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SAFETY-CRITICAL LANGUAGE COMPETENCE IMPROVEMENT WITHIN FLIGHT SAFETY CULTURE

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Summary. *The article analyzes a decisive impact of foreign language competence on flight safety, students' attitude to and assessment of the e-learning process in the context of education transition to online environment, as well as suggests solution to the problem of safety-critical language competence improvement within flight safety culture of future professionals.*

Keywords: *e-learning process; flight safety; flight safety culture; foreign language competence.*

The international aviation community, including ICAO, IATA, Eurocontrol, EASA and other organizations, is paying increased attention to the issues of flight safety culture. The flight safety culture means the way of how one perceives, evaluates and ranks flight safety among the priorities of an aviation entity. The culture influences the values, beliefs and norms that we share with other members of various social groups. Culture brings us together as group members and tells us how to behave in normal and emergency situations. Some people consider culture as a “collective mind programming”. Culture, as a complex social dynamic setting the rules of the game or the framework for all our interpersonal relationships, is the bunch of the methods people use to carry out their activities in a particular social environment. Culture creates the context in which all events take place. As far as flight safety management is concerned, awareness of the culture context is a decisive factor in determining a person's performance characteristics and limits.

The ICAO Safety Management Manual states that “organizational culture sets the boundaries for accepted executive and operational performance by establishing the norms and limits. Thus, organizational culture provides a cornerstone for managerial and employee decision making.” [4].

Aviation safety has to be beyond national boundaries, including all cultures within them. On a global scale, the aviation industry has achieved remarkable success in standardizing all types of aircraft regardless of their countries and ethnic



groups. However, it is not difficult to notice the difference in people's response to the same events and situations when they interact within a particular entity as their actions are affected by different cultural backgrounds. Various cultures solve the same problems differently.

There are three levels of culture which exert significant impact on flight safety management.

1) National culture. It recognizes and reflects the national characteristics and values of specific nations. People of different nationalities differ, for example, in their reactions to their superiors, as well as in how they behave under conditions of uncertainty and ambiguity and how they express their individuality. Not all of them are equally in harmony with the group efforts (team or organization).

2) Professional culture. It recognizes and reflects the behavior and characteristics of specific professional groups (e.g. typical behavior of pilots compared to typical behavior of ATC or aircraft maintenance engineers). Due to staff selection, education and training, field work experience, etc, there is a tendency for professionals (e.g. doctors, lawyers, pilots and ATC controllers) to learn the system of values and develop behavioral skills.

3) Corporate culture. It recognizes and reflects the behavior and values of particular organizations (e.g. the behavior of employees in one company compared to the behavior of employees in another company or the behavior of people in the public sector compared to the private one). Organizations provide a shell for national and professional cultures. The creation and development of safety culture is most done at the organizational level. This is usually called a corporate security culture.

It should be noted the role of culture in how automation is used; how instructions are developed; how documentation is prepared, presented and sent; how training courses are developed and organized; how production tasks are distributed, as well as in the relationship between pilots and air traffic control services (ATC), and so on. In other words, we admit that culture affects almost all types of interpersonal relationships. In addition, cultural aspects are gradually taken into account when designing equipment and tools. The equipment may visually seem neutral in respect to any culture, but it reflects a certain bias of the manufacturer (for example, an explicit preference for English language in most software). At the same time, there is no right or wrong culture; they are what they are, and in each culture there are both strengths and weaknesses.

An effective safety method is to achieve a positive security and safety culture for the operator. In simple words, it means that all personnel must be responsible for all their actions and take into account their possible impact on flight safety. This way of thinking must be so deeply rooted to become a "culture". A positive safety culture plays an important role in ensuring the effective flight safety management system. The culture is evolving as the system is gaining relevant experience. The positive safety culture is characterized by the following distinctive features: a) flight safety as an integral part of risk factor control strategy (i.e. loss minimization); b) decision makers and operating personnel realize obvious short- and long-term dangerous factors in the organization activity.

