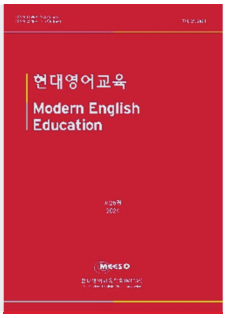
Modern English Education, Vol. 25, (2024) pp. 455-475
doi: https://doi.org/10.18095/meeso.2024.25.1.455

Modern English Education

ISSN: 1598-0782 / e-ISSN: 2586-6141
http://journal.meeso.or.kr



A Study on the Effectiveness of an ESP Course for Airline Cabin Services with Aid of ChatGPT

Kyunghee Cho (Dongshin University)
Munhong Choe (Chonnam National University)

Received: 10 November 2024
Revised: 7 December 2024
Accepted: 18 December 2024

Cho, Kyunghee, & Choe, Munhong. (2024). A Study on the effectiveness of an ESP course for airline cabin services with aid of ChatGPT. *Modern English Education*, *25*, 455-475.

Keywords
ESP, EFL, learning coaching, ChatGPT, airline cabin service
ESP, EFL, 학습코칭, ChatGPT, 항공사 객실서비스

Abstract
This study examines the potential benefits of an English-for-Specific-Purposes (ESP) program for airline cabin services incorporating ChatGPT and individualized coaching. A 10-session intensive course, designed based on interviews with experienced flight attendants, combined classroom activities and ChatGPT-driven assignments to enhance students' English communication and service skills. Ten pre-service college students participated in the experimental program, which significantly boosted their confidence and self-efficacy in English. The integration of AI tools like ChatGPT complemented traditional teaching methods, promoting interactive and autonomous learning. The findings underscore a shift from static ESP materials to dynamic, learner-centered methodologies supported by AI, addressing critical gaps in ESP education. Key factors for successful learning included self-directed learning, adaptability to AI, and effective time management, with underperforming students showing notable improvement. This study highlights the evolving role of technology in education and the importance of tailoring programs to leverage AI's interactive capabilities. By integrating AI tools and learner coaching, the program demonstrates a promising approach to meet modern educational demands. These insights support the adoption of AI-enhanced ESP programs and emphasize the significant influence of learner characteristics on outcomes.

Kyunghee Cho (First author)
Assistant Professor
Department of Hotel & Tourism Management
Dongshin University
skyn2000@hanmail.net

Munhong Choe
(Corresponding author)
Professor
Department of English Education
Chonnam University
munhong@chonnam.ac.kr

* This study is based partly on data from the first author's doctoral dissertation.

INTRODUCTION

Since English communication skills are essential for aviation service management, most airlines require their employees to attain upper-intermediate proficiency in English (Aviation Information Portal System, 2023). In particular, accent-less fluency in spoken English is deemed necessary not only for providing high-quality service to international passengers but also for enhancing individual competitiveness and employment success. Thus, college students aspiring to become flight attendants should work on improving their English skills during their studies. With the rise of employment-oriented

education, there is also an increasing demand for English-for-Specific-Purposes (ESP) courses, which integrate linguistic skills with field-specific knowledge (Aliakbari & Boghayeri, 2014). In the context of airline cabin services, ESP courses focus on job-related language and procedures (Lee & Won, 2016). However, few current programs incorporate practical experience and many fail to fully address the needs of the service industry. Moreover, test-oriented education in Korea has led to students playing a passive role in learning, restricting their self-directed learning abilities (Greene & Grant, 2003; H. S. Jang, 2013; S. M. Park, 2009).

In the post-pandemic era, AI-embedded chabots have emerged as a personalized and interactive tool, promoting student engagement and motivation (Seo, 2017). Chatbots have proven quite successful in improving oral fluency, vocabulary, and grammar knowledge in language learners (Chu & Min, 2019). While the foundational theories of ESP emphasize the integration of linguistic skills with occupational needs (Paltridge & Starfield, 2013), recent advancements in artificial intelligence have reshaped the possibilities for language education. AI tools, such as ChatGPT, have demonstrated significant potential in providing real-time feedback and personalized learning experiences, effectively addressing the practical and adaptive requirements of the airline service industry (Hwang & Lee, 2021; C. S. Jeong, 2023). This study addresses critical gaps in existing ESP literature by demonstrating the innovative use of ChatGPT to transition from static, one-size-fits-all materials to interactive and learner-centered approaches. By tailoring educational content to individual learner needs, this integration represents a significant advancement in ESP pedagogy. These developments present an opportunity to enhance ESP programs, ensuring they are aligned with the evolving demands of both learners and the industry. The present study aims to explore how AI-assisted learner coaching can enhance self-directed learning and the effectiveness of ESP education for airline service students. The goal is to meet the practical needs of both students and instructors, ultimately improving student employability and service quality in the airline industry. Through a comprehensive literature review and interviews with experts, this study aims to develop an efficient ESP course that prepares airline cabin crew students for their future careers and put forward suggestions for ESP education in this era of rapid technological advancement.

There is in fact a growing demand for ESP courses focused on specialization, practicality, and content-language integrated education. However, empirical studies on the management of ESP courses, curriculum development, and instructional methods are as yet insufficient (H. O. Kim, 2008). Research on ESP for airline cabin crew should address both pre- and in-service workers' needs and insights, which can propose more explicit directions, support employment prospects, and enhance customer satisfaction. To this end, the present study aims to develop an ESP program that utilizes AI chatbots and learner coaching. Through this program, instructors can assess the impact of AI-assisted coaching on student satisfaction and learning outcomes, thereby empirically verifying its effectiveness. The research questions are stated as follows:

(1) How can an ESP program for airline cabin service be developed using ChatGPT?
(2) What is the impact of the AI-assisted learner coaching program on ESP education for students in the Department of Airline Cabin Service Management?
(3) How does the ChatGPT learner coaching program influence learning outcomes and student satisfaction?

REVIEW OF THE LITERATURE

English for Specific Purposes

The core feature of an ESP course is that the content of the course is aimed at the specific occupational needs of learners (Paltrtidge & Starfield, 2013). ESP courses focus on language, language skills and genres suitable for the activities that learners need to perform in English. With regards to airline cabin services, human resources performing at the forefront of customer service are emphasized. The role of cabin crew in airline services relies heavily on interpersonal service (Cho, 2006, 2016; Cho & Ko, 2010) and their ability to successfully execute in-flight duties is critical for airline competitiveness.

In the context of airline cabin services, ESP courses focus on job-related language and procedures (Lee & Won, 2016). However, few current programs incorporate practical experience and many fail to fully address the needs of the service industry. Despite existing research on ESP education in aviation, significant gaps remain in addressing how modern AI tools like ChatGPT can enhance learning outcomes. Most prior studies (e.g., Kim & Jin, 2017; Park & Park, 2019) have focused on traditional ESP methods, neglecting the potential of AI to deliver personalized feedback and adapt to individual learning styles. Furthermore, while AI tools have been explored in general English learning (Chu & Min, 2019), their application in highly specialized fields like airline services remains underexplored. Recent advancements in AI, particularly post-2023, highlight ChatGPT's ability to foster real-time interaction and self-directed learning, which are critical for service-oriented industries (C. S. Jeong, 2023; Sim et al., 2023). However, there is a lack of empirical studies examining how such

technologies can bridge the gap between academic training and practical job requirements in the airline service sector. This study aims to address this gap by integrating AI-assisted coaching into an ESP program and evaluating its effectiveness in preparing students for real-world service scenarios.

The rise of digital transformation and AI adds a new dimension to ESP education. AI aims to artificially replicate human cognitive abilities such as reasoning, learning, inference, and decision-making. Machines equipped with AI can autonomously analyze vast datasets and make inferences and judgments (Hwang & Lee, 2021). AI technology strives to provide personalized learning paths tailored to the learner's individual characteristics. This is the primary goal of adaptive learning (Shin et al., 2021). AI-based tools such as ChatGPT can be used to enhance aviation service staff's language skills in authentic conversational contexts. Previous studies related to the effect of AI on language learning have been concerned with how to increase learner engagement and provide personalized feedback, thereby maximizing learning efficiency. To provide an overview of ESP research on airline services, Table 1 summarizes key studies that have shaped the understanding and development of this field.

