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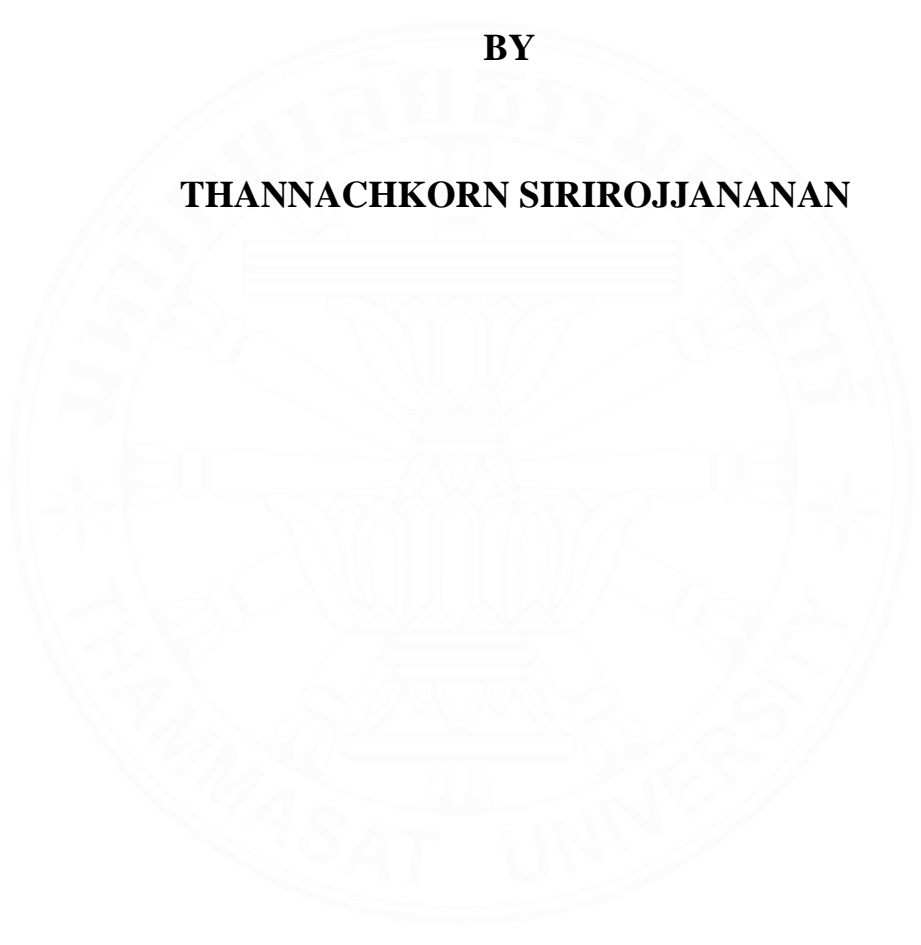
BY

THANNACHKORN SIRIROJJANANAN

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF ARTS IN ENGLISH LANGUAGE TEACHING
LANGUAGE INSTITUTE
THAMMASAT UNIVERSITY
ACADEMIC YEAR 2023

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ENTITLED

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was approved as partial fulfillment of the requirements for
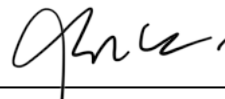the degree of Master of Arts in English Language Teaching

on June 18, 2024

Chairman   _____
            (Associate Professor Sucharat Rimkeeratikul, Ph.D.)

Member and Advisor _____
            (Monthon Kanokpermpoon, Ph.D.)

Director   _____
            (Associate Professor Supakorn Phoocharoensil, Ph.D.)

Independent Study Title	THAI HIGH SCHOOL STUDENTS' PERCEPTION TOWARD THE USE OF CHATGPT IN EFL CLASSES
Author	Thannachkorn Sirirojjananan
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Independent Study Advisor	Monthon Kanokpermpoon, Ph.D.
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ABSTRACT

This study explored high school students' perceptions regarding the use of ChatGPT in Thai EFL classes, examining both its benefits and challenges. Utilizing a mixed-methods approach, the research combined quantitative data from an online questionnaire with 23 closed-ended, five-point Likert scale statements, and qualitative insights from a focus-group interviews with open-ended questions. Content validity was ensured through the Index of Item-Objective Congruence (IOC) method, validated by three experts. A convenience sample of 120 Thai high school students participated, with four students selected for the focus-group interviews. The findings indicated that majority of participants were Grade 12 students from government schools in Bangkok, with an almost equal distribution of males and females. The largest respondent group comprised students in Science - Mathematics programs with GPAs between 3.01 and 4.00 in English subjects. Nearly two-thirds had used ChatGPT in English classes for less than a year, primarily in writing and translation courses. Overall, students had a high general perception of ChatGPT's use in learning (mean score: 3.76). Specifically, perceptions of its benefits in learning English were high (mean score: 3.84), while perceptions of its challenges were moderate (mean score: 3.08). Focus-group interviews highlighted ChatGPT's effectiveness in translation, sentence generation, essay writing, and grammar checking. However, challenges included inaccuracies in factual results and difficulties in command input, leading to

potential misunderstandings. Some participants also noted that ChatGPT underperformed compared to specialized tools for certain functions.

Keywords: Students' perception, ChatGPT, Benefits, Challenges , focus-group interview.

ACKNOWLEDGEMENTS

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CHAPTER 1
INTRODUCTION

1.1 Background of the Study

Information Technology (IT) has led to a new era of ingenuity and creativity across various disciplines, including education (Muñoz et al., 2023). Traditional pedagogical methods were revolutionized through the integration of tools and applications influenced by emerging technologies. After the computer scientist named John McCarthy coined the term Artificial Intelligence (AI) in 1995, AI has evolved gradually over time and became increasingly integrated into the field of education. Artificial Intelligence (AI) influences not only students' educational but also their personal lives in a technology-enhanced environment, particularly those enrolled in institutions of higher education, within technologically enhanced environments (Farhi et al., 2023). Numerous research investigations have delved into the convergence of technology and language education, particularly concerning artificial intelligence (AI). Despite encountering challenges such as output bias, human supervision, and potential misuse, addressing these issues effectively could yield educational benefits within the realm of AI in education (Ali et al., 2023). One of the most inventive and imaginative tools that has spread around the world is ChatGPT model 3.5, a language model powered by Artificial Intelligence (AI) developed by OpenAI and released to the public in November 2022. Through ChatGPT, learners can engage in simulated real-life conversations and promptly receive feedback, facilitating the recognition and correction of errors in real time (Bok & Cho, 2023).

Following the COVID-19 pandemic, the Thai educational system underwent extensive adjustments across multiple dimensions. Information Technology (IT) and Artificial Intelligence (AI) assumed pivotal roles in the educational landscape. Throughout the pandemic, a majority of classrooms transitioned to online platforms, such as Google Classroom, Google Meet, Microsoft Teams, among others. This shift afforded students the opportunity not only to engage with IT and AI tools within their virtual classrooms but also to leverage these technologies to facilitate

their academic endeavors. After its introduction into Thai EFL classrooms, ChatGPT has been widely utilized by both teachers and learners. ChatGPT is favored among Thai language learners due to its proficiency in text generation, question answering, and the completion of diverse language-related assignments. While ChatGPT shows considerable ability in supporting language learning, it also has some potential drawbacks. When students include content generated by ChatGPT directly into their work, it may give rise to issues of plagiarism. Furthermore, because ChatGPT relies solely on patterns acquired from its training dataset, it may lack the capacity to autonomously verify the accuracy of the generated data (Bok & Cho, 2023).

The rapid advancement of emerging technologies in English as a Foreign Language (EFL) classes has prompted considerable scholarly inquiry into students' perceptions toward the use of ChatGPT. F. Farhi et al. (2023) examined the perspectives, apprehensions, and ethical perceptions of students in the United Arab Emirates (UAE) regarding ChatGPT usage, finding that students considered ChatGPT beneficial in various ways. Furthermore, in an Asian context, Bok and Cho (2023) investigated Korean EFL college students' experiences and perceptions of using ChatGPT as a writing revision tool, revealing a positive reception from the students. However, a notable gap exists concerning the perceptions of high school students regarding the use of ChatGPT within Thai EFL classes.

1.2 Research Objectives

This study aims:

1) To investigate perceptions of high school students toward the use of ChatGPT in Thai EFL classes

2) To find out students' perceptions of the benefits and challenges associated with using ChatGPT in Thai EFL classes

1.3 Research Questions

Given these aims, the current study is guided by two primary research inquiries:

1) What are the perceptions of Thai high school students toward the use of ChatGPT in Thai EFL classes?

2) What are students' perceptions of the benefits and challenges associated with using ChatGPT in Thai EFL classes?

1.4 Definitions of Key Terms

1) "Students" refers to Thai high school students (Grade 10 - 12) who were studying in Bangkok's schools.

2) "Perception" refers to the presumptions, beliefs, and attitudes held by Thai high school students regarding the utilization of ChatGPT in their English as a Foreign Language (EFL) classes.

3) "English as a Foreign Language (EFL) class" refers to English language classes taught and learnt in Bangkok, Thailand, where the official language is not English but Thai.

4) "ChatGPT" refers to an artificial intelligence (AI) model created to produce text responses resembling human language, drawing from the input it receives. Employed as an aid in English language learning, the model serves as a tool for students to enhance their English proficiency.

1.5 Scope of the Study

This research will focus only on Thai high school students' perception toward the use of ChatGPT in their English classes. The perception will be investigated with the online questionnaires and online focus-group interview to obtain a comprehensive understanding regarding benefits and challenges of ChatGPT. The data collection procedures were administered online to accommodate the convenience of participants, aligning with the duration coinciding with the end of the school semester.

1.6 Significance of the Study

The outcomes of this investigation might confer notable advantages to EFL teachers to understand perceptions of the students toward using ChatGPT in classrooms. ChatGPT can assist teachers in various ways such as augmenting teaching resources or assessment, developing pedagogical approaches. Research on ChatGPT might inform professional development, helping educators integrate AI technology effectively into their teaching practices. Additionally, the results might benefit other researchers in various aspects, including providing theoretical insights that relate to theoretical frameworks and offering valuable cross-cultural perspectives on attitudes, beliefs, and societal norms regarding technology-mediated language learning.

1.7 Organization of the Study

The study of Thai high school students' perceptions toward the use of ChatGPT in EFL classes is organized into five chapters as follows:

Chapter One introduces the background of the study, research objectives, research questions, definition of key terms, scope of the study and significance of the study.

Chapter Two is the literature review, which includes the definition of Artificial Intelligence (AI), utilization of ChatGPT in the EFL, definition of perception and related studies.

Chapter Three shows the research methodology, which includes the participants, research instruments, data collection, and data analysis.

Chapter Four provides the results of the study.

Chapter Five is a summary of the study and findings, the discussion, conclusion, limitations of study and recommendations for further research.

CHAPTER 2
REVIEW OF LITERATURE

To explore how Thai high school students perceive the use of ChatGPT in English as a Foreign Language (EFL) classes, this section incorporates relevant terms pertaining to the current research. It delves into the empirical framework to underpin the study.

The chapter critically examines literature across five primary domains: (1) the definition of Artificial Intelligence (AI), (2) Background of ChatGPT which involves ChatGPT's evolution, and the advantages, limitations, and challenges, (3) utilization of ChatGPT in education, (4) perceptions, and (5) previous studies.