Typical positive safety cultures include: a) information awareness cultures where management keep their personnel informed of possible hazards and risks in

their workplaces. The personnel acquire knowledge, skills and experience for safety work and are encouraged to identify safety hazards and find ways to overcome them; b) learning cultures where training is considered as something more than a need for initial professional training; it is rather seen as a lifelong process. Employees are encouraged to develop and use their own skills and knowledge to boost safety in the organization.

Consequently, in assessing the organization's safety culture performance senior management should recognize possible human factors of organizational nature that would jeopardize flight operations; inevitable occasional failures and abnormalities; they should foresee possible errors and train personnel to identify and correct them. In addition, senior management should be committed to allocate necessary resources for sustainable flight safety, take preventive steps to eliminate organizational and technological error risks. In doing so, we suggest brainstorming as an effective technique for playing out likely worse-case scenarios, etc.

In its analysis of human factor-related aviation incidents (accidents) with using English, the International Civil Aviation Organization (ICAO) referred Aviation English to one of the risk factors along with errors in piloting, aircraft failures, adverse meteorological conditions, etc. English in aviation has become not so much a means of communication as an integral part of the interaction of air traffic control system elements. Therefore, any failure (mistake) in the perception or transmission of information in English contains a serious risk of the system operations and hence, poses a threat to flight safety.

The air crash investigations have revealed different levels of Aviation English proficiency and incorrect use of terminology and phrases in both General (plain) English and standard radio exchange phraseology. It is well known that confirmation of instructions is not limited to the words "Ok" or "Rogez" (you are understood), but must be confirmed by the crews in respect of key parts of such instructions. It is interesting to note that the generally accepted term "Take-off" can now be used only in two phrases: "Cleared for take-off" and "Cancel takeoff clearance". In all other cases, you should use the word "Departure", e.g. "Ready for departure" (allowed takeoff), etc.

However, it is one thing to develop standard rules, and another to follow them. That is why, while fulfilling the standard rules, it is necessary to take into account not only the details and command of pilots', controllers' and ground staff's proficiency in Aviation English, but also cultural aspects in the aviation safety system. Let's run back to the largest language-caused collision in the history of civil aviation between British Thrinet 38 and Yugoslavian DS-9 planes when in the stressful situation the controller switched to his native language instead of English that led to the accident.

From the point of view of engineering psychology the perception, processing, analysis of information, decision-making, execution (in speech or motor activity) in the controller-crew-ground staff non-native language communication require additional time for reinterpretation, at least split second, that, given flight speed, would entail error risks, especially in the speech interaction channel. On this basis, ICAO strengthened the General and Aviation English proficiency requirements for pilots and civil aviation controllers, raising the scale to Levels 4 and 5. This means that aviation personnel must not only be fluent in the radio exchange phraseology,



but also be able to clearly explain any emergency situation in English. In other words, they should be able to understand, comprehend and modify speech in the abnormal and stressful situation if it differs from the standard phraseology and to avoid switching to the native language in its broadest sense. The main issues are how it can be achieved and how to teach, train, learn Aviation English to avoid such "language" disasters. There is a single solution: to gain great language proficiency and competence. And this is not merely a matter of an individual, but the educational language training institutions as well.

Thus, Aviation English begins at an educational institution, whose ultimate goal is to strictly comply Aviation English training with the ICAO standard. Aviation English is the highest level of practical application. It is neither a written translation, nor consecutive or even simultaneous interpretation. It is top of the line as it is used in real flight conditions and the lives of many people depend on their outcomes.

The key figure in language training is, of course, the personality of the teacher who must not only perfectly master the methods of teaching achieved over the years, but also have high moral qualities. He/She will neither allow the student with bad test results to proceed to the next stage of training, nor to license for aircraft operation and ATC. In this sense, it is strange when educational institutions have been trying to maintain the same enrollment and graduation rates. As the result, we have low-performing graduates and poorly-qualified employees.

