

## AROUND THE WORLD IN AERONAUTICAL AND AVIATION ENGLISH COURSES

### Volta ao mundo em cursos de inglês aeronáutico e inglês para aviação

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**ABSTRACT:** *Considering their relevance for aviation safety, the teaching and the assessment of aviation and aeronautical English constitute an activity that should be research-informed. In this paper we present a critical view on the recommendations made by the International Civil Aviation Organization regarding English training for specifically two professionals: pilots and air traffic controllers (ATCOs). Then, we present some research about it and how it has been addressed in different contexts around the world. Results show that most studies focus on needs analysis and relate to pre-service and ab initio professionals; many of them regard military pilots and ATCOs and corpus linguistics is a growing approach for language analysis and material development.*

**KEYWORDS:** Aviation English; Aeronautical English; English for Specific Purposes (ESP); Language teaching and assessment

**RESUMO:** *Considerando sua relevância para a segurança da aviação, o ensino e a avaliação do inglês aeronáutico e do inglês para aviação constituem uma atividade que deve ser embasada em pesquisas. Neste artigo, apresentamos uma visão crítica das recomendações da Organização de Aviação Civil Internacional (OACI) sobre o ensino de inglês para especificamente dois profissionais: pilotos e controladores de tráfego aéreo (ATCOs). Em seguida, apresentamos algumas pesquisas sobre o assunto e como ele foi abordado em diferentes contextos ao redor do mundo. Os resultados mostram que a maioria dos estudos focaliza a análise de necessidades e se refere a estudantes pré-serviço ou em início de carreira; muitos deles abordam pilotos e ATCOs militares e a linguística de corpus é uma abordagem crescente para análise de linguagem e desenvolvimento de materiais didáticos.*

**PALAVRAS-CHAVE:** Inglês para aviação; Inglês aeronáutico; Inglês para Fins Específicos (ESP); Ensino e avaliação de línguas

## 1. INTRODUCTION

When Jules Verne wrote the adventure fiction “Around the World in Eighty Days”, in 1873, a machine that could fly and take people to the remotest parts of the world in a fast and safe way was still a dream to mankind. Today, only 147 years later,

air travel is a reality and considered the safest way of long-distance travelling. Since the early stages of modern civil aviation, the English language has been associated with the aviation community (BOROWSKA, 2017) and gradually became its lingua franca. During the 1980s and 1990s, the simplification and standardization of language used between pilots and air traffic controllers (ATCOs) was seen by experts as the best way to avoid accidents. However, it is known that, despite these efforts, accidents keep happening and phraseology is not enough to handle all the situations that appear inside the cockpit, especially in urgency or emergency situations.

Studies carried out in the following years indicated that the lack of proficiency in English and the presence of human failures in radiotelephony could be contributing factors to the occurrence of accidents and incidents. “From the observation that mechanical failures are less common causes of accidents than human factors, more attention is given by the International Civil Aviation Organization (ICAO) to issues related to radiotelephony communication” (BOCORNLY, 2011, p. 978)<sup>1</sup>, comprising *plain English* as well, which was not taken into consideration before. Precisely because it constitutes one of the elements of radiotelephony communications, the so-called *plain English* must be used according to the same rules of conciseness, precision, objectivity, intelligibility and unambiguity that govern the use of phraseology (ICAO, 2010, p. 3-5, item 3.3.14)<sup>2</sup>.

In order to mitigate miscommunication problems, ICAO published the Manual of Implementation of Proficiency Requirements, or Doc 9835, in 2004, and a reviewed edition in 2010 (ICAO, 2010). This document established requisites for the qualification and evaluation of pilots and ATCOs, aiming at guaranteeing that they have the competence to communicate effectively in English, mainly in situations in which it is necessary to go beyond the use of the prescribed standard aeronautical phraseology. Since then, aeronautical English has reached a higher level of importance and started being assessed by governments and institutions throughout the world, which generated the need for training in this English for Specific Purposes (ESP) area. In response to it many courses have been developed and coursebooks have been published in the last years.

The objective of this paper is to analyze what has been researched about the teaching of aeronautical English in different parts of the world. To do so, first we critically present ICAO recommendations about it. Then, we review the literature on aeronautical English language training in 33 studies from 18 different countries (Australia, Algeria, Brazil, Bulgaria, China, Ecuador, Estonia, France, Germany, Italy, Iran, Japan, Palestin, Pakistan, Poland, Turkey, Ukraine and the United States of America).

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<sup>1</sup> Original: “A partir da constatação de que falhas mecânicas são causas menos frequentes de acidentes do que fatores humanos, mais atenção passa a ser dada pela ICAO a questões relacionadas à comunicação radiotelefônica.”

<sup>2</sup> For a discussion about the nature, extension and limitations of phraseology and plain English in radiotelephony communications, see Tosqui-Lucks and Silva (2020).

Inspired by Verne's masterpiece, we decided to present them in geographical order, as if we were traveling around the world too. We depart from Brazil, home country of the authors and where most of the studies analyzed in this paper come from, then we briefly visit other studies from Latin and North America. After that, we go over studies from European countries, followed by research from the Middle East. Our last destinations are Asia and Australia. In the final considerations, we attempt to find out what these pieces of research have in common, what the most investigated topics are and maybe shed light on some gaps that deserve future studies. We hope the readers enjoy this trip while having an overview of aeronautical/aviation English courses worldwide.

## 2. ICAO RECOMMENDATIONS FOR AVIATION AND AERONAUTICAL ENGLISH

The term *aviation English* is very broad, considering that different professionals in aviation, such as aircraft maintenance personnel and flight attendants, for example, also use English to communicate in their workplaces. Even though the term *aviation English* is often chosen in the specific literature to refer to the sole language used between pilots and ATCO in radiotelephony communication (ICAO, 2010), we decided to opt for the term *aeronautical English* to refer to this particular language, following a discussion presented in Tosqui-Lucks and Silva (forthcoming):

Although we are aware that changes take time, and that many authors have been using *aviation English* meaning its restricted scope that we consider *aeronautical English*, probably influenced by ICAO documents, we insist that the use of different terms to refer to two different concepts, especially when one encompasses the other, has important consequences (TOSQUI-LUCKS; SILVA, forthcoming).

At this point, it is important to explain the mindset that guides aeronautical English training<sup>3</sup> and assessment, according to two ICAO documents: i) Doc 9835 (ICAO, 2010), which defines aeronautical radiotelephony communications (Chapter 3) and provides guidance on language proficiency training and assessment for pilots and ATCOs (Chapter 7; Chapter 6); ii) Circular 323 (ICAO, 2009), which presents specific recommendations for course designs in the same scenario.

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<sup>3</sup> We are using the terms *training* and *teaching* interchangeably, simply to be consistent with the terminology used in our references. While *teaching* is more common in the academic literature, in the introduction of Circular 323 (ICAO, 2009, p. ix) it is explained that *trainer* is a generic term that encompasses others such as *teacher*, more related to language learning, *instructor*, with more technical associations, or even *facilitator*, indicating someone with a more auxiliary role.