2.1 What is Artificial Intelligence (AI)?

AI is characterized as "the study and development of computer systems that can emulate intelligent human behavior" (Oxford Learner's Dictionaries, 2023) or "the ability of an artificial entity to solve intricate problems using its own intelligence," encompassing the processes of perception, analysis, and reaction (Singh & Haju, 2022). AI is not singularly defined but is often described by a rationality principle, mirroring human thought processes rather than traditional computer systems. (Nantaburom, 2023). In the educational setting, AI has been acknowledged for its potential in language learning and teaching as it not only improves teaching methods for language instructors but also aids language learners in acquiring language proficiency (Song & Song, 2023).

2.2 Background of ChatGPT

Initially launched in 2018, ChatGPT, a notable AI-powered tool developed by OpenAI, which Elon Musk, Sam Altman and others founded in 2015, holds potential for effective integration across various language learning programs. This intelligent tool has the capability to produce text resembling human language according to the provided input and offer immediate feedback and assistance to users.

Generating textual content that mimics natural language, encompassing sentences, paragraphs, and entire documents, is the ability of ChatGPT models which

were designed to be comprehensible to human language. The GPT models' key feature is starting by pre-training a substantial collection of data e.g. books, web pages, followed by fine-tuning of specific tasks (Ray, 2023).

2.2.1 GPT Evolution

Ray (2023) explained the evolution of ChatGPT in the study of ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope as follows:

GPT-1: The transformer-based architecture was initially released in 2018. This model was designed for processing natural language tasks, such as machine translation and language modeling. The purpose of GPT-1 was to grasp the patterns and connections among words in an extensive text data corpus resulting in the capability to anticipate the subsequent word within a sequence in the pre-training process. Regarding the fine-tuning process, language translating, text classifying, and sentiment analyzing could be adjusted.

GPT-2: At the time of its release, GPT-2 became one of the most expansive language modes, boasting 1.5 billion parameters. The capacity to pre-train through a language modeling task on an extensive corpus of textual data, comprising books, web pages, and various written sources, marked a significant progression from GPT-1. This advancement enabled the generation of lengthier and more cohesive textual sequences. n the fine-tuning process, GPT-2 was not only able to fine-tune on various downstream tasks but also to generate high-quality language text that is both natural and realistic, making it challenging to differentiate from text generated by humans. Due to this drawback, Open AI chose to release a downsized iteration with diminished functionalities instead of the full version of the GPT-2 model.

GPT-3: GPT-3, equipped with 175 billion parameters, stands as one of the most substantial and Additionally, it can execute a broad array of natural language processing tasks, including text categorization and sentiment analysis, and can also answer questions without requiring task-specific training data. GGPT-3 can be employed across a wide array of applications involving natural language processing, such as language translation, chatbots, code and content generation. Consequently,

new research and development in the AI community were inspired by the interest and excitement surrounding GPT-3.

This led to the creation of GPT-3.5 and GPT-4 models, which were designed to address the limitations of GPT-3, such as its difficulties with complex mathematical reasoning and lack of training on programming-related data. While GPT-3.5 models can understand and generate both natural language and code, GPT-4, released in March 2023, can process both text and image inputs. Furthermore, it demonstrates human-like fluency in generating text and excels in various natural language processing tasks (Kalyan, 2023).

2.2.2 Advantages of ChatGPT

Zhou et al. (2023) outlined four main advantages of ChatGPT:

1) Generalization: When ChatGPT generates responses that match what the user intends to discuss across multiple exchanges, it remembers previous parts of the conversation to answer hypothetical questions better, making chatting more enjoyable. Instruction tuning and reinforcement learning from human feedback (RLHF) techniques can help ChatGPT improve by learning task generalization and feedback from people.

2) Correction: The mistakes indicated by the users will be optimized regarding users' feedback. In addition, a reasonable prediction will be provided followed by challenging incorrect questions.

3) Safety: In consideration of ethical and political factors, ChatGPT demonstrates proficiency in refusing unsuitable inquiries or crafting responses that prioritize security. Furthermore, the provision of reasoned responses, coupled with explanations, enhances the acceptability of ChatGPT's output for users.

4) Creativity: ChatGPT exhibits notable efficacy in generating diverse creative writing tasks, encompassing activities such as brainstorming, speech synthesis, story or poem composition, and methodically refining written content through successive iterations.

2.2.3 Limitations and Challenges of ChatGPT

While ChatGPT is recognized as a sophisticated technological tool widely used globally, certain limitations and challenges have been highlighted, particularly in terms of accuracy and effectiveness. According to Azam (2023), ChatGPT's capability to capture the full meaning and context of text is limited due to its training method, which involves predicting the next word based solely on preceding words. This approach can lead to inaccuracies and inconsistencies in generated text, perpetuating the presence of incomplete data. Moreover, concerns about biases and inaccuracies arise in ChatGPT due to its training on a vast corpus of text data, further highlighting its lack of profound comprehension of textual meaning.

2.3 Utilization of ChatGPT in education

While English as a Foreign Language (EFL) learners navigating the digital landscape may already be acquainted with an assortment of tools and platforms designed to facilitate teaching and learning, such as online dictionaries, translation utilities, language learning software, and language learning applications, the prospective advantages of integrating ChatGPT into language education are noteworthy. This integration has the potential to enhance learners' motivation and foster language skill development through structured practice and iterative engagement (Baskara, 2023).

The integration of ChatGPT within the educational and training domain holds the potential to enhance multiple facets for users, including both learners and educators. Ray (2023) posits that there are several avenues for applying ChatGPT within this sector.

Learners: ChatGPT has the capacity to enhance learners' academic engagement and performance by offering personalized learning experiences, such as online tutoring sessions. Through the analysis of data concerning learners' preferences, strengths, and weaknesses, ChatGPT can tailor educational content to better suit individual needs. Furthermore, the capacity to offer customized recommendations can prove advantageous in language learning endeavors. It can assist learners in grasping grammar, expanding vocabulary, and refining pronunciation, all tailored to their language proficiency level and specific learning objectives.

Additionally, Peterson (2017) asserts that technology provides learners with a feeling of autonomy and agency, enabling them to assume control over their educational journey.

Teachers: ChatGPT possesses the capability to examine data regarding effective teaching methods and student academic achievements, thereby offering support to teachers. Beyond furnishing personalized recommendations for instructional techniques, lesson plans, and educational resources, the model can also propose suitable classroom management strategies, aiding teachers in refining their pedagogical methodologies.

2.4 Perception

Perception, from the Latin word "perception" meaning gathering or accepting, involves organizing, identifying, and understanding sensory information to represent and comprehend the surroundings. It encompasses signals received by the sensory system, which result from physical or chemical stimulation. Perception isn't merely receiving these signals passively; it's also influenced by the recipient's knowledge, memory, expectations, and focus. Sensory information undergoes a process that transforms low-level data into higher-level information, such as recognizing shapes for object identification. This process connects an individual's thoughts and expectations, as well as specific mechanisms like attention, which affect perception (Ramdhan, 2020).

Regarding the educational aspects, perception parallels the learning process, as students build their knowledge from personal experiences. Consequently, students develop perceptions based on their encounters, which significantly influence their academic performance, depending on how they perceive what they have learned in the classroom (Resmini, 2019).

2.5 Related Studies

The literature involving empirical studies, which are related to perceptions toward the use of ChatGPT are reviewed in this section.

In 2023, Xiao and Zhi undertook qualitative research to explore how students interacted with ChatGPT and how they viewed its significance in language acquisition. They employed semi-structured interviews to gather data from students attending prestigious international universities in China. The findings, based on students' viewpoints, highlighted ChatGPT's effectiveness in language education, emphasizing its ability to offer tailored learning experiences and prompt feedback to learners.

Yilmaz et al. (2023) explored how university students perceived ChatGPT using a quantitative research method involving 239 students enrolled in a Science and Mathematics Education Program at a private university in Almaty, Kazakhstan. The investigation delved into ChatGPT's potential across various factors, including students' gender, grade level, major, and prior experience with the system. The results revealed a generally positive perception among students. While there were statistically significant differences observed in certain dimensions based on gender, major, and prior experience, no notable distinctions were found across different grade levels.

Ngo (2023) conducted a study that aimed to explore university students' perceptions of utilizing ChatGPT for learning, encompassing its advantages, obstacles, and potential remedies. Employing a mixed-methods approach, Ngo utilized a questionnaire administered through an online survey to gather data from 200 students, followed by conducting semi-structured interviews with 30 students. The study revealed that students held favorable views regarding ChatGPT's ability to save time, offer diverse disciplinary information, provide personalized tutoring and feedback, and facilitate idea elucidation in writing. However, concerns were voiced among students regarding the quality, reliability, and accuracy of ChatGPT.

In 2023, Bok and Cho examined how Korean college students perceived and experienced the use of ChatGPT as a tool for revising paragraphs in a general English course emphasizing academic writing skills. The study involved 71 students who participated by completing a survey questionnaire that assessed the advantages and obstacles of using ChatGPT for writing revisions in class. The students generally held a favorable view of ChatGPT's feedback as being helpful and reliable. Additionally,

the study uncovered benefits such as convenience and accuracy. Nevertheless, challenges surfaced, including the absence of error explanations, feedback that was difficult to understand, discrepancies in responses, concerns regarding reduced authorial control, and uncertainties regarding its impact on learning effectiveness.

Ho (2024) conducted a study involving 120 I.T. students from the Korea University of I.T and the University of Da Nang in Vietnam. The research aimed to understand the perceptions, attitudes, and behaviors of these students in learning English. The data collection involved a 4-point Likert scale questionnaire and in-depth interviews. The results indicated that, despite recognizing the benefits of ChatGPT for specialized English learning aspects, students still highly value traditional classrooms and teacher guidance. Many students use ChatGPT to swiftly address English learning challenges. The study emphasizes the importance of teaching students how to use ChatGPT effectively and suggests further exploration of plagiarism detection tools to prevent potential misuse of the technology.

To summarize, previous studies have delved into perceptions regarding the integration of ChatGPT in English classes. Some research findings indicated positive perceptions, citing benefits such as personalized learning, quick feedback, and improved accuracy. However, concerns about plagiarism and reliability were also noted among participants. Despite the favorability of using ChatGPT, some students still prioritize learning with teachers in traditional classrooms.

While many studies have explored perceptions of using ChatGPT in English classes, there remains a significant gap regarding high school students' perspectives on its utilization within Thai EFL classes.

CHAPTER 3
RESEARCH METHODOLOGY

This research was conducted to survey perceptions of Thai high school students toward the use of ChatGPT in Thai EFL classes.

This chapter shows the methodology used in data collection for this study, which includes: (1) participants, (2) research instruments, (3) data collection, and (4) data analysis.

3.1 Participants

Convenience sampling was employed to deliberately select participants who were Thai high school students studying in Bangkok. The respondents of this study were 120 Thai high school students aged between 16-18. Since the research was conducted during the 2023 academic year, the selected participants had to have at least one academic year of experience using ChatGPT in their EFL classes. Four students, identified as B1, B2, B3, and G1 (pseudonyms for confidentiality), were chosen to participate in a focus group interview from a broader sample. B1 and B2, both male and aged 18, were seniors in grade 12 at a government school. B1 had less than a year of experience using ChatGPT in English classes, while B2 had been utilizing it for three years. B3, also male and aged 16, was a student in grade 10 with one year of ChatGPT experience. G1, the only female participant, was a 17-year-old student in grade 11 with less than a year of ChatGPT usage experience in English classes. All four students were enrolled in the Science-Mathematics program at their respective schools. The purpose of this interview is to gain a thorough understanding of the advantages and challenges related to the utilization of ChatGPT in their EFL class contexts. Following Hennink and Kaiser's (2022) suggestion, a range of 4-8 participants is effective in reaching data saturation with a limited number of interviews.