TABLE 1
ESP Research on Airline Services

Authors (Year)	Study Purpose
S. Y. Park (2005)	Satisfaction and dissatisfaction with educational content for flight attendants
Chenaksara (2005)	Necessity for English communication skills among Thai Airways international cabin crew.
Shen (2008)	ESP course for service agents at China Eastern Airlines
H. O. Kim (2008)	Issues in ESP courses offered at Korean universities.
W. J. Jang (2010)	Investigation and analysis of English education programs and textbooks used by airlines and universities
Dibakanaka & Hiranburana (2012)	Competency-based approach and instructional design for developing an e-learning English course module
Intakaew (2014)	ESP materials on English for airline ground attendant service for the year English major undergraduates
Xiaoqin & Wenzhong (2016)	Curriculum design of cabin service English from the perspectives of ESP, content and language
Cho (2016)	Practical English education and assessment methodologies through major English curriculums based on the National Competency Standards (NCS)
Lee & Won (2016)	Development of a program for improving English proficiency
Baroto et al. (2016)	Development of an English textbook aimed at enhancing the skills necessary for prospective flight attendants
Kim & Jin (2017)	Suggestions for developing an ESP program for flight attendants and students majoring in airline services
K. H. Choi (2018)	Field-oriented English education for airline cabin services
Park & Park (2019)	Development of Flight Attendant English textbooks for enhancing proficiency
S. R. Lee (2020)	Exploration of trends in ESP research
Cho & Yoo (2022)	Needs analysis for ESP targeting students in a Department of Aviation Services
Kim et al. (2022)	Impact of field-friendly ESP education programs on service value, organizational commitment, and customer orientation
Park & Jeon (2022)	Analysis of educational needs for English training to address deficiencies in the textbooks

These studies demonstrate the evolving nature of ESP education in airline cabin services. Recent efforts focus more on developing effective learning strategies, particularly with the rise of AI tools, which can enhance language skills and provide individuated feedback to improve engagement in learning. To optimize ESP learning, flight attendants and students preferred instructors with expertise in both aviation and English, and felt that the current training sessions were insufficient (Park & Jeon, 2022).

The progress of learners in self-assessment and instructor evaluations before and after the ESP program is illustrated in Figure 1.

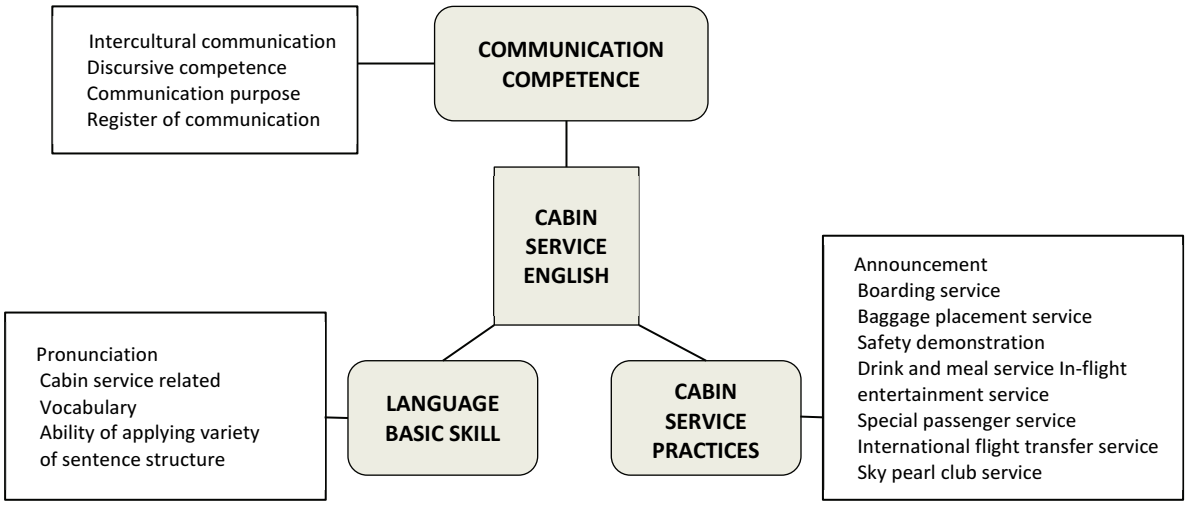


FIGURE 1
Cabin Service English Curriculum Framework (Xiaoqin & Wenzhong, 2016, p.36).

One of the operational proposals for aviation service ESP programs is outlined in Xiaoqin and Wenzhong (2016), in which they integrate both English education and service training. Their approach presents a curriculum that includes fundamental language skills, airline cabin service practices, and communication competence in the cabin. They stress that language skills are the foundation for airline cabin service practices and essential for training qualified flight attendants with well-rounded abilities.

Learning Coaching

This study sought to provide materials for textbooks and programs related to ESP for in-flight services. Initially limited to sports in the 1970s, coaching was later applied to business contexts, becoming a popular topic in the business field from the 1990s onwards (Evered & Selman, 1989; Kilburg, 1996). The International Coaching Federation defines coaching as becoming a partner in a thoughtful and creative process that inspires clients to maximize their personal and professional potential (International Coaching Federation, 2014). Learner coaching is a collaborative process between a coach and a student that focuses on maximizing the student's potential through tailored guidance, rather than traditional one-way teaching methods (Jeon, 2009). It encourages students to achieve their goals by promoting interactions that consider their individual level. This approach fosters self-directed learning, enabling students to analyze, judge, and solve problems independently, while also internalizing a desire for change and growth (Choi & Kim, 2014; Shin & Lee, 2010). Learner coaching helps students develop their own study methods and make self-directed learning a habit (H. K. Jeong, 2011). It does not simply provide answers, but rather supports students in discovering solutions themselves, promoting significant changes in their learning and life overall. According to Jeong (2018), learner coaching serves several key functions: it encourages enjoyable and independent study, helps students recognize their talents and build self-esteem, fosters dreams and global leadership, and teaches time management and learning skills. Unlike traditional methods, learner coaching involves understanding one's current state, setting goals, and learning autonomously. The process focuses not on standardization but on self-awareness, motivation, and independent growth through continuous questioning and feedback.

Integrating learner coaching into various educational methods can be a challenge. Coaching is not about teachers implementing learning strategies through one-way teaching or training methods but rather guiding students to achieve the ultimate goal through specific interactions that consider the learner's current level (Shin & Lee, 2010). Perhaps the most common model representing behavior-oriented coaching is GROW, which focuses on what and how things are done (S. H. Choi, 2011). The coaching process of the GROW model is divided into Goal Setting (G), Reality Checking (R), Options Exploration (O), and Will and Wrap-up (W), which is illustrated in Figure 2 below.

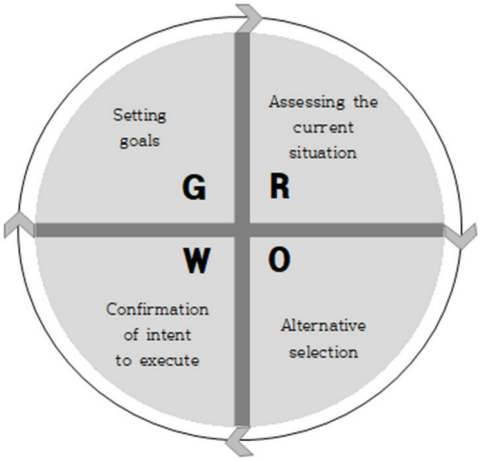


FIGURE 2
GROW Coaching Model

Including GROW, the procedures of the Coaching Conversation Model, the 8 Steps Model, and the SMART Model are summarized as follows:

TABLE 2
Five Coaching Models

Common Steps	GROW	Coaching Conversation	8 Steps	MIRACLE	SMART
Relationship building			Support	Mind Setting Icebreaking	Trust partnership
Topic identification		Focusing	Confirm the topic	Revisit Agenda	Share the goal
Goal setting	Goal	Discovering possibility	Make clients aware of the ripple effect		Make options
Check the reality	Reality			Coaching	
	Option		Make the plan	Learning	
Action plan	Will	Creating action plan	Obtain a commitment to action		Action planning
Execution			Deal with excuses		
		Removing obstacle	Clarify the results	Execution	
Feedback		Finishing up			
			Don't give up		Review & Feedback

The central concepts of each coaching method can be categorized and organized as shown in Table 2. The program in this study was designed by utilizing these five models for learner coaching.

Utilization of Artificial Intelligence (AI) in Education

The advancement of AI is revolutionizing education by offering new learning experiences and solutions to challenges. AI technologies enable systems to analyze large data sets and autonomously make decisions (Hwang & Lee, 2021). AI-assisted education aims to provide personalized learning paths, adapting to learners' individual needs, which is the foundation of individuated learning (Shin et al., 2021). In language learning, chatbots, a form of AI, offer interactive, human-like conversations that enhance foreign language proficiency by practicing speaking, listening, and other essential skills (Fryer

& Carpenter, 2006). Chatbots are highly beneficial in allowing repeated practice, immediate feedback, and fostering motivation in learners. The development of AI-based English teaching and learning in Korea is yet to meet practical demands (Kim & Lee, 2023; Yan et al., 2016).

