

Integrating AI in EFL Teaching: Bangladeshi Higher Education Teachers' Perceptions Regarding Usefulness, Challenges and Vision for the Future



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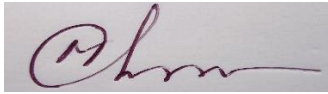
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CERTIFICATE OF APPROVAL

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.



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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.



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Dedication

This research paper is sincerely dedicated to my supportive parents and husband, who inspired and encouraged me to conduct this study. They never left my side throughout the process of doing this and gave me strength and hope whenever I thought of giving up. This research would not have been possible without their love and assistance.

As a small token of my appreciation, I dedicate this research paper to my supervisor Md. Mahadhi Hasan, PhD, who constantly guided and taught me to conduct this study even better. Last but not the least I would like to dedicate this research paper to the Almighty, who gives me strength, wisdom, guidance, the power of thinking, competence, and for giving me good health while doing this. All these I offer to you.

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Abstract

Due to the advancement in technologies the education system has been transforming rapidly. Artificial intelligence (AI) is one of the key features for this change. AI is making its way into classrooms worldwide to help students and teachers with new ways of learning and teaching. This study aims at investigating the teachers' perception of usefulness in integrating AI in the EFL teaching as well as identifying the challenges they face and proposes the future vision of the teachers regarding AI usage in the EFL teaching in Bangladeshi universities. This paper has conducted the data collection by using mixed method research design to answer the research questions: *What are Bangladeshi EFL teachers' perceptions of the usefulness of integrating AI tools in higher education? To what extent do Bangladeshi higher education EFL teachers perceive challenges in integrating AI tools for language instruction? How do Bangladeshi higher education EFL teachers envision the future role of AI in language instruction?* To collect the quantitative data, a survey questionnaire with 22 items were sent out online through Google Forms. A total of 123 teachers have responded to the survey from 20 universities. For the collection of qualitative data, 5 EFL teachers were interviewed. The interview consisted of eight different questions and the respective answers from the teachers. The major statistical tests conducted are Factor Analysis, Chi-Square Tests, and Multiple Regression Analysis. The data from the semi-structured interviews are thematically analyzed. Both quantitative and qualitative data highlights the fact that the teachers demonstrate the potential benefits of AI such as helping them to improve their teaching strategies, optimize their time, and support innovative teaching strategies. On the other hand, they acknowledge certain challenges like the essential requirement for ensuring students' original work instead of what is produced by AI. Despite all this, teachers keep an optimistic view about the future of AI in education. Based on these findings, this study recommends that AI tools should be

identified as helpful material in the effective improvement of EFL teaching. To utilize its maximum potential, a proper training program of AI should be introduced to the EFL teachers.

Keywords: Artificial Intelligence; higher education; EFL teaching; teachers' perception; challenges; vision.

Chapter 1

Introduction

1.1 General Overview

These days education systems are being transformed rapidly due to the advancement of technology. One of the key aspects of this transformation is Artificial Intelligence (AI). It allows computers to simulate human thought processes (Grassini, 2023). Many countries are preparing their students for the future by implementing AI into their education. Initiatives such as "AI for ALL" in the US and AI education standards in the UK and Finland show the effort. These programs are designed to equip the students with the skills that are needed to thrive in a technology-driven world (Paek & Kim, 2021, p. 3). Samman (2024) suggests that AI integration in higher education holds great promise to develop teaching, learning, and organizational processes. Using AI in EFL classrooms can help teachers with different types of assessment ideas, innovative teaching methods and adapt lessons to meet the needs of various students.

Higher education in Bangladesh is expanding quickly. There are more universities, a wider range of subjects, and a high percentage of students (Chowdhury et al., 2020). AI technologies have the potential to transform EFL education in higher institutions by improving language skills, boosting creativity, and making learning more engaging (Harunasari, 2023). If used correctly, AI tools can help teachers enhance language learning in EFL classrooms. According to Gökçearsan et al. (2024), AI also assists teachers by automating tasks like grading, helping with lesson planning, and providing support through chatbots. This means teachers can spend less time on paperwork and more time customizing lessons, tracking student progress, and improving their teaching.

Lin et al. (2022) explained that in the future, teachers believe AI will make learning more personalized for each student. AI could help by identifying where students struggle and offering the best ways to support them. It could also take care of tasks like grading and paperwork, giving teachers more time to focus on teaching and planning engaging lessons. Teachers think AI should be used in a fair and transparent way, helping students understand its impact on their lives. Even though they see the benefits of AI, teachers also face challenges, like not getting enough training or resources and they worry that students might become too dependent on AI (Firdaus & Nawaz, 2024). It is important to tackle these issues to ensure AI is used effectively in EFL classrooms. Implementing AI in EFL classrooms is beneficial for improving both teaching and learning. By addressing the challenges, like the need for more training and concerns about relying too much on AI, classrooms can become more personalized and effective.

1.2 Background of the Study

The rapid development of technology has an impact in every aspect of our life. It also influences how we learn and teach with the usage of Artificial Intelligence (AI) tools. AI is making its way into classrooms worldwide to help students and teachers with new ways of learning and teaching. Higher education in Bangladesh keeps on expanding with more universities and more students than ever before. Additionally, the interest of learning English to cope up with the people from all over the world is also growing. AI has the potential to change the way English is taught at these Bangladesh higher education EFL classrooms by making lessons more personalized and interactive. AI tools are useful for the teachers in grading, lesson planning, and providing extra support to students with diverse activities. However, multiple challenges like lack of proper training for teachers, adequate resources, and

a concern that students will depend too much on AI come along with the integration of AI in classrooms. It is very crucial to find out ways to overcome these challenges to effectively integrate AI in Bangladesh higher education EFL classrooms. The study investigates how Bangladeshi EFL teachers perceive the usefulness of AI, what challenges they face regarding integrating AI, and what visions they hold for the future AI use in teaching English.

1.3 Statement of Problem

The rapid technological advancement influences every aspect of our life. It also has influenced the mode of learning and teaching with the help of Artificial Intelligence (AI) tools. As Samman (2024) suggests that AI integration in higher education holds a great potential to develop teaching and learning. This study investigates the usage of AI in teaching English as a Foreign Language (EFL) within the Bangladeshi higher education system. It explores the teachers' perception of usefulness in integrating AI in the EFL teaching as well as identify the challenges they face and propose what are the teachers' future vision regarding AI usage in the EFL classrooms in Bangladeshi universities.

According to Harunasari (2023) in Bangladeshi university students generally take two or three English language learning courses. The aim of these courses is to develop reading, writing, listening, and speaking skills in English for the students. Assessments that are taken for these courses are quizzes, oral presentations, term exams and project work. These courses assess the students to understand how well they have grasp over the language and can apply these skills in their real-life scenarios. But in recent days, AI is very useful for effective education by making learning personalized for each student, helping teachers work more efficiently, using data to understand how students learn, and adjusting lessons to fit each student's needs. These are helping teachers to utilize their teaching profession effectively (Pedró, 2020). As Chowdhury et al. (2021) have stated that in Bangladeshi universities,

teachers take assessment ideas from online platforms like Duolingo for interactive lessons, teaching vocabulary, and grammatical items. According to Dilzhan (2024), ChatGPT helps teachers to organize their lesson plan properly. Moreover, teachers can get different kinds of daily lesson ideas and activities which reduces their daily workload and it suggests innovative teaching approaches which is useful for developing student engagement. According to Hooda et al. (2022), teachers use AI tools like Grammarly, ProWritingAid, Ginger to find out grammatical mistakes and give comprehensive writing feedback, including grammar, style, punctuation, etc. These tools help to quickly identify the mistakes and give instant feedback. Despite the growing interest in artificial intelligence (AI) to enhance educational outcomes, teachers face challenges when using AI in education (Harunasari, 2023). Using AI in classrooms presents challenges, as demonstrated by Shirin (2022) that the teachers need time and effort to learn how to use AI effectively. According to Quy et al. (2023) challenges include teachers' limited IT skills, lack of technology resources, financial barriers for students, and the need for mindset and management skill changes. There's also a risk of reduced teacher autonomy if AI organizes courses. Teachers also feel that use of AI technologies in education may reduce students' creativity and hamper their critical thinking and problem-solving skills (Dilzhan, 2024). Therefore, addressing these challenges is vital, focusing on training, building trust in AI, and respecting teacher autonomy while integrating AI into education.

In upcoming years, AI is going to develop the EFL teaching especially on two aspects such as increasing personalized learning and reducing administrative workload. As Pedró (2020) claims AI will continue to provide more useful tools that will help to create more personalized lessons that will fulfill the needs of all students, so the teachers can then focus more on creative teaching methods and engaging with the students. Additionally, Dilzhan (2024) stated that platforms such as ChatGPT will keep improving so that a teacher will have a chance to create lesson plans and student activities creatively by themselves in an easy way.

Moreover, AI-enabled tools such as Grammarly and ProWritingAid are getting more and more advanced and this provides more meaningful suggestions for correction regarding language usage, grammar, and style. In this way, the evolution will be to the teacher's benefit in delivering more dynamic and engaging lessons, ensuring effectiveness in teaching.

The need of conducting this study arises limited research on integrating of AI tools in EFL teaching within Bangladeshi higher education. AI tools are effectively used for planning interactive lessons and assessments for the students but there is a lack of comprehensive understanding on how these AI tools are actually being integrated and their impact on teaching of Bangladeshi higher education EFL teachers Shirin (2022). The study offers detailed perceptions of the teacher regarding the usefulness of integrating AI in EFL teaching practices as well as it assesses the challenges they are facing while implementing these tools. The study also portrays the vision and strategies for the future of AI in Bangladeshi higher education EFL classrooms.

1.4 Research Objectives

The objectives of the study are mentioned below:

RO1. To find out Bangladeshi EFL teachers' perceptions concerning the usefulness of AI in enhancing teaching and language learning.

RO2. To identify the problems faced by the EFL teachers while integrating AI due to lack of training and resources besides over-dependence of students on AI.

RO3. To explore Bangladeshi higher education EFL teachers' vision regarding future usage of AI for effective teaching.

1.5 Research Questions

RQ1. What are Bangladeshi EFL teachers' perceptions of the usefulness of integrating AI tools in higher education?

RQ2. To what extent do Bangladeshi higher education EFL teachers perceive challenges in integrating AI tools for language instruction?

RQ3. How do Bangladeshi higher education EFL teachers envision the future role of AI in language instruction?

1.6 Theoretical Framework

This study is based on the TPACK model, which is combined with three major areas of knowledge that are required for effective teaching: Technological Knowledge, Pedagogical Knowledge, and Content Knowledge. To use AI tools in EFL classrooms, teachers should know how to use technology, how to apply technology in teaching, and how to focus on the content of the language. This framework helps in the exploration of how ready Bangladeshi EFL teachers are for AI, the challenges they go through in terms of better support, infrastructure, and training to integrate AI into their teaching.