These documents reinforce that both training and assessment must be guided by ICAO Language Proficiency Rating Scale, Annex 1, Doc 9835 (ICAO, 2010), for speaking and listening proficiency only, according to six differentiating proficiency levels and band descriptors for pronunciation, structure, vocabulary, fluency, comprehension and interaction. The minimum operational level is 4. Circular 323 (ICAO, 2009) enumerates a few characteristics of aeronautical communication as being predominantly oral, with no visual cues, employing a very specific vocabulary to make it clear and unambiguous since it involves risk management not only for pilots and ATCOs but for society at large.

Doc 9835 (ICAO, 2010, item 2.5) states that radiotelephony communications should follow the framework of English as a lingua franca (ELF), in line with what is argued by Kim and Elder (2009), Douglas (2014), Estival, Farris and Molesworth (2016) and Prado and Tosqui-Lucks (2019). Such perspective comes with key assumptions in regard to cross-cultural awareness, the notion of intelligibility (JENKINS, 2000), far distant from the native-like pronunciation model, and the expected use of strategic competence, such as accommodation and negotiation of meaning, implicating a shared responsibility for misunderstandings.

As for the content of aeronautical English training courses, Circular 323 (ICAO, 2009, 1.1.1) defines the domain of the language to be taught and learned for radiotelephony communications. It is depicted as a continuum of specificity, ranging from standard aeronautical phraseology, a very specific register, to the wide focus of conversational aviation topics. Following a content-based language learning approach, it is argued in the same document that the closer the course content is to work-related situations in real life, the more motivated pilots and ATCOs tend to be. Yet, due to the specificities of their different roles (MODER, 2013; EMERY, 2014), the same document suggests different courseware for each group (ICAO, 2009, 1.3.2).

In terms of language training design, development and delivery, ICAO dedicates two chapters (1 and 2) in Circular 323, and an extended chapter (7) in Doc 9835 (ICAO, 2010) to discuss several issues. For instance, the methodology to be used in English language training for pilots and ATCOs, according to Circular 323 (ICAO, 2009, 1.3.4, p. 4) and Doc 9835 (ICAO, 2010, 7.3.3, p. 7-3; 7.4.10, p. 7-4) lies on “[...] a consistent use of a communicative approach”, with focus on pronunciation, fluency and interaction, through tasks that require the use of language with work-related topics and aviation-related materials to enhance learners’ interest and motivation. As for language training, Doc 9835 (ICAO, 2010, 7.4.11, 7.5) recommends it should be guided by content-based language learning (CBLT) approach, matching content-interest to language lessons. The way we see it, the needs of *ab initio* students, who are still learning the principles of the job, and experienced professionals, are dramatically different. Therefore, while CBLT may be relevant to *ab initio* students, it could be less motivating to on-the-job training.

Not much is recommended for teaching materials, but we believe that exposure to authentic pilot-ATCO communication must be prioritized. Regarding training course delivery, Doc 9835 (ICAO, 2010, 7.6) suggests blended learning as an optimal solution to match the method to the descriptors and skills to be developed, with emphasis on listening and speaking. Section 7.6 of the same document provides an overview of the advantages of adopting a computer-assisted language learning (CALL) approach to training delivery, such as flexibility for time constraints and students' different needs and learning styles, as well as cost-benefit efficiency to practice oral comprehension, pronunciation, grammar and vocabulary. Nevertheless, it acknowledges that computer-based training "[...] is not a magic bullet. Language is an interactive, communicative activity and even the most sophisticated voice recognition programmes cannot replace natural human interaction." (ICAO Cir. 323, 2009, p. 41).

Concerning classroom assessment, ICAO documents also recommend appropriate placement, progress and exit tests to benchmark levels of students' elevation, and by appropriate they mean tests that "[...] contain reference to subject matter with which the particular population is familiar with. Therefore, "[...] professional and *ab initio* students will probably require different tests" (ICAO, 2010, 2.5.1, p. 18).

In line with Doc 9835 (ICAO, 2010, 5.3.3), Borowska (2017) claims that any aeronautical English course should combine the teaching of linguistic and cross-cultural awareness, so that native speakers and non-native speakers can communicate successfully. In the same vein, Monteiro (2019) turned her attention to a broader view of communicative competence for intercultural communications in aviation. The results of her study signpost that such communicative competence requires: i) specific purpose language ability and background knowledge; and ii) the need to speak English as a lingua franca (ELF) to accommodate and to negotiate sociocultural differences, to solve misunderstandings between interlocutors from different cultures, to share responsibility for successful communication (MONTEIRO, 2019).

Despite ICAO's efforts in also suggesting an ELF perspective for aeronautical communications, it fails in making it clear, since the high levels of its very rating scale in Doc 9835 do not contemplate the use of communicative strategies, which far from being compensatory, should be triggered to facilitate communications (ARAGÃO, 2018). Likewise, in defining language ability for ATCOs for aeronautical communications, Park (2018) suggests that a combination between language knowledge and strategic competence (cognitive, metacognitive and communication strategies) is necessary.

### **3. AERONAUTICAL ENGLISH TRAINING PROGRAMS AROUND THE WORLD**



In the literature on aeronautical English language training, 33 studies from different countries are reviewed in this paper. We will start with 13 studies from Brazil, where the authors of this paper come from. Most research reviewed here are Master's theses and Ph.D. dissertations by members of a Brazilian research group called *Grupo de Estudos em Inglês Aeronáutico* (GEIA)<sup>4</sup>. These papers were originally written in Portuguese and afterwards published on a book, in Portuguese too, called *Pesquisas sobre Inglês Aeronáutico no Brasil*<sup>5</sup> (SCARAMUCCI; TOSQUI-LUCKS; DAMIÃO, 2018). According to Solovova, Santos and Veríssimo (2018, p. 01) “[...] choosing a language for disseminating research is largely dictated by the social norms and conventions of different communities of scientific practice”. For them, while, on the one hand, it is important to produce knowledge in the author's native linguistic background, for epistemological and language policy reasons, on the other hand, scientific texts written in English are accessible to larger research communities. For this reason, we consider that it is important to take this opportunity to spread GEIA's research to a larger community interested in aviation and aeronautical English.

After presenting Brazilian research, we present one paper from Ecuador and two from the United States of America. After that, we go over studies from eight European countries and we gladly were able to review one study from Algeria, in Africa. Then, we present five research from the Middle East. Our last destinations are Asia, with one paper from China and another from Korea and we finally present some considerations from one book published in Australia.

### 3.1 BRAZIL AND AMERICAS

Chini (2014) investigated to what extent the English course at *Escola de Especialistas de Aeronáutica* (EEAR) caters to the students learning needs (pre-service air traffic controllers), in order to determine whether it contributed to the performance of the operational tasks carried out by the ATCOs in different air traffic control units. A qualitative-interpretative research was conducted, the instruments of which were two written questionnaires administered to 50 students graduating the 4th grade of the Sergeant Training Course (specialty Air Traffic Control, as well as to 14 ATCOs in the military working in the air traffic control units) EEAR alumni. The analysis of the responses indicated that the large majority of respondents are aware of the necessity of this language in the aviation context. Furthermore, it was possible to identify the lack of dialogue between these two subjects: Air Traffic Control Phraseology and English. The

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<sup>4</sup> In English: *Aeronautical English Study Group* In: <https://geia.icea.gov.br/geia/inicial.php>.