AI-driven adaptive learning is gaining attention as it addresses declining academic skills and increasing learning gaps in higher education (Brown et al., 2020). It is evolving in various forms, including personalized learning, conversational systems, and intelligent learning agents (Holmes et al., 2019; Jeon, 2023). As AI technology continues to advance, its integration into university education becomes important for student learning in the digital age. ChatGPT is an AI model that uses natural language processing to engage in human-like conversations. GPT (Generative Pre-trained Transformer) refers to an application that generates natural conversations based on pre-trained models (Suk, 2023). Unlike traditional chatbots, ChatGPT understands the context of conversations, making its interactions more natural and flexible. In addition to conversation, ChatGPT performs tasks like text generation, sentiment analysis, document summarization, translation, Q&A, grammar correction, and even programming code generation, making it particularly useful for language learning.

ChatGPT was officially launched on November 30, 2022, and has since transformed AI interactions by eliminating the need for programming knowledge. The most recent version, GPT-4, can process both text and images, with a vocabulary of around 25,000 words, making it highly effective in multiple languages, including Korean and English (S. H. Lee, 2023). In education, especially in English learning, ChatGPT is expected to transform students from passive learners into active participants, enhancing both productive and receptive language skills (J. H. Jeon, 2023; Jeong et al., 2023). Its ability to provide personalized feedback and facilitate interactive communication makes it a valuable tool for both students and educators. As AI continues to evolve, it will play a significant role in reshaping educational content, teaching methods, and teacher competencies. To ensure the guided and responsible use of ChatGPT, further research and education in digital ethics are necessary.

Generative AI refers to artificial intelligence technologies that learn patterns from data and generate new content, such as text, images, and videos. This technology is gaining attention for its potential to address challenges and enhance creativity across various fields (Holmes et al., 2019). A 2023 survey of 544 university students in Korea revealed that 25% had used ChatGPT for academic purposes, mainly for tasks and report writing. Among the respondents, 76.5% viewed AI positively, particularly for saving time (Song, 2023). The increasing use of ChatGPT and other AI-chatbots is likely to have a significant impact on the future of language learning, though it also raises serious concerns among educators. To effectively integrate AI into education, ongoing research is required to optimize its use, manage data responsibly, and address challenges related to AI reliability and ethics (Yang et al., 2019). Despite some concerns, the use of ChatGPT in education is expected to grow and diversify as technologies become more prominent in the learning landscape.

As AI-based systems like ChatGPT become more integrated into course design, students' levels of engagement and utilization vary. Studies have shown a correlation between the level of AI system usage and academic achievement, which highlights the importance of designing courses that encourage continuous utilization (Shin et al., 2021). ChatGPT, unlike traditional rule-based chatbots, learns from large datasets, generating more natural conversations. This makes it useful in education, particularly for language learning, where it can provide personalized, level-specific feedback to students. Moreover, chatbots offer several educational advantages: they expand opportunities for meaningful communication, provide performance evaluation data, and reduce emotional stress, promoting self-directed learning (Jeong, 2021, 2023). In ESP education, ChatGPT can generate authentic dialogues for various scenarios, such as air traffic control, improving the quality of learning materials without placing additional burden on instructors (Sim et al., 2023). As education evolves, personalized coaching tools represent valuable methods for supporting student performance and growth, particularly in specialized fields like airline cabin service management.

METHODOLOGY

Development of an ESP Program

Interviews with Experienced Flight Attendants

As part of the research procedures, in-depth interviews were conducted with 10 flight attendants. They were asked about the most crucial English language skills during in-flight services, topics that should be included in aviation service education, the ideal number of hours specifically for aviation service English within the overall English class hours, and how they would categorize in-flight service procedures, followed by detailed explanations of the services performed in each step.

The second stage of research involved individual investigations based on the responses from the practitioners about categorizing airline cabin service procedures. This confirmed the service procedures, after which phone interviews were conducted to differentiate specific service items within each confirmed procedure. Questions such as "What procedures are involved in pre-take-off cabin services?" "What procedures are involved in post-take-off cabin services?" "How are services conducted in preparation for landing?" and "What content is covered in in-flight announcements?" were answered. The combined responses from the phone interviews were used to identify the conventional expressions needed for service, aiming to develop program content around these expressions.

Categorization of Service Procedures Based on Interview Results

This study focused on categorizing in-flight service procedures performed by flight attendants, aiming to create a precise framework for aviation service students. Based on these procedures, 5-point self-assessment evaluation sheets were developed for students to measure their performance before and after coaching, allowing them to track improvements. The principal service procedures were compiled into dialogues, extracting exemplary English sentences for use in aviation English education. Commonly important elements were summarized, and the content was organized into a ten-session course, selected for pre- and post-evaluations. Three English sentences were selected from each of the ten sessions to create a 100-point evaluation tool. Each of the 33 items was worth 3 points, with 1 extra point added. In the pre- and post-evaluations, correct responses in form and function were scored 3 points, slightly defective ones 2 points, and minimal attempts 1 point.

Implementation of ESP Learner Coaching Program

The program used five coaching models alternately across ten sessions, each lasting 50 minutes, with topics based on airline cabin service procedures. The study was conducted with Airline Cabin Service Management students to test the effectiveness of ChatGPT-assisted coaching. After the program, surveys were used to assess outcomes and satisfaction levels. The research aimed to develop materials for ESP textbooks and programs related to in-flight services, with satisfaction questionnaires completing the program preparation. A ten-session ESP coaching program using ChatGPT was conducted for ten third and fourth-year Airline Cabin Service Management students (seven female, three male) at a university from January 8 to February 28, 2024. The design of the ten-session ESP program was strategically developed to align with the specific needs of airline service students while maintaining practical feasibility. Each session focused on a critical aspect of in-flight service procedures, ensuring that students could engage in task-based learning directly applicable to their future roles. This concise structure allowed for intensive training without overwhelming learners, balancing depth and breadth of content. Furthermore, the ten-session format was informed by feedback from experienced flight attendants, who highlighted the importance of prioritizing essential service tasks within a limited timeframe. This design ensures that learners receive focused, high-impact training tailored to industry requirements.

Learning was facilitated using the following prompts, with roles of cabin crew and passengers alternated to allow for vocal practice:

Prompt 1: Let's play a role-playing game. You can pretend to be a [flight attendant/passenger]. I am a flight attendant, and you are a passenger in the cabin.

Prompt 2: Your name is [Peter/Mary]. Your nationality is [USA]. You live in [Los Angeles]. You have a unique character and family history. The scenario is that we met each other in the cabin.

Prompt 3: You don't have to ask me questions all the time, and try to keep the conversation as realistic as possible.

The educational content was set in the context of an aircraft cabin, with repeated practice of cabin crew and passenger conversation content. After each ChatGPT dialogue, the educational content was continued, ensuring a comprehensive learning experience.

The final stage of the study aims to conduct a post-survey to assess how well learners believe they can perform services according to procedures after the ESP program. The purpose of this survey is to examine the impact of coaching through ChatGPT in the ESP program for airline cabin service students before and after the program. In addition, a post-instructor evaluation will be conducted after the ten sessions to compare with the pre-evaluation and analyze learning outcomes.

Program Content

Listening and speaking were prioritized due to the importance of understanding passengers' verbal needs for effective

service, while writing was deemed the least critical as it is rarely used outside of training. The study also found consensus among experienced flight attendants that nine hours per week is the optimal duration for aviation service education, with three to six hours focused on aviation-specific English. Variations in terminology for cabin service procedures were noted, but they were broadly categorized into pre-takeoff, post-takeoff, and pre-landing services. Table 3 blow gives a detailed summary of the findings of this study based on the results of interviews with experienced flight attendants.