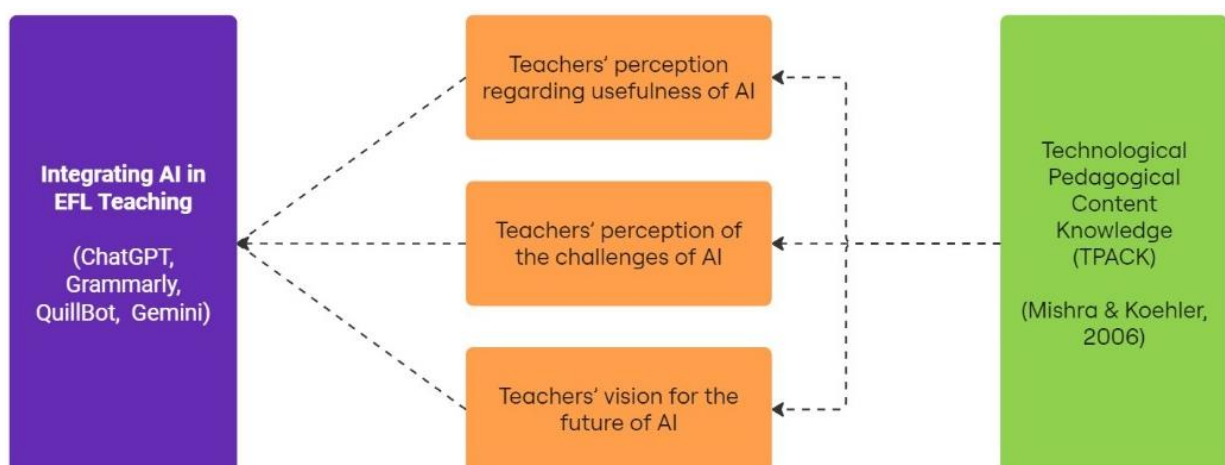


Figure 1: Theoretical Framework

1.7 Conceptual Framework

The study explores investigates the teachers' perceptions of AI usefulness, challenges, and their visions on the potential of AI in the future. AI tools are proven to be helpful for teachers in developing teaching strategies, easing workload, and carrying out new methodologies of teaching (Samman, 2024; Harunasari, 2023). Besides these benefits, teachers face some challenges such as lack of training, resources, and students' over-dependence on AI are the issues of concern. These challenges have to be solved for effective implementation of AI in teaching. Teachers envision that in the future AI will be facilitated to promote more personalized learning and increased support for teaching (Lin et al., 2022; Pedró, 2020). Therefore, this framework directs how AI can be integrated to improve teaching and learning in Bangladesh higher education EFL classrooms.

1.8 Scope of the Study

This paper focuses on the incorporation of AI in teaching English as a Foreign Language (EFL) in the higher education institutions of Bangladesh. It especially aims at EFL teachers or instructors in universities who are partaking in the integration of AI tools in their strategies of teaching. The scope contains an examination of the potential usefulness, the challenges encountered and the future vision for AI in EFL education. This study is measured within the higher education scenario of Bangladesh, in consideration of the unconventional challenges and opportunities faced in the educational environment.

1.9 Significance of the Study

The study highlights the perception of EFL teachers of Bangladeshi higher education regarding integrating AI in the classroom. It investigates the perspective of the teachers' perception on AI usefulness, challenges while implementing AI tools in teaching effectively

and the vision they have to make the teaching methods more effective using AI tools in EFL classrooms. This study guides the educators on the practice of utilizing AI tools effectively in teaching as well as address the ways of overcoming the existing challenges. Additionally, it contributes recommendations to the existing studies to integrate AI tools effectively in Bangladeshi higher education EFL classrooms.

1.10 Definition of Terms

- **Artificial Intelligence (AI)**

According to Schank (1987), Artificial Intelligence is that branch that develops machines that are able to do tasks that normally require human intelligence such as learning, problem-solving, and understanding language. Some try to mimic the processes of human thought, while others labor on building intelligent systems without particularly attempting to make them similar in the way humans think. In general, the definition of AI depends on goals and methods on which researchers are focused. As Wang (2008) has claimed that most people agree that AI involves computer systems that work like a human mind. However, there are diverse views on what this similarity should focus on. Some define it by structure, behavior, capability, function, or principle. The above-mentioned various definitions of AI are all valid because each of them reflects part of human intelligence. To put it precisely, AI is going to generate information just similar to human intelligence, not identical with human intelligence (Wang, 2008).

- **AI Tools**

As Fitria (2021) have stated that Artificial Intelligence (AI) is the use of a technology that allows machines to learn and understand like humans through tasks that normally would require human intelligence. It models human thinking and designs systems that act like humans.

These AI tools are software programs that utilize artificial intelligence in the performance of specific tasks. Nowadays, there are several kinds of available AI tools. Among them, the mentioned four AI tools are being used vividly by teachers, students, and others in various aspects.

- a. **ChatGPT:** According to Kar et al. (2024), ChatGPT is an AI developed tool by OpenAI, capable of producing human-like text. It assists users by answering questions, offering information, translating languages, summarizing texts, and helping with writing. It also helps students with their homework, assignments and in explaining complicated concepts.
- b. **Grammarly:** As Blanco et al. (2024) have stated that Grammarly is an AI-powered tool to improve one's writing through real-time feedback provided by the tool grammar, spelling, punctuation, style, and even tone. Advanced algorithms analyze text and provide suggested corrections by making it useful both for students and professionals.
- c. **QuillBot:** QuillBot is helpful for writing skills through paraphrasing and suggesting how one can improve on such writing. Like ChatGPT, it has also raised some concerns about plagiarism and students' authenticity. But QuillBot supports personalized learning through the varied approaches used in guiding learners on ways of improving their writing and reading comprehension (Algahtani, 2024).
- d. **Gemini:** Gemini is a google generative AI tool which is developed to help users to improve the general quality of their writing and communication. It generates coherent texts and also suggests grammar and style improvements in writing to provide personalized feedback. Gemini is useful when someone wants to draft different kinds of sentences, say, an email one wishes to send out or an essay. Moreover, it is also effective for language learning by improving students' writing in showing creativity in their thoughts (Blanco et al., 2024).

- **Teachers' Perceptions of Usefulness of AI**

This term refers to the perception of EFL teachers regarding the use of Artificial Intelligence (AI) tools. It involves their perception of how AI is capable of enhancing teaching methodology, bringing new techniques for assessment, and supporting students in learning. It also includes their perception that AI has the capacity to automate administrative tasks, make the learning environment more personalized, and foster new teaching techniques (Samman, 2024; Harunasari, 2023).

- **Teachers' Perceptions of Challenges of Integrating AI**

The term addresses the problems EFL classroom teachers face while introducing AI into their classes such as inadequate teacher training, limited technological infrastructure, lack of resources due to financial constraints as well as it also raises concern that students may become overly dependent on AI (Firdaus & Nawaz, 2024; Quy et al., 2023). It also includes the issues of adapting existing curricula and modes of teaching to effectively teach about AI, as well as addressing possible negative side effects from AI use (Shirin, 2022; Dilzhan, 2024).

- **Teachers' Vision of AI Usage in the EFL Classroom for Teaching English Language**

The term refers to what the EFL teachers envision as the future role of AI in their teaching. This part includes expectations of the EFL teachers regarding how AI will develop language instruction to a higher level, boost personalized learning, and increase student engagement through diverse teaching strategies. Teachers' vision involves what future developments may be in AI, how these might change their ways of teaching and classroom experiences, and propose new ways through which language education could be enhanced by AI (Lin et al., 2022; Pedró, 2020).

1.11 Chapter Summary

Chapter one discusses how Artificial Intelligence can be implemented in education and its impact on teaching EFL in the higher education system of Bangladesh. The potential advantages of AI in enhancing teaching and learning and organizational processes are discussed while underlining its role in producing diverse assessment ideas, innovative teaching methods and adaptive lesson plans. The chapter follows by focusing on the present state of higher education in Bangladesh, highlighting significant growth in the sector, including increased number of universities and student enrollment. The usage of AI tools including automated grading systems and chatbots is emphasized as a means to support teachers by saving time and enhancing the customization of lessons. The chapter further discusses the future scopes of AI in making learning more personalized and effective, as visualized by educators and instructors who forecast the role of AI in handling administrative tasks and supporting individualized learning. It also acknowledges the challenges faced by teachers including inadequate training, limitation of resources and concerns about the dependency of students on AI.

The statement of the problem summarizes the aim of the study to investigate the use of AI in EFL teaching within the universities of Bangladesh, highlighting the perceptions of teachers on the usefulness of AI, the challenges encountered and the future visions for AI integration. IT highlights the gap in research regarding the practical implementation of AI tools and their impact on teaching practices, setting the stage for thorough exploration of these issues. This chapter lays the groundwork for understanding how AI can enhance EFL teaching in Bangladesh, identifies key research objectives, and frames the study within a broader educational context.

Chapter two explores the review of literature on teachers' perception of AI integration in EFL education, popular AI tools, their usefulness, challenges, and future roles. The paper presents various tools used by EFL teachers, including ChatGPT, Grammarly, QuillBot, Gemini and automated grading systems that enhance language learning and reduction of workload. The chapter also focuses on the advantages brought about by AI in enhancing teaching efficiency, personalized lessons, and engagement among students. However, it discusses challenges such as technostress, inadequate training, and over-reliance on AI by students. This chapter concludes with the identification of research gaps on the effective implementation of AI in Bangladeshi EFL teaching by declaring the need for further investigation.

Chapter three presents a research design that incorporates both quantitative and qualitative methods to collect data from 123 EFL teachers of 20 universities in Bangladesh. The methodology intends to explore teachers' perceptions of the usefulness of AI, challenges, and their vision for the future. Furthermore, this chapter outlines the tools used in the collection of data that include a survey questionnaire and semi-structured interviews. Standard deviation, factor analysis, and regression analysis are some of the methods used here in the data analysis section to interpret the findings.

Chapter four represents the analysis of data collected from the participants which shows that the majority of the teachers have a positive attitude toward the potential of AI in EFL teaching. However, there are concerns regarding technical support, engagement of students and adequacy of AI content. Factor analysis indicates optimism among teachers about the usefulness of AI tools but skeptical about the infrastructure and institutional support. Responses in the variations show that most of the teachers believe in the benefits of AI but there is still some skepticism on its challenges, such as plagiarism and reduction of face-to-face interaction.

