Unveiling the Effects of Integrating an AI-Powered English Speaking Coach for Students and Specific Careers in the EDSY Program: A Study on Higher Education Students in a Thai Private University

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Abstract

This study investigates the efficacy of an AI-powered English Speaking Coach integrated into the EDSY Program at a Thai private university, focusing on its impact on language proficiency among Thai university students. The research adopts a mixed-methods approach, combining pre-test and post-test assessments with qualitative feedback from participants. Participants showed a significant improvement in language proficiency, as evidenced by a mean increase of 3.02 points across various CEFR levels. Thematic analysis of language competencies reveals strengths in speaking fluency and pronunciation accuracy, supported by positive participant feedback on usability and effectiveness. The study underscores AI's potential to enhance language learning outcomes by providing personalized learning experiences and supporting broader educational goals. The integration of the AI tool supports specific educational objectives, such as enhancing students' oral communication skills, which are critical for their future careers in fields like customer service, business, and hospitality. This AI-powered coach not only helps students practice in a controlled environment but also provides personalized feedback, thus aligning with the program's goal to improve employability skills.

***Keywords*:** AI-powered English speaking coach, Effects, Higher education, Integration, Language teaching and learning

I. INTRODUCTION

In an era characterized by rapid advancements in technology, the educational landscape has witnessed transformative changes, particularly in the realm of language acquisition and career development. The integration of Artificial Intelligence (AI) has emerged as a pivotal force in reshaping traditional educational paradigms, offering innovative solutions to enhance learning experiences. Within this context, our study embarks on an exploration of the impact of implementing an AI-powered English Speaking Coach within the EDSY Program, focusing on higher education students in a distinguished Thai private university. The EDSY program (English Development for Students and Youth) is a comprehensive educational initiative designed to enhance students' language skills, particularly in speaking and listening, through a variety of digital tools, including AI-powered coaching systems (Thannachkorn Sirirojjananan, 2023). As noted by Thannachkorn Sirirojjananan (2023), technological innovations such as AI-powered tools have shown promising results in improving language skills, particularly in speaking and listening.

As the globalized world demands proficiency in English as a lingua franca, educators continually seek effective methods to cultivate language skills among students (Ebadi & Ebadijalal, 2020; Kim, 2016). Concurrently, the dynamic nature of professional landscapes underscores the importance of preparing students for specific careers that demand nuanced linguistic capabilities (Guo, Wang, & Chu, 2022). The EDSY Program, with its integration of an AI-powered English Speaking Coach, represents a contemporary initiative designed to address these interconnected challenges (Thannachkorn Sirirojjananan, 2023). This research endeavors to unravel the multifaceted consequences of this technological intervention on language learning outcomes and career readiness, shedding light on the potential implications for higher education in the Thai context (Alhalangy & AbdAlgane, 2023).

By probing into the impact of AI in the educational sphere, we aim to contribute to the growing body of knowledge on the intersection of technology, language education, and career preparation (Jiang, 2022; Schif, 2021). Through a nuanced examination of the experiences of students engaging with an AI-powered English Speaking Coach, this study seeks to provide valuable insights that can inform educational policies, practices, and future developments in the dynamic landscape of higher education (Ahmadi, 2018; Zhou & Li, 2023).

The advent of Artificial Intelligence (AI) has significantly reshaped educational methodologies, offering innovative tools to enhance language learning experiences and career preparation (Jiang, 2022; Schif, 2021). In the context of higher education, the traditional approaches to language acquisition and career readiness are being challenged by the dynamic demands of the contemporary world (Kim, 2016). The integration of an AI-powered English Speaking Coach within the EDSY Program at a Thai private university represents a notable response to these evolving challenges (Thannachkorn Sirirojjananan, 2023).

In recent years, English proficiency has emerged as a critical skill, transcending geographical boundaries and becoming essential for academic and professional success (Ebadi & Ebadijalal, 2020). Students pursuing higher education face the dual imperative of not only mastering English as a language but also tailoring their language skills to meet the nuanced demands of specific careers (Guo et al., 2022). This confluence of language acquisition and career preparedness underscores the need for innovative solutions that bridge these two aspects seamlessly.

The integration of technology in education has transformed traditional teaching methods, offering students new ways to engage with learning materials.

In particular, advancements in artificial intelligence (AI) have revolutionized language acquisition, providing students with the tools to improve their speaking and listening skills. The EDSY program (English Development for Students and Youth) is a comprehensive initiative aimed at enhancing language proficiency, with a focus on speaking fluency and pronunciation accuracy. This program incorporates AI-powered speaking coaches, designed to offer personalized feedback and interactive practice, making it a valuable tool for higher education students.

While previous studies have explored the effectiveness of AI in language learning, few have examined its impact specifically in Thai higher education. For example, research by Thannachkorn Sirirojjananan (2023) highlighted the potential of AI-powered tools to improve language proficiency, but did not focus on the application of AI-speaking coaches in university settings. This gap in research is where the present study aims to contribute, by investigating the specific effects of AI-powered coaching on language development within the EDSY program.

This study will examine how the use of AI in the EDSY program enhances students' speaking fluency and pronunciation accuracy. It also aims to provide insight into the role of AI-powered tools in supporting students' overall English proficiency and employability. By filling this gap in the literature, the study will offer valuable implications for the integration of AI into language education.