<sup>5</sup> In English: *Research on Aeronautical English in Brazil*.

integration of these two subjects has been suggested as a way of bringing education to the reality of the occupation.

Silva (2016) conducted a language needs analysis for the usage of English by Aviator Officers of the Air Demonstration Squadron (EDA) of the Brazilian Air Force, popularly known as “*Esquadrilha da Fumaça*”. The EDA’s mission is to represent the Brazilian Air Force and Brazil through air shows. Among its various responsibilities EDA represents FAB abroad as a diplomatic tool, and it spreads the media policy of the Air Force Command (COMAER). Through a qualitative research, Silva (2016) developed a case study with a triangulation of multiple methodological procedures, such as nonstructured and semistructured interviews, focus groups, document analysis and observation, including different participants – Pilots in Activity, Veteran Pilots and English teachers from the Brazilian Air Force Academy. The Present Situation Analysis (PSA) showed that the speaking ability in ESP and English for General Purposes (EGP) has not been directly assessed. The Target Situation Analysis (TSA) demonstrates that the English language needed by the group is multifaceted. It includes the usage of standard phraseology for flight communication between pilots and ATCOs, in routine situations, and plain English for non-routine situations. On ground situation, there is evidence of need for the usage of EGP and specific vocabulary for aviation, in the performance of administrative and operational tasks. Similarly, EGP and specific vocabulary for aviation are required for interactions with the public, the press, authorities, members of other teams, among other parties, and also during exchange visits and the welcoming of international visits at the group’s headquarters.

As for syllabus design, Sá (2010) presents a comparative analysis between the syllabi of two English subjects from the Military Air Traffic Controller English Programme – whose approach is ESP – and the list of Events, Domains and Subdomains of the Controller-Pilot Communication that has been suggested by ICAO as a guide training content. The comparison was proposed in order to provide guidance to the syllabus designers of the Military Air Traffic Controller English Programme in the selection of the appropriate programme content, with reference to the ATCOs’ target needs presented by the ICAO list. In order to collect all information for this research, some instructional and normative documents were examined. The results of the analysis revealed that the content suggestions made by ICAO on the list of Events, Domains and Subdomains of the Controller-Pilot Communication were not followed completely by the Programme. The results also showed the content which has not been covered by the two English subjects’ syllabi, providing precise information to be used for redesigning it.

Concerning course development and implementation, Tosqui-Lucks et al. (2016) presented the theoretical and methodological background for the development and implementation of courses for military and civilian ATCOs, in a language development program constituted by in site and distance learning courses, or in relation to the *Exame de Proficiência em Inglês Aeronáutico do Sistema de Controle de Tráfego Aéreo*

*Brasileiro* (EPLIS)<sup>6</sup>. Finally, the paper discusses a few solutions for offering on-the-job training to around 4,000 professionals spread over the three operational facilities throughout Brazil by means of a system of education progress.

Regarding material evaluation, Bonifácio (2015)'s specific objectives were: i) to set criteria in order to create a checklist to evaluate textbooks used in English language courses to ATCOs; and ii) to evaluate the book called *Aviation English* (EMERY, 2008) using the same checklist. The main categories presented in the checklist, subdivided into 117 items, include theoretical principles (language role and language teaching and learning), graphical features, lexical, grammatical and functional competences described in the Document 9835, support materials and English proficiency test preparation. Using the checklist to evaluate materials will enable professionals engaged in English teaching to ATCOs to choose the most appropriate textbook according to their audience, as well as to identify gaps in the book, in order to adapt the material, since there is no such thing as perfect material.

Dias (2016) states that image is an excellent resource, which is very important especially for students who still do not act professionally in their functions, that is, pre-service students. However, considering the textbook of English and its peculiarities of production, the images may not be appropriate for the target audience, and it may be necessary to adapt them. In her research, the author analyzed the function of 45 images in three units of an aeronautical English textbook and verified their contribution in preparation for EPLIS. The end result of data analysis indicated that the most frequent function was application of exercise (20 images), followed by illustration (13 images). It was also found that most images contribute to EPLIS (26 images), whilst a large number of images does not contribute (18 images). During the analysis it was also discussed the possibilities of image adaptation in the textbook.

Babboni (2017)'s objective was to investigate in what way the pronunciation exercises from three textbooks, used during a training course for ATCOs, fulfill the specific needs of speakers of Brazilian Portuguese (BP). He analyzed which pronunciation exercises, available in the textbooks, satisfied the needs of speakers, and which exercises are relevant for the ATCOs identifying existing gaps. Being textbooks made by international publishers, the contents in the books aim to comply with the needs of speakers of several languages and not just our own reality of native speakers of BP. The results show that, in general, most of the pronunciation exercises have few samples (words and/or sentences), and many exercises do not suggest any type of oral practice for the learners. Furthermore, the analysis of the pronunciation exercises revealed that several difficulties in English pronunciation, which are common to speakers of BP, are not addressed in any of the three textbooks.

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<sup>6</sup> In English: *Aeronautical English Proficiency Exam to Brazilian Air Traffic Control System*. EPLIS has been applied to Brazilian in-service air traffic controllers and aeronautical station operators every year since 2007, in compliance with ICAO's guidelines pertaining to the proficiency assessment of professionals involved in international flight operations. In: <https://eplis.icea.gov.br/>



Cruz (2015) states that the interest in developing awareness tasks arouse when, teaching ESP in the aviation context, it was observed that many students were not clear about the importance of English to the area chosen as their profession, and they could not understand the nuances of linguistic aspects of the English language that caused ambiguity and misunderstandings with impact on the prevention of aviation accidents and incidents. In this context, it was also found that many students were taking ATCOs Training Course without knowing the scope and challenges of the profession. This lack of knowledge was clear during English classes and resulted in lack of interest in carrying out the activities and also the lack of awareness on aspects of English that are considered important for a safe flight.

In the intersection between teaching and assessing, Souza (2018) investigated the washback effect of EPLIS on teachers' and students' perceptions, attitudes and actions in an air traffic control initial training program. Adopting a mixed methods design, Souza's study comprised two consecutive phases. In the first phase, she used a questionnaire and statistical analyses to identify patterns and trends of perception and attitude among participants in relation to the influence of EPLIS on various aspects of English teaching and learning. In the second phase, qualitative data were collected through a focus group, individual interviews and class observations, in order to explain, expand on and corroborate the initial results. The results showed that the exam influenced the skills developed in the classroom, the types of tasks and their formats, the school achievement tests, and the teachers' teaching approach.