The final chapter discuss the views of 123 Bangladeshi EFL teachers on the use of AI in higher education. Most teachers hold a positive view as they acknowledge that AI can be used to enhance teaching and learning. However, they mentioned a number of challenges that they face such as limited technical support and inadequate infrastructure along with the fact that face-to-face interactions may reduce. The study relates the findings with the TPACK framework which is focused on teachers' knowledge regarding technology, pedagogy, and content that can find a realistic application to enhancing AI tools in EFL teaching (Mishra & Koehler, 2006). It concludes by recommending further research on larger samples concerning improvement in the integration of AI into EFL teaching by providing full support to the EFL teachers and institutions.

Chapter 2

Literature Review

2.1 Introduction

The glory of integrating Artificial Intelligence (AI) in education has spread worldwide (Yu & Nazir, 2021). According to Wafik et al. (2024), teachers in Bangladeshi higher education in EFL classrooms are not behind the lines. Bangladeshi higher education EFL teachers have started to incorporate AI into their teaching approaches to keep up with the changing world, but they have different viewpoints on AI use and they come across a variety of challenges while integrating AI in the classroom. Additionally, different teachers have different future visions for the rising interest in integrating AI into education. This review investigates Bangladeshi teachers' perspectives, challenges, and future outlook on incorporating AI in EFL classrooms, with the aim of providing useful insights into this arising setting.

2.2 Popular AI Tools Used by Teachers in EFL Education

AI tools are being integrated more into EFL education, presenting a new perspective to the teachers for improving the learning process of students and reducing workload. Research shows that multiple EFL teachers are using AI tools to support teaching and student learning. According to Holmes et al. (2021), researchers and institutions are trying to utilize AI as a helpful tool rather than a risk in education. The Beijing Consensus on Artificial Intelligence (UNESCO, 2019) addresses the opportunities and challenges of using AI in education, offering 44 recommendations across various areas (UNESCO, 2021). A study conducted by Galindo-Domínguez et al. (2023) claimed that higher education teachers utilize AI for academic purposes such as gathering numerous data, research works like text translation and data analysis as well as enabling students to use AI tools for different purposes in an ethical way.

The most commonly used tools are ChatGPT, Dall-E, and Midjourney. Algahtani (2024) mentioned some popular AI tools that are used in education. First of them is Automated Grading Systems. These AI tools are very helpful for the teacher for automating grading and provide feedback on grammar, sentence structure and content, such as Grdaescope or Essay Grader. There are also some AI tools such as Turnitin or Copyscape that can detect plagiarism by analyzing students' work which reduces the workload for teachers and the teachers also stay clarified that the students are not doing anything unethical. The following diagram of research data is adapted from Blanco et al. (2024), illustrating the AI tools and their functions.

Table 1 Popular AI Tools

AI Tools	Tool Category	Pedagogical competencies of educators	Associated AI Capabilities
Adrenaline	Source Code Generation	Evaluation and Feedback	Read, understand and produce texts
AI Text Classifier	AI Generated Text Detection	Evaluation and Feedback	Read, understand and produce texts
Amazon CodeWhisper	Source Code Generation	Evaluation and Feedback	Read, understand and produce texts
Anthropic	Text Generation	Teaching and Learning	Initiating, maintaining, and concluding conversations
AudioLM	Audio Generation	Teaching and Learning	Ability to understand spoken messages
Gemini	Text Generation	Teaching and Learning	Initiating, maintaining, and concluding conversations
ChatGPT	Text Generation	Teaching and Learning	Initiating, maintaining, and concluding conversations
ChatPDF	Text Generation	Digital Content	Read, understand and produce texts
Copyleaks	AI Generated Text Detection	Evaluation and Feedback	Initiating, maintaining, and concluding conversations
QuillBot	Text Generation	Teaching and Learning	Grammar and spelling
DALL-E 2	Image Generation	Digital Content	Read, understand and produce texts
GPT for Slides	Image Generation	Teaching and Learning	Read, understand and produce texts
Notion	Text Generation	Teaching and Learning	Read, understand and produce texts
Grammarly	Written Content	Teaching and Learning	Personalized suggestion on writing
Turnitin	AI Generated Text Detection	Evaluation and Feedback	Read, understand, produce texts and check plagiarism

2.3 The Usefulness of Integrating AI Tools Used by EFL Teachers

Integrating AI applications into EFL teaching practices can help students learn more and improve their language skills in class. Different teachers have various viewpoints on using AI tools in their classrooms but none can deny the various usefulness of using AI in effective EFL teaching. According to Hazaymeh et al. (2024), AI tools are very effective for improving their teaching strategies. Teachers appreciate the fact that integrating AI tools in teaching makes their work easier and it is very helpful to save their valuable time. They can utilize this time planning more engaging lessons instead of spending most of the time on grading and giving feedback to the students. Equivalently Dilzhan (2024) stated that AI tools are giving a crucial advantage in reduction the workload of the teachers. AI tools like Bamboozle or Quizlet help the teachers by preparing different templates to complete various tasks. By using ChatGPT, teachers can create any sort of lesson as they plan to deliver as well as they get variety of ideas to conduct both summative and formative assessments in EFL classrooms. According to Hooda et al. (2022), teachers also use AI tools like Grammarly, ProWritingAid, Ginger to find out grammatical mistakes and give comprehensive writing feedback, including grammar, style, punctuation etc. These tools help to quickly identify the mistakes and give instant feedback.

The EFL teachers perceive significant improvements particularly in providing personalized feedback, enhancing engagement and motivation, and improving teaching efficiency. Though the perceived benefits are lesser for language acquisition than the others, it is still considered as highly effective (Hazaymeh et al., 2024). Similarly, Sumakul et al. (2022) has claimed that teachers appreciate the use of AI tools in the EFL classroom. They find these tools quite useful for developing their teaching skills. Teachers have mentioned programs like Plot Generator and Elsa, which are highly beneficial for teaching tasks such as providing grammatical improvement and enhancing writing style and pronunciation. Baidoo-Anu and

Ansah (2023) claimed that with the help of ChatGPT teachers can create assessments where they can give ongoing feedback and it also helps the teachers to adjust their teaching strategies based on the students' performance data. It is noted that AI is enhancing students' motivation and helping them to bring out their creativity in different aspects. Therefore, there are noticeable significant usefulness found in implementing AI tools in EFL classroom.

2.4 The Challenges of Integrating AI Tools by EFL Teachers

As integrating AI tools in EFL teaching offers a lot of great opportunities but it also brings a lot of challenges as well to implement these tools in Bangladeshi higher education context. While AI tools can enhance personalized learning opportunities for the students, teachers can utilize their time using AI tools to make interactive lessons and introduce new methods in teaching, on the other hand, teachers face several obstacles while implementing AI tools in EFL teaching effectively (Wafik et al., 2024). These include addressing different needs of the students, managing concerns about AI may reduce teacher autonomy, technostress for not fully understand the AI and not having proper training or support on how to implement these tools in teaching in EFL classroom effectively. According to AbdAlgane and Othman (2023) Integrating AI tools into EFL classes can be highly effective for improving teaching and learning, but teachers have to consider a lot of concerns. These obstacles include having a clear understanding of different students' learning speeds, English language proficiency, and ensuring that each and every student is able to use the AI tools effectively and wisely. Another study conducted by Baidoo-Anu and Ansah (2023) have demonstrated that there are students who still prioritize traditional methods of teaching, therefore they have a hard time accepting learning through AI tools.

Some teachers might fear that these tools will replace human interaction such as getting face to face feedback from them. It's essential to help students to understand the benefits of

using AI and make them feel comfortable using these tools. When the students get comfortable using AI, teacher will also feel confident to integrate AI in their teaching strategies. According to the study, teachers are similarly concerned about students' perceptions of using AI tools to replace human teachers (Sumakul et al., 2022). According to Alharbi and Khalil (2023), age displays a vital challenge in this context. Younger teachers recognize the benefits of implementing AI tools in EFL education because they believe that using AI tools will make the teaching effective and innovative whereas the older teachers resist this idea because they fear that AI tools will overshadow the traditional teaching practices. However, Kohnke et al. (2024) noted that despite their potential to enhance learning experiences, integrating AI tools in EFL classrooms can cause “technostress” among teachers. Teachers who do not fully understand the function of utilizing AI properly in the classroom, they feel continuous pressure and anxiety. Additionally, a study conducted by Iqbal et al. (2022) indicated that teachers are not yet ready to utilize AI tools for classroom usage. The majority of teachers are hesitant to use it; nevertheless, teachers use it very rarely or when it is absolutely necessary. Though the university teachers recognize some potential benefit of using AI tools but they do not support the idea of stopping using it completely. However, concerns about plagiarism, students losing their critical thinking abilities and a disruption to traditional learning environments are common among teachers.

Another most concerning issue here is students might not get enough lessons to meet their needs. On the other hand, the least concerning issue here is AI might lack cultural awareness, and this will impact the authenticity of language learning. Therefore, the challenges are rated high from the teachers’ perspective. This shows that the teachers are having certain obstacles while integrating AI in EFL classes (Hazaymeh et al., 2024). According to Kuleto et al. (2021), a significant challenge is the lack of proper training programs for the teachers. Every teacher is not familiar with technical aspects of AI tools and they need proper training to

integrate these tools into their teaching methods effectively. Giving them proper training and support will build their confidence in using AI technologies effectively. As it is noticeable that there are multiple obstacles while implementing AI tools in Bangladeshi higher education EFL classroom yet there is no denying that these tools are very much helpful if they are integrated properly (Kohnke et al., 2024). Thus, addressing these challenges and giving proper training or support system can be helpful to overcome these challenges and teacher will be able to enhance their teaching practices (Hazaymeh et al., 2024).

2.5 Envisioning AI's Role in English Language Teaching in Higher Education

Since the era of AI in EFL education is rising, the educators acknowledge the significant improvements in integrating AI tools in Bangladeshi higher education EFL teaching (Shamsuddinova et al., 2024). The teachers envision proper strategies to be taken to overcome the challenges and effectively use AI tools in teaching methods (Sumakul et al., 2022). According to Walter (2024), teachers see the importance of integrating AI tools in higher education EFL classrooms. They propose to conduct mandatory AI classes which will cover basic to advanced topics related to using AI and its ethical consideration. Teachers acknowledge that AI is the future of education thus making AI a normal part of education will ensure students' continuous professional development. To ensure that, teachers have proposed that there should be regular workshops and meetings to keep every student updated on AI utilization. Similarly, Shamsuddinova et al. (2024) stated that teachers are very optimistic about AI having the capability to reshape their role, teaching strategies and assessment practices and they see a potential benefit for teaching.

However, teachers identify a lack of proper training system in AI tools as a barrier to implementation. They desire to learn how to use AI tools ethically and how to integrate these tools into their teaching strategies (Shamsuddinova et al., 2024). Additionally, Sumakul et al.