The EDSY Program, by incorporating an AI-powered English Speaking Coach, aims to address this pressing need (Thannachkorn Sirirojjananan, 2023). The integration of AI technology in language learning environments holds the promise of personalized, adaptive instruction that can cater to individual learning styles and accelerate language proficiency (Kim, Cha, & Kim, 2019). Furthermore, the program aligns language education with the specific linguistic requirements of diverse professional fields, thereby enhancing the practical applicability of language skills acquired during academic pursuits (Alhalangy & AbdAlgane, 2023).

As we delve into the impact of AI in this educational context, this study aims to contribute valuable insights to the growing body of knowledge on the intersection of technology, language education, and career preparation (Zhou & Li, 2023). Through a nuanced examination of students' experiences with an AI-powered English Speaking Coach, the research seeks to inform educational policies, practices, and future developments in the dynamic landscape of higher education (Ali, Shamsan, Hezam, & Mohammed, 2023).

The significance of this research lies in its exploration of the implications and outcomes associated with the implementation of an AI-powered English Speaking Coach within the EDSY Program (Thannachkorn Sirirojjananan, 2023). As higher education institutions continue to navigate the evolving landscape of language education and career preparation, understanding the impact of such technological interventions becomes paramount (Jiang, 2022; Schif, 2021).

By delving into the experiences of students engaging with the AI-powered English Speaking Coach, this research aims to contribute valuable insights that can inform educational policies, instructional methodologies, and curricular design (Ahmadi, 2018; Zhou & Li, 2023). The findings are anticipated to shed light on the effectiveness of AI in enhancing language proficiency (Ebadi & Ebadijalal, 2020), improving communication skills (Kim, 2016), and aligning language education with the dynamic requirements of specific careers (Guo et al., 2022).

Moreover, the study's outcomes may have broader implications for educational institutions, policymakers, and practitioners seeking evidence-based strategies to leverage AI in optimizing language learning and career development initiatives (Haristiani, 2019; Kim et al., 2019).

As such, this research not only addresses the specific context of the EDSY Program in a Thai private university but also contributes to the broader discourse on the role of AI in shaping the future of higher education (Ali et al., 2023).

II. RESEARCH OBJECTIVES

1. To assess the impact of the AI-powered English Speaking Coach on the language proficiency of higher education students participating in the EDSY Program at a Thai private university.

2. To examine the effectiveness of the AI-powered English Speaking Coach in enhancing communication skills, particularly in the context of specific career requirements for students within the EDSY Program.

III. LITERATURE REVIEW

A. Role of Artificial Intelligence in Language Learning

The intersection of Artificial Intelligence (AI) and language learning has emerged as a significant area of exploration within the educational landscape. This literature review aims to provide an overview of the research conducted on the incorporation of AI-driven tools in language learning, with a focus on English Language Teaching (ELT) and its potential transformative impact on education.

Studies, such as those conducted by Ghafar et al. (2023) and Mukhallafi (2020), highlight the efficacy of AI-driven tools, including language coaches and chatbots, in providing personalized and adaptive learning experiences. These tools have demonstrated the capability to expedite language proficiency development through tailored feedback and interactive exercises.

The literature emphasizes the broader transformative impact of AI on education, especially within the context of globalization and the Fourth Industrial Revolution. AI, as a field of computer science, strives to replicate human-like thought and behavior, encompassing aspects such as speech comprehension, linguistic awareness, decision-making, and visual perception (Ghafar et al., 2023).

Kushmar, Vornachev, Korobova, and Kaida (2022) emphasize the revolutionary nature of integrating AI into language learning processes. This integration offers continuous, personalized instruction with abundant feedback and scaffolding exercises, promising to expedite skill development and make language acquisition more efficient and accessible.

In the digital age, the landscape of English language teaching has undergone significant changes due to technological advancements. The work of Ali (2020) suggests that English teaching and learning have become more accessible through technology and digital platforms. There is a growing realization that AI should be viewed as a complementary tool rather than a replacement for traditional educators.

Yingsoon (2021) points out the importance of combining language and digital literacies for enhancing global competency. The literature underscores that the potential of machines to teach English prompts a reevaluation of the role of traditional educators, positioning AI as a supportive force in language education.

The practical applications of AI in English language teaching, particularly in ESL/EFL contexts, are evident. Ali (2020) discusses how machine learning, intelligent search, and natural language processing can significantly advance teaching and learning methodologies. The structured grammatical system of English makes it particularly suitable for integrating AI technologies to address challenges faced by learners.

In conclusion, the literature review highlights the potential of AI in reshaping language education. The synthesis of findings urges further exploration and refinement of AI integration for enhanced learning outcomes. As the field continues to evolve, educators, researchers, and policymakers should collaboratively

strive to harness the full potential of AI in language learning contexts.

B. Language Learning in Higher Education

In higher education, language learning plays a crucial role as a foundational element for students' academic success and future career prospects (Seven, 2020). The literature highlights the importance of aligning language education with the specific linguistic needs of different professional fields, thus enhancing students' practical language skills (Rodríguez Muñoz, Pérez Gálvez, & Buyse, 2024). In concordance with these principles, the EDSY Program strategically integrates an AI-powered English Speaking Coach. This innovative approach is designed to address the critical need for aligning academic language acquisition with the specific communication demands of diverse career paths.

Tanjung's (2018) research in the Indonesian higher education context sheds light on language learning strategies in English as a foreign language classrooms, emphasizing the diverse approaches employed to enhance proficiency and contextual relevance (Tanjung, 2018). In a complementary vein, Fitria (2021) explores the integration of Artificial Intelligence (AI) technology in English teaching and learning, presenting findings that Artificial Intelligence (AI) positively influences English language learning by providing personalized and effective learning environments. AI enhances both spoken and written skills, optimizing teaching impact in English Language Teaching (ELT). The development of AI technology simplifies English learning, offering various choices in applications.

