



Bridging General and Aviation English in EFL: Insights from Cockpit and Cabin

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Abstract

English proficiency is central to aviation safety, yet the pedagogical relationship between General English (GE) and Aviation English (AE) remains insufficiently examined in EFL contexts. This qualitative study investigates how 34 Iranian cockpit and cabin crew members perceive the functions of GE and AE in their professional communication. Semi-structured interviews were conducted and analysed using Reflexive Thematic Analysis to identify recurring patterns in participants' experiences. The findings indicate a clear functional distinction supported by consistent reports across participants. GE was frequently associated with handling unexpected situations, clarifying misunderstandings, and maintaining interpersonal interaction, while AE, aligned with ICAO Language Proficiency Requirements, was viewed as essential for accuracy, brevity, and safety in routine operational exchanges. Most participants emphasised that reliance on memorised AE phraseology without sufficient GE competence reduced communicative flexibility in non-standard scenarios. The results point to the need for a more integrated TEFL–ESP approach. Participants highlighted the value of communicative and task-based instruction, blended learning, and short, focused activities that connect everyday English with aviation phraseology. These findings suggest that strengthening GE alongside AE can better prepare aviation personnel for both routine procedures and unexpected communication demands.

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Introduction

Language proficiency has long been recognised as essential for professional communication in globalised, safety-critical industries such as aviation (Dudley Evans & St John, 1998; Basturkmen, 2025). While Teaching English as Foreign Language (TEFL) research has focused on General English (GE), emphasising communicative competence, vocabulary, and grammar, aviation required specialised knowledge, including technical vocabulary, standardised phraseology, and context-specific functions (Protic, 2009; Dumdumaya, 2025). Aviation English, as a branch of ESP, addresses these demands and aligned with The International Civil Aviation Organization (ICAO) language proficiency requirements to reduce communication risks (Malikovna, 2022; Dumdumaya, 2025).

Studies show that GE alone has been insufficient. Personnel had needed training in technical terms, scenario-based interactions, and intercultural communication (Malikovna, 2022; Dumdumaya, 2025). Challenges included limited teacher training, lack of authentic materials, and gaps in applying ICAO standards (Dumdumaya, 2025; Özgün, 2025). While GE had provided a foundation, applying it to real-world aviation communication, particularly when dealing with specialized terminology, accents, and high-pressure situations, remained difficult (Özgün, 2025).

Despite the critical role of English in aviation, few studies have explored how aviation professionals operating in non-native English contexts perceive the relationship between GE and Aviation English (AE). Understanding these perceptions is essential for aligning English for Specific Purposes (ESP) instruction with the practical communicative needs of cockpit and cabin crew. This study addresses this gap by examining the perspectives of Iranian aviation personnel, with the aim of informing more effective AE instruction and the integration of ESP principles within TEFL programmes. Data were collected through semi-structured interviews and document analysis, guided by the following research questions:

RQ1. What are the perceptions of cockpit and cabin crew regarding the roles and significance of GE and Aviation English in their professional communication?

RQ2. What recommendations do cockpit and cabin crew offer for improving Aviation English curricula and pedagogical practices for teaching English in non-native contexts?

1. Review of Literature

1-1. English as the Lingua Franca of Aviation

English has long been established as the principal language of international civil aviation. As with other multinational industries, aviation relies heavily on English, as the majority of technical manuals, operational procedures, and regulatory documentation are produced in this language (Knežević, 2015). Empirical research across various aviation sectors consistently confirms its central role in professional communication. Recent needs analyses indicate that aviation management personnel use English on a daily basis and regard it as the designated language of the industry, requiring proficiency in speaking, listening, reading, and writing (Saar, 2024). Similarly, research involving ab-initio air traffic controllers shows that trainees recognise the necessity of attaining professional standards of English in order to operate effectively within live environments (Tuncal, 2025). Studies focusing on aircraft maintenance

personnel further demonstrate that English is the primary language of technical documentation and maintenance manuals, underscoring its critical importance for operational accuracy and aviation safety (Korba et al., 2023).

1.2. Aviation English within ESP and EOP Frameworks

AV has been widely conceptualised as a specialised branch of English for Occupational Purposes within the broader field of ESP (Dudley-Evans & Johns, 1998). Unlike English for Academic Purposes (EAP), which addresses educational settings, AV targeted the communicative demands of aviation professionals, including pilots, air traffic controllers (ATCs), dispatchers, maintenance personnel, cabin crew, and ground staff (Douglas, 2000).

A defining feature of AV is its codified and standardised nature, particularly in radiotelephony communication. However, beyond standard phraseology, aviation professionals were also required to employ plain language to manage non-routine, unexpected, or emergency situations. This requirement aligns with research in ESP which argue that professional communication competence extends beyond formulaic language and depends on flexible language use in context-specific interactions (Hyland, 2007; Basturkmen, 2025). Accordingly, AV competence is increasingly viewed as inseparable from underlying GE proficiency, particularly in high-stakes operational environments (Kim & Elder, 2009).

1.3. ICAO Language Proficiency Requirements

ICAO formally recognised the role of language proficiency in aviation safety through the introduction of the Language Proficiency Requirements in Annex 1, supported by Annexes 6, 10 and 11 (ICAO, 2010). These require pilots and air traffic controllers to demonstrate English proficiency across six criteria: pronunciation, structure, vocabulary, fluency, comprehension and interaction. The original 2008 compliance deadline was extended to March 2011 due to implementation challenges (ICAO, 2011).

Subsequent research has identified continuing variability in assessment and training practices. In particular, interaction has proved difficult to standardise across contexts (Yin et al., 2024), as interactional competence is highly context dependent and challenging to operationalise through discrete scoring scales, especially in real time professional settings (McNamara, 2014; O'Sullivan, 2015). Furthermore, training programmes have often been found insufficiently aligned with the holistic and real time communicative demands of the LPR descriptors, particularly in handling misunderstandings and unexpected events (Dai & Zhang, 2024).

