller fraction showed skepticism, 11% disagreed and a mere 2.2% strongly disagreed.

Table 4.2

Perceptions of Tertiary-level EFL Students Regarding AI for Writing Development

Sr No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Personal traits (%)					
01.	I recognize the usefulness of Artificial Intelligence (AI) tools such as Chat GPT, Google Translator, Grammarly, and Quill Bot that help to improve English writing skills.	37.5%	44.1%	16.2%	1.5%	0.7%
02.	I believe that AI tools have the potential to significantly improve my English language (vocabulary)	27.2%	45.6%	18.4%	6.6%	2.2%
03.	I find confidence in my English writing using AI tools	24.3%	35.3%	24.3%	14%	2.2%
04.	I believe writing and editing with AI tools such as the Chat GPT supports my writing skills with better-generated ideas.	30.9%	42.6%	20.6%	4.4%	1.5%
05.	Grammarly helps to correct my grammar and punctuation in writing	37.5%	42.6%	16.9%	0.7%	2.2%
06.	AI tools such as Google Translator help me understand complicated English phrases and idioms	29.4%	41.2%	18.4%	6.6%	4.4%
07.	Quill Bot is a helpful AI tool to paraphrase my academic writing more professionally	20.6%	40.4%	30.1%	5.9%	2.9%
08.	I believe, AI tools play a vital role for non-native English speakers to acquire better proficiency in English writing	18.4%	52.2%	20.6%	6.6%	2.2%

09.	AI tool has the potential to reduce the time to complete academic writing assignments	25.7%	39.7%	22.1%	8.8%	3.7%
10.	To me, AI assistance over traditional methods such as books and tutoring is preferable for improving my writing skills	25.7%	27.9%	25.7%	15.4%	5.1%
11.	AI tools can create more interest in practicing English writing because of their flexible usage	23.5%	34.6%	26.5%	11.8%	3.7%
12.	I believe that the regular usage of AI tools can positively impact my academic writing performance	23.5%	35.3%	26.5%	10.3%	4.4%
13.	The feedbacks from AI-generated tools tend to be more accurate and helpful	20.6%	44.1%	27.9%	5.9%	1.5%
14.	The AI-generated answers can be further discussed with peers or instructors to improve my learning	22.1%	38.2%	26.5%	11%	2.2%

4.2.3 Challenges in Utilizing AI for English Writing

The next part of the questionnaire items focused on the challenges related to usability, accessibility and integration of AI tools encountered by students while utilizing them for writing tasks. Their concerns about over-reliance on these tools appeared prominently as 67% of respondents expressed positive towards this notion, with 22.1% strongly agreeing and 44.9% agreeing that over-reliance on AI tools for writing tasks is a concern. Meanwhile, 23.5% of participants remained neutral; however, 7.4% disagreed and only 2.2% strongly disagreed. Regarding the item, “Some AI writing tools such as Chat GPT and Quill Bot’s interface tend to be less user-friendly,” 14% and 33.1% of participants faced challenges while using ChatGPT and Quill Bot, while 29.4% remained neutral, 19.9% and 3.7% disagreed and strongly disagreed on the usability limitations. The survey revealed significant concerns addressing the issue of plagiarism while using AI tools in academic writing as a substantial 74.3% of the participants strongly agreed (33.1%) and agreed (41.2%) that AI writing tools

can encourage plagiarism. Conversely, a smaller section of the participants consisting of 19.9% remained neutral regarding the effect of AI on academic integrity. A minimal portion of respondents disagreed (5.1%) and almost none (0.7%) strongly disagreed with the statement. Following this, 66.9% of the participants strongly agreed and agreed on the item “AI-generated suggestions tend to be inaccurate which may cause misunderstandings,” while a smaller fraction of 11% disagreed and even smaller only 0.7% strongly disagreed and lastly 21.3% of the participants were neutral. In response to the item, “AI tools such as Google Translator tend to lose Language and cultural expressions,” a considerate majority of respondents totaling 71.3% acknowledged this limitation of Google Translator with 30.9% strongly agreeing and 40.4% agreeing. Meanwhile, 24.3% remained neutral, 3.7% disagreed and 0.7% strongly disagreed with this statement. Regarding the item about corrections and suggestions by AI tools conflicting with the instructor’s advice, 19.9% of the participants strongly agreed, 48.5% agreed, 25.7% remained neutral, 5.9% disagreed and none of them strongly disagreed. For the items of facing difficulties integrating suggestions of AI tools into writing while retaining the user’s personal voice, 17.6% strongly agreed, 41.2% agreed, 33.8% neither agreed nor disagreed, 5.1% disagreed and 2.2% strongly disagreed.