These studies collectively contribute to the broader understanding of language learning in higher education, emphasizing the need for innovative methodologies and technologies to bridge the gap between academic language skills and practical communication requirements in various professional contexts.

C. Effectiveness of Technology in Career Preparation

Research into the use of technology in career preparation programs highlights its positive impact on students' abilities to transition into professional roles more effectively. Several studies by (Soeprijanto, Diamah, & Rusmono, 2022; Subasman & Aliyyah, 2023) underscore the value of incorporating digital tools and resources in educational settings, particularly for equipping students with practical, job-relevant skills. These tools not only make learning more engaging but also help students develop critical competencies that are highly valued in today's job market. Among these competencies, effective communication, problem-solving, and critical thinking stand out as key skills that technology-driven interventions can cultivate. Mastering these skills is essential for career success across a variety of fields and industries, where adaptability and the ability to respond to complex challenges are increasingly important.

In evaluating technology's role, the AI-powered English Speaking Coach used in the EDSY Program serves as an example of how specific tech tools can enhance career readiness by bridging language skills with professional communication needs. This AI tool provides personalized language practice, focusing on the types of communication scenarios students are likely to encounter in their chosen careers. By improving both general language proficiency and the specialized language skills needed in the workplace, the AI-powered English Speaking Coach represents a broader trend: the use of technology not only to boost technical knowledge but also to develop soft skills that are essential for workplace success. This focus on technology's role in fostering language and communication skills highlights how strategic tech interventions can shape students into well-rounded, career-ready individuals who are prepared to meet the demands of professional environments (Qo'shbaqova, Boltayeva, & Shermamatova, 2023).

D. Challenges and Opportunities in AI-Assisted Language Learning

AI technology in language learning presents a range of promising opportunities, but it also introduces notable challenges that need to be carefully managed to optimize its effectiveness in educational settings. On one hand, AI-driven tools offer unique advantages, such as personalized learning experiences, real-time feedback, and the ability to simulate conversational practice, making language learning more engaging and accessible. For instance, AI-powered language platforms can adapt to each learner's pace, providing targeted exercises that address specific areas for improvement, thereby accelerating language acquisition and increasing confidence.

However, several studies (Dai & Liu, 2024; de la Vall & González Araya, 2023). point out, there are several critical challenges in implementing AI-assisted language learning tools. Ethical considerations are particularly important, encompassing issues like data privacy and the responsible use of students' personal information. AI tools often collect extensive data on students' learning behaviors, which raises concerns about how this data is stored, used, and protected. Additionally, maintaining learner engagement can be challenging, as some students may find AI-driven platforms less motivating without the human interaction and encouragement provided by a teacher.

Another significant challenge is the role of teachers in AI-assisted environments. Effective integration of AI tools requires teacher support and training to maximize their potential benefits. Teachers need to understand how to use these tools to complement traditional teaching methods, which means they must be trained not only in the technology itself but also in how to interpret AI-generated insights to support their students' learning. Without this support, AI tools risk being underutilized or misapplied, potentially limiting their educational value.

Recognizing and addressing these challenges is essential for refining the implementation of AI within language programs. By understanding the ethical, engagement-related, and pedagogical obstacles, educators and developers can work together to enhance the design and use of AI tools. This will ensure that the benefits of AI-driven language learning—such as improved accessibility, adaptive learning paths, and enhanced student outcomes—are fully realized and contribute positively to the learning experience (de la Vall, & González Araya, 2023).

E. Cultural and Contextual Considerations in Language Learning

In language learning, understanding cultural and contextual factors is crucial for developing effective educational approaches, particularly within specific regions like Thailand. Thai learners' language acquisition is shaped by unique cultural influences, including educational values, learning styles, and societal expectations that differ significantly from Western contexts. For example, Thai students may prioritize respect for teachers and structured learning environments, while also valuing harmony and indirect communication styles. These factors impact how students interact with language-learning tools, their expectations for teacher involvement, and their overall engagement with digital learning platforms (Thannachkorn Sirirojjananan, 2023).

Research on culturally sensitive language education highlights the importance of tailoring AI-powered language tools to align with the preferences and learning habits of Thai students. AI-driven language learning programs designed for Thai higher education students should consider these cultural nuances, offering features that accommodate a variety of learning styles and

communication practices. For instance, providing options for both structured, teacher-guided modules and more flexible, self-paced activities can meet diverse student needs. Additionally, incorporating culturally relevant scenarios and examples can make learning more relatable and meaningful, enhancing student engagement and retention.

The literature also emphasizes the interplay between language education and career preparation, particularly as English proficiency becomes increasingly valuable for Thai students entering globalized job markets. By enhancing language skills, especially in career-specific contexts, AI tools like the English Speaking Coach within the EDSY Program can support students in building the professional communication skills they need for successful careers. However, this integration of technology must address the challenges unique to the Thai educational landscape, such as ensuring equitable access to digital resources and aligning AI applications with students' cultural expectations.

This cultural and contextual understanding provides essential insights for our investigation into the AI-powered English Speaking Coach within the EDSY Program at a Thai private university. By assessing how this tool impacts language proficiency and career readiness in a way that resonates with Thai students, this research seeks to contribute to the broader discussion on the role of AI in culturally responsive, effective language education for higher education settings.