1.4. TEFL Methodology as a Pedagogical Bridge in Aviation Contexts

Although AV was theoretically situated within ESP, language instruction in many EFL contexts continued to be delivered primarily through TEFL-oriented methodologies. As a result, aviation professionals often encountered AV instruction shaped by GE pedagogical practices rather than by fully specialised ESP curricula (Hutchinson & Waters, 1987).

TEFL methodology, grounded in communicative language teaching principles, prioritised fluency, interaction, and learner-centred instruction, all of which were relevant to professional communication needs (Richards, 2006; Littlewood, 2014). Previous research in EFL contexts

indicated that TEFL-based instruction often served as the primary foundation upon which occupational language skills were later developed (Spada & Lightbown, 2020).

1.5. Pedagogical Approaches in Aviation and ESP Instruction

1.5.1. Flipped Classroom Pedagogy

The flipped classroom model, which required learners to engage with instructional content prior to class and reserved classroom time for interactive and communicative activities, has been shown to promote active learning and meaningful language use (Bergmann & Sams, 2012; Gilboy et al., 2015). From a sociocultural perspective, such models supported language development through increased opportunities for interaction and collaborative problem-solving (Lantolf & Thorne, 2006). Khoshsima, Beikian, and Mawlood (2025) reported significant improvements in reading comprehension and learner engagement among ESP students exposed to flipped classroom instruction, highlighting its potential applicability to AV training.

1.5.2. Blended Learning Approaches

Blended learning, which integrated face-to-face instruction with digital resources, offered flexibility for professionals with irregular schedules, such as cockpit and cabin crew members. Research in second language acquisition suggested that blended environments could enhance learner autonomy and provide increased exposure to input, both of which supported language development (Nation, 2013). Empirical studies demonstrated that blended instruction enhanced learner engagement and language outcomes when supported by appropriate technological infrastructure (Abazari et al., 2024; Dashtestani et al., 2025).

1.5.3. Adaptive and Contingent Teaching Models in Language Education

Contingent teaching methods, which adapt to learners' needs, have been shown to be effective for aviation professionals requiring flexible preparation for both GE and LPR. A study of 360 EFL learners found that combining the Model of Contingent Teaching (MCT) and the Contingent Shift Framework (CSF) improved learners' self-regulation and willingness to communicate, with questioning identified as a key strategy (Jafari Gohar et al., 2022). This approach is consistent with Vygotskian sociocultural theory, emphasising scaffolding and learner-centred support in professional language development (Lantolf & Thorne, 2006).

1.5.4. Classroom Interaction and Feedback Models in Aviation English

In aviation, effective communication was essential for meeting both ICAO LPR and broader English language proficiency requirements, particularly for pilots and cabin crew. Estaji and Mirzaei Shojakhanlou (2022) explored how the Initiation, Response, and Feedback (IRF) cycle in EFL classrooms, using strategies such as scaffolding and corrective feedback, related to improvements in GE and LPR during cockpit and cabin crew training. The study found that structured classroom feedback helped learners refine their communication skills, ensuring clearer and more effective exchanges during operational interactions. Such interactive feedback models were particularly relevant to aviation contexts because they simulated the real-time communicative demands of flight operations, where precise, timely, and adaptive communication could directly impact safety and operational efficiency (Richards, 2006; Littlewood, 2014).

1.5.5. Intercultural Communicative Competence (ICC) in Aviation English

International aviation is inherently multicultural, making ICC crucial. Language ability is central to successful interaction across cultures, with culture and emotion also playing important roles (Byram, 1997; Deardorff, 2006). Ghorbani and Dowlatabadi (2023) found that language is the most significant element, highlighting the need for aviation professionals to have flexible GE skills beyond standard phraseology, especially in multicultural cockpit and cabin settings.

1.5.6. ICAO LPR and Pedagogical Approaches

ICAO LPR requires proficiency in standard phraseology, plain language, routine communication, and managing misunderstandings (Skybrary Aviation Safety, 2021). Effective learning depends on linguistic, cultural, and emotional skills, with cultural intelligence and learning strategies influencing English achievement (Albalawee et al., 2024).

Blended learning offers flexible, interactive, and personalised instruction, but its success relies on both technological support and careful instructional design (Abazari et al., 2024; Dashtestani et al., 2025). Meeting LPR standards therefore requires not only technical phraseology but also adaptable, well-supported teaching approaches that integrate linguistic, cultural, and emotional competencies.

1.6. Conceptualising the Interplay Between General and Aviation English

Despite extensive research on AV and LPR, the relationship between GE and AV remains largely implicit. Aviation professionals relied on GE to support AV, particularly in non-routine and high-pressure situations. Drawing on ESP and communicative competence theories, this interplay can be conceptualised as a dynamic, bidirectional relationship encompassing linguistic transfer, pedagogical integration, and operational relevance (Canale & Swain, 1980; Basturkmen, 2025).

1.7. Summary and Research Gap

The literature demonstrates that English plays a central role in aviation safety, and ICAO LPR provides a robust regulatory framework. Training and assessment practices often failed to reflect the integrated and communicative nature of real-world aviation discourse. While GE is foundational, few studies have empirically examined aviation professionals' perceptions of its role in supporting AV. This study aims to fill this gap by investigating cockpit and cabin crew perspectives within the Iranian EFL aviation context.

2. Methodology

2.1. Design of the Study

This study adopted a qualitative descriptive research design and was non-experimental in nature. No treatment or intervention was implemented. The purpose of the study was to explore and describe participants' experiences rather than to examine causal relationships.

2.2. Participants

A total of 34 Iranian cockpit and cabin crew members participated in the semi-structured interview phase of the study. The sample included captains, first officers, flight pursers and

flight attendants, many of whom also served as flight or training instructors. All participants completed an information form and provided informed consent prior to the interviews.