Prado (2015) used corpus linguistics as a methodology to investigate this language for special purposes in its real environment. Her research presents a description of the language used by ATCOs and pilots in radiotelephony communications when in abnormal situations. The author compiled a spoken corpus extracted from this context and primarily investigated the phraseological patterns in the surroundings of five lexical items – 'runway', 'aircraft', 'emergency', 'fuel' and 'engine'. Then, she contrasted the results with the glossary attached to Doc 9835, which suggests a list of grammar structures on which the assessment and training of aviation English should be based. This research concludes with a demonstration of the simplicity, objectiveness and clarity of the plain English identified in the corpus, which neither correlates with the structures recommended in the glossary nor with the language explored in coursebooks published to this end.

In another research, Prado (2019) aimed to understand how fluency and interaction are manifested in radio communications held in abnormal situations, and how corpus pragmatics can be applied in the teaching of aeronautical English. To reach these objectives, she compiled two corpora: the first is comprised of radio communications; the second, of transcriptions of seven classes offered to a group of three airline pilots, to which the results of the investigation of the first corpus were applied. The author suggests changes to ICAO's Language Proficiency Rating Scale which should then be incorporated in the teaching of aeronautical English, in such a

way that the classes reflect the context in which the professionals work, thus preparing them so they can better accomplish their tasks, particularly when communicating in abnormal situations.

Tosqui-Lucks (2018) described 16 studies, from different parts of the world (mainly Brazil, North America and Europe), from the 1990's to the present date, which analyzed authentic recordings of the language of radio communication in real air traffic control and/or in simulations and training situations, using the corpus linguistics methodology, with various objectives, such as language description, language policies, and teaching. In a post-doctoral research, Tosqui-Lucks (2019) compiled two corpora: a spoken corpus from the collection and transcription of recordings of routine and non-routine communications, in English, between pilots and Brazilian ATCOs and a learner corpus from the compilation of activities prepared by the students, in which they recorded audios simulating communications between pilots and controllers. Thus, it is possible to contrast both corpora to check if the training has been effective and focused on the real needs of these professionals. The author proposed a module of activities that may be applied in recurrent training courses for these professionals.

Pacheco (2018) organized a book totally devoted to English for aviation with guidelines for teaching and introductory research, in which many aspects of teaching and learning English are addressed for *ab initio* and experienced pilots, in various contexts.

Moving from Brazil to Ecuador, Santos et al. (2018)'s investigation was in the military aviation field. The aim of their study was to analyze the methodology applied during an ESP aviation course containing a module with main expressions used for flight and radiotelephony operations, taught before the basic flight training, in a military aviation school in Salinas, Ecuador. A mixed methods approach of investigation was used by means of a mock aviation English test, an interview for teachers and a survey for first year students. The results showed that the course needs improvements since not all pilot cadets who participated in the study were familiarized with Doc 9835 or the ICAO Standardized Phraseology manual. A blended Learning design for the course was also suggested.

Friginal, Matthews and Roberts (2019) present the landscape of aviation English pedagogy and instruction, covering the range of contexts in which it is taught, including commercial airline pilots, professional ATCOs, maintenance technicians, ground staff, cabin crew, and flight training. The authors argue for more proactive involvement and leadership of language experts in developing curricula, testing instruments, and certification programs for these language learners in the aviation industry. They also discuss the roles and responsibilities of the aviation English instructor, emphasizing the importance of aviation familiarity and of English language instructors working with Subject Matter Experts (SMEs) in the field of aviation to ensure accuracy.

Roberts and Orr (2020) set forth an ideal ESP training process for *ab initio* flight students that is meaningful, cost-and-time-efficient, and safety-oriented. The authors

outline a process for providing pre-flight school language instruction by using a placement test followed by specific training, with a curriculum that follows approaches of Content-Based Language Teaching, Task-Based Language Teaching, and ESP principles.

### 3.2 EUROPE AND AFRICA

Alizieri (2010), in Italy, aimed to verify if air traffic control messages included in two chosen corpora confirm previous research results or if their structure fulfills ICAO standards. To carry out the analysis, a list of lexico-grammatical and pragmatic features typical of everyday conversations, and, thus, which should not occur in air-ground transmissions were identified by referring to two ICAO manuals, and then were compared among the corpora. Results showed that real ATC utterances are not compliant with standards in many respects. In the second part of the thesis, the author proposes a tentative learner corpus of aviation English.

Lopez (2013) developed a study of the usage of English by French ATCOs with international pilots. Her aim was to describe the different uses of English phraseology and plain language within air-ground communications via a comparative study between two corpora: one representing the prescribed norm and made up of examples of English from two phraseology manuals; the other consisting of the orthographic transcription of recordings of real air-ground communications. The comparative study focused on the discrepancies observed in the distribution of the corpora lexicon and the results can be used to improve English radiotelephony teaching.

Still in Europe, we found a book called *Aviation Communication – Between Theory and Practice* (HANSEN-SCHIRRA; MAKSYMYSKI, 2013) with a collection of papers presented at a conference about this theme, which took place in Germany in 2010. Among the topics covered by the book, there is “How can language training for controllers and pilots be optimized?”. Two papers address this topic, discussing the role of plain language in English training for non-native ATCOs and the development, implementation and efficiency of LPRs and courses.

Kovtun et al. (2020) developed a linguistic analysis for educational purposes in civil aviation communications in Ukraine. The research focused on radiotelephony and face-to-face communications between pilots and ATCOs, other communications between pilots in the cockpit, as well as between pilots and aerodrome staff. Results show that a combination between linguistic and psycholinguistic features of radiotelephony discourse, nature and causes of RTF communications failures and psycho-physiological features of pilot on-flight activity helped to determine different types of exercises for *ab initio* students to meet ICAO language proficiency requirements. Also in Ukraine, Kumpan and Kharlamova (2019) described interactive

teaching methods and discussed their effectiveness during professional language training for future pilots in order to facilitate the development of language skills and meet ICAO language proficiency requirements.

Borowska (2017), a Polish researcher, addresses ESP teaching without focusing on a specific study case. The author sets forth the importance of needs analysis, intercultural awareness and intercultural communicative competence. She also describes the characteristics of the Aeronautical English trainer, who, besides linguistic competence, must have good grounding in the professional field of ATC and piloting.

Tamm et al. (2012) outlined basic principles of developing curricula for aviation personnel at the Estonian Aviation Academy. The authors discussed the main issues in modular curriculum development and cooperation with various institutions of higher education and aviation in the teaching process.

Katsarska (2017) advocates in favor of harmozination in aviation training, promoted by a common aviation course which is being developed due to the cooperation among three Air-Force tertiary education institutions, namely Aviation Faculty, National Military University, Bulgaria, Air Force Academy, Romania and the War Studies University, Poland within the framework of Strategic Partnership, Erasmus+ program.

Mekkaoui and Mouhadjer (2019) developed a language needs analysis to explore the English language deficiencies and problems Algerian ATCOs may face at work. The results of this study show that their main difficulties include speaking and listening abilities with special focus on vocabulary and grammar.