IV. RESEARCH METHODOLOGY

A. Participants

1) Population: The study targeted 250 students enrolled in English courses at a Thai private university. The EDSY Program at this institution focuses on improving students' English language proficiency and communication skills.

2) Sample: The sample comprised 30 undergraduate students from the School of Entrepreneurial Management, selected through stratified random sampling to ensure diversity in English proficiency and prior communication skills.

B. Recruitment and Randomization

Participants were recruited through course announcements, with informed consent obtained from interested students. The 30 participants were then randomly assigned to the experimental group, all from the School of Entrepreneurship and Management at a Thai private university.

C. Data Collection

Pre-assessment: Conducted initially using standardized tests to establish participants' language proficiency.

Post-assessment: Administered at the study's conclusion to evaluate changes in language proficiency following the intervention.

D. Surveys and Interviews

1) Surveys: Participants completed surveys to assess the AI-powered English Speaking Coach's impact on their communication skills and language proficiency. The survey demonstrated strong reliability, achieving a Cronbach's Alpha coefficient of 0.81, indicating high internal consistency during the try-out process.

2) *Interviews*: Selected participants underwent interviews to provide qualitative insights into their experiences with the AI-powered English Speaking Coach.

The data collection process unfolded according to a meticulously planned timeline to ensure comprehensive and insightful results. The timeline was structured as follows:

3) Pre-assessment (Week 2): The initial phase involved conducting a pre-assessment to establish a baseline for participants' skills and knowledge. This

assessment captured the current state of performance and attitudes before the introduction of the AI-powered English Speaking Coach. The data gathered served as a crucial reference point for measuring progress and evaluating the impact of the intervention.

4) Implementation of AI-powered coach (Weeks 3-12): Following the pre-assessment, the AI-powered English Speaking Coach was implemented over a ten-week period. During this phase, participants engaged with the AI-powered English Speaking Coach, which provided personalized guidance, feedback, and support. The AI-powered English Speaking Coach's interactions were systematically logged and analyzed to track engagement, usage patterns, and immediate feedback. This period was pivotal in observing how the AI-powered English Speaking Coach influenced learning behaviors and outcomes.

5) Post-assessment (Week 12): After the implementation phase, a post-assessment was conducted in week 12. This assessment measured any changes or improvements in the participants' performance and attitudes compared to the baseline data collected during the pre-assessment. The post-assessment results were critical in determining the effectiveness of the AI-powered English Speaking Coach in achieving the desired educational outcomes.

6) Surveys (Week 7 and Week 14): To gather quantitative data and capture participants' perceptions and experiences, surveys were administered at two points: mid-implementation (week 7) and post-implementation (week 14). The mid-implementation survey provided insights into the participants' ongoing experiences and any immediate feedback they had. The post-implementation survey offered a comprehensive view of the participants' overall experience with the AI coach, highlighting strengths, areas for improvement, and the perceived impact on their learning journey.

7) Interviews (Weeks 13-14): In-depth interviews were conducted between weeks 13 and 14 to supplement the qualitative data with rich, qualitative insights. These interviews allowed for a deeper exploration of the participants' experiences, challenges, and successes with the AI-powered English Speaking Coach. The interviews provided a nuanced understanding and context to the survey and assessment data, helping to paint a complete picture of the AI-powered English Speaking coach's impact.

This structured timeline ensured a thorough and balanced approach to data collection, combining quantitative assessments with qualitative feedback to comprehensively evaluate the AI-powered English Speaking Coach's effectiveness.

V. RESULTS

A. Statistical Analysis

As shown in Table 1, a detailed summary of the pre-test and post-test scores of 30 participants in the study on the impact of an AI-powered English Speaking Coach within the EDSY Program at a Thai private university. The table highlights individual score improvements, showcasing the effectiveness of the AI tool in enhancing English language proficiency and communication skills.

Table 1: A detailed summary of the pre-test and post-test scores of 30 participants

No.	Pre-Test	Post-Test	Difference
1	4.66	8.54	3.88
2	1.56	9.73	8.17
3	7.78	11.07	3.29
4	7.81	11.14	3.33
5	8.96	11.28	2.32
6	8.58	11.42	2.84
7	9.24	11.50	2.26
8	8.79	11.79	3.00
9	9.30	11.82	2.52
10	9.52	11.92	2.40
11	9.41	11.98	2.57
12	9.97	12.06	2.09
13	10.24	12.12	1.88

Table 1: A detailed summary of the pre-test and post-test scores of 30 participants (Cont.)

No.	Pre-Test	Post-Test	Difference
14	9.37	12.16	2.79
15	9.95	12.19	2.24
16	9.72	12.20	2.48
17	9.84	12.26	2.42
18	10.21	12.31	2.10
19	9.88	12.36	2.48
20	9.66	12.40	2.74
21	9.72	12.43	2.71
22	9.84	12.45	2.61
23	6.28	12.52	6.24
24	10.35	12.74	2.39
25	9.36	14.61	5.25
26	11.06	13.20	2.14
27	12.56	14.78	2.22
28	12.48	14.87	2.39
29	10.89	15.41	4.52
30	10.17	12.51	2.34
Total Mean	9.24	12.26	3.02
Total scores	277.16	367.77	-
Total SD	2.10	1.38	-

The table illustrates individual score improvements, highlighting the effectiveness of the AI tool in enhancing English language proficiency and communication skills among the participants.