Participants were recruited through criterion-based purposive sampling. Eligibility required current or previous experience operating international flights, ensuring professional relevance to the research aims. Participation was voluntary. This non-probability approach is commonly used in qualitative and applied linguistics research, where depth and contextual insight are prioritised over statistical generalisability (Dörnyei, 2007). Table 1 outlines the distribution of interviewees by crew type, position and gender.

Table1. Interviewee Profile by Crew Type, Position, and Gender (N = 34)

Crew Type	Crew Position	Gender	Number of Interviewees
Cockpit Crew	Captain	Female	1
Cockpit Crew	Captain	Male	12
Cockpit Crew	First Officer	Female	2
Cockpit Crew	First Officer	Male	6
Cabin Crew	Flight Purser	Female	3
Cabin Crew	Flight Purser	Male	4
Cabin Crew	Flight Attendant	Female	3
Cabin Crew	Flight Attendant	Male	3
Total			34

Figure 1 shows the frequency of interviewees by crew position and gender.

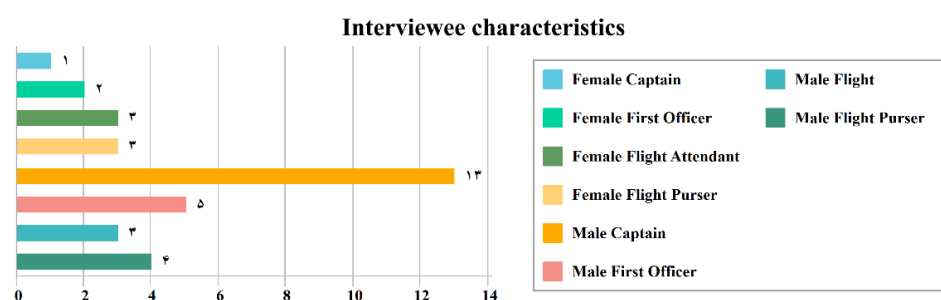


Figure 1. Bar chart showing the distribution of interviewees by crew type, position, and gender (N = 34).

2.3. Instruments

2.3.1 Semi-Structured Interviews

This study employed semi-structured interviews to investigate communication practices in multicultural aviation contexts, with particular focus on the use of GE and AV. This method was chosen for its ability to balance structure and flexibility, enabling in-depth exploration of participants' experiences (DeJonckheere & Vaughn, 2019; Kallio et al., 2016; Dörnyei, 2007). Qualitative approaches are especially valuable in language research, as they facilitate a deeper understanding of learners' perspectives and the motivational factors shaping language use and engagement (Boo et al., 2015).

The interview questions were developed over a two-month period and were informed by a review of relevant teaching methodologies and AV frameworks. Separate interview guides were designed for cockpit and cabin crew to reflect their distinct professional roles. Following consultation with experts in applied linguistics and aviation, the final interview protocol included introductory, thematic, probing and closing questions. These were structured from general to more specific topics, with optional follow-up prompts used to elicit detailed and comprehensive responses.

2.3.1.1. Pilot Test

A pilot study with four participants was conducted to evaluate the interview schedule. Feedback led to revisions that improved clarity, content validity and practical relevance. Three main findings emerged. First, cultural differences were evident not only in formal operational contexts but also during layovers and informal interactions, indicating that cultural variation extends beyond regulated settings. Second, differences in terminology for the co-pilot role were identified: while *First Officer* is used in English, the Persian term *Khalebān-e Dovom* (خلبان دوم) translates as "second pilot". Participants reported preferring *First Officer* to avoid hierarchical implications and to emphasise shared responsibility, a concern more frequently raised by female participants. Third, the interview schedule was reduced from nine to seven questions per group, improving focus and feasibility.

In line with Braun and Clarke (2021), inter-rater reliability was not applied, as Reflexive Thematic Analysis (RTA) is researcher-led. Rigour was ensured through systematic coding, transparent analytical procedures and a reflexive approach grounded in participants' accounts.

2.4. Data Collection Procedure

Data were collected at one of the largest commercial airlines with an extensive international network. Adopting a qualitative, field-based design, the study used semi-structured interviews as the primary data collection method. Fieldwork was conducted from 6 April to 5 May 2025, immediately after Nowruz, during intensive recurrent training in preparation for Hajj operations, providing a particularly relevant operational context.

Following approval from the Head of Department, the researchers attended 18 training days (approximately 108 hours), primarily between 08:00 and 14:00, Saturday to Tuesday. Participants were recruited from both cockpit and cabin crew programmes, including SEPT, DG, FTL, Airbus A330 and A306/310 courses for cockpit crew, and AIC (wide- and narrow-

body), First Aid, DG, Safety and Emergency Procedures, CRM and SAFA training for cabin crew.

Participants received written information outlining the study's aims, confidentiality procedures and time commitments, and provided informed consent. Interviews were arranged at mutually convenient times and conducted mainly face-to-face, with a small number via WhatsApp. Lasting between 15 and 50 minutes, they followed seven core questions with follow-up prompts where appropriate. Longer interviews were typically conducted with instructors and participants holding BA or MA qualifications in TEFL, reflecting their additional professional insights. All interviews were audio-recorded with consent, transcribed verbatim, anonymised and assigned pseudonyms in accordance with ethical research standards.

2.5 Data Analysis

Qualitative data were analysed using RTA following Braun and Clarke (2021), selected for its flexibility and capacity to capture the complexity of participants' experiences. Analysis proceeded through six stages: repeated reading for familiarisation; inductive coding of meaningful data segments; grouping codes into preliminary themes; reviewing and refining themes for coherence; reflexive consideration of the researchers' positionality; and the development of a coherent narrative supported by illustrative verbatim quotations.

All interviews were transcribed verbatim and analysed using MAXQDA Analytics Pro (version 24.9.1). Transcripts were organised into document groups by operational role and gender to enable systematic comparison while maintaining confidentiality. Figure 2 presents the MAXQDA interface, illustrating the organization of documents and codes related to language and teaching in the aviation context. Participant anonymity was strictly protected through pseudonymisation (e.g., *Female Captain 1*) in line with ethical research standards.