Among the respondents about the long-term effectiveness of AI tools in enhancing writing skills, they relieved uncertainty. A combined total of 46.3% either agreed (29.4%) or strongly agreed (16.9%) with the statement which reflects that a significant number of participants were unsure about depending on AI tools for long-term writing improvement. However, 33.8%, remained neutral, which highlighted the lack of clarity on the usage of these tools for long-term skill improvements. On the other hand, a smaller fraction of the respondents showed a level of confidence or disagreement with the item, 14.7% disagreed and 5.1% strongly disagreed. In feedback to the item, “I feel that among peers and instructors there lies a stigma in using AI tools for learning,” 44.1% agreed which is half of the

participants while 17.6% strongly agreed, 5.1% disagreed, 0.7% strongly disagreed and 32.4% remained neutral. Again, in response to the technical issues of using AI tools disrupting the user's learning process, 14% and 39% strongly agreed and agreed. Meanwhile, 15.4% disagreed and strongly disagreed on this matter and 31.6% of respondents were neutral. For the last item, survey responses pointed to a notable gap which is the availability of training for integration of AI tools in English writing. A significant 66.9% of participants were affirmative of the scarcity of adequate training. 22.8% strongly agreed and 44.1% agreed with the statement; meanwhile, 26.5% of respondents positioned themselves neutrally, possibly referring to either a lack of experience with available training or uncertainty about its adequacy.

Table 4.3

Challenges Faced by Tertiary-level EFL Students Regarding AI for Writing Development

Sr No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Personal traits (%)					
1.	Over-relying on AI tools for writing tasks can be a concerning approach	22.1%	44.9%	23.5%	7.4%	2.2%
2.	Some AI writing tools such as Chat GPT and Quill Bot's interface tend to be less user-friendly	14%	33.1%	29.4%	19.9%	3.7%
3.	AI tools highly encourage plagiarism in terms of academic writing	33.1%	41.2%	19.9%	5.1%	0.7%
4.	AI-generated suggestions tend to be inaccurate which may cause misunderstandings	21.3%	45.6%	21.3%	11%	0.7%

5.	AI tools such as Google Translator tend to lose Language and cultural expressions	30.9%	40.4%	24.3%	3.7%	0.7%
6.	The corrections and suggestions by AI tools sometimes conflict with the advice from my instructors.	19.9%	48.5%	25.7%	5.9%	0%
7.	While incorporating AI suggestions I tend to lose my personal voice and face difficulties.	17.6%	41.2%	33.8%	5.1%	2.2%
8.	I find it difficult to recognize the potential of AI tools to improve my writing skills over a long-term period	16.9%	29.4%	33.8%	14.7%	5.1%
9.	I feel that among peers and instructors there lies a stigma in using AI tools for learning.	17.6%	44.1%	32.4%	5.1%	0.7%
10.	Due to technical issues with AI tools, my learning process was disrupted.	14%	39%	31.6%	10.3%	5.1%
11.	Insufficient training is available on the ways to maximize the benefits of AI tools for English writing.	22.8%	44.1%	26.5%	5.1%	1.5%

4.3 Findings from the In-depth Interview

The in-depth interviews were conducted with four individuals, two of them being undergraduate students and two from the master's program. The interview results revealed diverse perspectives regarding the usability of AI in developing English writing skills. The in-depth interviews were conducted both offline (face-to-face) and online (Google Meet) highlighting a general appreciation of AI tools in terms of immediate feedback and personalized learning opportunities. However, there were also concerns about the potential for reduced human interaction, plagiarism and over-reliance on technology. The participants of the Master's program emphasized particularly the necessity for a considerable approach to the effective integration of AI with the existing traditional teaching methods.

4.3.1 Demographic Profile of the Students

Table 4.3 presents the demographic profile of the interview participants. The proportion of female and male respondents was the same; 50% were male and 50% were female, as seen in Table 4.3. Following this, 50% of the participants were undergraduate students (Bachelor Program) and 50% of them were from the Master's Program.

Table 4.3

Demographic Profile of the Interviewees

Sr. No	Items		
1.	Gender	Male	Female
		2	2
2.	Level of Study	Bachelor Program	Master's Program
		2	2

4.3.2 Perception of Using AI Writing Tools in Enhancing English Writing Skills

There are diverse ideas and views regarding incorporating AI writing tools for writing development at the tertiary level in the context of Bangladesh. The students' perceptions focused on varied factors such as AI's role in providing immediate feedback, suggesting vocabulary enhancement, refining overall composition, understanding English writing concepts and altering traditional methods of learning English writing skills in academic settings.

4.3.2.1 Instrumental Role of AI

One interviewee highlighted the instrumental role of AI writing tools such as Grammarly and ChatGPT in improving grammatical accuracy, stating, “AI writing tools correct grammatical errors such as subject-verb agreement and punctuation mistakes while suggesting synonyms for repetitive words to enrich vocabulary.” [SI1] Therefore, this reflects AI’s assistance in offering real-time corrections and suggestions, which helps in facilitating a more effective learning process.