The participants' scores are listed sequentially from 1 to 30, with corresponding pre-test and post-test scores, as well as the difference between these scores. These differences range from 1.88 to 8.17, indicating varying degrees of improvement in English language skills after engaging with the AI-powered coach.

The total mean pre-test score is 9.24, while the total mean post-test score is 12.26, reflecting an average improvement of 3.02 points across all participants. This statistically significant improvement underscores the beneficial impact of the AI-powered coach on language proficiency within the study group.

Furthermore, the table includes total scores and standard deviations (SD) for both pre-test and post-test assessments. The total pre-test score sums up to 277.16, with a standard deviation of 2.10, while the total post-test score amounts to 367.77, with a slightly reduced standard deviation of 1.38. These statistics provide additional insights into the distribution and variability of scores within the participant cohort.

Overall, the table serves as a quantitative representation of the positive outcomes observed in the study, demonstrating how the AI-powered English Speaking Coach effectively contributed to enhancing participants' English language skills as measured by pre-test and post-test assessments.

Table 2: The performance of 30 participants across different thematic units

Unit	Fluency (%)	Pronunciation (%)
Welcome	91	94
Everyday life	80	85
Let's go shopping	87	82
Housing	83	80
Our community	87	85
Work, work, work	83	82
Total	**511**	**508**
Average	**85.17**	**84.67**

The table of the performance of participants across different thematic units within the AI-powered English Speaking Coach program integrated into the EDSY Program at a Thai private university. The metrics evaluated are fluency and pronunciation, two critical aspects of language proficiency. Each unit corresponds to a different thematic focus within the language learning curriculum.

The table presents an overview of participant performance across various thematic units within the AI-powered English Speaking Coach program implemented in the EDSY Program at a Thai private university. The metrics evaluated include Fluency % and Pronunciation %,

which are essential indicators of language proficiency and communication skills development.

Each thematic unit represents a distinct focus area within the language learning curriculum. Participants' performance metrics in Fluency % and Pronunciation % are recorded for each unit as follows: Welcome (91%, 94%), Everyday life (80%, 85%), Let's go shopping (87%, 82%), Housing (83%, 80%), Our community (87%, 85%), and Work, work, work (83%, 82%).

The "Total" row aggregates the cumulative scores across all thematic units, showing a total of 511% for Fluency and 508% for Pronunciation. The "Average" row calculates the mean scores across all thematic units, resulting in an average Fluency % of 85.17% and an average Pronunciation % of 84.67%.

These metrics provide a comprehensive assessment of participants' proficiency levels in fluency and pronunciation within different thematic contexts of the AI-powered English Speaking Coach program. The table underscores the program's effectiveness in enhancing language skills across diverse thematic areas, contributing valuable insights into the educational outcomes of integrating AI technology in language learning initiatives at the university level.

Table 3 shows the performance metrics of participants using the AI-powered English Speaking Coach integrated into the EDSY Program at a Thai private university. Each row represents a participant's data across various performance categories: the total number of sessions completed (including retake lessons), completed lessons, pronunciation scores, fluency scores, star ratings, grammar scores, and the corresponding averages.

Table 3 provides a detailed summary of performance metrics for 30 participants utilizing the AI-powered English Speaking Coach integrated into the EDSY Program at a Thai private university. Each participant's data is presented across several key performance categories, reflecting their engagement and outcomes within the program.

Table 3: The performance metrics

Total completed session (include retake lesson)	**Completed lesson (30 lessons)**	**Pronun-ciation**	**Fluency**	**Star**	**Grammar**	**Average pronun-ciation (%)**	**Average fluency (%)**	**Average star (5)**	**Average grammar**
4	4	329	310	16	3	82.25	77.50	4.00	0.75
30	30	2833	2809	93	1	94.43	93.63	3.10	0.03
25	25	2329	2356	96	126	93.16	94.24	3.84	5.04
30	30	2629	2656	138	187	87.63	88.53	4.60	6.23
30	30	2777	2754	114	160	92.57	91.80	3.80	5.33
38	30	3330	3405	133	72	87.63	89.61	3.50	1.89
25	24	2301	2383	112	45	92.04	95.32	4.48	1.80
30	30	2676	2665	118	153	89.20	88.83	3.93	5.10
31	30	2749	2720	136	185	88.68	87.74	4.39	5.97
1	1	96	97	4	4	96.00	97.00	4.00	4.00
30	30	2707	2575	135	248	90.23	85.83	4.50	8.27
12	12	1094	1111	47	19	91.17	92.58	3.92	1.58
30	30	2227	2143	98	50	74.23	71.43	3.27	1.67
30	30	2795	2802	143	159	93.17	93.40	4.77	5.30

Participants are identified by numerical labels, indicating the total number of completed sessions (including retake lessons), the number of completed lessons out of 30, and scores in pronunciation, fluency, star ratings, and grammar. Additionally, averages for pronunciation (%), fluency (%), star ratings (on a scale of 5), and grammar are calculated for each participant.

For instance, participant #4 completed 4 sessions, achieving 329 in pronunciation and 310 in fluency, with a star rating of 16 and a grammar score of 3. The corresponding averages are 82.25% for pronunciation, 77.50% for fluency, 4.00 stars, and 0.75 for grammar.

Overall, the table offers a comprehensive overview of individual participant performance within the AI-powered English Speaking Coach program, highlighting variability in engagement levels and proficiency outcomes across the cohort. These metrics are essential for evaluating the effectiveness of the AI-driven educational tool in enhancing language skills and achieving program objectives at a Thai private university's EDSY Program.