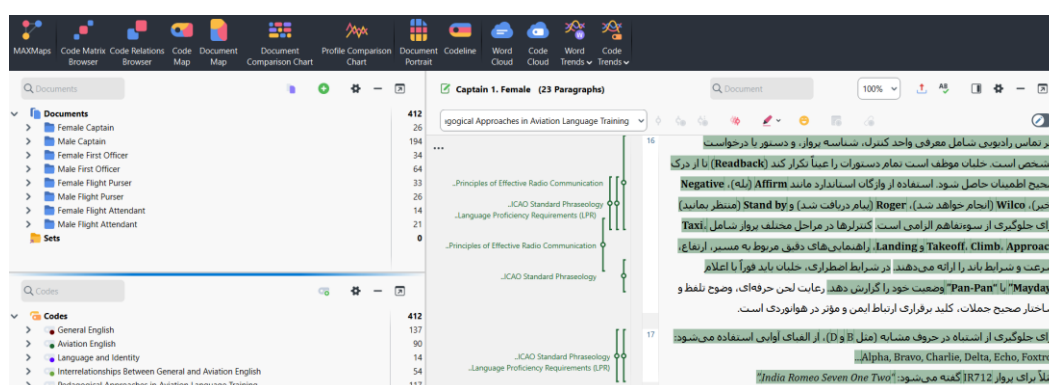


Figure 2. Organization of documents and codes in MAXQDA

3. Findings

The qualitative data were analysed in MAXQDA (version 24.9.1.1) using RTA (Braun & Clarke, 2021). Through iterative familiarisation, inductive coding and theme development, 412 codes were generated and organised into five themes: *General English*, *Aviation English*,

Interrelationships between General and Aviation English, Language and Identity, and Pedagogical Approaches in Aviation Language Training.

Credibility was supported through sustained engagement with the data and careful review of codes and themes (Creswell & Poth, 2018). Dependability was enhanced by maintaining an audit trail within MAXQDA to document analytical decisions (Miles et al., 2020), while reflexive memo writing addressed researchers subjectivity and strengthened confirmability, consistent with the principles of RTA.

Figure 3 presents a MAXQDA Code Matrix Browser visualisation illustrating the distribution of coded themes across cabin and cockpit crew and course areas, with shading intensity indicating coding frequency.

	Male Captain	Male First Officer	Male Flight Purser	Female First Officer	Female Flight Purser	Female Captain	Male Flight Attendant	Female Flight Attendant	SUM
General English	73	29	5	3	9	4	10	4	137
Aviation English	42	11	3	14	2	16	2	0	90
Language and Identity	12	1	1	0	0	0	0	0	14
Interrelationships Between General and Aviation English	21	13	6	6	2	1	3	2	54
Pedagogical Approaches in Aviation Language Training	46	10	11	11	20	5	6	8	117
SUM	194	64	26	34	33	26	21	14	412

Figure 3. MAXQDA Code Matrix Browser Showing Theme Distribution Between Cabin and Cockpit Crew

Figure 4 presents the MAXQDA Code Matrix Browser, showing all themes, codes, and subcodes and their distribution across cabin and cockpit crew. Variations in coding density reflect the richness of the data and reveal patterns across professional roles.