(2022) has stated that it is important to remember that AI tools should be used as helpful aids, not as replacements for human teachers. Teachers' vision is students should not be too much dependable on the AI tools that they stop prioritizing human teacher-student interaction.

2.6 Review of Existing Research

In the Bangladeshi higher education EFL classrooms, there is an increasing usage of AI-powered tools such as ChatGPT and Turnitin by educators, though they face challenges and have diverse views on AI tools' benefits (Algahtani 2024; Dilzhan, 2024; Blanco et al. 2024; AbdAlgane and Othman 2023; Baidoo-Anu & Ansah 2023). Hazaymeh et al. (2024) show that AI tools make teaching easier and more engaging but a concern arises that the students may be too much dependable on the AI tools that they stop prioritizing human teacher-student interaction (Sumakul et al., 2022). Other issues cited by teachers regarding technostress for not having proper training in AI tools (Kuleto et al., 2021). Notable opportunities will come around if the teachers get training on utilizing AI tools in EFL higher education classrooms. Future vision includes arranging training on AI and frequent workshops to integrate AI into teaching strategies effectively (Iqbal et al., 2022). The studies indicate that AI tools are very effective in teaching but implementing AI in EFL education is difficult. It requires a careful balance between how it works and ensuring teachers receive enough training to utilize it in the classroom context.

2.7 Identification of the Gap

There has been a great amount of research on integrating AI into EFL education but most of these studies are done in broader contexts that discuss general perceptions regarding usefulness, challenges, and future visions of AI use in higher education EFL classrooms (Hazaymeh et al., 2024; Sumakul et al., 2022; Kohnke et al., 2024). Very few studies

specifically address the issue of effective AI usage in Bangladeshi higher education EFL classrooms. Most of the research on AI for education does not pay enough attention to specific challenges in the Bangladeshi teachers' activity such as adapting AI tools to the local socio-cultural environment, infrastructural limitations and many more (Kuleto et al., 2021; Sumakul et al., 2022; Wafik et al., 2024). There is multiple research that has been conducted on the usefulness of using AI in Bangladeshi higher education EFL classrooms but a little research has been conducted on the specific training needs of Bangladeshi EFL teachers or the ways they can manage to develop using AI on limited resources (Algahtani 2024; Dilzhan, 2024; Blanco et al. 2024).

The present study attempts to fill in such gaps by carefully looking at Bangladeshi EFL teachers' views and experiences on the role of AI in higher education. The paper will analyze challenges they face while accessing technology, what kind of training they need, how to minimize the over-reliance on AI among the students, etc. It will further investigate the visions of the teachers for future use in classroom purposes and provide ways in which challenges can be overcome and utilize the usefulness of AI effectively. This is how the research contributes to useful findings that are necessary to properly integrate AI into the higher education system in Bangladesh EFL teaching.

2.8 Chapter Summary

The chapter discusses the perception of Bangladeshi higher education EFL teachers regarding the usefulness of AI tools, challenges that come with it and their future vision for AI implementation. Teachers hold an optimistic view about AI being useful for teaching efficiently and reducing workload, however, they show concerns in the issues like technostress, lack of training, and overdependence on AI. EFL Teachers envision improved training,

workshops, and integration of AI in ethical ways to develop future teaching strategies and learning experiences.

Chapter 3

Methodology

3.1 Introduction

Artificial Intelligence has recently become a well-known factor in education for changing traditional teaching and facilitating the ways teachers approach in classroom learning. This study explores Bangladeshi higher education EFL teachers' perceptions about the inclusion of AI tools in teaching practices through a mixed-methods approach. Data was collected by questionnaires and interviews which allowed the researcher to reach both the quantitative and qualitative perception of the teachers. Numerical data on teachers' opinions were collected through survey questionnaires, while personal reflection in depth is possible through interviews. This research tries to explore the usefulness of AI in teaching, challenges that may face them, and what vision they hold for the future classroom role of AI. Ethical considerations such as informed consent and confidentiality are assured throughout the research process.

3.2 Research Design

The study follows both quantitative and qualitative methods to find out the answer of the research questions. Generally, mixed-method design allows flexibility in the research and it is thereby for data evaluation as it allows both statistical data and personal experience to be reflected in the study (Creswell, 2013). The participants are the EFL instructor from tertiary level in Bangladesh. The emphasis was put on teachers' designation, their work experiences and any training they had received on using AI tools effectively in their EFL teaching practices. The collected data provided insights into teachers' perspective regarding AI usage usefulness, challenges and their vision for future.

3.3 Participants

In July 2024, a survey questionnaire with 22 items were sent out online through Google Forms as part of the quantitative component of the study. The sampling used was simple random sampling to ensure that the selections were random and unbiased (Noor et al., 2022). A total of 123 teachers have responded to the survey from 20 universities and 5 experienced EFL teachers were interviewed from several Bangladeshi universities who have participated in a semi-structured interview consisting of eight questions. A purposive sampling was used for the selection of interview participants based on relevant expertise and experience with AI tools in EFL teaching. Participants for the interview were chosen from the surveyed teachers. Their teaching experience, use of AI in EFL teaching and interest for the interview were considered in selecting them.

3.4 Setting of the Study

The research has been carried out across several universities in Bangladesh, focusing on EFL teachers within higher education institutions. The setting provides a diverse environment where AI tools are being integrated into language teaching and offer a representative sample of Bangladeshi EFL classrooms. The universities chosen for the study reflect the usefulness and challenges faced by EFL instructors in the region and ensure the relevance of the results to be extended to the general educational context of Bangladesh and beyond.

3.5 Instruments

In July 2024, a survey questionnaire with 22 items were sent out online through Google Forms as part of the quantitative component of the study. The questionnaire, which included close-ended questions in the form of a five-point Likert scale, were adapted from relevant and existing studies by Hazaymeh et al. (2024), Sumakul et al. (2022), Kohnke et al. (2024), Baidoo-Anu and Ansah (2023), Shamsuddinova et al. (2024), and Walter (2024). The questionnaire was divided into four main sections based on the research topic. First section was on demographic information. Second section was focused on the teachers' perception regarding the usefulness of integrating AI in EFL classrooms and the third section dealt with teachers' perception regarding challenges of integrating AI in EFL classrooms and the fourth section addressed teachers' vision for the future of integrating AI in EFL classrooms. In addition, EFL teachers from several Bangladeshi universities participated in a semi-structured in-depth interview consisting of eight different questions. The questions of in-depth interview were adapted from Hazaymeh et al. (2024), Kohnke et al. (2024) and Shamsuddinova et al. (2024). The semi-structured nature of the interviews helped the participants to share their thoughts on integrating AI tools into EFL teaching more explicitly. This encouraged the instructors to share their personal experiences, insights and detailed elaboration of each and every question. In this study, the participants' identities were kept anonymous. The study collected the data thoroughly using both quantitative and qualitative methods to explore the perceptions of EFL teachers from Bangladeshi universities of integrating AI tools in their teaching practices. Applying this mixed-method strengthens the study's validity, reliability and credibility.

3.6 Data Collection

This paper has conducted the data collection by using mixed methods. To collect the quantitative data, a survey questionnaire with 22 items were sent out online through Google

Forms. A total of 123 teachers have responded to the survey from 20 universities. Additionally, to collect the qualitative data, 5 EFL teachers were interviewed consisting of eight different questions. Using mixed method in this study has helped to collect the perceptions of teachers about AI, insights into detailed elaboration for each and every question. A pilot study with 30 samples ensured that the survey questionnaire is reliable and valid. Expert opinion on the in-depth interview protocol also helped develop the questions for clarity.

3.7 Data Analysis

Data analysis involves several statistical tests. Such tests were carried out to test the relationship and effects of variables associated with Bangladeshi higher education EFL teachers' perceptions of AI tools in language teaching. First, descriptive statistics such as means and standard deviations were calculated to summarize the data to provide an overview of the central tendencies and variability within the dataset (Creswell, 2014). The Factor Analysis using Principal Component Analysis (PCA) has been conducted to identify the hidden factors that influence perceptions. PCA is a statistical method of reducing data dimensionality while retaining most of the variability-in this case. It allows identification of key components explaining the variance in teachers' responses (Hair et al., 2010).

Afterwards, Chi-Square tests were conducted as an attempt to test associations with regard to categorical variables. This non-parametric test is quite suitable for analyzing relationships between categorical data (Field, 2013). Finally, in an effort to predict teachers' perceptions about the future role of AI in language teaching, there was a multiple regression analysis based on the teachers' perceptions of usefulness and challenges. Multiple regression is a powerful statistical tool to predict one dependent variable using multiple independent variables (Tabachnick & Fidell, 2013). Hence, all analyses have been run on appropriate software; hence, the results should be true and reliable.

Qualitative data that has been collected through the interviews are thematically analyzed (Creswell & Clark, 2017). The interview data were reviewed line by line to organize the key into themes. Indeed. This method has helped to identify an in-depth understanding of teachers' experiences and perspectives. The key themes that emerge in this study are the usefulness of the AI tools, challenges to integrate them, adequate teacher training, and their future visions for the use of AI in EFL classrooms.

3.8 Ethical Consideration

The research is conducted within strict ethical standards that make sure that the rights and privacy of the participants are strictly maintained. The participants were well informed, and consent was taken accordingly before collecting the data. It has been informed that their participation would be completely voluntary. They were assured that the data would be used only for research purposes and would be anonymous. Furthermore, to protect the privacy of the participants, pseudonyms were used. The participants are guaranteed that their information would not be shared with or any purpose other than this research.

3.9 Chapter Summary

This study investigates Bangladeshi EFL teachers' perceptions of integrating AI tools into their teaching through a mixed-methods approach. A total of 123 EFL teachers from 20 universities were sent a 22-item survey questionnaire through Google Forms. Additionally, five of the teachers were interviewed to gain a deeper understanding of their personal experiences and thoughts. To analyze quantitative data, descriptive statistics, PCA, and Chi-Square tests were applied. Multiple regression analysis in this study is also used to predict how teachers envision the role of AI in education in the future. For the qualitative part, the answers of the interview questions were thematically analyzed and some key themes are identified such as the

usefulness of AI tools, challenges of AI, the need for proper teacher training and finally, the teachers' vision about the future of AI in EFL teaching.

Chapter 4

Findings

4.1 Introduction

In this study, 123 EFL teachers from 20 universities were surveyed, along with 5 teachers who were interviewed for detailed insights. This analysis provides a comprehensive view of Bangladeshi EFL teachers' perceptions regarding the integration of AI tools in their teaching practices. The responses of the survey and interviews have figured out some key themes which are the usefulness of AI, challenges faced by the teachers to implement AI tools and their vision of what the future of AI will be in education. This chapter explains the findings in a systematic approach to provide a detailed insight in the perception of AI usage in higher education EFL classrooms across Bangladesh.