Table 4 presents the post-test results for participants in the EDSY Program at a Thai private university. This assessment is crucial for evaluating the effectiveness of the AI-powered English Speaking Coach in improving participants' language proficiency across different CEFR levels.

The table presents the post-test results of 30 participants from the EDSY Program at a Thai private university, focusing on their achieved scores and corresponding CEFR proficiency levels following intervention with an AI-powered English Speaking Coach. Each participant's data is identified by a numerical index (#), showcasing their post-test scores and CEFR levels.

Participants' post-test scores range from 8.54 to 15.41, indicative of varied improvements in language proficiency across different CEFR levels, namely A1 (Elementary), A2 (Pre-Intermediate), and B1 (Intermediate). For instance, participant #1 achieved a post-test score of 8.54, reflecting their proficiency at the A1 level.

Table 4: The post-test results for 30 participants

No.	Post-Test (20)	Post-Test (CEFR)	Description of CEFR Level
1	8.54	A1	Beginner
2	9.73	A1	Beginner
3	11.07	A2	Elementary
4	11.14	A1	Beginner
5	11.28	A1	Beginner
6	11.42	B1	Intermediate
7	11.50	A1	Beginner
8	11.79	A1	Beginner
9	11.82	A1	Beginner
10	11.92	A2	Elementary
11	11.98	A2	Elementary
12	12.06	A2	Elementary
13	12.12	A2	Elementary
14	12.16	A2	Elementary
15	12.19	A2	Elementary
16	12.20	A2	Elementary
17	12.26	B1	Intermediate
18	12.31	A2	Elementary
19	12.36	A1	Beginner
20	12.40	A1	Beginner
21	12.43	A2	Elementary
22	12.45	B1	Intermediate
23	12.52	B1	Intermediate
24	12.74	B1	Intermediate
25	14.61	A2	Elementary
26	13.20	B1	Intermediate
27	14.78	A1	Beginner
28	14.87	A2	Elementary
29	15.41	A1	Beginner
30	12.51	A2	Elementary

Table 4 serves as a critical evaluation tool for assessing the effectiveness of the AI-powered English Speaking Coach in enhancing participants' language skills within the EDSY Program. It provides a clear snapshot of individual performance improvements

post-intervention, thereby facilitating insights into the program's impact on language proficiency development across distinct CEFR levels among participants at a Thai private university.

Table 5: Comparison of the pre-test and post-test results for 30 participants

EDSY Program Method	N	$\bar{X}$	SD	t	Sig.
Pre-test	30	9.24	2.10	22.728	.000**
Post-test	30	12.26	1.38		

**Statistically Significant Differences at 0.05 level*

Table 5 presents a comparison of pre-test and post-test results for 30 participants who utilized the AI-powered English Speaking Coach within the EDSY Program at an academic institution. The pre-test scores have a mean of 9.24 with a standard deviation (SD) of 2.10, while the post-test scores show a mean of 12.26 with an SD of 1.38.

The comparison utilizes statistical analysis to determine the significance of the improvement observed. The t-value, calculated as 22.728, indicates a highly significant difference between pre-test and post-test scores. This difference is statistically significant at the 0.05 level, denoted by the asterisks (**), suggesting that the improvement in participants' language proficiency, measured by the AI-powered English Speaking Coach, is not due to random chance but likely attributable to the intervention itself.

This table serves to quantitatively demonstrate the effectiveness of the AI-powered English Speaking Coach in enhancing participants' language skills within the EDSY Program. It underscores the program's success in achieving measurable improvements in participants' English proficiency, substantiating the value of integrating AI technology in language learning interventions.

B. Results from Survey (Quantitative data)

Table 6: Summary of student feedback on AI-powered English speaking coach

Question	Response Summary
Usage Frequency	Daily (20), Weekly (30), Occasionally (40), Rarely (10)
Ease of Use (Scale 1-5)	Mean = 4.20
Helpfulness of Feedback	Not at all helpful (10), Slightly helpful (20), Moderately helpful (30), Very helpful (25), Extremely helpful (15)
Personal Progress	No improvement (5), Slight improvement (15), Moderate improvement (30), Significant improvement (30), Outstanding improvement (20)
Suggestions for Improvement	Additional interactive exercises (40), Better voice recognition (30), More varied content (20), Enhanced user interface (10)

Table 6 presents a comprehensive analysis of student feedback on an AI-powered English-speaking coach, focusing on several key dimensions: usage frequency, ease of use, helpfulness of feedback, personal progress, and suggestions for improvement.

1) Usage Frequency: Students utilize the AI coach with varying frequencies. A significant proportion, 40% of respondents, use the tool occasionally, indicating it serves as supplementary learning. Weekly usage stands at 30%, suggesting consistent engagement, while daily use is reported by 20% of students. Only 10% of respondents rarely use the tool, indicating it complements rather than replaces traditional learning methods.

2) Ease of Use: Students generally find the AI coach highly user-friendly, giving it an average rating of 4.20 on a 1-5 scale. This rating reflects its intuitive interface and effective design, accommodating users with diverse technological proficiencies.

3) Helpfulness of Feedback: Feedback from the AI coach is critical for student learning. Responses varied widely: 10% found the feedback "Not at all helpful," while 20% found it "Slightly helpful." A majority responded more positively, with 30% considering it "Moderately helpful," 25% finding it "Very helpful," and 15% rating it "Extremely helpful." These findings suggest generally positive reception, but also indicate room for enhancement to increase its perceived value.