3.2 Research Instruments

The instrument utilized for this study was an online survey comprising 23 closed-ended questions. These questions were rated on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to explore the perceptions of Thai high school students toward the use of ChatGPT in Thai EFL classes. The questionnaire of the study was adapted from Ho (2024) who investigated using ChatGPT in English language learning and Ngo (2023) who examined the perceptions of university students regarding the use of ChatGPT in education. The questionnaire was divided into two main sections: the participants' demographic information and the questionnaire elements that address using ChatGPT. Moreover, a focus-group interview with open-ended questions was conducted to obtain a comprehensive understanding of the benefits and challenges regarding their use of ChatGPT in their EFL classrooms. To ensure content validity, the items utilized in both the questionnaire and a focus-group interview underwent validation through the Index of Item-Objective Congruence (IOC) method.

This validation process aimed to establish an alignment between the items and the objectives of the study, and it involved the assessment of item relevance and appropriateness by three subject matter experts. Expert 1 is a Ph.D. university professor who specializes in English Language Teaching and boasts extensive experience teaching various English courses at a university in Thailand. With a track record of conducting research using questionnaires with Thai students, Expert 1 brought invaluable insight to the validation process. Expert 2, a Ph.D. candidate in English as an International Language (EIL), serves as a lecturer at the Faculty of Liberal Arts in a Thai university. Notably, Expert 2's expertise extends to research involving AI applications like Canva, and her academic contributions include lecturing and speaking on Canva application topics at numerous seminars. Expert 3, a Ph.D. school instructor, is renowned for his expertise in AI topics, particularly in research conducted with high school students. Each expert's unique background and scholarly contributions enrich the validation process, ensuring the robustness and reliability of the assessment.

Following validation by three expert reviewers, the findings indicated that out of 23 questions assessed, 18 questions demonstrated suitability for the questionnaire, achieving a mean score exceeding 0.5 (comprising 12 items with a mean score of 1 and 6 items with a mean score of 0.67). Nevertheless, five items

required further revision, exhibiting a mean score of 0.33. These items underwent a thorough review process, incorporating expert comments and recommendations to ascertain not only their relevance and appropriateness but also their alignment with participants' proficiency levels.

3.3 Data collection

The study was conducted in April 2024, initiating the data collection process through the development and dissemination of a Google Form-based online questionnaire. This instrument targeted high school students enrolled in educational institutions within Bangkok. Structurally, the questionnaire was partitioned into distinct sections. The initial segment encompassed inquiries aimed at gathering demographic data, including age, gender, academic level, field of study (program), and duration of engagement with ChatGPT in English as a Foreign Language (EFL) classes. The second segment explored the perception of students of the use of ChatGPT in their EFL classes.

Participants received an online survey and were expected to allocate approximately 10 minutes to complete all queries. Ethical considerations were addressed through the provision of a consent form, which respondents encountered and acknowledged on the initial page of the Google Form-based online questionnaire. Moreover, participants were assured that all information collected was treated with utmost confidentiality and was utilized solely for the purposes of the present study.

Subsequent to the acquisition of data from the Google Form-based online questionnaire, a focus-group interview was employed. This method involved the utilization of open-ended questions aimed at eliciting a nuanced and comprehensive understanding of the benefits and challenges associated with participants' experiences of using ChatGPT in their English as a Foreign Language (EFL) class contexts. Four participants who had consented to be interviewed were selected for this phase. The focus-group interview was conducted online, with a duration of approximately 40 minutes, accommodating the convenience of the respondents.

3.4 Data Analysis

Quantitative data analysis employed descriptive statistical techniques, specifically percentages and means, to assess the responses gathered from the 5-point Likert scale questions. These questions pertained to the perception level of Thai high school students regarding the integration of ChatGPT in Thai English as a Foreign Language (EFL) classes. The interpretation of students' perceptions was predicated upon insights derived from the 5-point Likert scale ratings, a methodology widely endorsed and utilized within academic research. The ordinary data was generated in terms of frequency and mean. The average score (mean) obtained from each item was interpreted into the degree of perception as shown below.

$$\text{Mean score Range} = \frac{\text{Maximum Score - Minimum Score}}{\text{Range}}$$

$$= \frac{5 - 1}{5} = 0.8$$

Table 3.1

Five Ranges Scale Value of Students' Perception

Scale Value	Level of Perception
4.21 - 5.00	Very High
3.41 - 4.20	High
2.61 - 3.40	Moderate
1.81 - 2.60	Low
1.00 - 1.80	Very Low

Regarding the focus-group interview exploring the benefits and challenges associated with participants' experiences of using ChatGPT in EFL classes, the results underwent conceptual content analysis.

CHAPTER 4
RESULTS

This chapter presents the findings derived from both the perception questionnaire, completed by 120 participants, and the insights gathered through focus-group interviews with four participants. These results are organized into three main sections: 1) Demographic details of the participants; 2) Analysis of questionnaire responses, focusing on Thai high school students' perceptions regarding the integration of ChatGPT in Thai EFL classes and 3) An in-depth exploration of the benefits and challenges arising from participants' utilization of ChatGPT in their English classes, as gleaned from the focus-group discussions.

4.1 Demographic details of the participants

In the initial phase, participants responded to a set of seven questions covering general information, encompassing aspects, namely gender, school year, school type, learning program, English subject grade point average, duration of ChatGPT usage in English classes, and the specific courses where ChatGPT was utilized. Data analysis involved calculating frequencies and percentages.

Table 4.1

Gender of participants

Gender	Frequency	Percentage
Male	64	53.3
Female	51	42.5
Not specify	5	4.2
Total	120	100

Based on the data presented in Table 4.1, the total respondent pool comprised 120, inclusive of 64 males, 51 females, and 5 individuals who did not specify their gender. In other words, males accounted for 53.3%, females represented 42.5%, and 4.2% of the respondents did not provide gender specifications.

Table 4.2

School Year of Participants

School Year	Frequency	Percentage
Grade 10 (Mathayom 4)	13	10.8
Grade 11 (Mathayom 5)	45	37.5
Grade 12 (Mathayom 6)	62	51.7
Total	120	100

As shown in Table 4.2, Grade 12 (Mathayom 6) was the largest respondent group with 51.7%. This was followed by Grade 11 (Mathayom 5) (37.5%), and the smallest group was Grade 10 (Mathayom 4) (10.8%)

These results suggest a prevalence of familiarity with ChatGPT among students in Grade 12 (Mathayom 6), as evidenced by their majority representation.

Table 4.3

Types of School of Participants

Types of School	Frequency	Percentage
Government School	116	96.7
Private School	1	0.8
Demonstration School	3	2.5
Total	120	100

Table 4.3 reveals the distribution among the three types of respondents' schools. The largest proportion of respondents hailed from government schools (96.7%), trailing by 2.5% from demonstration schools, with the smallest contingent represented by students from private schools, accounting for only 0.8% in this study.

Table 4.4

Learning Programs of Participants

Types of School	Frequency	Percentage
Science - Mathematics	63	52.5
Foreign languages	26	21.7
Mathematics - languages	16	13.3
Arts & Music	3	2.5
Social studies groups	4	3.3
Business/Commerce program	5	4.2
Others (not specify)	3	2.5
Total	120	100

In Table 4.4, we observe the distribution of participants' learning programs across seven distinct groups. The predominant group in this study comprises those enrolled in the Science - Mathematics program (51.7%), followed by participants in Foreign Language programs (21.7%). Additionally, 13.3% of respondents were engaged in Mathematics - Language programs, while 4.2% were enrolled Business/Commerce programs, and 3.3% were enrolled in Social Studies programs. Those studying in Arts & Music programs and Other groups that were not specified accounted for a similar proportion (2.5%)

Table 4.5

English Subject Grade Point Average (GPAs)

English subject GPA	Frequency	Percentage
0.00 - 1.00	0	0
1.01 - 2.00	4	3.3
2.01 - 3.00	23	19.2
3.01 - 4.00	93	77.5
Total	120	100

Table 4.5 illustrates that the largest group of participants comprised students with GPAs ranging from 3.01 to 4.00 in English subjects, accounting for the majority (77.5%). Following closely were 19.2% of participants with GPAs between 2.01 and 3.00, while the smallest group, constituting 3.3%, fell within the GPAs range of 1.01 to 2.00. Notably, no respondents reported GPAs between 0.00 and 1.00 in this study.

Table 4.6

Duration of ChatGPT Usage in English Classes

Duration	Frequency	Percentage
Less than 1 year	76	63.3
1 year	22	18.3
2 years	16	13.4
3 years	6	5
Total	120	100

In Table 4.6, the data reveals a notable trend: the majority of respondents, 63.3%, are students who had utilized ChatGPT in English classes for less than a year. Following closely behind are those who had used ChatGPT for 1 year, comprising 18.3% of the sample. The two-year group constitutes 13.4%, while the smallest cohort,

at 5%, consists of students who have integrated ChatGPT into their English classes for three years.

Table 4.7

Specific Courses Where ChatGPT was utilized

Courses	Frequency	Percentage
Writing	75	62.5
Reading	44	36.7
Speaking	24	20
Grammar	58	48.3
Translation	71	59.2

As shown in Table 4.7, the predominant utilization of ChatGPT occurred in writing courses, comprising 62.5% of the total. Following closely behind are translation classes, with 59.2% of respondents reporting usage. For grammar courses, the reported usage stands at 48.3%, while for reading courses, it is 36.7%. The smallest percentage, at 20%, is attributed to the use of ChatGPT in speaking classes. It's worth noting that the total percentage of usage exceeds 100% as respondents could select multiple courses where they employed ChatGPT.

Based on the findings, it's apparent that the majority of high school students surveyed were Grade 12 students attending government schools in Bangkok, with a nearly equal distribution between males and females. Among these students, those enrolled in Science - Mathematics programs with GPAs ranging from 3.01 to 4.00 in English subjects constituted the largest respondent group. Interestingly, nearly two-thirds of the participants had utilized ChatGPT in their English classes for less than a year, predominantly engaging with it in writing and translation courses, with similar levels of frequency.

4.2 Thai high school students' perceptions towards the use of ChatGPT in Thai EFL classes

The second part of the questionnaire was created to investigate the perceptions of Thai high school students' towards the use of ChatGPT in Thai EFL classes. It consisted of 23 closed-ended questions with a 5-point Likert scale, with the items divided into three groups: 1) General perception of students regarding the use of ChatGPT in learning, 2) Student's perceptions regarding benefits of using ChatGPT in learning, and 3) Students' perceptions regarding the challenges of using ChatGPT in learning. The results are presented in terms of frequency, percentage, mean and standard deviation as follows.