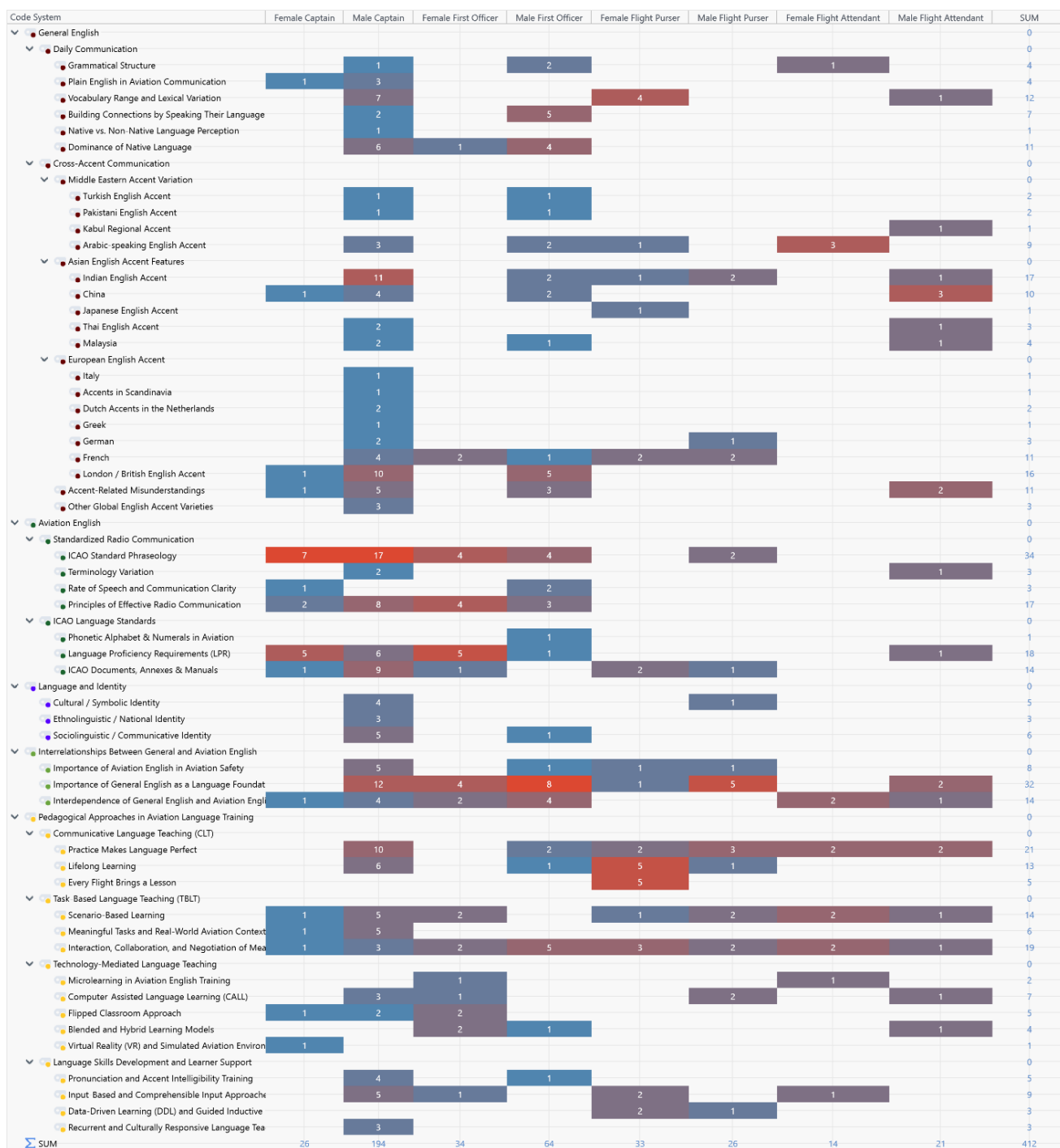


Figure 4. MAXQDA Code Matrix Browser Displaying All Themes, Codes, and Subcodes.

4.1. Findings for Research Question 1

A qualitative study using MAXQDA's creative coding identified four key themes: *Aviation English*, *General English*, *Interrelationship between General and Aviation English*, and *Language and Identity*. The thematic framework of Language in Aviation, generated through MAXQDA creative coding, is presented in Figure 5.

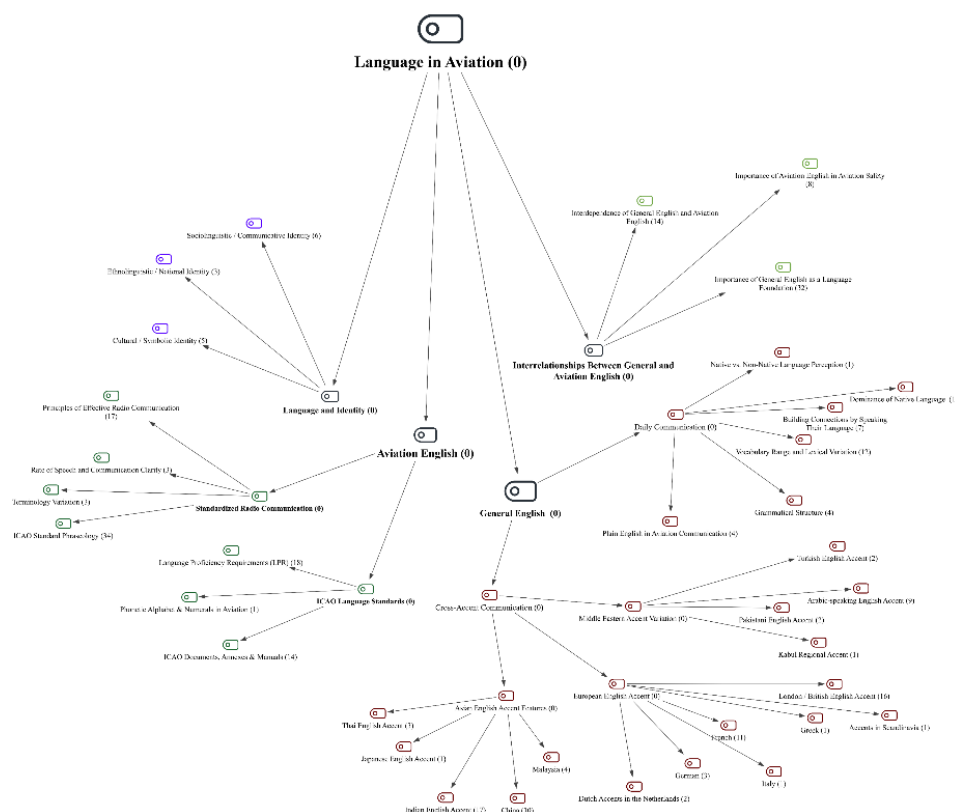


Figure 5. Thematic framework of Language in Aviation from MAXQDA creative coding.

Aviation English is specialised and safety-critical. Participants emphasised strict adherence to ICAO phraseology to prevent misunderstandings. The female captain noted that ‘the use of standard terminology such as Affirm (yes), Negative (no), Wilco (will comply), Roger (message received), and Standby (wait) is mandatory in order to prevent misunderstandings’ (F. Captain 1, personal communication, 2025). A First officer explained, ‘In ATC communication, sentences must be short, simple, and direct. Verbs usually start the sentence (e.g., Request, Cleared, Maintain), numbers and units follow standard formats (altitude as FL, speed in knots), and the call sign always comes first. Every message must be acknowledged to avoid ambiguity’ (M. First Officer 1, personal communication, 2025). British ATC was described as professional and precise, yet adaptable: ‘Although transmissions at Heathrow are fast due to heavy traffic, controllers adjust their speech if a pilot is not a native speaker to ensure clear communication’ (M. Captain 2, personal communication, 2025).

General English supports everyday professional communication with international passengers. Cabin crew use polite, simple, and human-centred language. One flight attendant explained, ‘Once, an angry passenger asked, “Why are we delayed?” A technical answer would be, “Due to operational reasons, the flight is delayed.” A human response using GE is, “You’re

right to feel upset; the weather didn't allow us to depart earlier." The meaning is the same, but the impact differs' (F. Flight Attendant 3, personal communication, 2025). Similarly, calming passengers during turbulence: 'Instead of just saying, "We're experiencing turbulence," I stood beside an elderly lady and said with a smile, "It's just a bit of bumpy air, like driving on a rough road. Nothing to worry about." That simple sentence calmed her down' (F. Flight Purser 3, personal communication, 2025). A flight attendant emphasised structured politeness: 'On board, communication must be fast, clear, and polite. Sentences are short, usually starting with a verb, using Present Simple/Continuous ("We are descending") or "going to" for the near future. Polite imperatives ("Please fasten your seatbelt"), simple passives ("The emergency exit has been opened"), and conditionals ("If your seatbelt is unfastened, please fasten it") are common. Also, instead of a technical answer like "Due to operational issues, the flight is delayed," a human response to passengers is: "You're right to feel upset; the weather didn't allow an earlier departure." Cabin crew language uses short, simple sentences rather than complex English' (F. Flight Attendant 2, personal communication, 2025).