4.2 Findings from Survey

This chapter summarizes the findings based on quantitative and qualitative data collected in this study. In total 123 EFL teachers from 20 universities participated to the survey and 5 were interviewed for more detailed insights. The analysis gives a clear view of how Bangladeshi EFL teachers perceive AI in their teaching. The major themes include the usefulness of AI, teachers' challenges and how they envision the future role of AI in education. The chapter systematically sets out to investigate these findings which are discussed in an organized way to explore how AI is used and perceived in higher education EFL classrooms in Bangladesh.

4.2.1 Demographic Profile of the Respondents

Demographic Variable	Category	Count (n = 123)	Percentage (%)
Gender	Male	52	42.3
	Female	71	57.7
Designation	Lecturer	58	47.2
	Assistant Professor	39	31.7
	Associate Professor	14	11.4
	Professor	12	9.7
Experience	0-3 years	38	30.9
	4-6 years	30	24.4
	6-10 years	32	26.0
	10+ years	23	18.7
AI Training	Yes	16	13.0
	No	107	87.0

The demographic profile of the study's participants (n = 123) reveals a diverse representation across several key categories. The majority of respondents are female (57.7%), with males comprising 42.3% of the sample. In terms of professional designation, most participants are Lecturers (47.2%), followed by Assistant Professors (31.7%), Associate Professors (11.4%), and Professors (9.7%). The distribution is relatively even; 30.9% of the teachers have between 0-3 years of teaching experience, 24.4% have between 4-6 years of teaching experience, whereas 26.0% fall within a bracket of 6-10 years of teaching experience, and 18.7% have more than ten years of teaching experience. Surprisingly, only a small part of the participants reported receiving training in AI, at 13.0%, while 87.0% have not. Above demographic information fully describes the sample of this study, illustrating the distribution of difference in gender, experience, and exposure to AI training among Bangladeshi higher education EFL teachers.

4.2.2 RQ1. What are Bangladeshi EFL teachers' perceptions of the usefulness of integrating AI tools in higher education classrooms?

Table 4.1 Mean and Standard Deviation

Sl No	Items	Mean	SD
1	AI tools are effective for improving teaching proficiency of the teachers	4.16	0.61
2	AI tools are effective in increasing students' engagement and motivation to learn English	4.07	0.78
3	AI tools will be able to improve Bangladeshi EFL higher education teaching efficiency and effectiveness more in the future.	4.17	0.73
4	AI tools make language learning easier and personalized	4.17	0.73
5	AI tools provide access to diverse contents which is very effective for teaching and learning	4.30	0.66
6	The institutions do not have enough technical support to integrate AI in the classroom	4.12	0.70

In the table 4.1 on Mean and Standard Deviation gives an outline of how Bangladeshi EFL teachers view the use of AI tools in higher education. It ranges from how AI helps improve teaching skills, increases student participation, enhances efficiency, personalizes learning, and offers diverse contents. The average scores range from 4.07 to 4.30 on a 5-point scale and thus reflect overall positive views; most of the teachers agree that AI is useful. The highest score, 4.30, highlights that teacher especially appreciate AI's ability to provide a wide range of teaching materials. Standard deviations, between 0.61 and 0.78, show moderate agreement, with some variation in responses.

Table 4.2 Factor Analysis

Items	PC1	PC2	PC3	PC4	PC5	PC6	Explained Variance
AI tools are effective for improving teaching proficiency of the teachers.	-0.45	0.03	-0.48	0.48	0.18	0.55	0.49
AI tools are effective in increasing students' engagement and motivation to learn English.	-0.44	-0.17	-0.27	-0.71	-0.41	0.17	0.17
AI tools will be able to improve Bangladeshi EFL higher education teaching efficiency and effectiveness more in the future.	-0.49	-0.04	-0.25	0.21	0	-0.81	0.12
AI tools make language learning easier and personalized.	-0.4	0.29	0.61	0.29	-0.54	0.11	0.08
AI tools provide access to diverse contents which is very effective for teaching and learning.	-0.44	0.11	0.43	-0.31	0.71	0.05	0.07
The institutions do not have enough technical support to integrate AI in the classroom.	-0.08	-0.93	0.29	0.19	0	0.06	0.06

Factor analysis of the items measuring perceptions of the Bangladeshi EFL teachers on the usefulness of integrating AI tools in higher education classrooms showed several important insights. Items have ranged from F to K, dealing with perceptions concerning the effectiveness of AI tools in improving teaching proficiency and enhancing students' engagement and all-out efficiency in times to come. The result provided six factors, which have been labeled as PC1 to PC6. Of these, PC1 accounted for the highest variance (49%), followed by PC2, accounting for 17%. The remaining components contributed progressively less variance to the observed data. The loadings of the items on these components reflect the weight of each perception to the variation in the dataset as a whole. For example, "AI tools are effective for improving teaching proficiency" has strong negative loading on PC1 -0.45, while "The institutions do not have enough technical support to integrate AI in the classroom" shows strong negative loading on PC2 -0.93. The explained variance is the attribute of PC1, and this component is predominant as it displays nearly half of the total variance while teachers form their perception to a great extent about the efficacy of AI tools in enhancing teaching practices.

4.2.3 RQ2 To what extent do Bangladeshi higher education EFL teachers perceive challenges in integrating AI tools for language instruction in their classrooms?

Table 4.3 Factor Analysis

Items	PC1	PC2	PC3	PC4	PC5	PC6	Explained Variance
The internet connection does not remain available all the time in our institute.	0.47	-0.52	0.13	0.08	-0.45	-0.54	0.31
There is not enough content in AI tools to satisfy all of the needs of students.	0.49	-0.51	-	-0.07	0.33	0.6	0.2
The students often submit plagiarized work using AI tools.	0.18	0.18	-	0.36	-0.02	-0.16	0.17
I will be able to detect plagiarized student work.	0.34	0.36	-	-0.73	-0.41	0.14	0.15
Using AI tools may reduce the opportunities of face-to-face language learning process.	0.5	0.36	0.21	-0.07	0.64	-0.4	0.11
Using AI tools for teaching may hamper teacher autonomy.	0.38	0.41	0.33	0.57	-0.34	0.38	0.06

The revised Factor Analysis examines the remaining six items regarding challenges in integrating AI tools into EFL classrooms. From this, six principal components from the factor analysis, referred to here as PC1 to PC6. PC1 explains 31% of the total variance, followed by 20% for PC2, and subsequent components of progressively less variance. Item "Using AI tools may reduce the opportunities of face-to-face learning" strongly influences this component with a high loading on PC1, 0.50. On the contrary, "There is not enough content in AI tools to satisfy all student needs", has strong loadings with both PC1, 0.49 and PC2, -0.51, which shows its dual influence. The explained variance indicates that PC1 is the most influential component, as it captures almost one-third of the total variance, therefore indicating that concerns about AI affecting traditional teaching practices and content adequacy are principal issues among teachers.

Table 4.4 Rounded Chi-Square Test Results for Designation

Items	Chi2	p-value	Degrees of Freedom
The internet connection does not remain available all the time in our institute.	14.39	0.28	12
There is not enough content in AI tools to satisfy all of the needs of students.	8.94	0.44	9
The students often submit plagiarized work using AI tools.	18.25	0.11	12
I will be able to detect plagiarized student work.	7.24	0.61	9
Using AI tools may reduce the opportunities of face-to-face language learning process.	8.76	0.72	12
Using AI tools for teaching may hamper teacher autonomy.	15.93	0.19	12

Chi-square test results relating Designation with the six items relating to challenges in integrating AI tools indicate that none of the associations are statistically significant. The highest value of Chi-Square observed is for the item "The students often submit plagiarized work using AI tools", which has recorded a value of $\text{Chi}^2 = 18.25$ with a p value of 0.11. Although this varies somewhat with designation, the associated p-value is always greater than the threshold of 0.05 for significance. Other items in this set, such as "Using AI tools may reduce the opportunities of face-to-face learning" and "Using AI tools for teaching may hamper teacher autonomy," likewise show Chi-Square values that are not significant across designations.

Table 4.5 Rounded Chi-Square Test Results for Training on AI Usage

Items	Chi2	p-value	Degrees of Freedom
The internet connection does not remain available all the time in our institute.	3.93	0.42	4
There is not enough content in AI tools to satisfy all of the needs of students.	9.31	0.03	3
The students often submit plagiarized work using AI tools.	3.24	0.52	4
I will be able to detect plagiarized student work.	4.19	0.24	3
Using AI tools may reduce the opportunities of face-to-face language learning process.	7.13	0.13	4
Using AI tools for teaching may hamper teacher autonomy.	4.55	0.34	4

The re-run Chi-Square test results relating Training on AI Usage and the six items produced one significant association. The Item "There is not enough content in AI tools to satisfy all student needs" is related to AI training with a Chi2 value of 9.31 and a p value of 0.03 proves a statistically significant relationship. This indicates that a teacher who has been trained in the usage of AI is more likely to perceive the lack of adequate content in AI tools. In respect to other items such as "The internet connection does not stay on all the time" and "Using AI tools for teaching may hamper teacher autonomy," the p-values are well above 0.05 and do not show significant association.

4.2.4 RQ3. How do Bangladeshi higher education EFL teachers envision the future role of AI in language instruction?

Table 4.6 Mean and Standard Deviation Summary for Items

Items	Mean	Standard Deviation
AI tools will shape the future of EFL higher education in Bangladesh	4.10	0.81
Making AI a normal part of education will ensure teachers' continuous professional development	4.02	0.84
Regular workshops are necessary for the teachers to keep them updated on AI utilization	4.36	0.65
Hands-on training of AI integration workshop will make the teaching more effective	4.33	0.65
The institutions should invest in AI resources for effective EFL classroom teaching	4.28	0.77
Having proper knowledge of utilizing AI in EFL classroom will be remarkable for career journey	4.35	0.80

The table for Mean and Standard Deviation on six items that reflects Bangladeshi EFL teachers' perception with regard to both the role of AI in education in the future and the importance of continuous professional development. Means for the statements are relatively high, ranging from 4.02 to 4.36; thus, evidencing a general agreement among the teachers with regard to the statements. The highest mean, 4.36, was for the item "Regular workshops are necessary for the teachers to keep them updated on AI utilization," showing a strong consensus on the need for ongoing training. Standard deviations range from a low of 0.65 to a high of 0.84, indicating moderate variability in responses; the item "AI tools will shape the future of EFL higher education in Bangladesh" had the highest variability, $SD = 0.81$.