Table 4.8
General Perception of Students Regarding the Use of ChatGPT in Learning

Perceptions regarding the use of ChatGPT in EFL classes	Mean	SD	Perception level	Rank
1) It is easy to use ChatGPT.	4.17	0.84	High	3
2) ChatGPT can provide answers quickly.	4.53	0.08	Very High	1
3) Using ChatGPT makes me lazy to produce any ideas by myself.	3.08	1.31	Moderate	7
4) ChatGPT functions as a search engine.	3.97	1.09	High	5
5) ChatGPT is a helpful tool for studying English.	4.22	0.88	Very High	2
6) ChatGPT should be used in English classrooms.	3.72	1.20	High	6
7) Using ChatGPT for self-study offers an alternative to traditional English classes.	4.07	1.06	High	4
8) Studying English may not be essential since ChatGPT is	2.48	1.32	Low	8

Perceptions regarding the use of ChatGPT in EFL classes	Mean	SD	Perception level	Rank
capable of addressing English language challenges.				
Overall	**3.76**	**1.06**	**High**	

SA= Strongly agree, A= Agree, N= Neutral, D= Disagree, Sd= Strongly Disagree

Table 4.8 shows that, overall, the respondents tended to have positive perceptions regarding the use of ChatGPT. In terms of overall student perception of utilizing ChatGPT in English class, respondents had a high perception level, with a mean score of 3.76. Students reported that ChatGPT can provide answers quickly and is a helpful tool for studying English (mean scores of 4.53 and 4.22, respectively). This was followed by high levels of perception that ChatGPT is easy to use, promotes self-study, and offers an alternative to traditional English classes (mean scores of 4.17 and 4.07, respectively). Furthermore, participants used ChatGPT as a search engine and believed it should be used in English classrooms (mean scores of 3.97 and 3.72, respectively). However, students moderately perceived that using ChatGPT makes them lazy in producing ideas independently (mean score of 3.08). Interestingly, despite the numerous benefits identified, there was a lower perception regarding the necessity of English classes. The majority of respondents, comprising over two-thirds, disagreed with the notion that studying English may not be essential since ChatGPT can address English language challenges.

Table 4.9
Student's Perceptions Regarding Benefits of Using ChatGPT in Learning English

Perception regarding the use of ChatGPT in EFL classes	Mean	SD	Perception level	Rank
9) ChatGPT can help me save time when researching a topic.	4.18	0.81	High	1

Perception regarding the use of ChatGPT in EFL classes	Mean	SD	Perception level	Rank
10) ChatGPT can easily be accessed to translate English learning materials into Thai.	3.98	0.96	High	3
11) I can better understand English theories and concepts (e.g. grammar, vocabulary, expressions) when using ChatGPT.	3.66	1.02	High	6
12) ChatGPT provides reliable and accurate translation.	3.79	0.92	High	4
13) ChatGPT is useful for my English language learning.	4.07	0.92	High	2
14) There was an improvement in my English communication skills after using ChatGPT.	3.49	1.14	High	8
15) I improved my reading and writing skills after using ChatGPT.	3.68	1.09	High	5
16) My interest in English learning increased after using ChatGPT.	3.62	1.13	High	7
17) ChatGPT boosted my confidence in doing English assignments.	3.98	1.01	High	3
18) I gained more English vocabulary after using ChatGPT	3.98	1.01	High	3
Overall	**3.84**	**1.01**	**High**	

SA= Strongly agree, A= Agree, N= Neutral, D= Disagree, Sd= Strongly Disagree

Table 4.9 illustrates students' perceptions regarding the benefits of using ChatGPT in English learning. Overall, respondents displayed a notably positive perception towards the advantages of using ChatGPT in learning English ($\bar{x}$ = 3.84). The analysis revealed that ChatGPT offered significant time-saving benefits during topic searches and was useful for language learning ($\bar{x}$ = 4.18 and 4.07, respectively). Furthermore, it was observed that ChatGPT facilitated easy access for students to translate English learning materials into Thai, thereby enhancing accessibility. Additionally, ChatGPT emerged as a confidence booster for students in completing assignments while also aiding in the expansion of English vocabulary, garnering a high mean score of 3.98. This was followed by the perception that ChatGPT could provide reliable and accurate translation ($\bar{x}$ = 3.79). Regarding skill enhancement, participants reported improvements in reading and writing abilities, as well as a better grasp of English theories and concepts ($\bar{x}$ = 3.69 and 3.66, respectively). According to identified benefits, ChatGPT increased students' interest in English learning with a 3.62 mean score. Despite these benefits, it was noted that ChatGPT's impact on English communication skills was rated comparatively lower within the group ($\bar{x}$ = 3.49).

Table 4.10

Students' Perceptions Regarding Challenges of Using ChatGPT in Learning English

Perception regarding the use of ChatGPT in EFL classes	Mean	SD	Perception level	Rank
19) My interaction with teachers has decreased since using ChatGPT.	2.67	1.42	Moderate	5
20) I find myself using ChatGPT to discuss topics in Thai rather than in English.	3.03	1.33	Moderate	3
21) I experienced misleading and confusing responses from ChatGPT.	3.29	1.24	Moderate	2

Perception regarding the use of ChatGPT in EFL classes	Mean	SD	Perception level	Rank
22) Using ChatGPT can produce inaccurate or false results and/or references.	3.44	1.09	High	1
23) I rely heavily on ChatGPT to assist with my learning challenges.	2.96	1.33	Moderate	4
Overall	**3.08**	**1.28**	**Moderate**	

SA= Strongly agree, A= Agree, N= Neutral, D= Disagree, Sd= Strongly Disagree

Table 4.10 depicts the respondents' perceptions regarding the challenges associated with employing ChatGPT in the context of English language learning, yielding a moderate mean score of 3.08. Notably, respondents expressed heightened concerns regarding the potential for ChatGPT to yield inaccurate or false results and/or references, evident in their high perception level ($\bar{x} = 3.44$). Furthermore, concerning the responses generated by ChatGPT, students reported encountering moderate levels of misleading and confusing responses in the mean score of 3.29. Additionally, participants demonstrated moderate perceptions concerning the utilization of ChatGPT for discussions in Thai rather than English, as well as relying on ChatGPT to address learning challenges, with mean scores of 3.03 and 2.96, respectively. Despite ChatGPT's capacity to facilitate self-directed learning, respondents held a moderate perception level regarding a potential decrease in their interactions with teachers due to their engagement with ChatGPT ($\bar{x} = 2.67$).

4.3 Comprehensive Perceptions Towards the Use of ChatGPT in English Class from Focus-Group Interview

Focus-group interviews were employed to elicit the nuanced benefits and challenges experienced by participants when using ChatGPT in EFL classes. Four participants who were chosen from the prior questionnaire and expressed

willingness engaged in the focus-group interviews. The comprehensive perception toward the use of ChatGPT can be categorized into two groups as follows:

4.3.1 Students' Perceptions of the Benefits Associated with Using ChatGPT in Thai EFL Classes

A notable discovery emerged from the participants' consensus: they unanimously acknowledged ChatGPT's efficacy as a translation tool for English studies. All students reported, "I always rely on ChatGPT to translate English vocabulary into Thai." Not only did it offer prompt feedback, but it also possessed the capability to translate numerous vocabulary items simultaneously. This versatility distinguishes ChatGPT from other popular translation tools. B2 articulated, "ChatGPT enables me to translate 500 vocabulary words within minutes." B3 highlighted its user-friendly interface and instantaneous feedback as key advantages, stating, "ChatGPT delivers the information I need instantly, all while being incredibly easy to use."

Furthermore, the capability to generate sentences and assist in essay writing emerged as a prominent finding from the majority of participants in the interview. Specifically, two participants, B1 and B3, mentioned utilizing ChatGPT for writing tasks, including composing emails and essays. B1 stated, "I always use ChatGPT to assist me with writing essay assignments." B3 remarked, "ChatGPT excels at writing well-written emails." The other two participants, B2 and G1, confirmed their frequent use of ChatGPT to generate English sentences by inputting prompts in the Thai language, expressing, "ChatGPT makes it convenient to generate content; I consistently utilize Thai prompts to engage with it."

Additionally, participants disclosed employing ChatGPT as both a grammar-checking tool and a facilitator in generating assignment topics. G1 articulated, "I don't have to worry about my grammar homework anymore since I can use ChatGPT to check the grammatical correctness of my sentences." B2 expressed, "ChatGPT assists me a lot in generating useful topics for free-writing essays assigned."

4.3.2 Students' Perceptions of the Challenges Associated with Using ChatGPT in Thai EFL Classes

Concerning the challenges inherent in utilizing ChatGPT within Thai EFL classrooms, the foremost issue reported unanimously by all interviewees was the occurrence of inaccurate factual results. B3 articulated, "When receiving results from ChatGPT, I find myself compelled to verify the answers as it occasionally provides incorrect responses." Additionally, another interviewee who was B1 highlighted the concern that "The results generated by ChatGPT may lack currency, as they reflect data from the year 2021."

Moreover, an additional significant challenge arises in the input process of commands. Two interviewees—B1 and B3—encountered difficulties resulting in inaccurate outcomes due to inconsistencies in command input methods. This challenge was particularly pronounced when queries were formulated in the Thai language, potentially leading to misinterpretations of the intended request, B3 stated that "My interaction with ChatGPT in Thai yielded strange sentence structures." B1 further suggested, "There is a likelihood that ChatGPT lacks proficiency in comprehending the nuances of the Thai language."

Despite being lauded for its versatility in performing various functions, such as serving as a grammar checking tool, ChatGPT may not always excel in comparison to tools specifically designed for singular functions. B1 remarked, "In my estimation, Grammarly surpasses ChatGPT in terms of grammar checking functionality."

4.4 Summary

The questionnaire results revealed a positive overall perception among students regarding the use of ChatGPT in English classes, particularly its ability to provide quick answers and aid in English study. When considering the advantages of ChatGPT, respondents highlighted its usefulness in topic searches as the most beneficial aspect.

However, perceptions of challenges associated with ChatGPT were moderate, with a notable concern being the potential for inaccurate factual results or references. In the focus-group interviews, participants acknowledged ChatGPT's effectiveness in translation, sentence generation, essay writing assistance, and its utility in writing assignments and grammar checking. Nonetheless, challenges were noted, particularly regarding inaccurate factual results and difficulties in command input, potentially leading to misunderstandings. Additionally, some participants felt that ChatGPT fell short compared to specialized tools in certain functions.
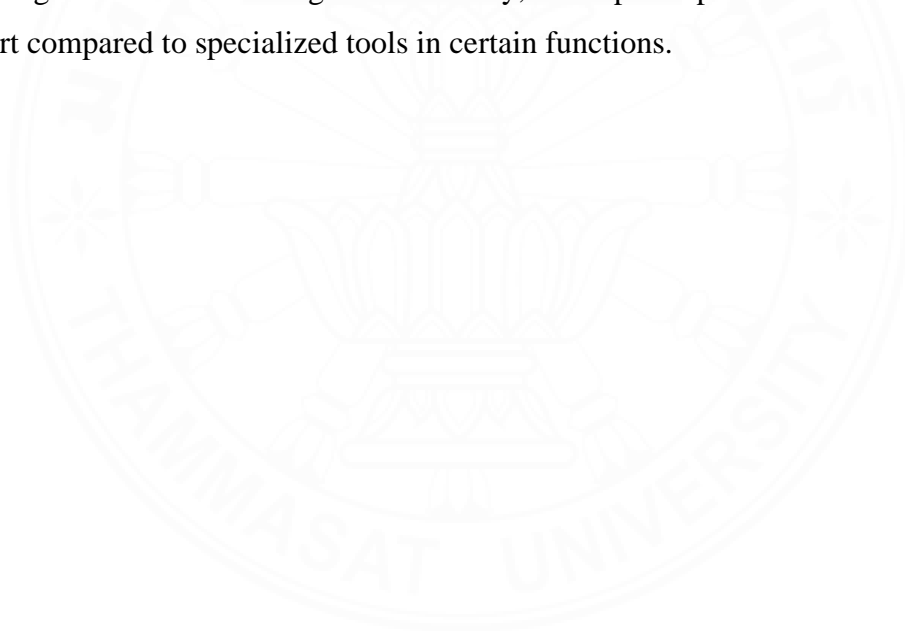
CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter consists of (1) a summary of the study, (2) the discussion of the findings, (3) the conclusion, (4) the implications, (5) the limitations of the study and (6) recommendations for further research.