Language challenges frequently arise in multicultural contexts. Mispronunciation or differing linguistic norms can cause confusion: 'I recall a flight in India where we encountered a bit of a challenge with a passenger. I asked one of the cabin crew what the issue was, and they told me that a gentleman kept saying "Derdi Du Di," which we were struggling to understand. Eventually, we realised he was trying to say "seat 32D," but pronounced it in a way that sounded like "Thirsty two D"' (M. Captain 6, personal communication, 2025). Words can differ drastically in meaning across languages: 'In Persian we often say "Bodo bodo," meaning "hurry up." But in Malay, "bedubedu" means "stupid." When we used to go out with colleagues, we would say, "Guys, hurry up!" They warned me, saying, "Don't say 'bodo bodo' here; it's an insult and means 'stupid'" (M. Flight Attendant 3, personal communication, 2025). Another interesting example: 'One night we stayed in Kabul, the next in Medina, before returning. While in Kabul, I asked for directions to "Abu Kamal restaurant" and whether I should go straight ahead. The man replied, "To ghelet mikoni." Confused, I asked him to repeat it. He again said, "No, to ghelet mikoni," and pointed towards the second alley. I later realised that *تو غلط میکنی* means "you are mistaken." At first, I had thought it was a swear word, but it simply means "you are making a mistake," pronounced differently' (M. Flight Attendant 2, personal communication, 2025). At airports, misunderstandings cause delays: 'At one airport, ground staff with limited English misunderstood our request for ground power DC and brought AC instead, causing a twenty-minute delay. This shows that even in international environments, weak GE can lead to errors and wasted time' (M. First Officer 5, personal communication, 2025). Some airports are particularly challenging: 'Paris Charles de Gaulle Airport was described as one of the most challenging in terms of communication, as most interactions are conducted in French, with English used only when directly addressing international crew' (M. First Officer 4, personal communication, 2025).

Interrelationship between General and Aviation English is vital for operational effectiveness. As one captain said, "In aviation, the English language is like the two wings of a bird: you must know both GE and AE. With only one wing, no bird can fly" (M. Captain 10, personal communication, 2025). Both forms of English are indispensable in real-world operations. The captain offered a compelling example to illustrate this point: "On a flight to

London, refuelling was not guaranteed due to sanctions, and Heathrow's procedures are very strict. Aircraft can be held for 20-30 minutes. On my flight, I explained the situation to ATC using plain English, deliberately avoiding the word 'sanction': 'We have a restriction at your station regarding refuelling, which may affect our return flight. Could you please review this matter? And what can we expect regarding the holding time?' Within seconds, they replied, 'Forget the holding,' and we were cleared to land immediately." This incident demonstrates the value of GE in enabling clear, strategic, and effective operational communication beyond standard phraseology and AE (M. Captain 10, personal communication, 2025).

Language and Identity highlight the cultural and professional role of English in aviation. English allows multicultural crews and passengers to interact effectively. Language reflects cultural identity: 'In France, even product packaging is written only in French, reflecting how strongly the national language is tied to cultural identity' (M. Flight Purser 1, personal communication, 2025). Airports and local terms also influence communication norms: 'In Japan, in addition to the standard word "passengers," terms such as "travellers" or "visitors" are sometimes used, especially in arrival and departure areas of airports' (F. Flight Purser 2, personal communication, 2025).

In conclusion, AV ensures precision and safety, GE underpins interpersonal communication and operational clarity, and English as a shared professional supports communication in international aviation.

4.2 Findings for Research Question 2

Research Question 2 further explored cockpit and cabin crew recommendations for enhancing AV programmes in non-native contexts. Using RTA (Braun & Clarke, 2021), the expanded dataset reinforced the four overarching themes: *Communicative Language Teaching (CLT)*, *Task-Based Language Teaching (TBLT)*, *Technology-Mediated Language Teaching*, and *Language Skills Development and Learner Support*. The thematic framework of Pedagogical Approaches in Aviation, generated through MAXQDA creative coding, is presented in Figure 6.

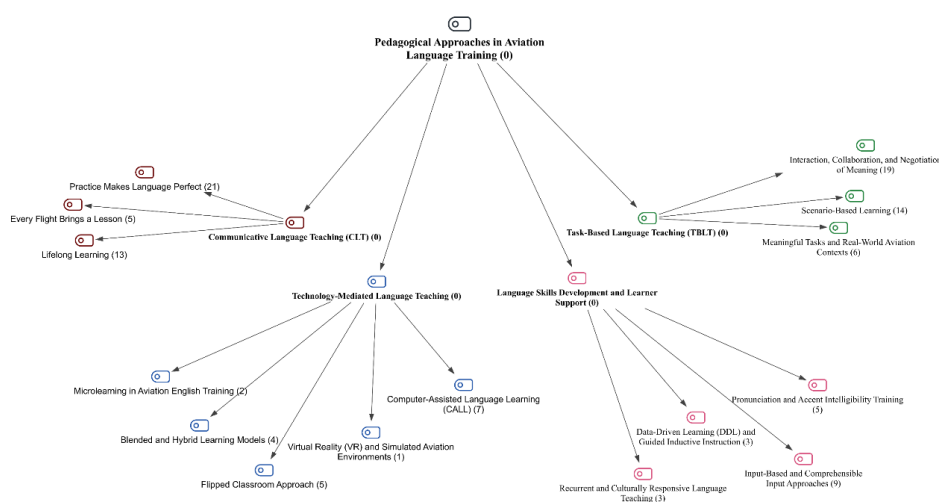


Figure 6. Thematic framework of Pedagogical Approaches in Aviation from MAXQDA creative coding.