TABLE 3
Results of Interviews with 10 Experienced Flight Attendants

Current Flight Attendant Information				
Expertise	Required Courses	English	Aviation English	Airline Cabin Service Procedures
1	Everyday English, Utilizing English Humor	20	5	Cabin safety, checks, guidance, beverage service, emergency situations, customer interaction, announcements
2	Accurate Vocabulary and Grammar, General Conversation	9	3~6	Short-flights, long-flights, meal service, food service, entertainment service
3	Role-play English Conversation, English Interviews	5~6	3~4	Pre-flight safety checks, in-flight service, post-flight service, safety checks, service item verification, customer service provision
4	Basic English, Practical Aviation English	10	5	Airport transportation service (departure), cabin service, transportation service (arrival), boarding, pre-take-off service, in-flight beverage service, entertainment service, arrival announcement service
5	English Listening, English Speaking	10	4	Aircraft take-off and landing service, safety and cabin service, boarding, pre-take-off service, in-flight meal and beverage service, post-arrival duties, connecting flight guidance, luggage retrieval service
6	Accurate Vocabulary and Grammar Use, General Conversation	9	3~6	Short and long-haul flights, pre-boarding preparation for passenger boarding, in-flight child give away and premium class beverage service, post-take-off meal and beverage, duty-free sales, immigration document service, lost and found checks
7	TOEIC Reading, TOEIC Listening, Aviation English Conversation	9	3~6	Short and long-haul flights, seat assignment service, meal service, beverage service, in-flight sales service, personal customer service, pre-arrival immigration-related service
8	Service English Conversation, General English Conversation, Broadcast English	9	3~6	Short and long-haul flights, meal service, beverage service, entertainment service
9	Everyday English Conversation, Grammar, English Conversation	10	6	Pre-take-off service, post-take-off service, post-arrival service, food and beverage service, personal touch service, in-flight sales service, immigration guidance service
10	General Conversation	9	6	Seat assignment service, meal service, beverage service, individualized service, entertainment service, immigration procedure guidance service, in-flight broadcast service

Another step was taken to delineate the specific procedures involved in airline cabin services. The categorization was based on interviews with experienced flight attendants about how passenger services are carried out onboard. The analysis resulted in the identification of 40 distinct stages of service procedures. The use of airline service English among flight attendants is outlined in Table 4 below.

TABLE 4
Classification of Airline Cabin Services Procedures Based on Interview Results

Cabin Service Categories		Specific Cabin Service Procedures
Pre-flight	Before boarding	Cabin briefing
		Pre-flight security check
		Dealing with minor problems
In-flight	Boarding	Greeting passengers at the gate
		Greeting passengers in the cabin
		Helping passengers who pass their seats
		Guiding passengers arriving with belongings in the aircraft
		Assisting passengers who need special assistance during boarding
		Serving newspapers and magazines
	Beverage service	Giving hot-towels
		Serving alcoholic beverages
		Serving non-alcoholic beverages (juice and soft drinks)
		Handling beverage spillage
	Meal service	Giving out hot towels
		Serving wine
		Serving meals
		Refilling wine for passengers
		Serving hot beverages (coffee and tea)
		Picking up meal trays
	In-flight sales service	Providing duty-free sales
		Providing information about duty-free allowance
		Providing tax-free information to transit passengers
	Entertainment service	Explaining entertainment devices
		Changing seats with malfunctioning devices
	Passenger rest	Adjusting the cabin temperature for passengers
		Special orders
	Medical emergency	Providing medicine
		Offering passengers motion sickness bags
		Giving medicine to passengers with medical symptoms
		Paging a doctor or nurse
Preparing for landing	Fasten seatbelt sign on	Supporting of immigration and customs card handout and filling in
		Collecting headphones and magazines
		Saying farewell to passengers
		Checking all passenger seatbelts
Dis-embarkation	Passengers deplaning	Arranging documents for take-off and landing
		Supporting of deplaning passengers
In-flight announcements		Making a welcome announcement
		Making a safety announcement
		Making a farewell announcement
		Making an emergency announcement

According to the procedures outlined in the table, airline flight attendants' cabin service processes were categorized into specific types. The entire in-flight service was divided into four main phases: pre-takeoff procedures, in-flight service procedures, pre-landing preparations, and post-arrival services. In-flight announcements were classified as a separate fifth phase, emphasizing the significance of standard announcements as a distinct part of cabin service.

Firstly, pre-takeoff procedures include tasks such as cabin briefings, safety checks, and attending to passenger needs. Flight attendant welcome passengers, assist with seating, and help with luggage. Providing special assistance and distributing newspapers are also part of this phase. Secondly, in-flight service covers six areas: beverage and meal service, in-flight sales, entertainment, attending to sleeping passengers, and offering medical assistance if necessary. Thirdly, pre-landing activities involve preparing for arrival by assisting passengers with immigration and customs forms, collecting service items, and ensuring safety measures are completed. Fourthly, post-landing procedures include assisting with documentation for ground staff and helping passengers disembark. Lastly, in-flight announcements, including welcome messages, safety briefings, post-landing information, emergency instructions, and guidance on disembarkation, are considered an essential component of cabin service. Thus, airline cabin services were categorized into five main phases, which were further broken down into 40 specific steps. This categorization provides a structured foundation for flight attendants to apply each of the 40 service procedures in practical settings.

This 40-step service procedure has been adopted as a set of specific protocols for flight attendants. The categorization was used in the evaluation form to assess students' competence in performing airline cabin service procedures. The form serves a dual purpose: it allows students to self-assess their confidence and effectiveness in executing the airline cabin service procedures, and it provides a tool to evaluate their proficiency in various service scenarios. Conducted both before and after training, the evaluation aims to measure changes and improvements in service delivery competencies.

A questionnaire, based on the 40 selected service procedures, was developed to assess the self-efficacy of aviation service students. These procedures cover the full range of services, from pre-flight tasks such as cabin briefings and addressing passenger discomfort, to in-flight duties like serving hot towels, offering alcoholic beverages, managing in-flight entertainment, and pre-landing activities such as assisting with immigration forms and farewells. Post-flight responsibilities, including in-flight announcements, are also included. This detailed categorization of service procedures provides a structured framework for airline cabin service students to develop and refine their service delivery skills across 40 distinct stages.

On the basis of these specified stages, initially a 13-session ESP curriculum was developed, which was subsequently revised into a ten-session format to enhance the efficacy of ChatGPT-assisted learner coaching, focusing on essential cabin service procedures (Michael & Kim, 2015). The streamlined first session, 'Passenger Boarding,' trains flight attendants in effective passenger interaction from boarding to take-off. It covers reviewing boarding passes, directing passengers to seats, managing seating problems like family separations or immediate seat change requests, and ensuring that seatbelts are fastened and overhead bins are secured. The training emphasizes key service scenarios:

Passenger Boarding: Flight attendants greet passengers, ensuring they are guided swiftly and safely to their seats.

Seat Arrangement: Attendants instruct passengers whose seats are in different areas, guaranteeing they receive necessary help.

Seating Problems: Strategies are discussed for when passengers need seat changes that cannot be made immediately.

After Boarding: Focuses on safety protocols including seatbelt security and luggage stowage to ensure a safe take-off.

The session-specific content aims to equip students in airline cabin service studies with the necessary competencies for effective cabin service execution, tailored to the frequent demands of airline operations.

Session 6. Passenger Complaints for Serving in the Cabin

1. Handling complaints about cold cabin

Passenger (PA): Excuse me. I have a cold now and I think that cabin is too cold for me.
Please check the cabin temperature. I am getting colder and colder.

Flight attendant (FA): I'm sorry, sir. First, I get you a blanket and some hot water.

PA: That's good for me. Can you raise the cabin temperature right now?

FA: Sure, I will set the cabin temperature higher right away. (later)
I have set the temperature on the high position. It will take some time for cabin temperature to heat up.

PA: Thank you, miss. I had some hot water and I'm feeling better now.

FA: That's very good. If you think that the cabin is too hot, please let me know.
I will set the temperature again for the passengers.

2. Solving skipped passenger meals
PA: Excuse me, miss. I didn't have dinner today.
FA: I know. You were sleeping deeply during the meal service and I couldn't serve you dinner. I'm keeping your meal in our gallery. Do you want to eat now?
PA: Yes, please. I am very hungry now.
FA: I have to heat up your meal for twenty minutes. Please wait for twenty minutes. (later) I have heated up your meal. Please open your tray table now.
PA: Thank you, miss. Thank you for your serving my meal after the passengers' meal service.
FA: Enjoy your meal, I will offer you something to drink. What would you like to drink?
PA: I would like to have apple juice.
FA: Here you are, sir. I'll offer you some coffee after you finish your meal.

The objectives and performance criteria for each session details the program's structure:

As mentioned, English conversation materials from interviews with flight attendants were used to create a 10-session curriculum. Functional expressions from each session were selected for evaluation, with three sentences per session from sessions 1 to 9, and six sentences for the tenth session on 'Announcements,' totaling 33 items. These items formed a 100-point assessment tool, used for both pre- and post-evaluations. The instructor assessed students' fluency in service situations before and after the program.

Session 1: 'Passenger boarding' covers the service procedures involved in greeting passengers and guiding them to their seats during the boarding process.