5.1 Summary of the Study

The study investigated the perception of Thai high school students toward the use of ChatGPT in Thai EFL classes. The results were obtained from both questionnaires and focus-group interviews. The questionnaire engaged 120 respondents, while the focus-group interviews involved four interviewees. This approach aligns with the recommendation by Hennink & Kaiser's (2022), suggesting that a group size of four to eight participants is effective in achieving data saturation. The study covers not only general perceptions but also benefits and challenges associated with using ChatGPT in Thai EFL classes. Thus, the ensuing discussion and interpretation of the results aim to address the research questions at hand:

5.1.1 What are the Perceptions of Thai High School Students toward the Use of ChatGPT in Thai EFL Classes?

The study revealed a positive inclination among students toward the use of ChatGPT in Thai EFL classes. They viewed ChatGPT as a beneficial tool providing quick responses, leading to perceived time-saving advantages during topic searches and aiding in language acquisition. Interestingly, students recognized the value of traditional English instruction alongside ChatGPT, indicating that the latter couldn't replace formal language learning. When considering English skill enhancement, particularly in reading, writing, and communication, students identified ChatGPT as least beneficial for improving communication skills compared to other areas.

Additionally, the research highlighted moderate challenges perceived by Thai high school students in utilizing ChatGPT in their EFL classes. Chief among these concerns was the potential for ChatGPT to produce inaccurate or false information. Furthermore, despite its potential to foster self-directed learning,

participants did not anticipate a reduction in their interaction with teachers during English learning activities.

5.1.2 What are Students' Perceptions of the Benefits and Challenges Associated with Using ChatGPT in Thai EFL Classes?

The insights gleaned from the focus-group interviews provided a comprehensive understanding of Thai high school students' perspectives regarding both the benefits and challenges toward the use of ChatGPT in EFL classes. Concerning its benefits, ChatGPT was unanimously acknowledged as an effective translation tool for learning English, capable of handling multiple vocabulary items simultaneously. Participants also lauded its user-friendly interface and ability to offer prompt feedback. Additionally, the majority of participants in the focus-group interviews also appreciated ChatGPT's sentence generation capabilities and its assistance in essay writing tasks.

Conversely, all participants unanimously identified challenges in utilizing ChatGPT in their EFL classes, with the occurrence of inaccurate factual results at the top of the list. Issues such as outdated information and language barriers were highlighted, particularly when inputting commands in Thai. Moreover, it was observed that ChatGPT might not consistently outperform specialized tools tailored for singular tasks, such as grammar checking functions.

5.2 Discussion of the findings

The interpretation and discussion of the findings are involved in this section. The results presented in Chapter 4 are discussed in relation to the research questions to fulfill the objectives of this study, as outlined in Chapter 1.

The study's findings unveil a robust positive perception among Thai high school students regarding the use of ChatGPT into Thai EFL classes. This finding is in line with Yilmaz et al.'s (2023) investigation into the perceptions of university students enrolled in a Science and Mathematics education program at a private university in Kazakhstan, which similarly found an overwhelmingly positive outlook towards ChatGPT. Furthermore, this study revealed that students perceive ChatGPT as a prompt provider of quick answers, presenting itself as a valuable studying aid, aligning with

findings by Bok and Cho's (2023) examination of Korean college students' experiences with ChatGPT. Their research highlighted students' favorable views of ChatGPT's feedback, emphasizing its utility and reliability.

According to studies by Ngo (2023) and Ray (2023), ChatGPT was found to offer personalized learning experiences and provide personalized tutoring and feedback. However, this study diverges slightly. While acknowledging ChatGPT's potential, Thai high school participants expressed doubt regarding the necessity of English study, which mirrors the results of Ho (2024). Ho examined the perceptions, attitudes, and behaviors of I.T. university students in Vietnam and found that students still highly value traditional classrooms and teacher guidance.

Considering student's perceptions of the benefits of utilizing ChatGPT, participants in this study recognized its substantial time-saving benefits during topic searches, echoing findings by Ngo (2023), where university students similarly praised ChatGPT for its efficiency in time management. Furthermore, participants in this study viewed ChatGPT as a key driver in elevating academic engagement among learners, recognizing its capacity as a confidence booster for completing assignments and its positive influence on students' enthusiasm for English learning. This observation is in line with Baskara's (2023) research, which underscored ChatGPT's efficacy in bolstering motivation and fostering the development of language skills.

On the other hand, the results of this study shed light on student's perceptions regarding the challenges of using ChatGPT, indicating an overall moderate level of concern among participants. This suggests that Thai high school students may not encounter significant hurdles in incorporating ChatGPT into Thai EFL classes. However, one notable concern emerged at a high level of perception: participants expressed heightened apprehension regarding the potential for ChatGPT to produce inaccurate or false results and references. This concern is in the same vein with Azam's (2023) explanation of ChatGPT's limited capacity to grasp the full meaning and context of text, which can result in inaccuracies and inconsistencies in generated responses. Similarly, Ngo's (2023) findings also highlight students' reservations about the quality, reliability, and accuracy of ChatGPT.

Furthermore, instances of misleading and confusing responses from ChatGPT were observed in this study, mirroring Bok and Cho's (2023) investigation where

students occasionally faced challenges in effectively communicating with ChatGPT, leading to misleading feedback. Despite some challenges identified in the integration of ChatGPT into English classes, it is interesting to note that participants in this study exhibited a moderate level of perception regarding decreased interaction with teachers. Although this aspect ranked lowest among concerns, it contrasts with Ho's (2024) findings, which indicated that the lack of face-to-face interaction emerged as the second most problematic issue highlighted by learners.

For benefits and challenges associated with using ChatGPT in Thai EFL classes obtained from the focus-group interviews, participants unanimously agreed on the efficacy of ChatGPT as a valuable translation tool for English studies within Thai EFL classes. This is in line with Ngo's (2023) findings, where students perceived ChatGPT as a versatile tool akin to a multilingual search engine. Furthermore, Ngo's study highlighted ChatGPT's role in facilitating idea elucidation in writing. This finding parallels the focus group interview from this study, where Thai high school students discussed utilizing ChatGPT for sentence generation and writing assignments. Despite countless benefits discussed in the focus-group interviews, participants also acknowledged certain challenges. Among these challenges was the occurrence of misinterpretations of intended requests when communicating with ChatGPT in Thai, mirroring findings by Bok and Cho (2023), whose participants encountered occasional difficulties conversing with ChatGPT in Korean. In an effort to mitigate these miscommunications, some students opted to communicate with ChatGPT in English, considering its origin.

5.3 Conclusion

This study aimed to investigate the perceptions of high school students toward the use of ChatGPT and the benefits and challenges associated with using it in Thai EFL classes. Overall, students displayed a positive perception towards ChatGPT, particularly its ability to provide quick answers and aid in English study. They found its usefulness in topic searches particularly beneficial. However, moderate concerns were raised about potential inaccuracies in ostensibly factual results. In addition to the results of the questionnaires, the focus-group interviews reinforced these perceptions, highlighting ChatGPT's effectiveness in translation, sentence generation,

and essay writing assistance. Challenges included inaccuracies in results and difficulties in command input, leading to potential misunderstandings. Some participants felt ChatGPT compared unfavorably to specialized tools in certain functions.

5.4 Implications

The findings of this study could prove advantageous for both EFL instructors and researchers with an interest in utilizing ChatGPT. For EFL teachers, understanding students' perceptions regarding ChatGPT usage in classrooms is crucial. Given the emergence of new technology, ChatGPT holds potential to aid teachers in diverse ways, such as enriching teaching materials, facilitating assessments, and refining pedagogical strategies. As indicated by the results, EFL teachers may consider integrating ChatGPT into their teaching practices, particularly as an efficient translation tool, thereby saving time. Furthermore, ChatGPT's functionalities, such as topic generation and grammar checking, could assist teachers in swiftly generating customized content tailored to student requirements. Moreover, teachers can incorporate ChatGPT into their lesson plans as an additional instructional resource. By offering supplementary explanations, examples, and contextual insights, ChatGPT accommodates various learning styles and paces, fostering authentic learning experiences. While this study highlights the benefits of ChatGPT, it also acknowledges potential challenges that both students and EFL teachers may encounter when utilizing it. This awareness enables teachers to prepare themselves and their students for effective ChatGPT utilization. Finally, the outcomes of this study offer valuable insights for researchers, providing theoretical frameworks and cross-cultural perspectives on attitudes and beliefs related to technology-mediated language learning.

5.5 Limitations of the Study

This study encountered several limitations that warrant consideration. Firstly, the duration of the data collection process was constrained by time limitations, as it coincided with the school break in Thailand in April 2024. Consequently, the distribution of the online questionnaire via online platforms presented challenges in tracking and ensuring timely responses from participants. Moreover, the questionnaire

was distributed only one week prior to the commencement of data analysis, potentially limiting the pool of respondents.

Secondly, the utilization of convenience sampling in participant selection led to an imbalanced representation across various criteria, including school year, school type, learning program, and English GPA. This may have introduced biases and affect the generalizability of the findings.

The third limitation was the size of the focus-group participants. Although the researcher intended to employ both quantitative and qualitative methods to ensure comprehensive results, only four participants engaged in the focus-group interviews. While this number may still yield data saturation, as suggested by Kaiser (2022), it remains at the lower end of the suggested range.

In addition to the relatively small size of the focus group, which remained at the lower end of the recommended range, there was a risk that the discussion might be dominated by a few participants. This dominance could influence other interviewees to conform to these responses, potentially affecting data saturation and the overall quality of the insights gathered.

Given these limitations, caution is warranted in generalizing the findings of this study to broader populations or contexts.

5.6 Recommendations for Further Research

1) This study only focused on the perception of Thai high school students toward the use of ChatGPT in EFL classes. Future research could extend this inquiry to explore the perceptions, attitudes, or satisfaction levels of students at different educational levels. Considering ChatGPT's widespread application, both lower and higher levels of Thai students may encounter its integration in English classes, potentially yielding varied perspectives. Such comparative analysis could offer insights into the diverse aspects of ChatGPT usage among Thai students.

2) The research instrument utilized for initial data collection comprised a questionnaire adapted from Ngo's (2023) and Ho's (2024) questionnaires. While this instrument underwent validation via the IOC method, involving assessment by three subject matter experts for item relevance and appropriateness, future studies might benefit from developing a questionnaire tailored to the specific research

population and contextual nuances. Such customization could enhance the instrument's effectiveness in capturing the targeted data accurately.

3) To mitigate the risk of a few participants dominating the focus group interviews, as noted in the previous limitations section, future research should consider employing additional qualitative data collection methods tailored to the specific population. This approach will enhance data triangulation and improve the robustness of the study's findings.