### 3.3 MIDDLE EAST

According to Er and Kikgöz (2018), the aim of ESP in Turkish<sup>7</sup> universities is to support the development of scientific literacy in learners' field of specialism in English. Implicit in this objective is to make the ESP curriculum tailor-made to meet the learners' specific needs. The authors evaluated the Turkish Air Force Academy (TurAFA) curriculum, providing an evaluation of an innovative "Aviation English for Cadets" (AEC) curriculum, designed to fulfill cadets' individual and institutional needs. AEC is based on a comprehensive needs analysis involving all stakeholders including the graduates, field experts, instructors and cadets. According to the authors, the most innovative aspect of the curriculum is the introduction of virtual aviation, a challenging innovation in the curriculum for cadets.

Kushi (2012) aimed at investigating the academic and professional needs of military cadets from Pakistan in an ESL context from the perspectives of the instructors,

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<sup>7</sup> Turkey is a transcontinental country located mainly in Western Asia, with a smaller portion in Southeastern Europe. We opted for including it in the section about Middle East because of similarities with the other studies from this region.

in order to contribute to the process of developing a course of English for Military Purposes. The instrument used in this study was the interview of 12 instructors and the data was analyzed through thematic analysis. The findings revealed that the English Language plays an important role in the academic and professional lives of military cadets and that the productive skills (speaking and writing) were more important than the receptive skills (reading and listening). Moreover, the findings revealed that the English language courses taught were inadequate in relating the English language use to the academic and professional needs of the cadets. More authentic material should be used, and teachers should be properly trained to teach ESP courses.

Qaddomi (2013) also researched about cadets. His study aimed at determining EFL cadets' needs at Al-Istiqlal University (AU), in Palestine, as well as revealing how cadets rated their own competence in particular skills in EFL, and what they really need from their EFL course. The study was conducted on a random sample of 91 cadets and the findings showed that their level in EFL is intermediate. Moreover, results indicated that the most serious difficulty which the cadets face, as they perceive future workplace, in learning EFL is following English conversations.

Karimi and Sanavi's (2014) purpose was to find the present and future English language needs of the students in an Aviation Training Program in Iran. Both quantitative and qualitative methods were used in this research to investigate the needs of the learners by means of a questionnaire based on a Likert-scale, structured interview and semi-structured interview. The result of the study showed the needs and the problems of the students. It also provided valuable implications for curriculum developers.

Also in Iran, Zolfagharian (2017) pointed out the current and target needs of 46 ATCOs who work at Iranian airports and the air navigation company and 7 aeronautical English teachers from Tehran Area Control Center (ACC) who teach both at the Civil Aviation Technology College and at working places. The results revealed the importance of the skills which are necessary for the job, the improvement of the skills as a result of in-service courses, their needs of English language improvement, participants' opinion about different aspects of aviation English instructors and at last and satisfaction in attending in-service classes. Results showed that students need to improve fluency, interaction, listening comprehension and technical words. Most of the participants believe that teachers were good, rather good or very good, but in case of satisfaction in held classes, the majority of the respondents were not satisfied with most aspects of classes. The results of the study can be used to inform managers of aviation industry, policy makers, aviation English instructors and material developers in order to improve the quality of the courses and concentrate more on the needs of the learners.

### 3.4 ASIA AND AUSTRALIA



By needs analysis and curricula design for an integrated course of study in the Chinese context, Aiguo (2008) explored the possibility of establishing aviation English as an ESP specialty in aeronautical and/or aviation colleges and universities. The author states that *aviation English* is not only confined to pilots and ATCOs, but it also refers to English in general terms in aeronautical and/or aviation universities. It can be designed as integrated ESP curricula for students in the fields of aeronautics and/or aviation. Learners of ESP are supposed to master the vocabulary in their specific discipline as well as the English language skills.

Park (2015) conducted a needs analysis for the English courses offered at the educational institutions of the Korean Navy. In his study, 14 Korean naval officers were interviewed and a survey of 64 Korean naval officers was administered. In addition, a survey of three U.S. naval officers was also conducted to achieve triangulation of the data. The objectives were to identify the target situations and tasks for which Korean naval officers must use English, as well as their wants for the English courses and their perceptions of their own use of the language. Through these research methods, six main target situations and 44 target tasks were identified along with the participants' perceived frequency, difficulty and criticality of these target situations. The study revealed that Korean officers' biggest weakness in their engagement with target tasks is their insufficient speaking skills, in spite of their great desire for improving it. The findings of this study support the adoption of Task Based Learning and Teaching (TBLT) approach and the learning-centered approach to ESP in English for Military Purposes Courses, in which not only the language but also specific knowledge can be taught jointly for the learners' successful performance of the target tasks.

In Australia, Estival (2019) considers that training and testing of aviation phraseology and communication procedures for native English speaker pilots and ATCOs should be mandatory, giving special emphasis on language awareness for mutual comprehension.

As we have seen, some of the research presented here are theses, dissertations or articles made by individual researchers, such as Chini (2014), Silva (2016), Sá (2010), Babboni (2017), Prado (2019) among others in Brazil; Alizieri (2010) and Lopez (2013), in Europe; Zolfagharian (2017) in Iran and Park (2015) in Korea, while others seem to be more practical needs analysis performed by one or more authors, aimed at guiding schools, universities and training centers to make informed decisions about content and material for teaching aeronautical English, such as Tosqui-Lucks et al. (2016) in Brazil, Katsarska (2017) in Europe, Er and Kikgöz (2018) in Turkey or Karimi and Sanavi (2014) in Iran.

There are examples of complete books dedicated to aviation and aeronautical English too, such as the ones edited by Scaramucci, Tosqui-Lucks and Damião (2018) and Pacheco (2019) in Brazil, Hansen-Schirra and Maksymski (2013) in Germany and Friginal, Mathews and Roberts (2019), in the USA, as well as the ones written by Borowska (2017) in Polonia and Estival, Farris and Molesworth (2016) in Australia.

This shows the growing interest of research about the topic, addressing different aspects of it.

The majority of these investigations focus on language needs analysis, in an attempt to better define pilots and ATCOs' specific language needs. The context can be university or training centers for professional pilots and ATCOs. Some of them also targeted at military students, especially in Latin America (Air Force ATCOs and pilots in Brazil and Ecuador), in the Middle-East (Air Force cadets in Turkey and military cadets in Pakistan), in Europe (Air-Force in three tertiary educational institutions from Bulgaria, Romania and Poland) and Korea (Naval officers).

## FINAL CONSIDERATIONS

Phileas Fogg had won his wager, and had made his journey around the world in eighty days. [...] The eccentric gentleman had throughout displayed all his marvelous qualities of coolness and exactitude. But what then? What had he brought back from this long and weary journey? (VERNE, 1994, p. 245)

When the long journey around the world was over, the main character of Vernes' adventure could not avoid reflecting upon what he had learned from it. Likewise, it is time for us to make some considerations about all the papers we have discussed. We would like to emphasize that this analysis is purely based on the texts reviewed, and by no means has the intention to comprehend everything that has been researched about aviation and aeronautical English teaching all around the world.