Taking into account the importance of English language departments we suggest aligning them with those of specialized disciplines and flight safety and equaling the Aviation English tutor status with that of flight instructor. As for the students themselves, the traditional method: "If you do not know, we will teach! If you don't want to, we will make you!" should be forgotten, as well as the traditional argument of the low-grade student: "I've learnt, but don't remember!"

Language proficiency level of university graduates leaves much to be desired due to several reasons, of which the two major are competence and motivation. Competence relates to knowledge and actions in human practice. Competency-based learning of the language is based on functional and interactive approaches to the language nature. Language learning within the framework of this method depends on the social context of language usage. Language often appears as a way of interaction and a means of communication between people to achieve specific goals. In this regard, competency-based language learning is most often used as a basis for language teaching, where learners have special needs, particularly roles, and where the language skills they need are well predicted and defined. So, we highlight that language competence is the knowledge of vocabulary and certain grammar rules which help produce a meaningful statement. Aviation English competence means the ability and psychological readiness to communicate in aviation context out of visual contact with the observance of grammatical, lexical and phonetic norms of Aviation English register.

High motivation is obviously the sign of effective activity. It is vainly to teach the language to a non-motivated person. Only interested people who set certain goals learn a foreign language much easier, faster and with greater pleasure.

Researchers distinguish extrinsic and intrinsic motivation. The extrinsic motivation is influenced by parents, teachers, friends, surroundings, etc. Students

often have a certain level of extrinsic motivation, e.g. they need the language to pass a test or exam, to be promoted or even to hold down their job. Unfortunately, extrinsic motivation does not last long if the source of influence is not permanent and convincing. Students can't be well-motivated without intrinsic motivation because, as we mentioned above, the purpose of extrinsic motivation is to make a person study. The intrinsic motivation is a long and complex process for a person to realize the need to learn a foreign language for the goal he/she sets. But intrinsic motivation does need external support.

What makes students intrinsically motivated? The belief that they have skills to succeed. Learning a language requires regular effort and practice, especially when you don't live in the country where this language is spoken. Therefore, generating extrinsic and intrinsic motivation is needed to learn a foreign language as early as possible from school years.

When asking first-year students about their attitude to study the foreign language in a non-linguistic university, the majority feel uncertain and less motivated than master students.

According to psychological studies, students' adaptation to educational process finishes at the end of the 2nd or at the beginning of the 3rd year of study. A tutor's attitude and role is the most prominent here. He or she has to remember about the final goal of education for the developing of graduate's necessary competence in professional knowledge and personal qualities such as independence, self-esteem, decision-making, creativity and continuous learning.

Adaptation of a student to a new working environment depends on his or her personal and intellectual level. Young people adhere differently to a new educational system and to specialized study of a foreign language. That is why the primary task of a foreign language teacher for special purposes is to didactically adapt students to the learning process in class and at home.

There are four prerequisites of successful motivation: interest, actualization, expectation (of success and control), and satisfaction.

Motivation is grouped into three levels.

1. Language level (culture, society, practical language importance and its mastering).
2. Student's level (self-efficiency, confidence, result motivation).
3. Teaching level (influence of teacher's personality, his or her behavior, teaching style, curriculum, teaching methods, group dynamics).

The didactical adaptation at foreign language classes for special purposes implies students' adherence to new forms and methods of language teaching according to students' future occupation. The adaptation criteria foster students to follow tutor's instructions on classroom and self-study work and raising their general level of culture. For achieving the required results, the tutor should use practical guiding technologies for the development of critical thinking: conceptual, context and game teaching. The tutor creates a suitable environment for classroom learning, demonstrates how to speak correctly in both foreign and native languages, corrects students' speeches in the foreign language, ensures appropriate language level for a particular group, gives differentiated tasks to high- and low-performing students. The methods for introducing and practicing specialized foreign language



terminology include interactive, researching, imitational, modeling and case studies. Properly planned and organized lessons help students to master lexical and grammatical material, to do practical assignments, to eagerly search for, read and make presentation using foreign language educational and instructional materials.