CLT emphasises authentic, context-specific communication in aviation, promoting task-based language learning. Pilots benefit from role-plays simulating real-time cockpit exchanges, particularly in unexpected or high-pressure situations, while integrating content such as meteorology and navigation strengthens relevance and retention (M. Captain 2, personal communication, 2025; M. First Officer 6, personal communication, 2025). Similarly, a flight attendant reported that practising real passenger interactions using authentic operational manuals and procedures, rather than standard coursebooks, fosters meaningful, task-based language learning directly aligned with workplace needs (M. Flight Attendant 3, personal communication, 2025).

Regarding the TBLT theme, one captain described how pilots familiarise themselves with emergency protocols, carry out simulated incident reports or briefings, and then review their performance to improve clarity and decision-making (M. Captain 9, personal communication, 2025). Similarly, a flight attendant reported that preparing safety announcements, performing full cabin demonstrations with passenger role-plays, and reflecting on feedback strengthened task-based language skills (F. Flight Attendant 1, personal communication, 2025). Another captain noted that during an engine failure, pilots prioritise giving precise instructions to the first officer and air traffic control to ensure safety (M. Captain 11, personal communication, 2025), showing how learners focus on conveying meaning rather than grammatical accuracy. Collectively, these practices exemplify the principles of task-based language learning.

Technology-Mediated Language Teaching offers vital flexibility and accessibility, particularly given the unpredictable schedules of aviation professionals. Microlearning, characterised by brief, focused lessons such as five-minute ATC listening drills, has been identified as an effective means to sustain proficiency amidst demanding workloads (F. First Officer 1, personal communication, 2025). Computer-Assisted Language Learning (CALL) platforms provide interactive opportunities for practising listening, pronunciation, and communication, which are further enhanced by mobile applications delivering targeted feedback on pronunciation clarity (F. Officer 2; M. Flight Purser 4, personal communications, 2025). The flipped classroom model, combining online preparatory work with in-class speaking practice, optimises learning efficiency and engagement (M. Captain 8; M. Flight Purser 1, personal communications, 2025).

Language Skills Development and Learner Support should emphasise a systematic progression of core competencies aligned with ICAO standards. A key challenge identified by both cockpit and cabin crew is accent variation, particularly when communicating with speakers from China, India and Pakistan (M. Captain 12; M. Flight Attendant 2, personal communications, 2025). Variations in pronunciation, stress and intonation can reduce intelligibility, especially in time-critical radiotelephony exchanges with ATC and in safety-related passenger interactions (M. Captain 1; F. Flight Attendant 3, personal communications, 2025). Addressing this challenge requires recurrent, culturally responsive language teaching that incorporates structured exposure to a range of international accents, explicit phonological awareness training, and operationally grounded simulations reflecting authentic aviation contexts.

4. Discussion

The findings show that both AE and GE are essential for communication in aviation. AE is crucial for routine cockpit–ATC exchanges, while GE becomes vital in non-routine situations requiring problem-solving and clarity (Clark & Williams, 2020; Estival, Farris, & Molesworth, 2016). Cabin crew need GE for interacting with international passengers, whereas AE supports precise communication with the cockpit crew. These results support integrated training that combines standard phraseology with broader communicative competence (Friginal, Mathews, & Roberts, 2020; Kim, 2026), and simulation evidence suggests that context-rich training improves performance.

The findings also align with communicative and learner-centred TEFL theories. Dahmardeh (2009) argues that traditional textbooks often fail to develop communicative competence, while his analysis of Iranian materials highlights the need for authentic, contextually relevant content. He further notes that learners engage more effectively when materials represent real-life situations and cultural realities (Dahmardeh & Mahdikhani, 2025). Applied to AE, this suggests that training should combine specialised operational language with realistic professional scenarios to meet both routine and unexpected communicative demands.

The study is limited by its single-airline sample, the exclusion of ATCs and the lack of empirical testing of pedagogical methods such as TBLT.

5. Conclusion and Implications

The study indicates that in aviation, English is like the two wings of a bird: professionals need both General English and Aviation English. One alone is not enough. Just as a bird cannot fly with only one wing, safe and effective communication in aviation depends on competence in both.

AE provides standardised terminology and phraseology for routine operations, while GE enables flexibility and clarity in non-standard or emergency situations. For cockpit crews, AE and compliance with ICAO Language Proficiency Requirements are critical for flight safety and accurate ATC communication, yet GE remains necessary for problem-solving and decision-making during emergencies. For cabin crew, GE is most important because they regularly interact with international passengers. However, AE is also necessary for clear communication and coordination with the flight crew. The findings suggest that aviation language training should integrate both AE and GE, as they function like roots and branches of a tree: both are interdependent and essential for effective communication.

Furthermore, the study concludes that flexible, modular curricula should accommodate irregular work schedules through a flipped-classroom approach and short, focused micro-learning strategies. It also highlighted the need for pronunciation training to address accent-related challenges, especially with speakers from China and India, using communicative and task-based methods that target segmental and suprasegmental features and encourage self-monitoring and reflective practice (Baker & Goldstein, 2018; Celce-Murcia et al., 2010; Ellis, 2003; Richards & Rodgers, 2014; Swain, 2005).

Microlearning is highly effective for aviation crew, both cockpit and cabin, as it fits around their irregular schedules. Short, focused modules can be completed between duties or during

layovers, allowing crew to refresh key procedures without lengthy classroom sessions. Theo Hug (2010), a pioneer of microlearning, explains that it delivers small, focused learning units that can be accessed flexibly, making it ideal for learners with limited time.