Back to what we mentioned in the introduction, the language barrier can be a problem for scientific dissemination. In this paper, only publications written in English were considered, apart from the ones in Portuguese. This can be the first gap detected: the more studies published in English we have, the more they can be cited and considered at international environments. This is why, even though the studies were grouped in "continents", it is very difficult to jump into conclusions of what the language teaching in each part of the world would be like. The reason why we decided to write this paper in English is indeed to reach more researchers worldwide and spread the results of our Research Group GEIA.

By analysing some aspects presented in recent research about teaching, we can conclude that needs analysis is fundamental for a better understanding of pilots and ATCOs different and mutual characteristics. In the literature on aeronautical English language training, 33 studies were reviewed in this study. A great deal of these investigations focuses on language needs analysis in order to: i) outline curriculum development, critically evaluate or make suggestions for material design; ii) propose course design, describe cases of development and delivery; iii) evaluate training courses and professional awareness in them; iv) emphasize the need for more technology in

course delivery and its application and v) suggest the implementation of new teaching methods, and also suggest a multinational cooperation and harmonization in aviation English language training.

Interestingly, we noted that many studies have been conducted in the military aviation sphere, both for pilots and ATCOs, with a growing need for integration, cooperation and harmonization in the development of language courses. In terms of methodological instruments used in most studies, we observed that many of them were limited to interviews and/or questionnaires applied to students and instructors only, while only a few use mixed method approaches or contrast the students and teachers perceptions with ICAO documents. As for the gaps detected on our critical view, ICAO rating scale seems to be too based on English for general purposes and the recommendations in Doc 9835 have been causing different interpretations and misunderstandings.

As we see it, future studies in aeronautical English will have to address English as a lingua franca and cross-cultural awareness in more detail. Meanwhile, corpus linguistics seems to be a tendency because it provides analysis of large amounts of authentic radiotelephony data. This methodology is present in studies in Brazil, the United States, Italy, France and Germany. At the same time, training is more and more regional and focused on the very specific purposes of different groups of professionals (ATCOs of different facilities, pilots with different experience backgrounds, civilian, military, *ab initio*, from different countries, etc.).

In the end of this journey, there seems to be common agreement that a more general oriented English course simply does not fit the specific professional needs of pilots and ATCOs, from civil or military background, in culturally diverse and distant parts of the world.

## REFERENCES

AIGUO, W. 2008. Reassessing the position of Aviation English: from a special language to English for Specific Purposes. *Ibérica* v.15, p. 151-163. Available at: <<https://www.redalyc.org/articulo.oa?id=287024060009>>. Access: 23 Jan. 2020.

ALIZIERI, S. 2010. *Aviation English: Analysis of corpus data and tentative proposal for a learner corpus*. Doctoral dissertation. Università degli Studi di Pavia. Italy. 86 p.

ARAGÃO, B. F. 2018. O uso de critérios autóctones no context aeronáutico: contribuições para uma nova escala de proficiência em inglês aeronáutico. In: M. V. R.; SCARAMUCCI, P. TOSQUI-LUCKS; S. M. DAMIÃO (eds.). *Pesquisas sobre inglês aeronáutico no Brasil*. Campinas: Pontes. p. 243-270.

- BABBONI, C. A. 2017. *Atividades de pronúncia em livros didáticos de Inglês Aeronáutico: reflexões sob o prisma de falantes de português brasileiro*. M.A. thesis (Mestrado em Linguística Aplicada) – Faculdade de Ciências Sociais e Letras, Universidade de Taubaté, Taubaté. 187 p.
- BOCORNY, A. E. P. 2011. Panorama dos estudos sobre a linguagem da aviação. *RBLA*, Belo Horizonte, v. **11**, 4, p. 963-986.
- BONIFÁCIO, E. M. R. 2015. *CrITÉrios de avaliação de livro didático para o ensino-aprendizagem de inglês para controladores de tráfego aéreo brasileiros: uma proposta de checklist*. M.A. thesis (Mestrado em Estudos Linguísticos e Literários em Inglês) – Faculdade de Filosofia, Letras e Ciências Humanas, Universidade de São Paulo, São Paulo, 170 p.
- BOROWSKA, A. P. 2017. *Avialinguistics: The Study of Language for Aviation Purpose*. Frankfurt: Peter Lang, 332 p.
- CRUZ, A. P. C. S. 2015. *Conscientização linguística e profissional para o controlador de tráfego aéreo: uma proposta didática para o ensino - aprendizagem de Língua Inglesa baseada em tarefas*. M.A. thesis. (Mestrado em Linguística Aplicadas) – Faculdade de Ciências Sociais e Letras, Universidade de Taubaté, Taubaté. 137 p.
- CHINI, M. R. R. C. 2014. *Ensino-aprendizagem de Inglês para o Controlador de Tráfego Aéreo Brasileiro: em busca de novos rumos*. 195 f. Dissertação (Mestrado em Linguística Aplicada) – Faculdade de Ciências Sociais e Letras, Universidade de Taubaté, Taubaté. 195 p.
- DIAS, R. T. S. 2016. *Análise de imagens no livro Aviation English: uma contextualização para o ensino de ESP para controladores de tráfego aéreo pré-serviço brasileiros*. 207 f. Dissertação (Mestrado em Linguística Aplicada) – Faculdade de Ciências Sociais e Letras, Universidade de Taubaté, Taubaté. 207 p.
- DOUGLAS, D. 2014. Nobody seems to speak English here today: Enhancing assessment and training in aviation English. *Iranian Journal of Language Teaching Research*, [s.l.], **2.2**, p.1-12. Available at:  
<<https://files.eric.ed.gov/fulltext/EJ1127407.pdf>>. Access: 23 Jan. 2020.
- EMERY, H. J. 2014. Developments in LSP Testing 30 years on? The case of Aviation English. *Language Assessment Quarterly*, vol. 11, n.2, UK, p. 198-215. Available at:  
<<http://dx.doi.org/10.1080/15434303.2014.894516>>. Access: 10 May 2020.
- EMERY, H.; ROBERTS, A. 2008. *Aviation English: for ICAO compliance*. Oxford: Macmillan. 127 p.
- ER, M.; KIRKGÖZ, Y. 2018. Introducing Innovation into an ESP Program: Aviation English for Cadets. *Key Issues in English For Specific Purposes in Higher Education*,

[s./l.], p.179-199. Available at: <[http://dx.doi.org/10.1007/978-3-319-70214-8\\_11](http://dx.doi.org/10.1007/978-3-319-70214-8_11)>. Access: 10 May 2020.

ESTIVAL, D. 2019. Aviation English Training for Native English Speakers: Challenges and Suggestions. *International Civil Aviation English Association*. Chiba, Tokyo: Embry-Riddle Aeronautical University Scholarly Commons. Available at: <[file:///Users/analgia/Downloads/Estival\\_Proceedings\\_ICAEA-2019.pdf](file:///Users/analgia/Downloads/Estival_Proceedings_ICAEA-2019.pdf)>. Access: 02 Jun. 2020.