To promote the efficiency of teaching process, the following are useful didactical projections:

- Planning the goal direction of a lesson;
- Presenting subject information and didactical material;
- Defining the structure and content of students' learning and cognitive activities;
- Predicting the results of the learning process.

Curricula and teaching methods undoubtedly do play a huge role in the learning process and the quality of students' training. However, they can only be effective if they are based on latest innovations in pedagogy, linguistics, general and engineering psychology, IT technologies. The development and adjustment of such products should be an ongoing process that provides a vector for improving the entire learning process and enhancing teaching skills.

The academic English curriculum in aviation institutions of higher education provides for training students in the following directions.

1. General English, i.e. development of pronunciation and grammatical skills for written and oral communication without distortion of language meaning; mastering the basic terminology in monologues and dialogues, as well as development of listening, reading and writing skills.

2. Aviation English, i.e. mastering of aviation terminology in the amount of 1200 lexical units; developing the skills of using reference literature and reading specialized professional literature and technical documentation; mastering Aviation English grammatical structure; developing the skills of annotating and referencing.

3. Radio Telephony Communication phraseology, i.e. training of radio exchange phraseology. Since Ukraine joined the Bologna Process and the European Higher Education Area we divide our educational process into modules depending on the students' years of study. Content-related module is defined as a range of educational program elements combined under their content around a certain educational object. At these stages, the knowledge of grammatical structures is corrected and leveled, the lexical minimum is expanded, and pronunciation, reading, listening, writing, and oral speech skills are brushed up.

Another important aspect in teaching and learning Aviation English is the translation of original authenticated texts as any foreign narration has its own subtle nuances and shades, grammatical structures, word order in the sentence and idiomatic expressions which complicate understanding and translation and require finding appropriate and correct analogues in the language of translation. Indeed, the communicative approach should prevail because in real communication learners (students) understand the importance of language learning and learn how to use it, thus generating perspective and procedural motivation.

Almost all students have perspective motivation realizing the importance of English in their life and career. But very often students are distracted from future welfare by present problems, entertainments and laziness. The influence of

procedural motivation is completely different as it is connected with satisfaction from learning process. That's why when a teacher manages to form such motivation the success in mastering English is granted. In general, we should note that internal motivation relates to feelings, desires, efforts and attitudes as a self-motivated approach in learning.

The guidance for language learning can be considered as instrumental (connected with the language learners' desire to succeed in some objectives such as passing exam or career promotion); and integrated (connected with the language learners' positive personal attitude to the language, people who speak it, literature, etc.).

It has been proved that integrated motivation fosters the achievement of notable success in learning English as it is impossible to progress in learning the language you have no interest in.

The lockdown we are still currently facing with have affected all sectors of our life, including education. We had to work and finish this academic year remotely applying the absolutely new method of Aviation English teaching and learning. We had to adapt our lesson plans and tools to these challenges to ensure proper online communication with and assessment of students. It was difficult, but this practice revealed pros and cons of distance learning compared to the traditional classroom. The available e-learning programs were economically accessible solutions. They are popular among language learners as they can use them at any time and in any place, only sometimes resorting to tutor's support. For example, the well-known e-Learning systems for aviation English DynEd or Relta help improve pronunciation, structure, vocabulary, speed of speech, understanding and free communication. Usually the programs contain examples of standard and emergency situations, videos, a speech recognition or recording system for further evaluation by a qualified instructor; some programs are developed together with airlines.

This approach allows the tutor rationally allocate their teaching time and to continually monitor each student's knowledge. For students, it serves as a motivational incentive to make an effort in their studies and move on to the end of the course.

Having analyzed all these and realizing that traditional classroom is gradually being substituted with online learning we are more prone to blended learning due to the following. Firstly, blended learning encourages students to master new knowledge independently, but with the consolidation of materials in the classroom. Secondly, the availability of training anywhere and at any time should be. Thirdly, an individual approach to each student and comprehension of learning material taking into account the possibilities of independent study. This means that students with a higher level of training have the opportunity to study material of increased complexity in the same group, and students with a lower level of training have the opportunity to devote more time to refining the material. Also, the method of blended learning develops creative and constructive thinking of students, communication skills in team projects, research skills, the ability to process and select the necessary information, save time in the classroom by making individual topics for independent study, having constant access to the required learning materials and, accordingly, the opportunity for continued improvement of knowledge and revision of the material they studied.