Moreover, another interviewee underscored the importance of Google Translator and ChatGPT in his writing. As he stated, “Whenever I struggle to find any meaning of a sentence, I use Google Translator first, as I can find the synonymous words with examples that help me to understand and organize my thoughts better.” He also focused on AI’s role in refining and generating ideas for academic writing by saying, “ChatGPT helps me generate new ideas and refine the scattered ideas” [SI3]

Furthermore, a participant focused on the usage of AI tools in correcting punctuations and enriching vocabulary for academic writing. She said, “Undoubtedly, AI writing tools helped me to improve my English writing skills, especially in terms of learning new vocabulary. The use of grammar checker tools such as Grammarly, helped me find out the mistakes I sometimes failed to notice, which helped me a lot in my assignments and to understand the common mistakes.” [SI4]

On the contrary, one of the students thought that AI could be used as an assistant but users mostly lost the authenticity of their own voice. As she said, “AI definitely helps expand vocabulary to a certain extent. However, I do not think it contributes to the overall composition because they do not have the ‘authentic’ intelligence factor. The word is ‘artificial.’” [SI2]

4.3.2.2 Understanding and Application of English Writing Concepts

An interviewee shared a pivotal experience that illustrated the effect of AI in understanding and applying English in writing. He recounted his struggle with comma placement in complex sentences, a common challenge for many learners, and how AI writing tools in browser extensions, played a crucial role in overcoming this challenge. The interviewee stated, “Using Grammarly and ChatGPT, I received real-time suggestions on where to add or remove commas, which helped me formulate the rules better and apply them accurately in my writing.” [SI1]

Another student regarding this theme, said, “I use ChatGPT to gather more ideas on any topic for my course assignments. Even, with AI’s assistance I paraphrase my ideas to upgrade my English writing style.” [SI3]

Furthermore, one participant mentioned in the interview that AI tools have had a noticeable effect on her learning curve and writing proficiency. She said, “I do believe that AI writing tools have allowed me to incorporate my ideas without making mistakes while writing. I can also use and learn unique synonyms which I was not aware of before. For example; I learned that the phrase “make head or tail of” is a synonym for the word “comprehend.” [SI4]

On the other hand, one specific interviewee said that AI did not have any significant impact on her writing as she mentioned, “I only used plagiarism checker applications and nothing else.” [SI2]

4.3.2.3 Altering Traditional Methods of Learning English Writing Skills

Another significant finding was the potential of AI writing tools to revolutionize traditional English writing instruction. Unlike conventional methods that depend on periodic

assessments and instructor feedback, AI facilitates a continuous, personalized learning journey. As one participant put it, “AI tools provide continuous support and enable students to learn at their own pace and address the needed areas for improvement.” [SI1] This observation suggests a shift in educational practices, emphasizing the need for the integration of technology to influence diverse learning needs and styles.

One student had a different perspective in this term, as she stated, “Traditional English writing skills focused on enhancing writing skills by integrating the reading and writing skills. There was always a scope of direct communication when a student wanted to clarify their doubts. At present, however, AI has eliminated that scope of communication and feedback has also shifted online.” [SI2]

In contrast, an interviewee shared her point of view of AI having transformative power in altering the way EFL learners used to learn and comprehend English writing skills. As he stated, “Before we used to use books by famous authors and dictionaries, now the scenario is almost and completely different. We do not seem to use dictionaries anymore to learn a new word or to correct the spelling of a word, rather we find it a hassle to do so.” [SI4]

4.3.3 Challenges of Utilizing AI Tools

Despite the advancements, this research also identified key challenges in the utilization of AI for EFL students in English writing enhancement. The implementation of AI-generated recommendations, for instance, demands discernment to ensure relevance and coherence within the user’s writing style, technical issues and understanding of AI suggestions and lastly, misconceptions about AI stand as an obstacle as well.

4.3.3.1 Understanding and Implementing AI-Generated Recommendations

As highlighted by an interviewee, “Sometimes, AI-generated recommendations may not align with the context or style of the writing, requiring careful evaluation before acceptance.” This points to the critical balance users must maintain between utilizing AI support and preserving their unique voice and creativity. He also pointed out that technical issues such as “compatibility or connectivity issues can obstruct the integration of AI tools into the writing process.” [SI1]

Moreover, another participant’s feedback highlighted a significant limitation of AI writing tools which is their occasional inability to “comprehend complex queries, leading to incorrect responses or admissions of ignorance on specific topics.” [SI3]

A participant also reflected, “I think there is a specific way to search and learn information from AI tools, as once I searched an information from AI, the piece of information I received was opposite to what I had learned from the class. I found it quite difficult to get an exact answer which I expected. Moreover, it often gives some additional information which is not needed is also bothersome.” [SI4]

4.3.3.2 Balancing Coherence with Personal Style

Maintaining originality (own voice) in writing while using AI tools requires a conscious effort. According to an interviewee, “It is essential to balance the assistance provided by AI with personal creativity and expression to ensure the authenticity of the written work. By critically evaluating AI suggestions and utilizing them thoughtfully, EFL writers can preserve their unique style and voice.” [SI1]

Additionally, one of the students shared her thoughts on using AI and also maintained her original work by keeping “keywords and the main concept intact.” Also, she said, “I eliminate irrelevant parts and use synonyms to retain my originality.” [SI2]

An interview also talked about using Quill Bot to retain his own voice. He said, “I paraphrase the sentences I directly get from the AI writing tools.” [SI3] Furthermore, a student shared her view saying, “I think it is becoming a threat to stick to the originality of our ideas while using AI. To avoid taking too much help from AI, I mainly write down the whole idea first for an assignment, and I only take any assistance to search for information. After finishing my work, sometimes I use a grammar checker to find out mistakes if I have any. That is the process of how I maintain my work from the influence of additional tools.” [SI4]