Session 2: 'Preparing for take-off and after take-off' initially covers delays due to awaiting connecting flight passengers, including informing them and ensuring safety preparations like securing luggage and fastening seatbelts. The second part involves towel and drinks service, explaining safety regulations regarding coffee service before take-off.

Session 3: 'Serving meals' entails taking orders, serving meals, and addressing requests for specific items not available, managing passenger expectations and complaints about depleted meal options. It also covers serving special meals for dietary or religious reasons and includes polite service expressions.

Session 4: 'In-flight sales' involves teaching basic expressions for sales transactions, introducing in-flight items, and handling queries about products, including alcoholic beverages and tobacco sales.

Session 5: 'Explaining how to use the entertainment system' focuses on troubleshooting entertainment system issues, offering personalized service, and instructing passengers on using the system with resources like in-flight magazines for assistance.

Session 6: 'Passenger complaints for serving in the cabin' includes managing complaints about cabin temperature and missed meal services, ensuring comfort measures like warm water and prompt meal service.

Session 7: 'Sickness in the Air' involves handling airsickness, offering comfort measures like warm water, and assisting passengers with headaches, including offering pain relief with precautionary measures.

Session 8: 'Preparing for landing' guides passengers through immigration paperwork and safety instructions during taxiing, particularly for U.S. citizens, and addresses concerns about connecting flights.

Session 9: 'Deplaning passengers' covers providing local time and date at the destination, assisting with retrieving items from overhead bins and coatrooms, and ensuring passengers have all belongings before deplaning.

Session 10: 'Announcements' focuses on delivering essential flight-related information through welcome and farewell announcements, including safety instructions and local time updates upon landing.

Assessment Instruments

As mentioned, English conversation materials from interviews with flight attendants were used to create a ten-session curriculum. Functional expressions from each session were selected for evaluation, with three sentences per session from sessions 1 to 9, and six sentences for the tenth session on 'Announcements,' totaling 33 items. These items formed a 100-point assessment tool, used for both pre- and post-evaluations. The instructor assessed students' fluency in service situations before and after the program. These presented in Table 5 below, served as the foundation for examining the learning outcomes of the students by providing a basis for both pre- and post-assessment.

TABLE 5
Pre- and Post-assessment Instruments

1. May I see your boarding pass, please?
2. After take-off, I will find someone who can change seats with you.
3. Excuse me. would you please turn off your cell phone now?
4. Please put your seat back in the upright position.
5. After the towels have been collected, you can choose your drinks from a beverage serving cart.
6. You can choose beef or chicken for dinner. Which do you prefer?
7. We'll be serving coffee and tea after dinner has been served for all passengers.
8. Excuse me, did you order a special meal?
9. If you need anything else, please push this call button during the flight.
10. Would you like to buy something from our in-flight sales?
11. You can see the complete list of items in our catalog.
12. Please print your name, nationality and passport number on the back of this traveler's check.
13. Did you plug it in correctly?
14. Also, if the sound is loud, you can adjust the volume by pressing these buttons.
15. If you need any help during the flight, please let me know, sir.
16. I will set the cabin temperature higher right away.
17. I have to heat up your meal for twenty minutes. Please wait for 20 minutes.
18. I've kept your meal in our gallery. Do you want to eat now?
19. If you feel like you are going to throw up, please use this airsickness bag right here.
20. Are you okay now? Your face looks very pale.
21. I hope you feel better soon.
22. Here is your arrival card and customs declaration.
23. If the plane suddenly stops while you are standing up and moving, you could fall.
24. You have to fill these cards out for visiting Korea.
25. That's a safe and comfortable way for you.
26. It looks like you're ready to go now.
27. I look forward to seeing you again. Have a nice stay in Seoul.
28. Our flight time to Los Angeles is 9 hours and 55 minutes after take- off.
29. The use of electronic devices, including mobile phones, is not allowed during take-off and landing.
30. Please remain seated until the seat belt sign is turned off.
31. And please have all your belongings with you when you deplane.
32. Smoking in the cabin and lavatories is prohibited at all the times during the flight.
33. We hope you have a convenient trip to your final destination.

Learning Coaching

The ESP program of this study applied five distinct coaching conversation models: MIRACLE, 8 Steps, Coaching Conversation, GROW, and SMART. The learner coaching process utilizing these five coaching models is presented in Table 6 below.

TABLE 6
Participation in Whole-class and Group/Pair Work

Session	Coaching Model	Learner Coaching and ChatGPT Utilization Learner Coaching Process	
1	M I R A C L E	• Mind setting • Icebreaking • Topic confirmation • Coaching • Reviewing • Learned points • Sharing greetings	• Sharing greetings • Commitment to the learner's mindset and program operation • Guidance for successfully concluding the program and navigating the process • Individual post-evaluation [Self-evaluation & Instructor evaluation] • Efforts to maximize learning effectiveness through pre-program atmosphere adjustment • Session 1 Guidance: Passenger Boarding • Anticipation of sentences that could emerge from the learners' topics • Review of achievements post-learning and planning for future learning methods
2	8 S T E P s	• Provide support • Confirm the topic • Raise awareness of • impact • Make the plan • Secure a commitment • to action • Handle excuses • Clarify outcomes • Encourage • Persistence • Sharing greetings	• Acknowledgment and support for achievements in session 1 • Session 2 guidance: Preparing for take-off and after take-off • Encouragement to discover new insights through the session's topic • Recognition of the learning ripple effect • Development of actionable plans • Enhancing execution through commitment • Anticipating and mitigating negative outcomes of learning • Clarifying learning results to enhance outcomes • Encouragement not to abandon learning
3	Coaching Conversation	• Focus on the topic • Focus on the goal • Discover possibilities • Plan for action • Remove obstacles • Conclusion • Sharing greetings	• Session 3 guidance: Serving meal and serving special meal • Sharing thoughts on the session's topic with learners • Setting goals according to the topic to discover possibilities • Establishing plans for action • Identifying and removing obstacles that hinder session learning • Concluding the session's learning
4	G R O W	• Reality • Options • Will • Share greetings	• Session 4 guidance: In-flight sales • Setting goals based on one's current situation • Assessing the current state in light of set goals • Identifying alternatives for what needs to be done • Committing to executing the chosen alternatives
5	S M A R T	• Building trust • Relationships • Sharing goals • Planning actions • Review & feedback • Sharing greetings	• Casual conversation before learning • Sharing goals with learners • Exploring methods for execution • Session 5 guidance: Explaining how to use the entertainment system

6	M I R A C L E	• Mind setting • Icebreaking • Topic confirmation • Coaching • Reviewing learned points • Sharing greetings	• Commitment to the learner's mindset and the will to operate the program • Guidance for successfully completing the program • Efforts to maximize the learning effect through a pre-program atmosphere shift • Session 6 guidance: Passenger complaints for serving in the cabin • Anticipating sentences that can emerge from the learner's topic • Reviewing achievements post-learning and planning methods for future learning
7	8 S T E P s	• Support • Confirm the topic • Raise awareness of the impact • Make the plan • Secure a commitment to action • Handle excuses • Clarify outcomes • Encourage • Persistence • Sharing greetings	• Confirmation and support for achievements in session 6 • Session 7 guidance: Preparing for take-off and after take-off • Encouraging the discovery of new insights through the session's topic • Recognizing the learning ripple effect • Setting up actionable plans • Enhancing execution through a commitment • Anticipating and mitigating negative outcomes of learning • Clarifying learning results to enhance outcomes • Encouraging persistence in learning
8	Coaching Conversation	• Focus on the topic • Focus on the goal • Discover possibilities • Plan for action • Remove obstacles • Conclusion • Sharing greetings	• Session 8 guidance: Preparing for landing • Sharing thoughts on the session's topic with learners • Setting goals based on the topic to discover possibilities • Establishing plans for action • Identifying and removing obstacles that hinder session learning • Concluding the session's learning
9	G R O W	• Goal • Reality • Options • Will • Sharing greetings	• Session 9 guidance: Deplaning passengers • Setting goals based on one's current situation • Assessing the current state in light of the set goals • Finding alternatives for what needs to be done • Committing to execute the chosen alternatives.
10	S M A R T	• Building Trust • Relationships • Sharing Goals • Planning Actions • Review & Feedback • Sharing Greetings	• Focuses on maintaining and building trust relationships with learners • Session 10 guidance: Announcements • Setting new learning objectives • Planning for execution • Individual post-evaluation [Self-evaluation & Instructor evaluation] • Evaluation of outcomes - praise and support

These session-by-session plans integrated five coaching models. The plan for the sixth session is presented in Table 7, for instance.