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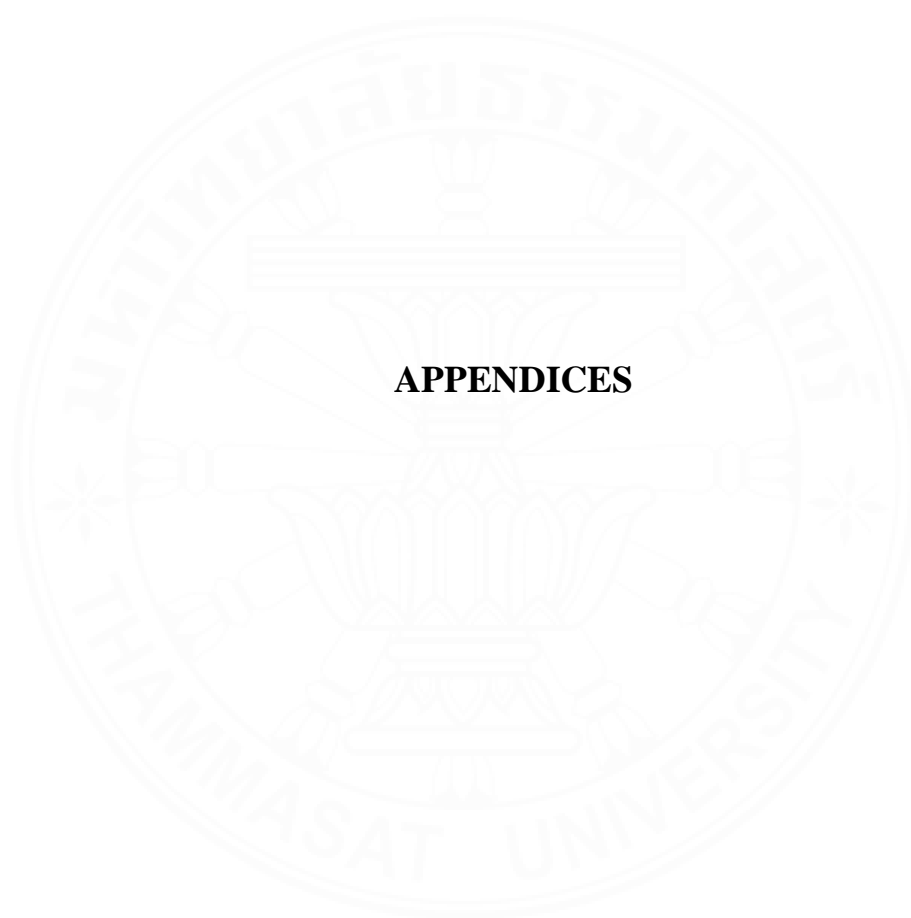
APPENDICES

APPENDIX A
CONSENT FORM

แบบสอบถามการรับรู้ของนักเรียนระดับมัธยมศึกษาตอนปลายต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษเป็นภาษาต่างประเทศ (Thai High School Students' Perception toward the Use of ChatGPT in EFL Class)

เกี่ยวกับแบบสอบถามและการใช้ข้อมูล

แบบสอบถามนี้จัดทำเพื่อเป็นส่วนหนึ่งของรายวิชาการค้นคว้าอิสระของนักศึกษาปริญญาโท (การสอนภาษาอังกฤษ) สถาบันภาษา มหาวิทยาลัยธรรมศาสตร์ การวิจัยครั้งนี้มีจุดประสงค์เพื่อการศึกษาการรับรู้ของนักเรียนระดับมัธยมศึกษาตอนปลายต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษเป็นภาษาต่างประเทศ ท่านสามารถมั่นใจได้ว่าข้อมูลทั้งหมดของท่านถือเป็นความลับ และนำไปใช้เพื่อการวิเคราะห์ในเชิงวิชาการเท่านั้น ไม่ได้มีจุดประสงค์เพื่อประเมินผลงานหรือระดับความสามารถทางด้านภาษาอังกฤษของท่านแต่อย่างใด

แบบสอบถามนี้ประกอบไปด้วยคำถาม 2 ตอน

ตอนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

ตอนที่ 2 แบบสอบถามเกี่ยวกับการรับรู้ของนักเรียนต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ (23 ข้อคำถาม)

โปรดตอบแบบสอบถามตามความคิดเห็นที่เป็นจริงของท่าน และกรุณาตอบคำถามให้ครบทุกข้อ เนื่องจากคำตอบของท่านมีค่าอย่างยิ่งสำหรับการวิจัยในครั้งนี้ ขอขอบคุณท่านเป็นอย่างสูงที่ให้ความร่วมมือในการตอบแบบสอบถามนี้เป็นอย่างดี

ขอแสดงความนับถือ

นางสาวธัญญณัชกร สิริโรจนาพันธ์

นักศึกษาปริญญาโท (การสอนภาษาอังกฤษ)

สถาบันภาษา มหาวิทยาลัยธรรมศาสตร์

การยินยอมให้เก็บข้อมูลและนำข้อมูลไปใช้ในการวิจัย

แบบสอบถามนี้จัดทำเพื่อเป็นส่วนหนึ่งของรายวิชาการค้นคว้าอิสระของนักศึกษาปริญญาโท (การสอนภาษาอังกฤษ) สถาบันภาษา มหาวิทยาลัยธรรมศาสตร์ การวิจัยครั้งนี้มีจุดประสงค์เพื่อการศึกษาการรับรู้ของนักเรียนระดับมัธยมศึกษาตอนปลายต่อการใช้ โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษเป็นภาษาต่างประเทศ ท่านสามารถมั่นใจได้ว่าข้อมูลทั้งหมดของท่านถือเป็นความลับ และนำไปใช้เพื่อการวิเคราะห์ในเชิงวิชาการเท่านั้น ไม่ได้มีจุดประสงค์เพื่อประเมินผลงานหรือระดับความสามารถทางด้านภาษาอังกฤษของท่านแต่อย่างใด

การยินยอมให้เก็บข้อมูลและนำข้อมูลไปใช้ในการวิจัย *

◉ ยินยอม

◯ ไม่ยินยอม

APPENDIX B

QUESTIONNAIRE IN ENGLISH

Thai high school students' perception toward the use of ChatGPT in EFL classes.

This survey is a part of an independent study for a Master's Degree in English Language Teaching at the Language Institute, Thammasat University. It is designed to explore the perception of high school students toward the use of ChatGPT in English class. Your answers will be kept confidential and will be used for research purposes only.

Part 1: Demographic information

Instructions: Please choose the following questionnaire.

1. **Gender**
    ☐ Male
    ☐ Female
    ☐ Prefer not to say

2. **Shool year**
    ☐ Grade 10 (Matthayom 4)
    ☐ Grade 11 (Matthayom 5)
    ☐ Grade 12 (Matthayom 6)

3. **Types of School**
    ☐ Demonstration school
    ☐ Government school
    ☐ Private school
    ☐ Others, please specify…

4. **Study program**
    ☐ Science - Mathematics
    ☐ Mathematics - English
    ☐ Foreign languages
    ☐ Arts & Music
    ☐ Social studies
    ☐ Others, please specify…

5. ENGLISH SUBJECT GRADE POINT AVERAGE (GPAS)
☐ 0.00 - 1.00
☐ 1.01 - 2.00
☐ 2.01 - 3.00
☐ 3.01 - 4.00

6. Duration using ChatGPT in English class
☐ Less than 1 year
☐ 1 year
☐ 2 years
☐ 3 years

7. In what course have you employed ChatGPT in English class? (Allow to select more than one option)
☐ Writing
☐ Reading
☐ Speaking
☐ Grammar
☐ Translation

Part 2: General perceptions regarding the use of ChatGPT in learning English
Instructions: Please choose the statement indicating your perception toward the use of ChatGPT in English classes. There are five level of agreement rating as follows:
1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree

Perception regarding the use of ChatGPT in learning English	5	4	3	2	1
General perceptions regarding the use of ChatGPT in learning English					
1. It is easy to use ChatGPT.					
2. ChatGPT can provide answers quickly.					
3. Using ChatGPT makes me lazy to produce any ideas by myself.					

Perception regarding the use of ChatGPT in learning English	5	4	3	2	1
4. ChatGPT functions as a search engine.					
5. ChatGPT is a helpful tool for studying English.					
6. ChatGPT should be used in English classrooms.					
7. Using ChatGPT for self-study offers an alternative to traditional English classes.					
8. Studying English may not be essential since ChatGPT is capable of addressing English language challenges.					
Student's perceptions regarding benefits of using ChatGPT in learning English					
9. ChatGPT can help me save time when researching a topic.					
10. ChatGPT can easily be accessed to translate English learning materials into Thai.					
11. I can better understand English theories and concepts (e.g. grammar, vocabulary, expressions) when using ChatGPT.					
12. ChatGPT provides reliable and accurate translation.					
13. ChatGPT is useful for my English language learning.					
14. There was an improvement in my English communication skills after using ChatGPT.					
15. I improved my reading and writing skills after using ChatGPT.					
16. My interest in English learning increased after using ChatGPT.					
17. ChatGPT boosted my confidence in doing English assignments.					

Perception regarding the use of ChatGPT in learning English	5	4	3	2	1
18. I gained more English vocabulary after using ChatGPT					
Student's perceptions regarding challenges of using ChatGPT in learning English					
19. My interaction with teachers has decreased since using ChatGPT.					
20. I find myself using ChatGPT to discuss topics in Thai rather than in English.)					
21. I experienced misleading and confusing responses from ChatGPT.					
22. Using ChatGPT can produce inaccurate or false factual results and/or references.					
23. I heavily rely on ChatGPT to assist with my learning challenges.					

APPENDIX C

QUESTIONNAIRE IN THAI

**แบบสอบถามการรับรู้ของนักเรียนระดับมัธยมศึกษาตอนปลายต่อการใช้โปรแกรม ChatGPT ในการเรียน
ภาษาอังกฤษเป็นภาษาต่างประเทศ**

เกี่ยวกับแบบสอบถามและการใช้ข้อมูล

        แบบสอบถามนี้จัดทำเพื่อเป็นส่วนหนึ่งของรายวิชาการค้นคว้าอิสระของนักศึกษาปริญญาโท (การสอน
ภาษาอังกฤษ) สถาบันภาษา มหาวิทยาลัยธรรมศาสตร์ การวิจัยครั้งนี้มีจุดประสงค์เพื่อการศึกษาการรับรู้ของ
นักเรียน
ระดับมัธยมศึกษาตอนปลายต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษเป็นภาษาต่างประเทศ ท่าน
สามารถมั่นใจได้ว่าข้อมูลทั้งหมดของท่านถือเป็นความลับ และนำไปใช้เพื่อการวิเคราะห์ในเชิงวิชาการเท่านั้น ไม่ได้มี
จุดประสงค์เพื่อ
ประเมินผลงานหรือระดับความสามารถทางด้านภาษาอังกฤษของท่านแต่อย่างใด

        แบบสอบถามนี้ประกอบไปด้วยคำถาม 2 ตอน

        ตอนที่ 1 ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

        ตอนที่ 2 แบบสอบถามเกี่ยวกับการรับรู้ของนักเรียนต่อการใช้โปรแกรม ChatGPT ในการเรียน
ภาษาอังกฤษ (23 ข้อคำถาม)