Table 4.7 Multiple Regression Analysis of Teachers' Perceptions of the Future Role of AI in Language Instruction Based on Perceived Usefulness and Challenges

Variable	Coefficient	Standard Error	t-Statistic	p-Value	95% Confidence Interval (Lower)	95% Confidence Interval (Upper)
const	1.428	0.415	3.437	0.0008	0.605	2.251
Usefulness	0.643	0.076	8.471	0.0000	0.493	0.794
Challenges	0.032	0.073	0.433	0.6654	-0.113	0.177

The full regression analysis table provides coefficients, standard errors, t-statistics, p-values, and confidence intervals for the constant and two predictors: Usefulness and Challenges. For instance, the estimated coefficient for Usefulness is 0.643, and this implies a positive association with the dependent variable, Teachers' perceptions of the Future Role of AI in Language Teaching. Its p-value for the significance of Usefulness is very small (0.0000), meaning this is statistically significant. In contrast, the Challenges variable has a coefficient of 0.032 with a rather high p-value of 0.6654, and it is not a significant predictor in this model. The constant term, 1.428, represents the baseline level of the dependent variable when both predictors are zero. The width of the confidence intervals gives the range within which the true population parameter is expected to fall. In this case, the interval for Usefulness is narrow and positive, but for Challenges, it is wider and crosses zero which reinforces its lack of significance.

4.3 Findings from In-depth Interviews

The qualitative data were collected through interviews with five experienced EFL teachers representing different universities within Bangladesh. It gives insight into an in-depth exploration of their perceptions about integrating AI tools into classrooms in higher education. Each semi-structured interview, lasting 20-25 minutes allowed participants to share their experiences and insights regarding the usefulness of AI, challenges they face, and their vision for the role of AI in language instruction. The demographic profile of the study's respondents is composed of a total of 123 teachers, where 71 are females and 52 are males. In terms of teaching experience, 38 teachers have 0-3 years of teaching experience, 30 are between 4-6 years, 32 fall between 6-10 years of teaching, and 23 have teaching experiences of more than ten years. Only a few of the respondents mentioned that they received training in AI for teaching EFL by implementing AI tools. On the contrary, the teachers who were interviewed had sorts of training in AI. Through the analysis of such comprehensive narratives a few themes emerge from the qualitative analysis which are presented in the following sections.

4.3.1 Usefulness of Integrating AI

The teachers have stated multiple usefulness of utilizing Artificial Intelligence (AI) in EFL teaching by reflecting on how AI can be useful in their teaching practices. As described by Teacher -1, *"I personally think that because of the popularity of AI in educational institutions, teachers are trying really hard to cop up with the raising concern, and for this [reason], teachers are also improving their AI knowledge and while doing it they are also finding out innovative ideas that can be implemented while teaching in the classroom."* Since the idea of integrating AI in Bangladeshi higher education classrooms is comparatively new, therefore, teachers need to learn more about the effective integration of AI to make it more useful. As Teacher 3 stated that *"As teachers, we are also in the process of learning constantly*

and AI can help us to think in a better way to conceptualize our writing and our analytical skills in a more effective way. So, teachers should experiment with these tools and sort of utilize it [them] to improve ourselves." However, Teacher 4 voice a contradictory thought in this regard – *"In the context of higher education in Bangladesh, AI tools have nothing to do yet to improve the effectiveness of teaching. It may help learners to some extent by making their earlier online search activities smarter and easier."* Apparently, there is a difference in opinion about the effectiveness of AI in Bangladesh higher education institutions, as some teachers believe that it is useful for professional growth, while others doubt its effects on teaching.

4.3.2 Challenges of Integrating AI

Due to the popularity of AI tools, teachers' obstacles are more vital nowadays in order to find out the original work of the students. Teacher 2 demonstrates, - *"since this AI tools are new in the higher educational context of Bangladesh, technologically challenged teachers are finding it very hard to use it effectively and students are taking this chance to get completely dependable to complete their assignment through ChatGPT in general"*. According to Teacher 4, ChatGPT is the most well-known AI tool among the students. However, some of the students do not even comprehend that their works can be identified by AI itself. Teacher 5 also stated that *"Challenges comes from the students' side whether it is the original work of the students or not. To find [out] the original work of [the] students is the most challenging task to do."* Another challenge claimed by Teacher 3 that *"Teachers are having a hard time to prepare the question paper in a way that no student can directly copy and paste their writing that is written by AI tools and for now this is a big challenge for the teachers."* Evidently, teachers are facing various challenges to utilize AI tools effective in EFL classroom, on the other hand, students are getting dependable on AI to complete their tasks instead of thinking critically and submit their original work.

4.3.3 Future Vision for AI

Since the era of AI in EFL education is rising, the teachers acknowledge the significant improvements in integrating AI tools in Bangladeshi higher education EFL teaching (Shamsuddinova et al., 2024). As Teacher 5 stated that, *“By utilizing AI strategies we can create an opportunity for automated assessments.”* It is an evident that no one can deny the fact that integrating AI in the classroom will be very helpful to enhance the existing teaching strategies. As stated by Teacher 1, *“AI tools can suggest us various new teaching techniques and strategies for conducting a formative assessment. AI can play a big role to design innovative assessments which can also save the time for the teachers and they will learn new teaching strategies every day.”* Additionally, Teacher 2 claimed that, *“In previous time, teachers had to spend their times mostly in libraries to verify information but with the help of AI we can learn a lot quicker now and stay updated about the changes from time to time. AI should facilitate these tools where teachers can actually get a chance to stay updated in terms of academia, writing or any source which will be helpful for the teachers.”* Therefore, it is an evident that every teacher is showing optimistic view regarding the effectiveness of AI tools in Bangladeshi higher education EFL classrooms and they are expecting to learn more about AI tools for effective teaching strategies.

4.3.4 Training on AI

Most of the Teachers agreed on a fact that most of the challenges while integrating AI in the EFL classrooms are rising from not having proper training on these AI tools. As Teacher 2 claimed that, *“Teachers are very optimistic to adapt the new technologies but here institution has a big role to play because having a proper training on AI is important even for the most senior teachers.”* As Teacher 3 mentioned, pedagogical training should be necessary for all teachers because it would help them to understand that they are required to learn how to

enhance their teaching strategies while integrating AI in EFL classrooms. According to Teacher 4, - *“I would like to have seminars more than the workshops where I could learn more about the productivity of AI, how it can be, how it can help me [to] improve my skill, to help me understand where I can improve and these should be held every 4 or 6 months.”* Teacher 5 also described that, *“Currently, perhaps the best training would be on the strategies to check for AI-based plagiarism and to improve the PowerPoint or other presentation materials that teachers prepare as a teaching aid.”* Teacher 3 suggested that there should be rigorous and structured training where teachers should invest their time to learn the strategies to integrate AI tools into the EFL classrooms effectively. To conclude successful integration of AI into Bangladeshi EFL classrooms depends on the right training for teachers that improves their teaching and enables them to adapt to new technologies.

4.3.5 Summary of Qualitative Data

The qualitative data were collected through interviews with five experienced EFL teachers representing different universities within Bangladesh. This study explores Bangladeshi university teachers' perceptions of integrating AI into EFL classrooms. The teachers demonstrate the potential benefits of AI such as helping them to improve their teaching strategies, optimize their time, and support innovative teaching strategies. On the other hand, they acknowledge certain challenges like the essential requirement for ensuring students' original work instead of what is produced by AI. Despite all this, teachers keep an optimistic view about the future of AI in education. They have emphasized how proper training is needed to understand the AI tool and use it to enhance their teaching practices. The summary of the findings is presented in Table 4.8.

Table 4.8 Findings from In-depth Interviews

Themes	Key points	Supporting Quotes
Usefulness of Integrating AI	Innovation	<i>"I personally think that because of the popularity of AI in educational institutions, teachers are trying really hard to cop up with the raising concern, and for this [reason], teachers are also improving their AI knowledge and while doing it they are also finding out innovative ideas that can be implemented while teaching in the classroom."</i> Teacher -1
	Teacher-Learning	<i>"As teachers, we are also in the process of learning constantly and AI can help us to think in a better way to conceptualize our writing and our analytical skills in a more effective way. So, teachers should experiment with these tools and sort of utilize it [them] to improve ourselves."</i> Teacher -3
	Skepticism	<i>"In the context of higher education in Bangladesh, AI tools have nothing to do yet to improve the effectiveness of teaching. It may help learners to some extent by making their earlier online search activities smarter and easier."</i> Teacher - 4
Challenges of Integrating AI	Dependency	<i>"Since this AI tools are new in the higher educational context of Bangladesh, technologically challenged teachers are finding it very hard to use it effectively and students are taking this chance to get completely dependable to complete their assignment through ChatGPT in general".</i> Teacher - 2
	Identifying	<i>"Challenges comes from the students' side whether it is the original work of the students or not. To find [out] the original work of [the] students is the most challenging task to do."</i> Teacher - 5
	Assessment	<i>"Teachers are having a hard time to prepare the question paper in a way that no student can directly copy and paste their writing that is written by AI tools and for now this is a big challenge for the teachers."</i> Teacher - 3
Future Vision for AI	Automated Assessments	<i>"By utilizing AI strategies, we can create an opportunity for automated assessments."</i> Teacher 5
	Innovative Teaching Strategies	<i>"AI tools can suggest us various new teaching techniques and strategies for conducting a formative assessment. AI can play a big role to design innovative assessments which can also save the time for the teachers and they will learn new teaching strategies every day."</i> Teacher 1
	Fast Learning	<i>"In previous time, teachers had to spend their times mostly in libraries to verify information but with the help of AI we can learn a lot quicker now and stay updated about the changes from time to time. AI should facilitate these tools where teachers can actually get a chance to stay updated in terms of academia, writing or any source which will be helpful for the teachers."</i> Teacher 2
Training on AI	Training Necessity	<i>"Teachers are very optimistic to adapt the new technologies but here institution has a big role to play because having a proper training on AI is important even for the most senior teachers."</i> Teacher 2
	Enhancing Intellectuality	<i>"I would like to have seminars more than the workshops where I could learn more about the productivity of AI, how it can be, how it can help me [to] improve my skill, to help me understand where I can improve and these should be held every 4 or 6 months."</i> Teacher 4
	Practical Work	<i>"Currently, perhaps the best training would be on the strategies to check for AI-based plagiarism and to improve the PowerPoint or other presentation materials that teachers prepare as a teaching aid."</i> Teacher 4

4.4 Chapter Summary

This chapter highlights the findings from the survey of 123 EFL teachers and interviews with 5 EFL teachers in Bangladesh on AI integration in language teaching. The key themes that emerged included usefulness, challenges in implementation, and the vision of teachers for AI in EFL teaching. The major statistical tests conducted are Factor Analysis, Chi-Square Tests, and Multiple Regression Analysis. Furthermore, five experienced EFL teachers from Bangladeshi universities were interviewed for their opinions on the integration of AI into EFL teaching. Teachers believe that AI is the future, however, the data further revealed that the challenges mentioned include inadequate technical support and students' dependency on the usage of AI tools such as Gemini or ChatGPT to complete their tasks. Therefore, the data highlights that there is a need for adequate training on how to use it effectively within EFL education.