TABLE 7
Participation in Whole-class and Group/Pair Work

Sixth Session of Learner Coaching Program Plan			
Topic		Introduction to the program and the meaning of Learner Coaching	
Coaching objectives		Understanding the objectives of the first session, the program, and learner coaching	
Learning content		First session: Passenger boarding	
Coaching model		MIRACLE	
Category		Core content of Learner Coaching	Learner Coaching questions
Learner Coaching Process	Mind setting	• Instructors prepare for the 6th session of the program with a customer service mindset before meeting the learners.	• Instructors reaffirm their commitment to treat learners with respect and the right attitude, especially as the program reaches its midpoint. They promise to keep their focus and attitude from scattering and to conduct the program sincerely as planned.
	Icebreaking	• At the midpoint of the program, instructors and learners discuss through conversation how to elevate their energy for a successful program moving forward.	• You look healthy and bright. Is there something good happening? Can you share it? • How was your last week? If you learned something through it, what was it? That's great. I support the feelings you've had. • If there's anything we should do for better outcomes in the program, please let me know. What would you like to improve? • What has been meaningful for you in the program so far? Thank you for sharing.
	Topic confirmation	• Ensure that learners are aware of self-evaluation and teacher evaluation, and guide them to read what they will learn. • Ask the learner questions to help them remember the topic of the 6th session.	• Shall we read the topic in the program plan? What do you think the content will be about? I see! • What do you think the core of 'passenger complaints for serving in the cabin' will be? • What are your thoughts upon hearing today's topic? • What sentences do you think will appear in today's study? Looking at the first week's content in the lecture plan, what do you think will be included?
	Coaching (Learning)	• Guide the student to learn well with a self-directed attitude. • Pay attention to not doing different actions during the learning process and praise the learning process.	• How do you feel about consistently using ChatGPT? • How much do you think you are learning on your own? You seem to be doing well. I hope you continue as planned. • You're doing well. How do you feel? I see. • Please repeat it about three times. Yes, that's good. Let's keep up the good work in today's learning. • How can you support yourself?
	Confirmation of learning points	• Remind learners of what they learned and felt after the learning session, and share any new insights or feelings from the learning process.	• What did you learn through today's lesson? • How do you feel after learning? • Check your achievements. How many points would you give yourself? • What achievements did you have? That's a great reflection! You're an amazing student. • Congratulations on learning so much. It seems like a great achievement.

	Farewell and review	• Share your feelings about the current session and guide the next session in advance so the learner can prepare for the next session's content on their own.	• How do you feel about your achievements in this session? • Thank you for your hard work in participating in the program. I'm proud of you for following along so well today. I look forward to seeing you in a bright mood in the next session! Thank you.

Finally, the implementation plan for the ESP program is presented in Table 8 below.

TABLE 8
Implement Procedures

Session	Pre-assessment	Session Progress	Session Contents	Post-assessment	Satisfaction Evaluation
1	√	Session 1	• Passenger boarding		
2		Session 2/7	• Preparing for takeoff and after takeoff		
3		Session 3/8	• Serving meals		
4		Session 4/9	• In-flight sales		
5		Session 5	• How to use the entertainment system		
6		Session 6	• Passenger complaints for serving in the cabin		
7		Session 2/7	• Sickness in the air		
8		Session 3/8	• Preparing for landing		
9		Session 4/9	• Deplaning passengers		
10		Session 10	• Announcement	√	√

RESULTS AND DISCUSSION

Overall Effectiveness

Overall, the average self-assessment scores increased from 3.24 to 4.34, while instructor evaluations improved from 71.1 to 91.4, indicating a positive impact on learners. Despite the promising outcomes, the study acknowledges the limitation of a small sample size, consisting of ten participants. While this focused group provided valuable insights into the effectiveness of the AI-assisted ESP program, the findings may not be fully generalizable to larger or more diverse populations. To address this limitation, future research should include a larger and more varied cohort to validate the program's scalability and broader applicability. Additionally, longitudinal studies tracking participants' long-term performance in professional settings could further strengthen the evidence base for the program's effectiveness. The satisfaction score for the program averaged 4.75, demonstrating high levels of student satisfaction.

The students were divided into high-, middle-, and lower achievers based on pre-evaluation scores. Top-tier learners saw a self-assessment increase from 3.92 to 4.97 and instructor evaluations improved from 87 to 100 points. Middle-tier learners' self-assessment scores increased from 3.07 to 4.28, while instructor evaluations rose from 69 to 84.5. Interestingly, lower-tier learners showed the greatest improvement in instructor evaluations, from 58 to 92 points, marking a 34-point improvement. Although middle-tier learners showed the highest increase in self-assessment, their gains in instructor evaluations were lower than other groups. This highlights that the program had the most significant effect on lower-tier students, especially those who found self-study difficult. The top-tier learners also showed substantial improvements but might benefit from setting higher learning goals or more challenging materials in future iterations of the program.

Individual Differences

The results, including self-assessments scores, instructor evaluation scores, and satisfaction assessments of the learner coaching program for the 10 learners, are summarized in Table 9 below.

TABLE 9
Individual Differences in the Effectiveness of the Program

Learner	Self-evaluation			Instructor Evaluation			Satisfaction
	Pre	Post	Improvement Score	Pre	Post	Improvement Score	
1	3.09	4.70	1.61	64	83	19	5.00
2	3.30	5.00	1.70	82	100	18	5.00
3	4.20	5.00	0.80	94	100	6	5.00
4	3.00	4.07	1.07	71	82	11	4.60
5	2.70	3.75	1.05	58	89	31	4.80
6	3.10	4.00	0.90	65	75	10	4.10
7	2.70	3.75	1.05	58	89	31	4.90
8	3.00	3.87	0.87	58	98	40	5.00
9	3.10	4.37	1.27	76	98	22	4.20
10	4.06	4.93	0.87	85	100	15	4.93
Mean	3.24	4.34	1.11	71.10	91.40	20.30	4.75

Learner 2 showed the greatest self-assessment improvement (1.7 points), while Learner 8 saw the highest instructor evaluation increase (40 points). The correlation between self-assessment and instructor evaluations varied, suggesting that self-assessment reflects personal confidence rather than just objective learning gains. Learners 2, 3, and 10, classified as top-tier learners, consistently showed high performance, with all achieving perfect or near-perfect instructor evaluations. The pre- and post-instructor evaluations of the 10 learners presented in Table 9 are summarized in Figure 3.

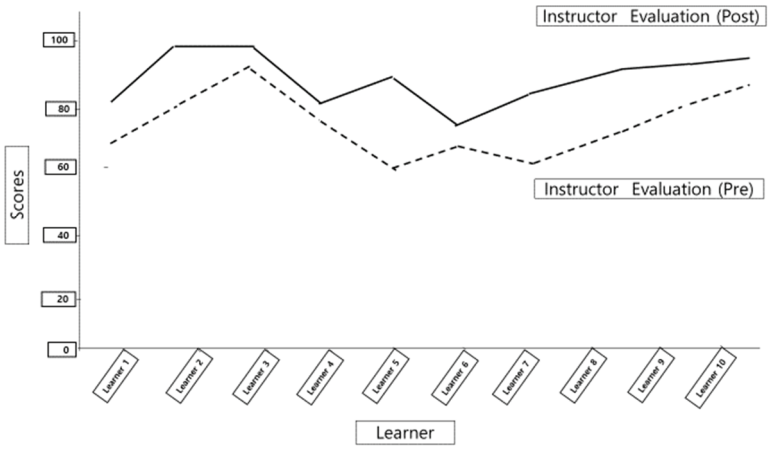


FIGURE 3
Learner Progress: Instructor Evaluation

Throughout the program, the instructor conducted observational evaluations based on what the learners expressed and what the instructor perceived. The content was collected and organized accordingly. The comprehensive results of the ten learners across the ten sessions, with detailed observation notes for Learners 1, 2, and 6, are included in the appendix. Based on all the data from the ten participants, the program outcomes for all ten learners were inputted into the WordArt analysis program. By analyzing the recurring keywords that represent the characteristics exhibited by learners during the learning process, 15

characteristics influencing learning outcomes and attitudes were identified, as shown in Figure 4. Listed in order of frequency, these factors were 'Self-directed learning' with 64 occurrences, 'Continuous effort' with 60, 'Adaptability to using ChatGPT as a learning tool' with 56, 'Confidence' with 44, 'Interest' with 43, 'Learning attitude' with 36, 'Clarity of personal goals' with 35, 'Time management' with 29, 'Positive attitude' with 22, 'Proactiveness towards review' with 22, 'Satisfaction' with 19, 'Attention' with 17, 'Active response' with 15, 'Experience in language study abroad' with 15, and 'Trust in instructors' with 14. These 15 characteristics, graphed in Figure 4, are described as follows:

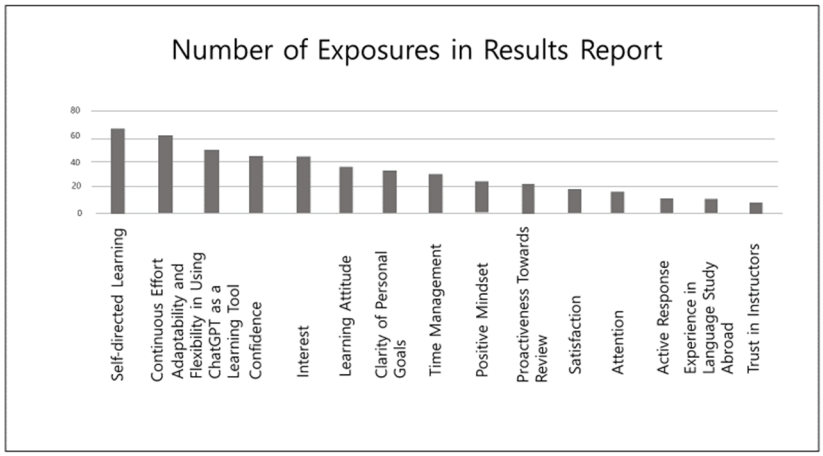


FIGURE 4
Learner Characteristics Observed During Program

The analysis integrated 'Interest' and 'Attention' into a single characteristic of 'Interest and Attention,' and 'Learning Attitude,' 'Positive' and 'Active Response' were combined into 'Positive and Active Learning Attitude, ' resulting in a total of 12 consolidated characteristics. From the 15 characteristics listed in Figure 4, similar items were consolidated into 12 distinct characteristics, which were then used to organize the observational data of the 10 students. The 12 characteristic factors observed during the learning process were influential in learners' outcomes, interacting with each other to affect the learning journey, achievements, and satisfaction. Instructors evaluated the observed characteristics on a 5-point scale during the learning process (5: Strongly Agree, 4: Agree, 3: Neutral, 2: Disagree, 1: Strongly Disagree). The aggregated scores and their percentage conversions are presented in Table 10 below. As shown in the table, among the top-tier learners, Learner 2 scored 57 points across 12 items, translating to a scaled score of 95 out of 100. Learner 3 scored 60 points across 12 items, translating directly to 100 points, and Learner 10, like Learner number 2, scored 58 points across 12 items, with a scaled score of 96 out of 100. Among the middle-tier group of four learners, learner 1 had no official English score, resulting in 0 points, and scored 46 points across 12 items, with a scaled score of 76 out of 100. Learner 4 scored 36 points across 12 items, translating to a scaled score of 60 out of 100. Learner 6, like learner number 2 with no official English score, scored 29 points across 12 items, with a scaled score of 48 out of 100. Learner 9, with an official English score unlike other middle-tier learners, scored 54 points across 12 items, resulting in the highest scaled score of 90 out of 100 among middle-tier learners. Among the lower-tier group of three learners, Learner 5 had no official English score, resulting in 0 points, and scored 43 points across 12 items, with a scaled score of 71 out of 100. Learner 7 scored 52 points across 12 items, with a scaled score of 86 out of 100. Learner 8, having an official English score among lower-tier learners, scored 54 points across 12 items, resulting in the highest scaled score of 90 out of 100 among them.

TABLE 10
Participation in Whole-Class and Group/Pair Work

Group and Learners	High				Middle				Low			
	2	3	5	Average	1	4	6	9	Average	5	7	8	Average
• Self-directed learning	5	5	5		4	3	3	5		3	4	5	
• Continuous efforts	5	5	5		4	3	2	4		4	5	5	
• Adaptability and flexibility in using ChatGPT as a learning tool	5	5	5		3	4	2	5		4	5	5	
• Confidence	5	5	5		4	3	2	4		4	5	5	
• Interest and attention	5	5	5		4	2	2	5		5	4	5	
• Positive and active learning attitude	5	5	5		5	3	2	4		4	5	5	
• Clarity of goals	5	5	5		4	3	3	5		4	5	5	
• Time management and planning	5	5	3		5	2	3	5		4	5	5	
• Proactiveness towards review	4	5	5		3	3	3	4		3	4	4	
• Satisfaction	4	5	5		3	4	4	5		4	5	5	
• Experience in language study abroad	5	5	3		0	3	0	3		0	0	0	
• Trust in instructor	4	5	5		5	3	3	5		4	5	5	
• Total (60 points)	57	60	58	58.33	46	36	29	54	41.25	43	52	54	49.66
• Percentage (Score)	95	100	96	97	76	60	48	90	68	71	86	90	82.00

All in all, the experimental ESP program significantly enhanced learner engagement and proficiency in airline English. The study demonstrated that AI tools are useful for providing real-time feedback and adapting learning strategies to meet individual needs, supporting previous research on the effectiveness of adaptive learning systems in specialized fields like aviation. This study categorized learners into high, middle, and low levels based on their evaluations during the experimental process. However, future research could benefit from a comparative analysis of groups with varying proficiency levels. Such studies could examine the effectiveness of the ESP program according to learners' baseline skills, ultimately proposing optimal learning methods tailored to different proficiency levels.

The direction of ESP education should align with the progress of the times by utilizing various learning tools and employing teaching methods and programs that reflect the needs of both experts and learners. As previously discussed, since ESP education is related to job performance, it seems necessary to secure instructors who have experience in performing the relevant tasks. Thus, future research should extend these findings across a broader array of educational settings and examine the long-term effects of AI-assisted coaching programs on student success, preparing them to cope with the complexities of their prospective professions as knowledgeable, adaptable, and proficient specialists.

CONCLUSION

This study investigated the effectiveness of a ten-session ESP program for airline cabin service students, combining ChatGPT with individual coaching. The results supported the potential benefits of the program both in perceived self-efficacy and standard evaluations, along with high student satisfaction. In particular, self-directed learning attitudes and strong trust relationships with instructors were found to be crucial factors influencing positive learning outcomes. These findings suggest that tailoring coaching to individual learner characteristics can improve educational outcomes.

The integration of AI-based tools proved beneficial for improving students' L2 proficiency. Through scenario-based practice and self-review using ChatGPT, students demonstrated greater adaptability and flexibility in applying language skills. This highlights the potential for AI tools to play a valuable supportive role in language education when used as complementary resources under the guidance of instructors.

This study has limitations due to its small sample size and its focus on students from a single department. Therefore, future studies therefore should include larger, diverse groups to validate these findings and assess the long-term impact of AI-integrated coaching. In addition, although the program sessions were designed with fundamental content, future research

could focus on developing programs utilizing diverse materials based on various irregular situations that occur onboard aircraft. Such research could provide a wider range of resources for students aspiring to pursue careers in airline services. Furthermore, future efforts should focus on developing flexible and adaptive educational programs that combine individual learner coaching, small group sessions, and traditional lectures to meet the varied needs of students. By addressing these limitations and continuously evolving educational methods, L2 learners can be better supported in achieving their academic and professional goals.

References

Aliakbari, M., & Boghayeri, M. (2014). A needs analysis approach to ESP design in Iranian context. *Procedia-Social and Behavioral Sciences*, *98*, 175-181.

Aviation Information Portal System. (2023). *Korean air to hire 150 new cabin crew members in 2024*. https://news.airportal.go.kr:448/article/selectArticleView.do.

Baroto, M. A. A., Iragiliati, E., & Anugerahwati, M. (2016). Developing English textbooks for pre-service flight attendants. *Journal Pendidikan Humaniora, 4*(3), 193-203.

Brown, J. D. (1995). *The elements of language curriculum: A systematic approach to program development*. Heinle & Heinle.

Chenaksara, P. (2005). *Needs analysis for English communication skills of Thai Airways international cabin crew*. Kasetsart University.

Cho, Kyung-Hee. (2006). The effect of physical attractiveness of flight attendants on personal perception. *Tourism Research, 23*, 197-228.

Cho, Kyung-Hee. (2016). A study on English listening and reading proficiency of English learning motivation and English vocabulary learning strategies. *Tourism Research, 41*(1), 197-220.

Cho, Kyung-Hee, & Ko, Ho-Seok. (2010). Effect of cabin attendants job stress on job satisfaction and organizational commitment and turnover intention in the airline service. *International Journal of Contents, 10*(4), 403-419.