        โปรดตอบแบบสอบถามตามความคิดเห็นที่เป็นจริงของท่าน และกรุณาตอบคำถามให้ครบทุกข้อ เนื่องจาก
คำตอบของท่านมีค่าอย่างยิ่งสำหรับการวิจัยในครั้งนี้ ขอขอบคุณท่านเป็นอย่างสูงที่ให้ความร่วมมือในการตอบ
แบบสอบถามนี้
เป็นอย่างดี

<div align="right">

ขอแสดงความนับถือ

นางสาวธัญญ์ณัชกร สิริโรจนานันท์

นักศึกษาปริญญาโท (การสอนภาษาอังกฤษ)

สถาบันภาษา มหาวิทยาลัยธรรมศาสตร์

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ตอนที่ 1: ข้อมูลทั่วไปของผู้ตอบแบบสอบถาม

โปรดตอบแบบสอบถามตามความเป็นจริงของท่าน และกรุณาตอบคำถามให้ครบทุกข้อ

    1. **เพศ**

        ☐ ชาย

        ☐ หญิง

        ☐ ไม่ระบุ

    2. **ระดับชั้น**

        ☐ มัธยมศึกษาปีที่ 4

        ☐ มัธยมศึกษาปีที่ 5

        ☐ มัธยมศึกษาปีที่ 6

3. ประเภทของโรงเรียนที่ท่านศึกษาอยู่
   - ☐ โรงเรียนสาธิต
   - ☐ โรงเรียนรัฐบาล
   - ☐ โรงเรียนเอกชน
   - ☐ อื่น โปรดระบุในข้อถัดไป

4. แผนการเรียนที่ท่านศึกษาอยู่
   - ☐ วิทย์ - คณิต
   - ☐ ศิลป์ - คำนวณ
   - ☐ ศิลป์ - ภาษา
   - ☐ ศิลปะ - ดนตรี
   - ☐ ศิลป์ - ทั่วไป
   - ☐ อื่น โปรดระบุในข้อถัดไป

5. เกรดเฉลี่ยรวมวิชาภาษาอังกฤษ (GPAS)
   - ☐ 0.00 - 1.00
   - ☐ 1.01 - 2.00
   - ☐ 2.01 - 3.00
   - ☐ 3.01 - 4.00

6. ประสบการณ์การใช้โปรแกรม ChatGPT ในการเรียนวิชาภาษาอังกฤษ
   - ☐ น้อยกว่า 1 ปี
   - ☐ 1 ปี
   - ☐ 2 ปี
   - ☐ 3 ปี

7. ท่านมีประสบการณ์การใช้โปรแกรม ChatGPT ในการเรียนวิชาภาษาอังกฤษในคอร์สเรียนใดบ้าง
   (สามารถเลือกได้หลายคำตอบ)
   - ☐ การเขียน (Writing)
   - ☐ การอ่าน (Reading)
   - ☐ การพูด (Speaking)
   - ☐ ไวยากรณ์ (Grammar)
   - ☐ การแปล (Translation)

ตอนที่ 2: แบบสอบถามเกี่ยวกับการรับรู้ของนักเรียนต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ

คำชี้แจง: กรุณาอ่านข้อความเกี่ยวกับการรับรู้ของนักเรียนต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ และเลือกให้ตรงกับความคิดเห็นของท่าน

5 หมายถึง เห็นด้วยอย่างยิ่ง

4 หมายถึง เห็นด้วย

3 หมายถึง รู้สึกเฉย ๆ

2 หมายถึง ไม่เห็นด้วย

1 หมายถึง ไม่เห็นด้วยอย่างยิ่ง

การรับรู้ของนักเรียนต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ	5	4	3	2	1
การรับรู้ทั่วไปของนักเรียนต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ					
1. โปรแกรม ChatGPT ง่ายต่อการใช้งาน					
2. โปรแกรม ChatGPT ช่วยหาคำตอบได้อย่างรวดเร็ว					
3. การใช้โปรแกรม ChatGPT ทำให้ฉันรู้สึกขี้เกียจที่จะหาคำตอบด้วยตนเอง					
4. ฉันใช้โปรแกรม ChatGPT เพื่อเป็นเครื่องมือใช้งานในการสืบค้นข้อมูลต่าง ๆ					
5. โปรแกรม ChatGPT เป็นเครื่องมือที่เป็นประโยชน์ในการเรียนวิชาภาษาอังกฤษ					
6. โปรแกรม ChatGPT ควรถูกนำมาใช้ในห้องเรียนวิชาภาษาอังกฤษ					
7. โปรแกรม ChatGPT เป็นทางเลือกในการเรียนภาษาอังกฤษด้วยตนเองนอกเหนือจากการเรียนในห้องเรียนปกติ					
8. การเรียนวิชาภาษาอังกฤษอาจจะไม่จำเป็นอีกต่อไป เนื่องจากโปรแกรม ChatGPT ช่วยในการแก้ไขปัญหาในการเรียนภาษาอังกฤษ					

การรับรู้ของนักเรียนต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ	5	4	3	2	1
การรับรู้ของนักเรียนต่อประโยชน์ของการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ					
9. โปรแกรม ChatGPT ช่วยให้ฉันประหยัดเวลาในการค้นคว้าหัวข้อที่สนใจ					
10. โปรแกรม ChatGPT สามารถเข้าถึงได้ง่าย สามารถใช้ในการช่วยแปลสื่อหรือเอกสารในการเรียนภาษาอังกฤษเป็นภาษาไทยได้อย่างง่ายดาย					
11. ฉันเข้าใจหลักไวยากรณ์ คำศัพท์ ทฤษฎีหรือแนวคิดในภาษาอังกฤษได้ดีขึ้นเมื่อใช้โปรแกรม ChatGPT					
12. โปรแกรม ChatGPT ช่วยหาคำตอบที่น่าเชื่อถือและสามารถแปลได้อย่างแม่นยำ					
13. โปรแกรม ChatGPT มีประโยชน์ต่อการเรียนวิชาภาษาอังกฤษ					
14. ทักษะด้านการสื่อสารภาษาอังกฤษของฉันพัฒนาขึ้นหลังจากใช้โปรแกรม ChatGPT					
15. ทักษะด้านการอ่านและการเขียนภาษาอังกฤษของฉันพัฒนาขึ้นหลังจากใช้โปรแกรม ChatGPT					
16. ความสนใจในภาษาอังกฤษของฉันเพิ่มขึ้นหลังจากใช้โปรแกรม ChatGPT					
17. โปรแกรม ChatGPT ช่วยเพิ่มความมั่นใจของฉันในการทำการบ้านวิชาภาษาอังกฤษ					
18. โปรแกรม ChatGPT ช่วยทำให้ฉันได้เรียนรู้คำศัพท์ภาษาอังกฤษเพิ่มขึ้น					
15. ทักษะด้านการอ่านและการเขียนภาษาอังกฤษของฉันพัฒนาขึ้นหลังจากใช้โปรแกรม ChatGPT					
16. ความสนใจในภาษาอังกฤษของฉันเพิ่มขึ้นหลังจากใช้โปรแกรม ChatGPT					
17. โปรแกรม ChatGPT ช่วยเพิ่มความมั่นใจของฉันในการทำการบ้านวิชาภาษาอังกฤษ					
18. โปรแกรม ChatGPT ช่วยทำให้ฉันได้เรียนรู้คำศัพท์ภาษาอังกฤษเพิ่มขึ้น					

การรับรู้ของนักเรียนต่อการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ	5	4	3	2	1
การรับรู้ของนักเรียนต่อความท้าทายของการใช้โปรแกรม ChatGPT ในการเรียนภาษาอังกฤษ					
19. การใช้โปรแกรม ChatGPT ทำให้ฉันขาดการปฏิสัมพันธ์กับครูวิชาภาษาอังกฤษ					
20. ฉันพบว่าตัวเองใช้โปรแกรม ChatGPT เพื่อสนทนาในหัวข้อภาษาไทยมากกว่าภาษาอังกฤษ					
21. ฉันเคยมีประสบการณ์ได้รับผลลัพธ์ที่ไม่ถูกต้องและน่าสับสนจากการใช้โปรแกรม ChatGPT					
22. การใช้โปรแกรม ChatGPT อาจทำให้เกิดผลลัพธ์ที่ไม่แม่นยำหรือความผิดพลาดในเชิงข้อมูลหรือการอ้างอิง					
23. ฉันรู้สึกว่าตนเองต้องพึ่งพาโปรแกรม ChatGPT เพื่อช่วยแก้ไขปัญหาในการเรียนภาษาอังกฤษของฉันมากเกินไป					

APPENDIX D
IOC VALIDATION FORM

IOC Validation form of Expert 1 page 1

Validation Form of Thai High School Students' Perception toward the Use of ChatGPT in EFL Class Questionnaire

This evaluation form will be used to verify the developed questionnaire's validity using Item-Objective Congruence (IOC) index. It will be verified by the three experts in the field. This questionnaire entitled 'Thai High School Students' Perception toward the Use of ChatGPT in EFL Class Questionnaire' was adapted from Ngo (2023) and Ho (2024) to investigate students' attitudes, habits, and perceptions toward the use of ChatGPT in Education. The questionnaire will be divided into two main sections as follows:

1. Demographic information
2. Questionnaire elements that address using ChatGPT

The participants are required to rate the statement indicating their perception toward the use of ChatGPT

Directions: Please mark (/) in the rating box (1, 0, -1) on the following items according to your opinions. Please provide comments or suggestions for the improvement of the questionnaire.

1	means	appropriate
0	means	not sure
-1	means	not appropriate

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
Instructions: Please choose the statement indicating your perception toward the use of ChatGPT in English classes. There are five level of agreement rating as follows: levels 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree			✓	

IOC Validation form of Expert 1 page 2

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
General perception of students of the use of ChatGPT in learning				
1. It is easy to use ChatGPT. *(for me)* *that I need*			✓	
2. ChatGPT can provide answers quickly.			✓	
3. Using ChatGPT makes me lazy to think. */ to produce any idea by myself*			✓	My version here is optional.
4. ChatGPT has functions as a search engine.			✓	
5. ChatGPT is a helpful tool for studying English.			✓	It's quite similar to 'Item 13.'
6. ChatGPT should be used in English classrooms.			✓	
7. Self-studying with ChatGPT can replace English classes			✓	
8. It is unnecessary to study English because ChatGPT can solve English language problems.			✓	
Student's perception on benefits of using ChatGPT in learning				
9. ChatGPT can help me save time. *when researching a topic*		✓		
10. ChatGPT can be used to translate English learning materials into Thai, making them easy to access. *understand?*		✓		Access to the materials? Or it means comprehensible? the state of being
11. I can better understand English *language* theories and concepts when using ChatGPT.		✓		If the research context is in a high school, I'm not sure whether language theories and concepts are taught to the students. *usually* How about 'grammar', 'vocab', or 'expressions'?
12. ChatGPT provides reliable and accurate translation. *me with*			✓	
13. ChatGPT is useful for my English language learning.			✓	It's quite similar to 'Item 5.'