Chapter 5

Discussion

5.1 Introduction

The study aims to explore Bangladeshi EFL teachers' perception regarding AI usage in higher education teaching. The study investigates the EFL teachers' perception of AI usefulness and challenges and their future vision of using AI tools. The required data has been collected from EFL teachers of 20 universities across Bangladesh through a mixed-method approach that includes a survey and in-depth interviews. The results provide insight into the optimism of the teachers about the significant potential of AI, while mentioning some key concerns that might stand in the way of successful implementation of AI in EFL teaching. The study discusses implications of the findings considering the research objectives, places them within the existing literature and explains how they can influence the usage of AI in EFL teaching in Bangladeshi higher education.

5.2 Usefulness of AI in EFL Teaching

The mean values reflect the positive attitude of Bangladeshi EFL teachers toward integrating an AI tool into their teaching. Most of the items have received relatively high mean scores, which shows how AI is contributing positively to various aspects of language instruction. This perception is also reflected by Hazaymeh et al. (2024) that, teachers appreciate the fact that integrating AI tools in teaching makes their work easier and it is very helpful to save their valuable time. However, the standard deviations are indicating that while most teachers agree on the usefulness of AI in basic skills development, there may be some variation in responses that could suggest not all teachers are as convinced. The more variable standard deviation for the item on increasing student engagement stood at 0.78 and could indicate that

some teachers remain skeptical about AI being useful in motivating students effectively. The data collected from the interviews also portrayed that many teachers may agree regarding the usefulness of AI for developing basic skills but not all of them are entirely convinced which is reflected by Alharbi and Khalil (2023) as well who stated that teachers have optimistic views regarding AI usefulness in teaching but it is not guaranteed that it can motivate the learners in EFL classrooms. Additionally, the perception that institutions lack sufficient technical support (mean = 4.12, SD = 0.70) highlights an area of concern that might be an obstacle for the effective implementation of AI tools. The interview data also suggests that while there is optimism about usefulness of AI tools, successful integration will depend on addressing institutional support and infrastructure challenges.

Moreover, Hazaymeh et al. (2024) showed that AI can be highly effective for improving teaching and learning, but teachers have to consider a lot of concerns. The results of the Factor Analysis thereby reflect the similar concern. The dominant influence of PC1, capturing about half of the variance indicates that for the teachers concerned, the effectiveness of AI in general, or its ability to improve teaching proficiency, is a primary concern. Negative loadings of PC1 and PC2 indicate that teachers feel a sense of familiarity with the possible benefits of AI but are also skeptical due to the lack of institutional support and infrastructure challenges which is also reflected in the study conducted by Algahtani (2024). Most notably, PC2 relates strongly with perceived lack of technical support-an important burden contributing much to the variance in the successful integration of AI tools. This suggests that though the teachers were open to the use of AI, positive perceptions about AI are really tempered by their concerns over the adequacy of infrastructure and support systems. In addition, the interview data also show that teachers are concerned about the infrastructural challenges while integrating AI tools in effective EFL teaching which is also claimed by (Algahtani 2024). Therefore, the data indicate that Bangladeshi EFL teachers have taken a cautiously optimistic

position, viewed the perceived usefulness of AI but linked it at the same time to institutional resources and support and this is aligned with the TPACK framework, which views effective technology integration as an aspect of interplay amongst Technological Knowledge, Pedagogical Knowledge, and Content Knowledge (Mishra & Koehler, 2006).

5.3 Challenges of AI in EFL Teaching

According to the TPACK theory AI tools are helpful for an engaging teaching and learning environment but there are challenges to implement AI tools as well (Mishra & Koehler, 2006). This aligns with the results from the revised Factor Analysis that pinpoint what features of AI tool integration are perceived by Bangladeshi EFL teachers as the most critical issues. The fact that PC1 is dominant and captures 31% of the variance, after that points to the top concerns of teachers regarding the potential decrease in face-to-face interactions and how adequate AI content is. These issues, therefore, have the greatest salience for their perception of the challenges posed by AI in the classroom. What is more, the load for both "Using AI tools may reduce the opportunities of face-to-face learning" and "There is not enough content in AI tools to satisfy all student needs" is strong for both PC1 and PC2, underlining that these are interrelated and significant concerns across the board. The concern regarding the potential decrease in face-to-face interactions raised in the study conducted by Sumakul et al. (2022) who claimed that some teachers might fear that these tools will replace human interaction such as getting face to face feedback from them. Additionally, the concern regarding how adequate AI content is also reflected in the study conducted by Wafik et al. (2024). Furthermore, the interview data that there might not be enough content to satisfy all students need because in a classroom there are multiple students with diverse needs. It is very crucial for the teachers to do the need analysis of their students and prepare lesson according to their needs. A study conducted by Iqbal et al. (2022) indicated that teachers are not yet ready to utilize AI tools for

teaching as they feel that it will not be a sufficient tool to meet up the needs for each and every student.

The very existence of separate components from PC3 to PC6, with a specific loading means that the other challenges, including plagiarism and teacher autonomy, are taken differently by teachers and can be constituted as separate issues and this statement aligns with the interview data. It is clearly stated in the interview that these challenges can be overcome by arranging diverse assessment systems such as viva exam or in-person assessments. It was indicative of nuance in the understanding of the teachers, who differentiated immediate content-related challenges from broader systemic concerns. By excluding the forward-looking item on AI shaping the future, the factor analysis refines the focus to the current challenges faced by teachers in integrating AI. This underlines that attention to content quality and preservation of traditional teaching methods feature among the most valuable means for successful integration of the AI tools into EFL education. The nonsignificant associations might suggest that challenges associated with the integration of AI tools are perceived relatively uniformly across teaching roles. Such uniformity could imply that these challenges are generally understood or experienced irrespective of one's designation in the educational hierarchy. While there are some differences, especially in the perception of plagiarism problems, the general lack of significant differences could suggest that these problems are overall shared in the different profiles. This might be a consequence of the general character taken by most of the challenges brought about by AI tools, such as considering the academic integrity issue and how it has changed the traditional approach to teaching. The findings suggest that interventions aimed at addressing these challenges might be equally effective across different job roles, rather than needing to be tailored to specific designations.

This strong positive correlation between training on AI and perceived lack of content in AI tools suggests a pattern that indeed, training can affect how teachers expect from, and critically evaluate, AI resources. It could be that AI training enables teachers to better understand what to expect from AI tools and, therefore, be more prepared to find the content lacking. A very important finding in this respect is that comprehensive AI training seems critical, not only regarding technical issues of these tools but also in setting the expectation right with regards to their content and capabilities. The lack of significant associations for the other items would suggest that AI training is not necessarily driving perceptions of broader challenges, such as infrastructure concerns or concerns about teacher autonomy. This is aligned with the study by Algahtani (2024) which indicates that while training enhances the technical competence, in most instances, it does not allow teachers to overcome other wider concerns or anxieties with regard to the systemic issues of adopting AI because of factors such as inefficiencies in infrastructure, lack of institutional support, or impacts on traditional teaching methods and teacher independence. AI training therefore needs to be complemented with broader institutional efforts at helping address these more general challenges. Samman (2024) stated that a significant challenge is the lack of proper training programs for the teachers. Giving them proper training and support will build their confidence in using AI technologies effectively whereas, factor analysis contradicts by revealing that it is not enough that teachers learn only about the technical skills related to using the AI tool, support must be provided in dealing with the larger structural and pedagogic changes that integrating AI really entails.

5.4 Envisioning AI in EFL Teaching

The interview data reveals that teachers are highly acknowledged with the fact that integrating AI tools in EFL teaching will enhance the teaching strategies and to integrate AI tools effectively, teachers need to have a proper training on AI. This aligns with the high mean

scores on all items which reflect that Bangladeshi EFL teachers are essentially optimistic in their perception concerning AI as an integral part of future education, especially in enhancing teaching effectiveness and professional development. The strong agreement on the necessity for regular workshops (mean = 4.36) and hands-on training (mean = 4.33) is reflected in the realization that teachers recognize the need for constant updates in how AI is integrated to remain relevant in carrying out their responsibilities. Similarly, Shamsuddinova et al. (2024) stated that teachers are very optimistic about AI having the capability to reshape their role, teaching strategies and assessment practices and they see a potential benefit for teaching. The dispersion regarding the impact of AI on the future of EFL education was a trifle higher: var = 0.65, SD = 0.81, perhaps reflecting different degrees of optimism or skepticism among the teachers as to how AI will influence the wider educational landscape.

The regression analysis is important in indicating how Bangladeshi higher education EFL teachers perceive the future role of AI in language teaching, given their current perceptions on the usefulness and challenges of AI. The large positive coefficient for Usefulness signifies that those teachers who consider the AI tools to be effective and helpful are more likely to see AI playing a key role in language teaching in the future which aligns with the study conducted by Walter (2024) who teachers see the importance of integrating AI tools in higher education EFL teaching. This might show that the perceived utility of AI to enhance teaching proficiency, increase student engagement, and provide varied content strongly informs expectations of its future impact. In contrast, the Challenges variable does not significantly predict the views of teachers about the future role of AI. In the interviews, teachers seemed to have faith on themselves that even if there is a chance for plagiarism or reduction of face-to-face learning, it can be overcome with necessary steps which aligns with the near-zero coefficient and the high p-value indicate that the concerns related to technical support, adequacy of contents, plagiarism, and reduction of face-to-face learning do not raise or lower

teachers' optimism or expectations concerning future role of AI tools. This may indicate that even though teachers acknowledge these challenges, they do not regard them as unsurmountable barriers to integrating AI into future teaching practices.

The Confidence Intervals suggest that the "Usefulness" variable is strong, as it is all positive, confirming thereby the role of the variable as a reliable predictor. It may be suggested that the wider interval for "Challenges" is due to uncertainty in its effect, probably caused by the presence of some unmeasured factors. In conclusion, this test indicates that showing teachers how AI tools can be useful will be the key to encouraging a favorable attitude towards AI in language teaching. Yet, challenges must be addressed. However, a focus on showing the current benefits of AI more effectively can shape the long-term perceptions and acceptance of AI in education by the EFL teachers.