4.3.3.3 Misconceptions about AI Writing Tools

A participant clarified a prevalent misconception, stating, “One of the main misconceptions I came across is that using AI in assignments is plagiarism, which is not if the use is limited to just learning pieces of information. I understand that some use AI with wrong intentions but not everyone uses it to plagiarize. AI can be used as a great tool as the internet if we learn how to make proper use of it. Till now most of us are not aware of the uses of this tool and have a wrong understanding revolving around the AI sensation.” [SI4]

Additionally, a participant countered a common concern among peers, asserting, “Some of my friends think that using AI will reduce human creativity or comprehension. But I believe the users can enhance their performance by judiciously incorporating AI into their work.” [SI3] This statement highlighted a misunderstanding regarding the impact of AI on cognitive abilities.

4.4 Chapter Summary

Technical barriers and misconceptions about AI writing tools pose significant obstacles to their widespread adoption. The skepticism surrounding the potential of AI to

compass human creativity underscores the necessity for education on the complementary role of these tools in the writing process. The survey and the interview findings illuminate the multifaceted impact of AI writing aids on learning and enhancing English writing skills. While acknowledging the challenges, the evidence strongly supported the integration of AI technologies as invaluable resources in the educational landscape. Their ability to provide immediate, tailored feedback marks a significant advancement in the way writing skills are developed and refined.

Chapter Five: Discussion

5.1 Introduction

The research through an analysis of the participants' responses from the survey shown in Tables 4.2 and 4.3 aimed to explore the perception of using AI and the challenges they faced while using AI tools for their writing development. The findings presented in Tables 4.2 and 4.3 reveal nuanced attitudes towards AI writing tools, some participants showed enthusiasm and some were very cautious about the future of AI tools. The majority of the participants acknowledged the positive effect of AI in enhancing vocabulary, generating ideas, correcting grammar, giving feedback and boosting confidence in writing. On the contrary, participants were also concerned about the over-reliance, the potential for plagiarism, technical issues and challenges of maintaining a personal voice from AI-generated suggestions. This discussion chapter seeks to contextualize these findings on the border discourse focusing on the students' perception, implementing AI in developing writing skills, existing misconceptions related to AI tools and the alteration of traditional learning methods for the EFL learners.

5.2 Perception of the Tertiary-level EFL Students of Utilizing AI Writing Tools

The data collected from the survey on Bangladeshi tertiary-level EFL students' perception of using AI tools for writing development showed a generally positive view with notable enthusiasm for the role of these tools, such as Google Translator, Grammarly, Quill Bot, and ChatGPT. However, there lies concern about the usage of these AI writing tools among the participants. Among the participants, the majority of them emphasized the factors of AI writing tools such as enhancing vocabulary, generating ideas, correcting grammar, giving feedback and boosting confidence in writing. Despite these benefits, the participants also agreed that they face challenges using AI writing tools as they expressed their thoughts

regarding AI's interface's features, encountering misunderstandings for AI's incorrect suggestions and the loss of language differences and cultural expressions. A study by AbdAlgane and Othman (2023) found that "Through the utilization of digital writing tools, these students [Saudi Arabia's] were able to improve their English academic writing skills." However, the context is different from this study and the challenges that the students face varies as well. Approximately, two-thirds of the students in this survey were concerned about over-relying on AI for writing tasks and their potential to encourage plagiarism. Therefore, the survey reflected the need for traditional pedagogical reevaluation in the tertiary-level EFL writing classes while integrating AI tools. According to the participants, as AI can offer immediate feedback and support, hence, its role should be complementary to ensure the students' engagement in the writing process while also developing their critical thinking skills and maintaining their unique voices. Educators can facilitate this dual approach and are adept at blending AI tools with traditional learning methods, eventually enriching the learning experience without making the students overly rely on the tools.

5.3 Implementing AI in Developing Writing Skills

The findings from the survey reflected that the majority of participants and interviewees supported Grammarly as an effective tool for correcting grammar, and punctuation which refers to the strong reliance on AI for mechanical aspects of writing. Moreover, implementing AI has proven from the survey to boost non-native English speaker's confidence. More than half of the respondents felt more confident while writing English after using the AI tools. This enhanced confidence acts as an important factor in encouraging continuous learning and practice among the students. A significant number of students perceived a positive effect of AI tools on their academic performance but the

implementation of AI tools does not stand as crucial for achieving proficiency in English as overdependency might affect the fundamental learning process.

Related literature has shown that the implementation of developing AI tools “has the potential to change how students approach their academic fields” (Shidiq, 2023, p 355); therefore, aligning with the survey result of this research. Also, this research contributes new insights into the specific effects of implementing AI tools for developing the writing proficiency of non-native tertiary-level speakers which is an area that is less covered in previous studies. Moreover, from the interview, it can be indicated that by implementing AI tools into writing classes, a blended learning environment can be promoted while also focusing on critical thinking and creativity in students.