ESTIVAL, D.; FARRIS, C.; MOLESWORTH, B. 2016. *Aviation English: A lingua franca for pilots and air traffic controllers*. New York: Routledge. 193 p.  
FRIGINAL, E.; MATHEWS, E.; ROBERTS, J. 2019. *English in global aviation: context research and pedagogy*. New York: Bloomsbury. p. 215-245.

HANSEN-SCHIRRA, S.; MAKSYMYSKI, K. 2013. *Aviation Communication: Between theory and practice*. Germersheim, FTSK62, Peter Lang Edition. p. 33-42.

HUTCHINSON, T.; WATERS, A. 1987. *English for Specific Purposes: A learning-centered approach*. Cambridge: Cambridge University Press, 183 p.

INTERNACIONAL CIVIL AVIATION ORGANIZATION/ICAO. 2009. Guidelines for Aviation English Training Programs: Circular 323 NA/185, Montreal.

INTERNATIONAL CIVIL AVIATION ORGANIZATION/ICAO. 2010. Manual on the implementation of ICAO language proficiency requirements: Doc. 9835 AN/453. 2. ed. Montreal, Canada. Available at: <<https://skybrary.aero/bookshelf/books/2497.pdf>>. Access: 23 Mar 2020.

JENKINS, J. 2020. *The phonology of English as an International language*. Oxford: Oxford University Press.

KARIMI, P.; SANAVI, V. R. 2014. Analyzing English Language Learning Needs among Students in Aviation Training Program. *Procedia-Social and Behavioral Sciences*, Islamic Azad University, Roudehen Branch ELT Department, Tehran, v. 98, p. 852–858, 2014). Available at: <<https://www.sciencedirect.com/science/article/pii/S1877042814025828>>. Access: 23 Jan. 2020.

KATSARSKA, V. 2017. Harmonization of University Aviation Courses. *The Journal of teaching English for specific and academic purposes*, [s./l.], 5.3, p.449-458. Available at: <<http://espeap.junis.ni.ac.rs/index.php/espeap/article/view/538>>. Access: 23 Jan. 2020.

KIM, H.; ELDER, C. 2009. Understanding aviation English as lingua franca. *Australian Review of Applied Linguistics: Understanding English as a lingua Franca articles*, [s./l.], v. 32, n. 3, p. 23.1-23.17. Available at: <<https://benjamins.com/catalog/aral.32.3.03kim>>. Access: 26 Mar. 2020.



KOVTUN, O.; KHAIDARI, N.; HARMASH, T.; MELNYK, N.; GNATYUK, S. 2020. Communication in Civil Aviation: Linguistic analysis for educational purposes. *CEUR-WS, Ukraine*, v. **2588**.40, [s./p.]. Available at: <http://ceur-ws.org/Vol-2588/paper40.pdf>. Access: 10 May 2020.

KUMPAN, O.; KHARLAMOVA, L. S. 2019. Implementation of Interactive Teaching Methods in the Process of Developing Professional-Communicative Proficiency of Future Pilots. *International Journal of Science Annals*, [s.l.], **2**,1-2, p.12-18, 2019. Kharkiv Regional Public Organization. Available at: [http://culturehealth.org/ijsa\\_archive/Vol.\\_2,ijsa\\_No\\_1-2,\\_2019-2.pdf](http://culturehealth.org/ijsa_archive/Vol._2,ijsa_No_1-2,_2019-2.pdf). Access em: 10 May 2020.

KUSHI, Q. 2012. Language Skills of PMA Cadets: Insights into Perceptions of Instructors. *Pakistaniaat: A Journal of Pakistan Studies*, Pakistan, **4**.3, p. 175-188. Available at: <https://www.semanticscholar.org/paper/Language-Skills-of-PMA-Cadets%3A-Insights-into-of-Khushi/db4f7aa254b3b037e1b29f434706b64433edfd4b>. Access: 23 Jan. 2020.

LOPEZ, S. 2013. Norme(s) et usage(s) langagiers: le cas des communications pilote-contrôleur en anglais. Doctoral dissertation in Linguistics. *Universit' e Toulouse le Mirail - Toulouse II*. Français. 435 p.

MEKKAOU, G.; MOUHADJER, N. 2019. Addressing air traffic controllers' English language proficiency needs: Case of Zenata Airport. *Global Journal of foreign Language Teaching*, v. **9**, 3. p. 167-183. Available at: [https://www.researchgate.net/publication/335823257\\_Addresssing\\_air\\_traffic\\_controllers'\\_English\\_language\\_proficiency\\_needs\\_Case\\_of\\_Zenata\\_Airport](https://www.researchgate.net/publication/335823257_Addresssing_air_traffic_controllers'_English_language_proficiency_needs_Case_of_Zenata_Airport). Access: 10 May 2020.

MODER, C. L. 2013. Aviation English. In: B. PALTRIDGE; S. STARFIELD; (eds.). *Handbook of English for Specific Purposes*. [s.l.]: John Wiley & Sons, Inc. Cap. 12. p. 227-242. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1002/9781405198431.wbeal0068>. Access: 23 Jan. 2020.

MONTEIRO, A. L. 2019. Workshop L.: From a Language-Only Approach to a Broader View of Communicative Competence for Intercultural Communications in Aviation (2019). *International Civil Aviation English Association*. Available at: <https://commons.erau.edu/icaea-workshop/2019/day-3/3>. Access: 30 Mar. 2020.

PACHECO, Aline. 2019. *English for aviation: guidelines for teaching and introductory research*. Porto Alegre: EdiPUCRS. 258 p.

PARK, K. 2015. A Needs Analysis of English for Korean Naval Officers. Master of Arts in Teaching of English as a Second Language — Graduate College, University of Illinois at Urbana-Champaign, Urbana, Illinois. 101p. Available at:

<<https://www.ideals.illinois.edu/bitstream/handle/2142/78565/PARK-THESIS-2015.pdf?sequence=1>>. Access: 23 Jan. 2020.

PARK, M. 2018. Innovative assessment of aviation English in a virtual world: Windows into cognitive and metacognitive strategies. *ReCALL- European Association for Computer Assisted Language Learning*, p. 1-18.

PRADO, M. C. A. 2015. *Levantamento dos padrões léxico-gramaticais do inglês para aviação: um estudo vetorado pela Linguística de Corpus*. M.A. thesis. (Mestrado em Estudos Linguísticos e Literários em Inglês) – Faculdade de Filosofia, Letras e Ciências Humanas, Universidade de São Paulo, São Paulo. 133 p.

\_\_\_\_\_. 2019. *A relevância da pragmática no ensino do inglês aeronáutico: Um estudo baseado em corpora* [The relevance of pragmatics in the teaching of aviation English: A corpus-based study]. Doctoral dissertation, Universidade de São Paulo. Available at: <[www.teses.usp.br](http://www.teses.usp.br)>. Access: 1 Jun. 2020.