5.5 AI Related Teacher Training

The study mentions the importance of proper AI-related teacher training for the successful integration of AI tools in EFL teaching. For many teachers, a structured training is required. In the interview, Teacher 3 has expressed that the teachers need adequate training in order to apply AI tools to their teaching effectively or else they will not be able to use AI properly. Teacher 4 also proposes regular workshops once every 4-6 months in order to enable teachers to enhance their skills about AI continuously which aligns with the study conducted by Shamsuddinova et al. (2024) where it is mentioned that teachers identify a lack of proper training system in AI tools as a barrier to implementation. They desire to learn how to use AI tools ethically and how to integrate these tools into their teaching strategies. Moreover, the findings also reveal that training enables the teachers to better understand some of the limitations of AI tools, particularly the lack of content to satisfy students' needs. Accordingly, the trained teachers, as opposed to the untrained ones, would be more aware of such gaps and this calls for not only technical but also content-related training (Hazaymeh et al., 2024).

However, the findings show that not every challenge can be resolved only through training. Institutions need to take steps regarding poor infrastructure and the threat of loss of autonomy for teachers. AI training has to be accompanied with institutional support in order to solve these larger issues. In this way, AI can enhance teaching strategies without replacing traditional methods or decreasing personalized contact between teacher and students.

5.6 EFL Teachers' New Identity

According to Grassini (2023) these days education systems are being transformed rapidly due to the advancement of technology. One of the key aspects of this transformation is Artificial Intelligence (AI). AI integration in higher education holds great promise to develop

teaching, learning, and organizational processes. Using AI in EFL classrooms can help teachers with different types of assessment ideas, innovative teaching methods and adapt lessons to meet the needs of various students (Samman, 2024). According to Gökçearsan et al. (2024), AI also assists teachers by automating tasks like grading, helping with lesson planning, and providing other supports. This means teachers can spend less time on paperwork and more time customizing lessons, tracking student progress, and improving their teaching. Sumakul et al. (2022) has claimed that teachers appreciate the use of AI tools in the EFL classroom. They find these tools quite useful for developing their teaching skills. This is why the teachers are trying to find out ways how to implement AI tools in their teaching strategies for effective EFL teaching.

Challenges are raised by multiple teachers as well on various aspect such as teachers might fear that these tools will replace human interaction such as getting face to face feedback from them (Sumakul et al., 2022). Moreover, Kuleto et al. (2021) claimed that a significant challenge is the lack of proper training programs for the teachers. Every teacher is not familiar with technical aspects of AI tools and they need proper training to integrate these tools into their teaching methods effectively. Despite these challenges the teachers recognize the need for effective AI tools implementation in EFL teaching. Thus, teachers have proposed that there should be regular workshops and meetings to keep every student updated on AI utilization. They propose to conduct mandatory AI classes which will cover basic to advanced topics related to using AI and its ethical consideration (Walter, 2024). Since the era of AI in EFL education is rising, the identity of EFL teachers' is constantly emerging through adapting new technologies, diverse teaching strategies and subject knowledge based on the TPACK framework. Thus, the EFL teachers are evolving more by using technology for enhanced teaching methods and meeting new challenges every day (Su, 2023).

5.7 Implications of the Study

The study holds a lot of significance in the implications for theory and research, students, teachers, and educational institutions. It contributes theoretically to the discussion on how the TPACK framework which is focused on teachers' knowledge regarding technology, pedagogy, and content that can find a realistic application to enhancing AI tools in EFL teaching (Mishra & Koehler, 2006). This presents how teachers should have a good balance between technical skills and effective teaching methods in order to integrate AI effectively in their teaching strategies. AI can make the learning process individualized and interactive for students, but the institutions have to ensure that the contents which are taken from the AI tool should be able to meet the need of all sorts of students. Additionally, the findings of this study highlight that the teachers need regular training in the use of this technology and technical support on how to integrate these AI tools into their teaching. Without having a proper training, it might be quite hard for them to use AI tools effectively. Eventually, the institutions have also their part to play by providing the required infrastructure and all other resources of integrating AI in EFL teaching. If the educational institutions do not invest in the development of proper technology and resources, then the teachers would not be able to adopt the AI tools and ultimately have limited potential benefits for education.

5.8 Limitations

This study provides several key insights related to AI integration in EFL teaching. However, there are some limitations that must be taken into consideration. Firstly, the sample of 123 EFL teachers from 20 universities is informative but not representative for the greater Bangladeshi teacher population in higher education. A more significant sample could offer more generalized findings and reveal the broader insights of EFL teachers' perception regarding the usefulness of AI, challenges to integrate AI tools in EFL teaching and their vision

for the future for AI usage in EFL teaching. Secondly, the methodological limitations in the study are another limitation because the data were collected mainly through questionnaires and in-depth interviews, which is considerably useful but they may not provide the full depth in experiences and attitudes of teachers. Using other methods such as classroom observation or case studies might be more appropriate to develop a holistic view of the situation. Additionally, the research could also have been conducted through a T-test to compare pre-test and post-test data. This would provide a clear explanation of how teachers' perception regarding AI usage has developed when teachers received training or practical experiences in using AI tools in EFL teaching. Otherwise, without that ability of contrast, it is difficult to understand how such AI training may have affected EFL teachers' attitudes.

5.9 Recommendations

The study investigates the EFL teachers' perception of AI usefulness and challenges and their future vision of using AI tools. Based on these findings, this study proposes that AI tools should be identified as helpful material in the effective improvement of EFL teaching. To utilize its maximum potential, a proper training program of AI should be introduced to the EFL teachers. In further research, an increased sample size and utilize other methodologies will provide wider perspectives. Also, the research should be directed towards how challenges can be minimized from the use of AI in teaching EFL. Moreover, in-class assessments practice should be revised to fit in the use of AI, Further studies may investigate what revisions have to be done so that AI actually enhances language assessment in EFL.

5.10 Conclusion

The study has surveyed and interviewed 123 Bangladeshi EFL teachers from 20 universities to acknowledge their perceptions about the use of AI in higher education. In the questionnaire survey and interview, most of the teachers showed positive attitudes toward AI for its potential to enhance existing EFL teaching and they hold a high hope towards AI in language teaching. However, there are some concerns raised regarding the inadequate support of technology and infrastructure and a reduction in face-to-face learning. Teachers stated that they need proper constant training and workshops to be able to cope up with the technologies. Teachers also claimed that institutions need to provide the resources required for integrating AI tools effectively. On a larger scale, this study suggests that further research needs to be established to minimize the challenges related to AI in EFL teaching. Moreover, in-class assessments practice should be revised to fit in the use of AI, Further studies may investigate what revisions have to be done so that AI actually enhances language assessment in EFL. Although AI holds exciting promises for EFL teaching, issues of institutional support, targeted training, and refocused assessment strategies must be considered to meet the changing needs of students and teachers in a digital era.

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Appendices

Appendix A

Invitation Letter

Dear Respected Teachers,

My name is Kaniz Fatema. I am pursuing my Master of Arts in Applied Linguistics and TESOL at the University of Liberal Arts Bangladesh. I am kindly requesting your participation in the dissertation that I am conducting titled, "Integrating AI in EFL Classrooms: Bangladeshi Higher Education Teachers' Perception Regarding Usefulness, Challenges, and Vision for the Future" under the supervision of Dr. Md. Mahadhi Hasan.

The survey involves filling out some basic demographic information, followed by questions about your views on using AI in EFL classrooms. The study is completely anonymous and your participation is entirely voluntary. Therefore, it does not require you to provide your name or any other identifying information.

Your participation in this research will help me to understand the perception of Bangladeshi higher education teachers' perception regarding the usefulness, challenges and their vision for the future. The insights we gain will aid in improving education and creating effective strategies for using AI in language teaching.

Thank you for your time and participation. If you have any further queries, feel free to contact at kaniz.fatema.deh@ulab.edu.bd

Demographic Information:

Gender

- Male
- Female
- Prefer not to say

Designation

- Professor
- Associate Professor
- Assistant Professor
- Lecturer

Experience

- 0-3 years
- 4-5 years
- 6-10 years
- 10 Years and above

Have you received any kind of training on AI usage in EFL teaching?

- Yes
- No

Survey Questionnaire

Sl. No.	Items	SD	D	N	A	SA
Teachers' Perception Regarding Usefulness of Integrating AI in EFL Classrooms						
1.	AI tools are effective for improving teaching proficiency of the teachers.					
2.	AI tools are effective in increasing students' engagement and motivation to learn English.					
3.	AI tools will be able to improve Bangladeshi EFL higher education teaching efficiency and effectiveness more in the future.					
4.	AI tools make language learning easier and personalized.					
5.	AI tools provide access to diverse contents which is very effective for teaching and learning.					
6.	The institutions do not have enough technical support to integrate AI in the classroom.					
Teachers' Perception Regarding Challenges of Integrating AI in EFL Classrooms						
1.	The internet connection remains available all the time in our institute.					
2.	There is not enough content in AI tools to satisfy all of the needs of student.					
3.	The students often submit plagiarized work using AI tools.					
4.	I will be able to detect plagiarized student work.					
5.	Using AI tools may reduce the opportunities of face-to-face language learning process.					
6.	Using AI tools may reduce the opportunities of face-to-face language learning process.					
7.	Using AI tools for teaching may hamper teacher autonomy.					
Teachers' Vision for the Future of Integrating AI in EFL Classrooms						
1.	AI tools will shape the future EFL higher education in Bangladesh.					
2.	Making AI a normal part of education will ensure students' continuous professional development.					
3.	Regular workshops are necessary for the teachers to keep them updated on AI utilization.					
4.	Hands-on training of AI integration workshop will make your teaching more effective.					
5.	The institutions should invest in AI resources for effective EFL classroom teaching.					
6.	Having proper knowledge of utilizing AI in EFL classroom will be remarkable for your career journey.					

Appendix B

In-depth Interview Protocol

Demographic Information:

Gender

- Male
- Female
- Prefer not to say

Designation

- Professor
- Associate Professor
- Assistant Professor
- Lecturer

Experience

- 0-3 years
- 4-5 years
- 6-10 years
- 10 Years and above

Have you received any kind of training on AI usage in EFL teaching?

- Yes
- No

Questions:

1. To what extent do you believe that integrating AI tools in Bangladeshi higher education EFL classroom is improving the effectiveness of teaching and it will continue to do so?
2. What is your thought on students becoming too much dependent of AI tools will reduce their critical thinking and problem-solving skills?
3. What are the challenges you have faced in your teaching so far while integrating AI in your teaching strategies?
4. What are the steps you have taken to overcome the challenges?
5. What is your thought on teachers losing their teaching autonomy while utilizing AI in their teaching methods? (*For example: AI tools may limit abilities to provide personalized feedback or it may reduce teachers' role as a facilitator*)
6. Would you like to propose training system for the teachers to keep them updated on AI utilization?
7. What kind of AI integration training you would like to have to make your teaching more effective?
8. What type of changes do you foresee with the utilization of AI tools in EFL education in future? (*For example: Teachers' role as more of a facilitator or coach, wide range of learning resource availability or AI changing the way of providing assessment and feedback*)