IOC Validation form of Expert 1 page 3

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
14. There was an improvement in my English communication skills. *after using ChatGPT?*			✓	
15. I improved my reading and writing skills ← *after using ChatGPT?*			✓	
16. My interest in English learning increased.			✓	
17. ChatGPT boosted my confidence in doing English assignments.			✓	
18. I gained more English vocabulary after using ChatGPT			✓	*What about 'I learned more English vocabulary after using ChatGPT?*
Students' perception on challenges of using ChatGPT in learning				
19. Using ChatGPT makes me lack interaction with teachers.			✓	
20. I have distraction from other topics to ask ChatGPT, especially in Thai language instead of in English.		✓		*I'm not sure about this one. It's quite confusing for me to understand.*
21. I experienced misleading and confusing responses from ChatGPT.			✓	
22. Using ChatGPT can produce inaccurate or false factual references.		✓		*information and references?*
23. I heavily depend on ChatGPT to address my learning challenges. *deal with*			✓	

Comments. *Overall, most of the items here are easy to understand. What I have suggested here is optional. You can consult your adviser about this again before the revision.*

Kanokpoj Khakhai

(*Mr. Kanokpoj Khakhai*)

Expert

IOC Validation form of Expert 2 page 1

Validation Form of Thai High School Students' Perception toward the Use of ChatGPT in EFL Class Questionnaire

This evaluation form will be used to verify the developed questionnaire's validity using Item-Objective Congruence (IOC) index. It will be verified by the three experts in the field. This questionnaire entitled 'Thai High School Students' Perception toward the Use of ChatGPT in EFL Class Questionnaire' was adapted from Ngo (2023) and Ho (2024) to investigate students' attitudes, habits, and perceptions toward the use of ChatGPT in Education. The questionnaire will be divided into two main sections as follows:

1. Demographic information
2. Questionnaire elements that address using ChatGPT

The participants are required to rate the statement indicating their perception toward the use of ChatGPT

Directions: Please mark (/) in the rating box (1, 0, -1) on the following items according to your opinions. Please provide comments or suggestions for the improvement of the questionnaire.

1	means	appropriate
0	means	not sure
-1	means	not appropriate

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
Instructions: Please choose the statement indicating your perception toward the use of ChatGPT in English classes. There are five level of agreement rating as follows: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree				

IOC Validation form of Expert 2 page 2

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
General perception of students of the use of ChatGPT in learning				
1. It is easy to use ChatGPT.			/	
2. ChatGPT can provide answers quickly.			/	
3. Using ChatGPT makes me lazy to think.		/		Slightly leading, could imply a negative connotation
4. ChatGPT has functions as a search engine.			/	
5. ChatGPT is a helpful tool for studying English.			/	
6. ChatGPT should be used in English classrooms.			/	
7. Self-studying with ChatGPT can replace English classes	/			The suggested situation could lead to unfair or one-sided answers. I suggest talking about it in a way that is fair and even for everyone.
8. It is unnecessary to study English because ChatGPT can solve English language problems.	/			This wording could influence opinions negatively about learning English. Please consider rephrasing for a neutral perspective.
Student's perception on benefits of using ChatGPT in learning				
9. ChatGPT can help me save time.			/	
10. ChatGPT can be used to translate English learning materials into Thai, making them easy to access.			/	
11. I can better understand English theories and concepts when using ChatGPT.			/	
12. ChatGPT provides reliable and accurate translation.			/	
13. ChatGPT is useful for my English language learning.			/	

IOC Validation form of Expert 2 page 3

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
14. There was an improvement in my English communication skills.			/	
15. I improved my reading and writing skills.			/	
16. My interest in English learning increased.			/	
17. ChatGPT boosted my confidence in doing English assignments.			/	
18. I gained more English vocabulary after using ChatGPT			/	
Students' perception on challenges of using ChatGPT in learning				
19. Using ChatGPT makes me lack interaction with teachers.		/		Slightly leading, could imply a negative connotation "My interaction with teachers has decreased since using ChatGPT."
20. I have distraction from other topics to ask ChatGPT, especially in Thai language instead of in English.		/		Clumsy wording, might be confusing. "I find myself using ChatGPT to discuss topics in Thai rather than in English"
21. I experienced misleading and confusing responses from ChatGPT.		/		
22. Using ChatGPT can produce inaccurate or false factual references.		/		This is the fact, not students' perception.
23. I heavily depend on ChatGPT to address my learning challenges.		/		The word "heavily" suggests a strong dependence that might not accurately reflect the user's experience. "I rely on ChatGPT to assist with my learning challenges."

Comments...
Some items are somewhat leading or suggest negative aspects of using ChatGPT, which could bias responses.
..Try using more neutral wording that asks about the experience without implying it...........................

(Wipada Sutthiroj   )

Expert

IOC Validation form of Expert 3 page 1

Validation Form of Thai High School Students' Perception toward the Use of ChatGPT in EFL Class Questionnaire

This evaluation form will be used to verify the developed questionnaire's validity using Item-Objective Congruence (IOC) index. It will be verified by the three experts in the field. This questionnaire entitled 'Thai High School Students' Perception toward the Use of ChatGPT in EFL Class Questionnaire' was adapted from Ngo (2023) and Ho (2024) to investigate students' attitudes, habits, and perceptions toward the use of ChatGPT in Education. The questionnaire will be divided into two main sections as follows:

1. Demographic information
2. Questionnaire elements that address using ChatGPT

The participants are required to rate the statement indicating their perception toward the use of ChatGPT

Directions: Please mark (/) in the rating box (1, 0, -1) on the following items according to your opinions. Please provide comments or suggestions for the improvement of the questionnaire.

1	means	appropriate
0	means	not sure
-1	means	not appropriate

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
Instructions: Please choose the statement indicating your perception toward the use of ChatGPT in English classes. There are five level of agreement rating as follows: 1: Strongly Disagree, 2: Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree				

IOC Validation form of Expert 3 page 2

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
General perception of students of the use of ChatGPT in learning				
1. It is easy to use ChatGPT.			x	
2. ChatGPT can provide answers quickly.			x	
3. Using ChatGPT makes me lazy to think.			x	
4. ChatGPT has functions as a search engine.		x		
5. ChatGPT is a helpful tool for studying English.			x	
6. ChatGPT should be used in English classrooms.			x	
7. Self-studying with ChatGPT can replace English classes			x	
8. It is unnecessary to study English because ChatGPT can solve English language problems.			x	
Student's perception on benefits of using ChatGPT in learning				
9. ChatGPT can help me save time.			x	
10. ChatGPT can be used to translate English learning materials into Thai, making them easy to access.		x		ChatGPT can easily be accessed to translate English learning materials into Thai.
11. I can better understand English theories and concepts when using ChatGPT.			x	
12. ChatGPT provides reliable and accurate translation.			x	

IOC Validation form of Expert 3 page 3

Item	Scale			Comments
	-1	0	1	
Direction and criteria				
13. ChatGPT is useful for my English language learning.			x	
14. There was an improvement in my English communication skills.			x	
15. I improved my reading and writing skills.			x	
16. My interest in English learning increased.	x			Not related to AI
17. ChatGPT boosted my confidence in doing English assignments.			x	
18. I gained more English vocabulary after using ChatGPT			x	
Students' perception on challenges of using ChatGPT in learning				
19. Using ChatGPT makes me lack interaction with teachers.			x	
20. I have distraction from other topics to ask ChatGPT, especially in Thai language instead of in English.		x		It is confusing – what is the point of the question?
21. I experienced misleading and confusing responses from ChatGPT.			x	
22. Using ChatGPT can produce inaccurate or false factual references.			x	Using ChatGPT can produce inaccurate or false factual results and/or references.
23. I heavily depend on ChatGPT to address my learning challenges.			x	

Comments....-

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(Surakrai, N.   )

Expert

The interpretation of IOC validation form

Item	The IOC indices of each expert relating to the items			IOC	Result	Comments	Reviewed item
	1	2	3				
Direction and criteria							
General perception of students of the use of ChatGPT in learning							
1. It is easy to use ChatGPT.	1	1	1	1	acceptable		
2. ChatGPT can provide answers quickly.	1	1	1	1	acceptable		
3. Using ChatGPT makes me lazy to think.	1	0	1	0.67	acceptable		3. Using ChatGPT makes me lazy to produce any idea by myself.
4. ChatGPT has functions as a search engine.	0	1	1	0.67	acceptable		
5. ChatGPT is a helpful tool for studying English.	1	1	1	1	acceptable	It's quite similar to item 13.	
6. ChatGPT should be used in English classrooms.	1	1	1	1	acceptable		
7. Self-studying with ChatGPT can	1	-1	1	0.33	reviewed	The suggested situation could lead to unfair or	7. Using ChatGPT for self-study offers

Item	The IOC indices of each expert relating to the items			IOC	Result	Comments	Reviewed item
	1	2	3				
Direction and criteria							
replace English classes.						one-sited answers. I suggest talking about if in a way that is fair and even for everyone.	an alternative to traditional English classes.
8. It is unnecessary to study English because ChatGPT can solve English language problems.	1	-1	1	0.33	reviewed	This wording could influence opinions negatively about learning English. Please consider rephrasing for a neutral perspective.	8. Studying English may not be essential since ChatGPT is capable of addressing English language challenges.
Student's perception on benefits of using ChatGPT in learning							
9. ChatGPT can help me save time.	1	1	0	0.67	acceptable		9. ChatGPT can help me save time when researching a topic.

Item	The IOC indices of each expert relating to the items			IOC	Result	Comments	Reviewed item
	1	2	3				
Direction and criteria							
10. ChatGPT can be used to translate English learning materials into Thai, making them easy to access.	0	1	0	0.33	reviewed		10. ChatGPT can easily be accessed to translate English learning materials into Thai.
11. I can better understand English theories and concepts when using ChatGPT.	1	1	0	0.67	acceptable		11. I can better understand English theories and concepts (e.g. grammar, vocabulary, expressions) when using ChatGPT.
12. ChatGPT provides reliable and accurate translation.	1	1	1	1	acceptable		
13. ChatGPT is useful for my English language learning.	1	1	1	1	acceptable		

Item	The IOC indices of each expert relating to the items			IOC	Result	Comments	Reviewed item
	1	2	3				
Direction and criteria							
14. There was an improvement in my English communication skills.	1	1	1	1	acceptable		14. There was an improvement in my English communication skills after using ChatGPT.
15. I improved my reading and writing skills.	1	1	1	1	acceptable		15. I improved my reading and writing skills after using ChatGPT.
16. My interest in English learning increased.	-1	1	1	0.33	reviewed	Not related to AI	16. My interest in English learning increased after using ChatGPT.
17. ChatGPT boosted my confidence in doing English assignments.	1	1	1	1	acceptable		
18. I gained more English vocabulary	1	1	1	1	acceptable		

Item	The IOC indices of each expert relating to the items			IOC	Result	Comments	Reviewed item
	1	2	3				
Direction and criteria							
after using ChatGPT							
Students' perception on challenges of using ChatGPT in learning							
19. Using ChatGPT makes me lack interaction with teachers.	1	0	1	0.67	acceptable		19. My interaction with teachers has decreased since using ChatGPT.
20. I have distraction from other topics to ask ChatGPT, especially in Thai language instead of in English.	0	0	0	0	reviewed	- It is confusing – what is the point of the question?	20. I find myself using ChatGPT to discuss topics in Thai rather than in English.
21. I experienced misleading and confusing responses from ChatGPT.	1	1	1	1	acceptable		
22. Using ChatGPT can produce inaccurate or false factual references.	1	1	0	0.67	acceptable		22. Using ChatGPT can produce inaccurate or false factual

Item	The IOC indices of each expert relating to the items			IOC	Result	Comments	Reviewed item
	1	2	3				
Direction and criteria							
							results and/or references.
23. I heavily depend on ChatGPT to address my learning challenges.	1	1	1	1	acceptable		23. I rely on ChatGPT to assist with my learning challenges.