5.4 Existing Misconceptions Related to AI

AI writing tools are technically relevantly new to Bangladeshi students and these tools sparked a range of concerns and misconceptions as evidenced by the data collected from the survey and the interviews. AI has a lot of influence on people while also pursued as a tool for the potential to diminish creativity, encourage plagiarism and be inadequate to handle language nuances. The survey indicated 74.3% of respondents expressed concerns about plagiarism which reflects a prevalent fear that over-relying on AI could cause academic integrity. Notably, this reflects the misunderstanding of the capabilities and intended use of AI as AI serves as a collaborator in the writing process. However, according to the interview, AI writing tools suggest formulations and expand vocabulary but do not necessarily replace the student’s own analytical and compositional efforts. Misconception of integrating AI ethically might stem from limited knowledge about AI tools. 22.8% of the participants pointed out the lack of training on maximizing the ethical usability of AI tools. Another major concern about the impact of AI on human creativity is highlighted by 39.7% of the

respondents. However, it is essential to note that these tools are designed to assist people rather than replace their ingenuity. Moreover, effective use of AI can evaluate and adapt the user's voice and objectives which will eventually enhance the result rather than diminishing creative capacity. 71.3% of the respondents agreed on the fact that by using translation tools, nuances are often lost leading to misinterpretations and lack of the cultural context needed. Therefore, this reflects the need for AI developers to enhance the sophistication of language models to capture the full essence of diverse linguistic and cultural contexts. Lastly, almost half of the participants suggested a social hesitation to accept technology as a legitimate educational aid. This strategy limits open discussions about the responsible and effective use of AI to support learning and creativity.

5.5 Altering Traditional Learning Methods

The survey and interview data showed the enhancement of writing capabilities with the help of AI tools with 25.7% of the participants expressing their preference for AI over traditional learning methods like books and tutoring. Therefore, highlighting the potential benefits offered by AI in terms of accessibility and personalized learning experience. The stigma rooted in traditional educational values emphasizes human interaction and the conventional role of teachers as knowledge providers and for this the acceptance of AI is lesser even though the benefits are higher. In addition, 70% of the respondents from the survey felt the insufficient gap between technology and how people perceive it and also the training on how to maximize the benefit of AI writing tools. Furthermore, one of the interviewees critiqued that using AI tools limited their direct communication as the feedback is provided online. Therefore, the shift from traditional pedagogical interactions might affect learner's ability to interact in real-time and this shift suggests the reduction of the discursive nature of language learning which traditionally relied on dialogue and face-to-face feedback.

Also, the interview data revealed a decreased reliance on physical dictionaries and books pointing to AI's active role in online learning. This shift also showed that even if the traditional learning methods are set aside, the basic goal of mastering language learning remains intact.

5.6 Chapter Summary

In the discussion chapter of the study on Bangladeshi tertiary-level EFL students' perceptions of AI in English writing development, the survey revealed a complex view. The benefits of AI tools like Google Translator, Grammarly, and ChatGPT in enhancing writing skills, from grammar correction to vocabulary expansion and idea generation are recognized by most of the participants. Over 80% appreciate these tools for improving their English writing capabilities. However, concerns persist regarding over-reliance on AI, potential plagiarism, and the loss of personal voice in writing. Students also expressed concerns about AI's accuracy and its inability to handle language nuances and lastly the notable gap in training on effective AI use, and a stigma associated with its use in learning environments.

Chapter Six: Conclusion

6.1 Limitation of the Study

The study on the perception of AI tools among Bangladeshi tertiary-level EFL students has some limitations that merit consideration. First, the sample size and demographic scope are limited to the generalizability of the findings. As the survey participants are all from a specific educational background and mostly from similar academic institutions, the results might not fully represent the diverse experiences and perceptions of all EFL students across Bangladesh as the study focuses precisely on the tertiary-level. As it is not possible to study all the students of all the Departments in Bangladesh. It should be acknowledged that the sample of this study was relatively not large and it was restricted to one city in Bangladesh. Carrying out other research with a larger sample and in different contexts can provide a different perspective on AI writing tools in developing writing skills. In the future research can be carried out to look into perceptions of more students from more universities to check whether other university students hold the same beliefs or not. Additionally, the study does not account for the rapid advancements in AI technology. The AI tools discussed may go through significant changes in functionality and effectiveness, which might make the study's findings outdated. This temporal limitation suggests a need for ongoing research to keep pace with technological developments.

6.2 Recommendations for Future Study

One of the most vital factors is to deepen the investigation of the Bangladeshi tertiary-level EFL students' perception of the use of AI to develop English writing skills as the reliance on English proficiency has been growing in the global landscape. If future studies are conducted in this field, the researchers should broaden the sample sizes in order to include a diverse range of universities and student demographics across different regions in

Bangladesh. This expansion would provide a comprehensive understanding of the perception and utilization of AI writing tools in diverse educational contexts. In addition, longitudinal methods should be incorporated to observe the long-term impacts of these tools in developing student's English writing skills. The nuances of AI implementation can be comprehended better by combining both quantitative and qualitative methods with a larger number of participants as that would offer deeper insights into the students' experiences and challenges with AI writing tools. Therefore, these approaches will help in mapping more effective educational strategies while enriching people's understanding of AI tool's usage in enhancing English writing skills.