QADDOMI, H. A. 2013. English for Specific Purposes in Palestinian context: Determining EFL cadets' needs at Al Istiqlal University. *Theory and Practice in Language Studies*, Palestine, 3.7, p. 1.110-1.122. Available at: <<http://www.academypublication.com/issues/past/tpls/vol03/07/04.pdf>>. Access: 23 Jan. 2020.

ROBERTS, J.; ORR, A. 2020. Language Education for Ab Initio Flight Training: a plan going forward. In: S. K. KEARNS; T. J. MAVIN; S. HODGE (eds.). *Engaging the next generation of aviation professionals*. N.Y: Routledge, 2020. p. 149-162

SÁ, P. P. T. F. 2010. *Novos caminhos para o conteúdo programático das disciplinas Inglês 2 e Inglês 3 do curso de Formação de Controladores de Tráfego Aéreo Militares*. M.A. thesis (Mestrado em Linguística Aplicada) – Faculdade de Ciências Sociais e Letras, Universidade de Taubaté, São Paulo. 130 p.

SANTOS, M. G.; PACHECO, V. A.; REYES, R. R.; VARGAS, G. V. 2018. Analysis of the methodology applied in Aviation English course at a military school in Salinas. *Journal of Education and Human Development*, [s/l], p. 39-44. Available at: <[researchgate.net/publication/334612042\\_Analysis\\_of\\_the\\_Methodology\\_Applied\\_in\\_Aviation\\_English\\_Course\\_at\\_a\\_Military\\_School\\_in\\_Salinas](https://researchgate.net/publication/334612042_Analysis_of_the_Methodology_Applied_in_Aviation_English_Course_at_a_Military_School_in_Salinas)>. Access: 23 Jan. 2020.

SILVA, A. L. B. C. 2016. Uma análise de necessidades de uso da língua inglesa por oficiais aviadores do Esquadrão de Demonstração Aérea da Força Aérea Brasileira. M.A. thesis. (Mestrado em Linguística Aplicada) – Instituto de Estudos da Linguagem, Universidade Estadual de Campinas, Campinas, 2016a. Available at: <<http://repositorio.unicamp.br/handle/REPOSIP/320921>>. Access: 10 May 2020.

\_\_\_\_\_. 2019. A construção da identidade militar em narrativas de pilotos da 'Esquadrilha da Fumaça': revisitando uma análise de necessidades de uso de inglês. : revisitando uma análise de necessidades de uso de inglês. *Entretextos*, Londrina, PR,

19.2, p. 5-24, 2019. Available at:

<<http://www.uel.br/revistas/uel/index.php/entretextos/article/view/32578>>. Access: 10 May 2020.

SOLOVOVA, O.; SANTOS, J. V.; VERISSIMO, J. 2018. Publish in English or Perish in Portuguese: Struggles and Constraints on the Semiperiphery. *MDPI Publications*, **6.25**. Available at:

<[https://www.researchgate.net/publication/325560032\\_Publish\\_in\\_English\\_or\\_Perish\\_in\\_Portuguese\\_Struggles\\_and\\_Constraints\\_on\\_the\\_Semiperiphery](https://www.researchgate.net/publication/325560032_Publish_in_English_or_Perish_in_Portuguese_Struggles_and_Constraints_on_the_Semiperiphery)>. Access: 10 May 2020.

SOUZA, P. R. 2018. *O efeito retroativo do EPLIS nas percepções, atitudes e ações de professores e alunos de um curso de formação em controle de tráfego aéreo*. Doctoral dissertation - Universidade Estadual de Campinas, Instituto de Estudos da Linguagem, Campinas, SP. 384 p. Available at:

<<http://www.repositorio.unicamp.br/handle/REPOSIP/332731>>. Access: 30 Mar. 2020.

TAMM, J.; AAVER, A.; ANDRESEN, N.; UMBORG, J. 2012. Learning outcome based curriculum development: example of Estonian Aviation Academy. *Electronic International Interdisciplinary Conference [s/l]*, p.602-605. Section: 10. Electronics, electrical Systems, Electrical Engineering. Available at:

<<https://www.etis.ee/Portal/Publications/Display/9f41b0e8-7c0b-48ee-bf74-b31b69b26e13>>. Access: 10 May 2020.

TOSQUI-LUCKS, P.; SOUZA, P. R.; RAYMUNDO, N. A.; GUERREIRO, N. C.; ARAGÃO, B. F. 2016. Ensino e Avaliação de Língua Inglesa para Controladores de Tráfego Aéreo como Requisito de Segurança de Voo. *Revista Conexão Sipaer*, [s/l], **7.1**, p. 44-54. Available at:

<<http://conexaosipaer.cenipa.gov.br/index.php/sipaer/article/view/383>>. Access: 23 Jan. 2020.

TOSQUI-LUCKS, P. 2018. Aplicações de corpora no ensino e na avaliação de inglês aeronáutico: estado da arte, reflexões, direcionamentos. [Applications of corpora in the teaching and testing of aeronautical English: state-of-the-art, reflections, guidelines]. In: M. V. R. SCARAMUCCI; P. TOSQUI-LUCKS; S. M. DAMIÃO, *Pesquisas sobre Inglês Aeronáutico no Brasil*. Campinas: Pontes. p. 89-114.

\_\_\_\_\_. 2019. *Elaboração de um módulo de atividades didáticas a partir de corpora de comunicações piloto-controlador em língua inglesa*. Relatório Final de Pesquisa de Pós-Doutoramento. São Paulo: Faculdade de Filosofia, Letras e Ciências Humanas, Universidade de São Paulo. 136 p.

TOSQUI-LUCKS, P.; SILVA, A. L. B. C. 2020. Da elaboração de um glossário colaborativo à discussão sobre os termos inglês para aviação e inglês aeronáutico. *Estudos Linguísticos*, São Paulo, v. **48**, 4, p. 97-116. Available at: <<https://revistas.gel.org.br/estudos-linguisticos/issue/view/66/showToc>>. Access: 2 Jun. 2020.

\_\_\_\_\_ . (forthcoming). Aeronautical English: Investigating the Nature of this Specific Language in Search of New Heights. *The ESPecialist*. v.41, n. 3

VERNE, J. 1873 *Around the World in Eighty Days*. Revised and adapted translation, 1994. London: Penguin Popular Classics.

ZOLFAGHARIAN, A. 2017. Needs Analysis of Aviation English for Air Traffic Controllers. *International Journal of Language Learning and Applied Linguistics World*, v. **16.1**, p. 54-68. Available at:  
<[https://www.academia.edu/40173939/NEEDS\\_ANALYSIS\\_OF\\_AVIATION\\_ENGLISH\\_FOR\\_AIR\\_TRAFFIC\\_CONTROLLERS](https://www.academia.edu/40173939/NEEDS_ANALYSIS_OF_AVIATION_ENGLISH_FOR_AIR_TRAFFIC_CONTROLLERS)>. Access: 10 May 2020.