Cho, Kyung-Hee, & Yoo, Moon-Young. (2022). Analysis of specific purpose English needs for students in the Department of Aviation Services. *The Journal of Humanities and Social Sciences 21, 13*(5), 3957-3972.

Choi, Kyunghee. (2018). An analysis of the textbooks for airline service English within the NCS framework. *Modern English Education, 19*(1), 105-119.

Choi, Seung-Hee. (2011). *An effect of self-directed learning coaching program on middle school students' studying motives, studying strategy, and studying achievement* [Unpublished Master's thesis]. Kwangwoon University.

Choi, Wonyoung, & Kim, Haekyung. (2014). Case study on coaching-based university mathematics education: Focused on the H University. *Journal of the Korean School Mathematics Society, 17*(2), 193-205.

Chu, Seong Yeub, & Min, Deok Gi. (2019). A study of using task-based artificial intelligence (AI) chatbot for further interaction in English and the analysis of students' production. *Primary English Education*, *25*(2), 27-52.

Dibakanaka, A., & Hiranburana, K. (2012). Developing an e-learning competency based English course module for chief flight attendants. *International Journal of Scientific and Research Publications*, *2*(8), 313-326.

Evered, R., & Selman, J. C. (1989). Coaching and the art of management. *Organizational Dynamics*, *18*(4), 16-32.

Fryer, L., & Carpenter, R. (2006). Bots as language learning tools. *Language & Technology, 10*(3), 8-14.

Greene, J., & Grant, A. M. (2003). *Solution-focused coaching: A manager's guide to getting the best from people.* Pearson Educational Limited.

Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promise and implications for teaching and learning*. Center for Curriculum Redesign, The Open University.

Hwang, Yohan, & Lee, Hey-Jin. (2021). Artificial intelligence and its potential in English education: Deployment and creation of an AI chatbot by pre-service EFL teachers. *Multimedia-Assisted Language Learning, 24*(1), 104-133.

Hyun, Jooeun, & Lim, Heejoo. (2019). Analysis and implications of AI speakers as English learning tools *The Mirae Journal of English Language and Literature, 24*(1), 201-219.

Intakaew, A. (2014). *The efficiency of a teacher-designed textbook on English for airline ground attendant service* [Unpublished Doctoral dissertation]. Srinakharinwirot University.

International Coaching Federation. (2014). *ICF definition of coaching*. https://coachfederation.org/app/uploads/2020/01/ICF-Code-of-Ethics_2015.pdf

Jang, Hyun-Soek. (2013). *Development throughout one's life*. Parkyoungsa.

Jang, Woo-Jung. (2010). *A study on ESP: with special reference to English for cabin attendant* [Unpublished Master's Thesis]. Sungkyunkwan University.

Jeon, Deok-kyo. (2009). *Learning coaching that develops self-directed study habits*. Hakjisa.

Jeon, Jonghee. (2023). A study on the response status and improvements to ChatGPT in university education. *Korean Association for International Culture Exchanging, 12*(4), 517-548.

Jeong, Jaeyoung, Cho, Hyunmyung, Hwang, Jaewon, Moon, Myunghyun, & Kim, Injae. (2023). *ChatGPT Educational Revolution.* Porche.

Jeong, Cheonsu. (2023). A study on the service integration of traditional chatbot and ChatGPT. *Journal of Information Technology Applications & Management, 30*(4), 11-28.
Jeong, Hyunkwon. (2011). *Hyunkwon Jeong's learning coaching workbook for learning coaches*. Lionbook.
Jeong, Hong-Sik. (2018). *Self-directed learning coach*. Korea Qualification Association.
Jeong, Younghee. (2021). The advantages of using chatbots in education. *International Journal of Educational Technology in Higher Education*, *18*(1).
Kilburg, R. R. (1996). Toward a conceptual understanding and executive coaching. *Consulting Psychology Journal: Practice and Research, 48*(2), 134-144.
Kim, Kyungwon, Woo, Myeongah, Yoo, Jihyun, Rim, Seongil, & Lee, Gyunghee. (2022). Influence of the ESP programs on self-efficacy, educational service value, organizational commitment and customer orientation for cabin crew. *Korean Journal of Hospitality and Tourism*, *31*(2), 169-186.
Kim, Hyeyoung, & Lee, Sungsoo. (2023). A study on task design of AI-based voice chatbot for elementary English speaking. *Multimedia-Assisted Language Learning, 26*(1), 31-58.
Kim, Hyeonok. (2008). The practices, problems, and prospects of university ESP courses in Korea. *English Language Teaching*, *20*(3), 143-168.
Kim, Hyeyoung. (2018, September). *Designing L2 interactive tasks with an artificial intelligence robot*. [Paper presentation]. Asia TEFL International Conference, Macau, China. https://www.slideshare.net/heyoungkim/designing-12-interactive-tasks-with-an-artificial-intelligence-robot
Kim, Jieun, & Jin, Suhyun. (2017). ESP education for flight attendants. *Asia-Pacific Journal of Education Management Research, 2*(1), 105-110.
Lee, Sangil, & Won, Kyungsook. (2016). A study on English education for airline service quality improvement. *Korean Business Education Review, 31*(4), 545-569.
Lee, Seunghyun. (2023, March 16). GPT-4 becomes smarter: Ranked in the top 10% on the U.S. bar exam. *Hankook Ilbo*.
Lee, Seung-Ryul. (2020). An overview of the English for specific purposes from 2000 to 2018. *ESP Review*, *2*(1), 59-71.
Michael, A. P., & Kim, Jinsook. (2015). *Real English for cabin crew*. Darakwon.
Park, Hyunsuk. (2015). *A study of ESP course design for engineering students: Focusing on needs analysis and corpus* [Unpublished Doctoral dissertation]. Kangwon National University.
Park, Sung-Mi. (2009). Development of learning strategy scale for college students. *Journal of Fisheries and Marine Sciences Education, 21*(1), 16-27.
Park, Shinyoung. (2005). *Needs analysis for English for flight attendants* [Unpublished Master's thesis]. Yonsei University.
Park, Youjin, & Jeon, Jihyeon. (2022). A study on English for cabin crew purposes (ECCP): A meta-analysis. *Korean Journal of English Language and Linguistics, 20*, 458-484.
Park, Youjin, & Park, Yunjoo. (2019). Service professionalism in dialogues of airline cabin English textbooks. *The New Studies of English Language & Literature*, *72*, 155-181.
Paltridge, B., & Starfield, S. (Eds.). (2013). *The handbook of English for specific purposes* (Vol. 592). Wiley-Blackwell.
Seo, Jeongeun. (2017). *A case study of early childhood English learning based on artificial intelligence voice recognition system* (Masters' thesis). Chung-Ang University.
Shin, Eunjung, & Lee, Inhwa. (2010). Effects of the learning coaching program for the elementary underachievers. *Asian Journal of Education, 11*(4), 146-165.
Shin, Jongho, Choi, Jaewon. & Park, Suyong. (2021). An exploratory study on the use of AI-based adaptive learning system in university class. *The Journal of Educational Information and Media, 27*(4), 1545-1570.
Shen, Q. (2008). A study of an ESP curriculum for airline agents in China. *English Language Teaching*, *1*(1), 54-60.
Sim, Cang-young, Hwang, Pil-ah, & Nam, Bora. (2023). AI-powered English education with chatbots and generative AIs. *ESP Review*, *5*(2), 71-91.
Song, Mingeun. (2023. March 20). 1 in 4 college students "uses ChatGPT in actual academic books". *Maeil Business Newspaper*. https://www.mk.co.kr/news/economy/10688836
Suk, Kwang-Ho. (2023). How far has chatbot technology that communicates with people come. *Brain, 98*, 8-11. https://www.brainmedia.co.kr/MediaContent/MediaContentView.aspx?MenuCd=BRAINTRAINING&contIdx=23384
Xiaoqin, L., & Wenzhong, Z. (2016). Towards an integrated approach to cabin service English curriculum design: A case study of China Southern Airlines' cabin service English training course. *Higher Education Studies*, *6*(2), 30-38.
Yan, R., Song, Y., & Wu, H. (2016). Learning to respond with deep neural networks for retrieval-based human-computer conversation system. In *Proceedings of the 39th International ACM SIGIR Conference on Research and Development in Information Retrieval* (pp. 55-64).
Yang, Hyejin, Kim, Heyoung, Shin, Dongkawng, & Lee, Jangho. (2019). A study on adopting AI-based chatbot in elementary English-speaking classes. *Multimedia-Assisted Language Learning*, *22*(4), 184-205.