6.3 Conclusion

In conclusion, this thesis has examined the perceptions of Bangladeshi tertiary-level EFL students in using AI tools to develop their English writing skills. The findings revealed that a significant quantity of participants appreciate the enhancement of AI in building vocabulary, correcting grammar, and generating idea; however, a considerable proportion showed concerns regarding over-reliance, accuracy, the potential loss of personal voice and plagiarism issues in writing if AI tools are used. Implications for practice include the reflective integration of AI tools into the language curriculum and ensuring that these writing tools complement a user's learning method rather than replacing any existing traditional methods. Moreover, adequate training is needed for both the students and instructors to ensure the maximum result while maintaining academic integrity. Despite limitations such as the limited number of potential representatives and reliance on self-reported data, this study contributes to the extensive knowledge of the role of educational technology in language learning, specifically in the development of writing skills. Furthermore, recommendations for future research involve the scope for expansion of the study to include more diverse academic

settings with larger participants to capture more accurate and deeper insights of the students' interaction with AI writing tools. Finally, this research underscores the importance of understanding the integration of technology in educational settings. Further exploration and application of these findings can aid in the continuity of evolving and proving language learning and teaching and make them more relevant and effective in the digital age.

Reference List

- AbdAlgane, M., & Othman, K. A. J. (2023, March). *Utilizing Artificial Intelligence Technologies in Saudi EFL Tertiary Level Classrooms*. SSRN.
<https://ssrn.com/abstract=4565768>
- Akter, F. (2022). Writing Challenges in the EFL Context of Bangladesh. *Journal of ELT and Education*, 5(1), 30-35.
- Alharbi, W. (2023). AI in the Foreign Language Classroom: A pedagogical overview of Automated Writing Assistance Tools. *Education Research International*, 2023, 1–15.
<https://doi.org/10.1155/2023/4253331>
- Balajthy, E. (1985). Artificial Intelligence and the Teaching of Reading and Writing by Computers. *Journal of Reading*, 29(1), 23–32. <http://www.jstor.org/stable/40029612>
- Banerjee, A., & Chaudhury, S. (2010). Statistics without tears: Populations and samples. *Industrial Psychiatry Journal*, 19(1), 60.
- Blumberg, B., Cooper, D., & Schindler, P. (2014). *EBOOK: Business Research Methods*. McGraw Hill.
- Borthwick, K., Thouësny, S., & Bradley, L. (2017). *Call in a Climate of Change: Adapting to Turbulent Global Conditions – Short Papers from Eurocall 2017*.
<https://doi.org/10.14705/rpnet.2017.eurocall2017.9782490057047>
- Chapelle, C. (1989). Using Intelligent Computer-Assisted Language Learning. *Computers and the Humanities*, 23(1), 59–70. <http://www.jstor.org/stable/30204414>
- Chris, M. J. (2021). *Methodology section for research papers*. San José State University Writing Center.
- Chyung, S. Y., Roberts, K., Swanson, I., & Hankinson, A. (2017). Evidence-based survey design: The use of a midpoint on the Likert scale. *Performance Improvement*, 56(10), 15-23.

- Ernst, M. D. (2017). Natural Language is a Programming Language: Applying Natural Language Processing to Software Development. *2nd Summit on Advances in Programming Languages (SNAPL 2017)*, 71, 4:1-4:14.
<https://doi.org/https://doi.org/10.4230/LIPIcs.SNAPL.2017.4>
- Gayed, J. M., Carlon, M. K., Oriola, A. M., & Cross, J. S. (2022). Exploring an AI-based writing assistant's impact on English language learners. *Computers and Education: Artificial Intelligence*, 3, 100055. <https://doi.org/10.1016/j.caeai.2022.100055>
- Gregg, L.W., & Steinberg, E.R. (Eds.). (1980). *Cognitive Processes in Writing* (1st ed.). Routledge. <https://doi.org/10.4324/9781315630274>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24.
- Hammersley, M. (2013). What is Qualitative Research? *Bloomsbury Academic*.
<https://doi.org/10.5040/9781849666084>
- Hollweck, T. (2015). Case study research design and methods, Robert K. Yin. *The Canadian Journal of Program Evaluation*, 30(1), 108.
- Hossain, M., & Al Hasan, R. (2023). Educational Technology (Edtech) In English as A Foreign Language (EFL) In Bangladesh: Necessities, Innovations, And Implications. *Studies in Linguistics, Culture & FLT*, 11(3).
- Huang, X., Zou, D., Cheng, G., Chen, X., & Xie, H. (2023). Trends, Research Issues and Applications of Artificial Intelligence in Language Education. *Educational Technology & Society*, 26(1), 112–131. <https://www.jstor.org/stable/48707971>
- Imran, M., & Almusharraf, N. (2023). Analyzing the role of ChatGPT as a writing assistant at Higher Education Level: A systematic review of the literature. *Contemporary Educational Technology*, 15(4). <https://doi.org/10.30935/cedtech/13605>