But the benefits of blended learning are not only one-sided. We want to demonstrate the effectiveness of this process for the teacher/lecturer. Firstly, blended learning improves the efficiency and quality of teaching through the use of the latest information technologies. Secondly, the assessment of the homework is automated. Thirdly, this method is convenient for checking the learnt material and presenting a new one. Fourthly, it promotes mutual control over the learning process both by the teacher and by the student. Thus, we consider the undoubted advantages of blended learning are the intensification of the learning process at all levels, the improvement of teaching efficiency and quality due to the application of modern information technologies, the stimulation of cognitive activity and the strengthening of interdisciplinary links.

The issue of introducing blended learning in aviation universities is a matter of time and it is necessary to take into account all aspects, including the university's policy on curricula, material planning, administrative and financial aspects, as well as technical equipment. Among other things, we want to emphasize the need to provide appropriate technological resources for conducting classroom and online classes, maintaining students' interest.

The most important element in teaching this "hybrid" course is the pedagogical component. Mastering the teacher's method of conducting classroom and distance learning is the key to the success of students' communicative and specialized language competence. The teacher must develop a learning format, tasks, prepare handouts, work out assessment criteria for distance and classroom classes. When students have enough learning materials and resources to learn a foreign language, they can easily overcome their doubts and uncertainties, independently control their own learning process, independently determine learning strategies and take personal responsibility for acquiring their knowledge.

Blended learning is impossible without a reliable learning management information system. You need to know how to register, how to work with different tasks, how to implement appropriate didactic strategies in a virtual environment. The moral aspect also plays an important role in blended learning: the teacher's equal attitude towards students and his/her assistance to those who need it most. However, in blended learning, teachers face a common problem. Some students create a login on the Internet under someone else's name or use the work of others to perform their own tasks. Therefore, teachers should focus on the autonomy of the educational process and the authenticity of classroom and distance learning.

The expansion of Ukraine's international relations in various fields of economy, science, education and culture, its joining to the Bologna Process and the European Higher Education Area in 2010 have substantially increased the demand for sound knowledge of foreign languages. Therefore, the issue of improving foreign language training of future professionals, in our context of Aviation English, is high on the agenda as it does not only ensure flight safety, but also opens up vast opportunities for Ukrainian specialists to participate in international projects, conferences, symposia, meetings to share experiences and communicate with foreign colleagues and partners. The need to switch to e-learning resources in the context of university education is resulted from searching of new teaching methods in modern conditions, new ways to motivate students, raising such important qualities of

students as independence in finding the necessary information, its generalization and systematization, managing student's own academic time ability. The undoubted advantages of blended learning are the intensification of the educational process at all levels, increasing the efficiency and quality of teaching through the use of information technology, stimulating cognitive activity and deepening interdisciplinary links. It is clear that the process of transition from the traditional form of learning to distance learning is not quick and easy. It requires a lot of efforts and time. In teaching we have to stick to internal motivation where drives to learning are derived from that person who is mastering English. This high positive internal motivation in mastering a language arises when a learner has personal important value.

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УДОСКОНАЛЕННЯ БЕЗПЕКОВОЇ МОВНОЇ КОМПЕТЕНЦІЇ В МЕЖАХ КУЛЬТУРИ БЕЗПЕКИ ПОЛЬОТІВ

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Анотація. У статті проаналізовано вирішальний вплив іноземної мовної компетенції на безпеку польотів, ставлення та оцінку здобувачами процесу е-навчання в контексті переходу освіти до онлайн-середовища, а також запропоновано вирішення проблеми удосконалення безпекової мовної компетенції майбутніх фахівців в межах культури безпеки польотів.

Ключові слова: безпека польотів; іншомовна компетенція; культура безпеки польотів; процес е-навчання.