Declaration of Use of Generative AI

During this article's preparation, the researchers used generative AI tools (ChatGPT GPT-5.2, Gemini 2.5 Pro/Flash, ScienceOS.ai, Copilot) in a limited way for proofreading only. All AI-generated content was carefully reviewed and revised, and the researchers take full responsibility for the work's accuracy and integrity. AI was not used for data collection, analysis, interpretation, or research management.

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Appendix

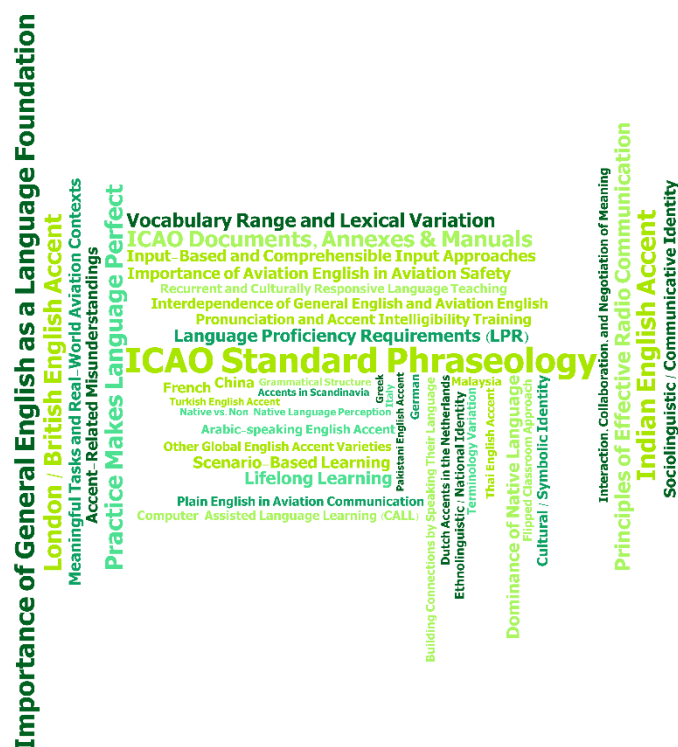
MAXQDA Code Clouds for All Groups

This appendix presents the code clouds generated in MAXQDA for all participant groups. These visualisations provide a summary of the coding patterns identified during the qualitative analysis, with the size of each code indicating its relative frequency within the dataset. The code clouds offer a clear depiction of the prominent themes and their distribution across the groups, thereby facilitating comparison and interpretation of the qualitative data.

Female Captain



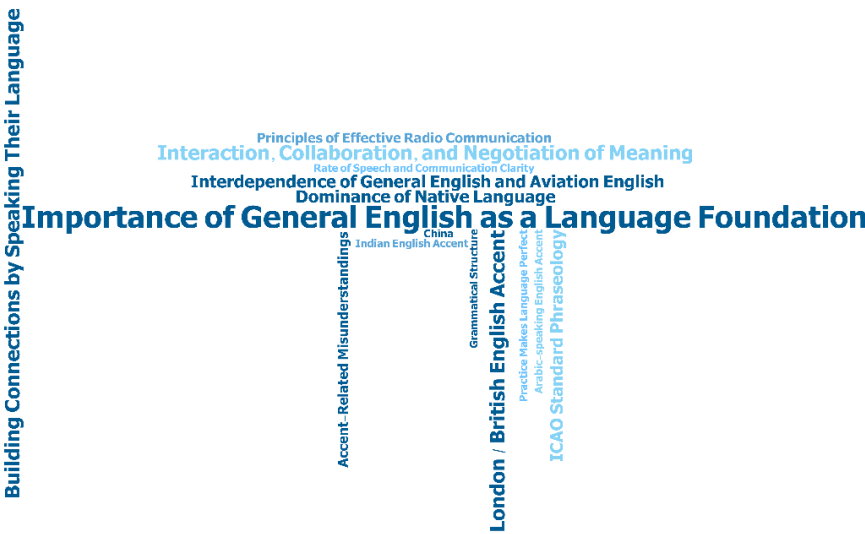
Male Captain



Female First Officer



Male First Officer



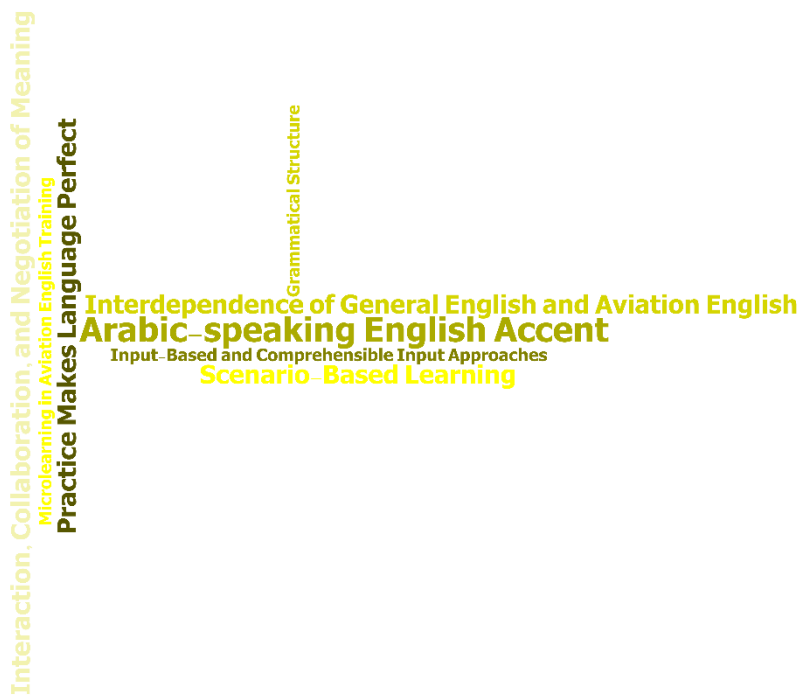
Female Flight Purser



Male Flight Purser



Female Flight Attendant



Male Flight Attendant