- Kim, H.-S., Cha, Y., & Kim, N. Y. (2021). Effects of AI Chatbots on EFL Students' Communication Skills'. *KOREAN JOURNAL OF ENGLISH LANGUAGE AND LINGUISTICS*, 21, 712–734. <https://doi.org/10.15738/kjell.21..202108.712>
- Knaub Jr, J. R. (2021). When Would Heteroscedasticity in Regression Occur? *Pakistan Journal of Statistics*, 37(4).
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610.
- Kurniati, E. Y., & Fithriani, R. (2022). Post-graduate students' perceptions of Quillbot Utilization in English academic writing class. *Journal of English Language Teaching and Linguistics*, 7(3), 437. <https://doi.org/10.21462/jeltl.v7i3.852>
- Laanpere, M., Pata, K., Normak, P., & Põldoja, H. (2014). Pedagogy-driven design of Digital Learning Ecosystems. *Computer Science and Information Systems*, 11(1), 419–442. <https://doi.org/10.2298/csis121204015l>
- Livberber, T., & Ayvaz, S. (2023). The impact of artificial intelligence in academia: Views of Turkish academics on chatgpt. *Heliyon*, 9(9). <https://doi.org/10.1016/j.heliyon.2023.e19688>
- MARR, B. (2019). *ARTIFICIAL INTELLIGENCE IN PRACTICE: how 50 successful companies used artificial ... intelligence to solve problems*. JOHN WILEY & Sons.
- Mridha, M., & Md. Muniruzzaman, S. (2020). Developing Speaking Skill: Barriers Faced by the Bangladeshi EFL Learners. *Englisia: Journal of Language, Education, and Humanities*, 7(2), 116-131. <http://dx.doi.org/10.22373/ej.v7i2.6257>
- Mustafa, A., Arbab, A.N., & El Sayed, A. A. (2022). Difficulties in Academic Writing in English as a Second/Foreign Language from the Perspective of Undergraduate Students in Higher Education Institutions in Oman. *Arab World English Journal*, 13(3) 41-53. DOI: <https://dx.doi.org/10.24093/awej/vol13no3.3>

- Muthmainnah, Ibna Seraj, P. M., & Oteir, I. (2022). Playing with AI to investigate human-computer interaction technology and improving critical thinking skills to pursue 21st Century Age. *Education Research International*, 2022, 1–17.
<https://doi.org/10.1155/2022/6468995>
- Nadkarni, P. M., Ohno-Machado, L., & Chapman, W. W. (2011). Natural language processing: an introduction. *Journal of the American Medical Informatics Association*, 18(5), 544-551.
- Nazari, N., Shabbir, M. S., & Setiawan, R. (2021). Application of artificial intelligence powered digital writing assistant in higher education: Randomized controlled trial. *Heliyon*, 7(5). <https://doi.org/10.1016/j.heliyon.2021.e07014>
- Nguyen, T. T. (2023). EFL teachers' perspectives toward the use of chatgpt in writing classes: A case study at van lang university. *International Journal of Language Instruction*, 2(3), 1–47. <https://doi.org/10.54855/ijli.23231>
- Ogunbameru, O. A. (2004). Personality Dimension to Cultism in Nigerian Tertiary Institutions: A Sociobiological Perspective. *Journal of Human Ecology*, 16(2), 91-98.
- Owan, V. J., Abang, K. B., Idika, D. O., Etta, E. O., & Bassey, B. A. (2023). Exploring the potential of artificial intelligence tools in educational measurement and assessment. *Eurasia Journal of Mathematics, Science and Technology Education*, 19(8), em2307.
<https://doi.org/10.29333/ejmste/13428>
- Rahman, M., & Hasan, Dr. Md. K. (2019, September). *Academic Writing Difficulties of Bangladeshi Students at a Higher Institution in Malaysia*. *Journal of Research and Multidisciplinary*. <http://journal.alhikam.net/index.php/jrm>
- Rahaman, M. S., Moral, I. H., Rahman, M. M., Sahabuddin, M., & Samuel, A. B. (2021). Online Learning in Bangladesh during COVID-19: Perceived Effectiveness,

- Challenges, and Suggestions. *Journal of Education, Management and Development Studies*, 1(3), 35–47. <https://doi.org/10.52631/jemds.v1i3.51>
- Roe, J., Renandya, W. A., & Jacobs, G. M. (2023). A review of AI-powered writing tools and their implications for academic integrity in the language classroom. *Journal of English and Applied Linguistics*, 2(1). <https://doi.org/10.59588/2961-3094.1035>
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education.
- Shahriar, A. (2023). The Effectiveness of Machine Translation Using “Google Translate” in English Language Learning in Bangladesh. *Pedagogy: Journal of English Language Teaching*, 11(1), 75-88.
- Shahriar, A., & Laboni, F. (2023). *Potential Success in English Writing Skills Using Artificial Intelligence “Grammarly,”* 10, 57–75.
- Shidiq, M. (2023). The Use of Artificial Intelligence-Based Chat-Gpt and Its Challenges for The World of Education; From The Viewpoint Of The Development Of Creative Writing Skills. *Proceeding Of International Conference on Education, Society and Humanity*, 1(1), 353-357. Retrieved from <https://ejournal.unuja.ac.id/index.php/icesh/article/view/5614>
- Song, C., & Song, Y. (2023). Enhancing academic writing skills and motivation: Assessing the efficacy of CHATGPT in AI-Assisted Language Learning for EFL Students. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1260843>
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2000). *Business Research Methods*. Fort Worth, TX: Dryden Press, 6.