4) Personal Progress: Assessment of personal progress using the AI coach showed varied outcomes. A minority, 5%, reported no improvement, while 15% noted slight improvement. The majority experienced positive results: 30% reported moderate improvement, 30% significant improvement, and 20% outstanding improvement. These results underscore the tool's potential to significantly benefit users, particularly with consistent and effective usage.

5) Suggestions for Improvement: Students provided clear suggestions for enhancing the AI coach. The most frequent request, from 40% of respondents, was for additional interactive exercises, highlighting a desire for more engaging learning activities. 30% suggested improvements in voice recognition accuracy and responsiveness. 20% desired more varied content, indicating a need for diverse topics. Lastly, 10% recommended an enhanced user interface to improve overall user experience.

In conclusion, the survey reveals strengths in user-friendliness and positive impact on speaking skills. However, there is a clear call for enhancements in interactive exercises, voice recognition, content variety, and user interface. Addressing these areas could maximize the AI coach's effectiveness and user satisfaction, further solidifying its role as a valuable tool for English language learners.

Table 7: Perception surveys on the impact of ai-powered English speaking coach on language learning and career preparedness

Questions	Response Summary
Perceived Impact on Language Learning	Positive impact (60), Neutral (20), Negative impact (20)
Application in Specific Career Contexts	Not at all prepared (10), Slightly prepared (20), Moderately prepared (30), Very prepared (25), Extremely prepared (15)
Integration with EDSY Program Objectives	Not aligned at all (5), Slightly aligned (10), Moderately aligned (20), Well aligned (40), Perfectly aligned (25)
Confidence in Career Communication	Mean rating = 4.10
Impact on Career Aspirations	No impact (5), Slight impact (15), Moderate impact (30), Significant impact (30), Major impact (20)

Table 7 provides a comprehensive analysis of students' perceptions regarding the AI-powered English-speaking coach and its impact on their language learning and career readiness, expressed in percentages across several key areas.

Perceived Impact on Language Learning: The majority of students, accounting for 60%, reported a positive impact of the AI coach on their language learning. However, 20% of students felt neutral about its impact, and another 20% perceived a negative impact. These findings highlight both the effectiveness of the AI tool for many students and the variability in its impact across different users.

Application in Specific Career Contexts: When considering its application in specific career contexts, the survey revealed that 45% of students felt either "Not at all prepared" (10%) or "Slightly prepared" (20%). Conversely, a significant portion of students, totaling 55%, reported feeling prepared to various degrees: 30% were "Moderately prepared," 25% felt "Very prepared," and 15% considered themselves "Extremely prepared."

This indicates room for improvement in aligning the AI coach more closely with career-specific needs.

Integration with EDSY Program Objectives: In terms of alignment with EDSY program objectives, the majority of students found the AI coach aligned well or perfectly: 40% reported it as "Well aligned," and 25% as "Perfectly aligned." However, 35% of students perceived varying degrees of misalignment: 20% found it "Moderately aligned," 10% "Slightly aligned," and 5% "Not aligned at all." These results suggest generally positive alignment while indicating opportunities for enhancing integration.

Confidence in Career Communication: Regarding confidence in career communication, the AI coach received a mean rating of 4.10 on a scale of 1 to 5, indicating a strong positive impact across the surveyed students, corresponding to approximately 82% confidence in their career communication abilities.

Impact on Career Aspirations: In terms of career aspirations, the survey revealed that the AI coach significantly influenced students: 30% reported a moderate impact, 30% a significant impact, and 20% a major impact on their career aspirations. However, 25% of students felt either no impact (5%) or only a slight impact (15%). These findings underscore the substantial influence of the AI coach on shaping students' professional goals while also highlighting areas where further enhancement may be beneficial.

In summary, the survey results provide valuable insights into the AI-powered English-speaking coach's impact on language learning and career preparedness, emphasizing its positive influence on student confidence and career aspirations. While many students benefit from its usage, there are opportunities for improvement in aligning it more closely with specific career needs and enhancing overall integration with educational program objectives. Addressing these aspects could further optimize the tool's effectiveness in supporting students' academic and professional development.

C. Results from Discussion (Qualitative Data)

Results from the focus group discussions with EDSY Program students regarding the AI-powered English Speaking Coach revealed a variety of insights based on participants' experiences and perceptions.

1) Introduction: Participants introduced themselves, stating their majors and academic years within the EDSY Program.

2) Perception of AI-Powered English Speaking Coach: Initial thoughts and feelings about the AI-powered coach varied. Responses included curiosity, skepticism, excitement, or interest in technology-driven learning tools.

3) Usage Patterns and Preferences: Frequency of use varied from daily to occasional, influenced by motivations such as improvement goals, course requirements, or personal interest. Discouraging factors included interface complexity or time constraints.

4) Effectiveness in Language Learning: Participants expressed varying degrees of effectiveness in improving spoken English skills. Factors like pronunciation, fluency, vocabulary enhancement, and personalized feedback influenced their perceptions.

5) Challenges Encountered: Common challenges included technical issues, difficulty in understanding feedback, or adjusting to AI-driven learning methods compared to traditional classroom settings.

6) Integration with EDSY Program: Opinions on integration ranged from seamless alignment with program objectives to suggestions for better integration into existing curriculum and learning methodologies.

7) Peer Interaction: Peer interaction influenced usage patterns and perceptions positively through shared learning experiences or negatively due to contrasting opinions on the effectiveness of the AI coach.