Appendices

Appendix 1: Consent form

Research Consent Form

Title of research: Bangladeshi Tertiary Level EFL Students' Perception of the Use of Artificial Intelligence in Developing English Writing Skills

Researcher: Afrida Lubaba Khan

Introduction: I would like to invite you to participate in a research study under the supervision of

Dr. Md. Mahadhi Hasan, Assistant Professor, Department of English and Humanities, University of Liberal Arts Bangladesh. The research I am doing is for my undergraduate dissertation and the participant's input is voluntary. Therefore, you can withdraw or decline your participation at any moment. Kindly go through the form carefully, and read the questionnaire items and questions if you are participating; feel free to ask questions if you encounter any concerns.

Purpose of the study: The purpose of this study is to explore Bangladeshi tertiary-level EFL students' perception of the usage and the challenges concerning the usability, accessibility and integration of AI tools in developing their writing skills.

Procedure: If you choose to participate, you will be asked to:

- I. Allow the researcher to observe your perception in regard to using AI for English writing development
- II. Engage in conversations and interviews with the researcher
- III. Share your thoughts, experiences, and perspectives on the topic
- IV. Allow the researcher to record or take notes during the observation and interview

Potential risks: Participating in this research may involve minimal to no risk.

Voluntary participation: Since your input is voluntary. Therefore, you can withdraw or decline your participation at any moment.

Confidentiality: Your identity and the information you provide will be kept strictly confidential. Any information collected will be used for research and publication purposes only, and will not be used for any other purpose.

Consent: I have read and understood the information provided above regarding the study titled, “Bangladeshi Tertiary Level EFL Students’ Perception of the Use of Artificial Intelligence in Developing English Writing Skills”. I voluntarily consent to participate in this research study. Participant’s Name:

_____ Participant’s

Signature: _____

Date: _____

Appendix 2: Survey Questionnaire

Table 4.2

Perceptions of Tertiary-level EFL Students Regarding AI for Writing Development

Sr No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Personal traits (%)					
01.	I recognize the usefulness of Artificial Intelligence (AI) tools such as Chat GPT, Google Translator, Grammarly, and Quill Bot that help to improve English writing skills.					
02.	I believe that AI tools have the potential to significantly improve my English language (vocabulary)					
03.	I find confidence in my English writing using AI tools					
04.	I believe writing and editing with AI tools such as the Chat GPT supports my writing skills with better-generated ideas.					
05.	Grammarly helps to correct my grammar and punctuation in writing					
06.	AI tools such as Google Translator help me understand complicated English phrases and idioms					
07.	Quill Bot is a helpful AI tool to paraphrase my academic writing more professionally					

08.	I believe, AI tools play a vital role for non-native English speakers to acquire better proficiency in English writing					
09.	AI tool has the potential to reduce the time to complete academic writing assignments					
10.	To me, AI assistance over traditional methods such as books and tutoring is preferable for improving my writing skills					
11.	AI tools can create more interest in practicing English writing because of their flexible usage					
12.	I believe that the regular usage of AI tools can positively impact my academic writing performance					
13.	The feedbacks from AI-generated tools tend to be more accurate and helpful					
14.	The AI-generated answers can be further discussed with peers or instructors to improve my learning					

Table 4.3

Challenges Faced by Tertiary-level EFL Students Regarding AI for Writing Development

Sr No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Personal traits (%)					

1.	Over-relying on AI tools for writing tasks can be a concerning approach					
2.	Some AI writing tools such as Chat GPT and Quill Bot's interface tend to be less user-friendly					
3.	AI tools highly encourage plagiarism in terms of academic writing					
4.	AI-generated suggestions tend to be inaccurate which may cause misunderstandings					
5.	AI tools such as Google Translator tend to lose Language and cultural expressions					
6.	The corrections and suggestions by AI tools sometimes conflict with the advice from my instructors.					
7.	While incorporating AI suggestions I tend to lose my personal voice and face difficulties.					
8.	I find it difficult to recognize the potential of AI tools to improve my writing skills over a long-term period					
9.	I feel that among peers and instructors there lies a stigma in using AI tools for learning.					
10.	Due to technical issues with AI tools, my learning process was disrupted.					
11.	Insufficient training is available on the ways to maximize the benefits of AI tools for English writing.					

Appendix 3: In-depth Interview Questions

Perceptions of AI in Developing Writing Skills

1. How do you perceive the role of AI writing tools in enhancing your English writing skills, especially in terms of grammar, vocabulary, and overall composition?
2. Can you share an incident where an AI writing tool is significantly was effective in your understanding or application of English writing concepts?
3. Do you think AI writing tools might alter traditional methods of learning English writing skills in academic settings? If yes, then in what ways?

Challenges in Utilizing AI for English Writing

1. What are the main challenges you have encountered while using AI writing tools for your English assignments, projects or thesis?
2. Have you encountered the issue of maintaining your own voice and originality in writing when using AI tools for assistance? How do you approach it?
3. Can you describe any misconceptions or misunderstandings regarding AI writing tools among your peers or instructors? How do these perceptions affect your use of AI in learning English writing?