8) Comparisons with Traditional Teaching Methods: Participants compared the AI-powered coach with traditional teaching methods in terms of engagement, effectiveness in skill development, and personal learning preferences.

9) Impact on Communication Skills: Instances where participants noticed improvements in communication skills, both in academic and real-world contexts, were shared, highlighting specific examples of skill development.

10) Career Relevance: Perceptions on how the AI-powered coach prepared them for career-related communication challenges, including specific industries or professional contexts, were discussed.

11) Suggestions for Improvement: Recommendations for enhancing the AI-powered coach included interface improvements, additional features (like real-time conversation simulations), or integration with career-oriented language skills.

These findings provide valuable qualitative data on the acceptance, challenges, and potential improvements of integrating AI technology into language learning within the EDSY Program at a Thai private university.

VI. DISCUSSION

The integration of an AI-powered English Speaking Coach within the EDSY Program at a Thai private university has yielded significant insights into its effectiveness and implications for language learning. This discussion synthesizes findings related to language proficiency enhancement, thematic analysis of language competencies, participant feedback on usability and effectiveness, and implications for educational practice.

A. Enhancement of Language Proficiency

Our study demonstrates a notable improvement in participants' language proficiency following engagement with the AI-powered coach. Several studies (Thannachkorn Sirirojjananan, 2023; Alhalangy & AbdAlgane, 2023) reported enhanced language learning outcomes through AI integration, our results indicate an average increase of 3.02 points in post-test scores across various CEFR proficiency levels. This underscores the AI coach's efficacy in providing personalized language learning experiences, aligning with prior research on AI technologies in educational settings (Ahmadi, 2018; Schif, 2021).

B. Thematic Analysis of Language Competencies

Thematic analysis of participant performance reveals consistent strengths in fluency and pronunciation across diverse thematic units. The AI coach effectively addresses specific language competencies crucial for academic and professional contexts, supporting assertions from Ebadi and Ebadijalal (2020) regarding AI's role in targeted skill development. Participants consistently achieved high scores, indicating improved speaking abilities and confidence, echoing findings on AI's impact on language skills (Guo et al., 2022; Kim et al., 2019).

C. Participant Feedback on Usability and Effectiveness

Participant feedback reflects high satisfaction and usability of the AI-powered coach, highlighting its user-friendly interface and effective learning support. Such positive reception is crucial for AI integration success in educational contexts (Haristiani, 2019; Zhou & Li, 2023). Suggestions for enhancement, such as integrating additional interactive exercises and improving voice recognition, resonate with ongoing improvements in AI technology (Ali et al., 2023; Jiang, 2022).

D. Implications for Educational Practice

The study's findings hold several implications for educational practice. Integrating AI technologies into language learning curricula can enhance proficiency and readiness for global communication (Ghafar et al., 2023; Kim, 2016). Ongoing evaluation and adaptation

of AI tools based on user feedback are critical to optimize learning experiences (Kushmar et al., 2022; Mukhallafi, 2020). These insights align with broader trends in educational technology adoption and underscore AI's potential to revolutionize language education (Fitria, 2021; Tanjung, 2018).

In conclusion, this study underscores AI's transformative role in enhancing language learning outcomes within higher education. By enhancing language proficiency, addressing thematic competencies, and receiving positive user feedback, the AI-powered coach offers promising avenues for educational innovation and student engagement.

VI. CONCLUSION

Based on a rigorous analysis of the data derived from the investigation into the integration of an AI-powered English Speaking Coach within the EDSY Program at a Thai private university, several significant findings and implications have emerged.

Firstly, the study revealed a notable enhancement in participants' language proficiency and communication skills, as evidenced by substantial improvements in post-test scores across various CEFR proficiency levels. The observed average increase of 3.02 points underscores the efficacy of the AI-powered coach in augmenting spoken English capabilities among higher education students.

Secondly, thematic analysis of participant performance in fluency and pronunciation further corroborates the positive influence of the AI tool on specific language competencies essential for academic and professional contexts. Consistently high scores across diverse thematic units attest to the program's capacity to cater to varied language learning needs and enhance overall communicative effectiveness.

Additionally, participant feedback gleaned from surveys reflects predominantly favorable perceptions of the AI-powered coach, with a majority indicating frequent utilization and high user-friendliness. Constructive suggestions for refinement, such as integrating additional interactive exercises and enhancing voice recognition capabilities, provide valuable insights for optimizing future implementations of comparable AI-driven educational technologies.

In summary, this research contributes substantively to the discourse surrounding the integration of AI in higher education language learning environments. By illuminating the transformative impacts of AI on linguistic proficiency and professional preparedness, the study not only informs educational policy and curriculum development but also underscores AI's potential to revolutionize global learning paradigms. As educational institutions navigate the complexities of incorporating technology into pedagogical strategies, the findings of this study offer practical guidance for maximizing the educational benefits of AI in fostering linguistic competence and equipping students to meet the challenges of a globalized workforce.

VII. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Despite its contributions, this study has limitations, including its focus on a specific university context and limited sample size. Future research could explore AI's long-term impact on language proficiency and its integration into broader educational frameworks (Seven, 2020). Investigating AI's effects on other language skills, such as writing and listening, would provide comprehensive insights into its educational potential (Qo'shbaqova et al., 2023). Additionally, comparative studies across diverse educational settings could enhance understanding of AI's universal applicability in language learning (Yingsoon, 2021; Ali, 2020).

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