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Defining the Underlying Factors of Ukrainian Student Pilots' Motivation to Learn Aviation English

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Abstract: Motivation plays an important role in language acquisition. The article highlights the necessity of student pilots' motivation in learning English. The research sheds light on the underlying factors of motivation in learning aviation English. The concept "motivation" was analyzed in the article. The factors of influence on students' motivation were grouped into three categories: how teacher's activity influences the educational process; how students' activity influences the educational process; how organization of the educational process influences quality of studying. The research focused on studying pilots' motivation to learn aviation English. The participants of the experiment were 247 people, among them third- and fourth-year student pilots of the Flight Academy of the National Aviation University (Kropyvnytskyi, Ukraine), third- and fourth-year student pilots of the Kharkiv Air Force University named after I. M. Kozhedub (Kharkiv,Ukraine), flight instructors and pilots of aviation company "URGA" (Kropyvnytskyi, Ukraine). The reason behind this division was to test motivation, to define the key factors and motives of pilots' motivation to learn aviation English at flight training institutions; to trace the dynamics of changes taking place in the training of students from the third to the fourth year of studying. Data were collected by giving student pilots open-ended questionnaires, which comprise 3 blocks of the underlying factors of motivation to learn aviation English. After that a statistical analysis was conducted which showed a variation in the results between the groups of respondents; it allowed to define a variety of factors influencing students' motivation. Each factor was assessed on the 7-point evaluation scale. The number of points received for each factor was summed up and divided by the total number of respondents. The interpretation of received results has been presented in the paper.

Keywords: *aviation English; factors of influence; ICAO; motivation; student pilots.*

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Introduction

The ultimate goal of language training for pilots is to develop their listening and speaking skills in general and aviation English. Paramasivam (2013) stated that the term aviation English encompasses radio telephony phraseology in air traffic control as well as plain English use that is specific to the language of airport personnel especially pilots and air traffic controllers. The term is not new to the area of English for Specific Purposes (ESP). In 1962, the International Civil Aviation Organization (ICAO, which is a specialized agency of the United Nations that sets standards for aviation safety and security and promotes cooperation in international civil aviation) ruled that air traffic control must provide services in English and since then aviation English appeared as a term in ESP.

According to Corrizzato and Goracci (2014), "Aviation English is therefore prominently employed in aerospace education, and represents a pivotal source for aviation professionals whose work depends exclusively on the use of language" (Corrizzato and Goracci, 2014, p. 239).

The certain degree of **fluency** is required because pilots and air traffic controllers need to communicate effectively in routine and emergency situations. In addition, **interaction** must be on a high level as they must receive information, process it and react accordingly. **Vocabulary** should be sufficient enough to describe the situations which occur while flying. It is highly recommended to have a good command of **grammar structures** to be able to convey the messages. **Pronunciation** must be clear in order not to create any confusion for your colleagues.

Ragan (1997) outlining the importance of acquiring aviation English stated that English language "is concerned about the safety hazard caused by pilots' inability to communicate sufficiently by radio and to deal adequately with air traffic control" (Ragan, 1997, p. 25).

Good knowledge of phraseology is sufficient in 95% of routine situations, but there are also non-routine situations which can become emergency situations where a pilot's proficiency of speaking English can save lives of many passengers. Thus, skills to communicate effectively in English gained an ultimate importance.

The International Civil Aviation Organization (ICAO) has introduced language proficiency requirements for pilots and air traffic controllers with the objective to improve the level of language proficiency globally and reduce the frequency of communication errors. Historically,

insufficient English language proficiency on the part of the flight crew or the controller has contributed to a number of accidents and serious incidents.

According to ICAO Language Proficiency Rating Scale future pilots must have at least Level 4 (Operational) which is assessed according to the criteria such as: pronunciation, structure, vocabulary, fluency, comprehension, interactions (Manual on the Implementation of ICAO Language Proficiency Requirements, 2010).

Students who are eager to develop fluent speaking skills must have a high level of motivation. Lack of encouragement, on the other hand, results in poor knowledge of English. This fact may lead to more serious consequences in the future.

From the above mentioned it is obvious that one of the priority tasks of the teaching staff and flight instructors is the formation in future pilots' motivation for professional communication in English. The second important task was to find out pedagogical means that would increase the level of motivation for professional communication in the process of learning aviation English. In the scope of the current research the key factors which influence pilots' motivation to learn English are going to be considered.

Problem of Research

The motivation for aviation English plays an important role in the professional pilots' activity. The issue of the development of motivation is one of the central in learning aviation English, including factors that affect the behavior, stimulate and support professional activity at a certain level. Motivation is considered not only as a condition for effective acquisition of language, but also as an important factor in the development of pilots' outlook. Moreover, motivation for aviation English is a significant component that may affect the level of safety of flights on international airlines.

Thus, the research aimed:

1. To study the role of motivation for student pilots to learn aviation English.

2. To define and group the underlying factors which influence the development of motivation of future student pilots to learn aviation English.

Research Focus

The role of motivation. Saienko (2017) researching the topic of cognitive development of students in foreign language acquisition pays attention to the fact that teaching practice shows that a high level of motivation can

ensure success in learning even for students with mediocre abilities. According to her words, together with such components as educational assignments, training actions, control and self-control, assessment and self-assessment motivation forms an external structure of educational process and affects students' academic behaviour which has two basic dimensions: focus and intensity. A cognitive type of academic motivation is based on students' intellectual activity and constant pursuit of knowledge. Negative motivation reveals itself in attempts to avoid low marks and censure of teacher for the failure of educational tasks. The development of cognitive abilities, positive attitude to language acquisition process and to a subject of English for Specific Purposes intensify training activity and improve its efficiency which means that motivation becomes a source of active focus of students' behavior including educational behaviour. If the motivational determinant is insufficiently developed it fails to stimulate effective learning and causes adverse conditions for the linguistic abilities development.

Definition. The issue of motivation has been in the centre of attention of many psychologists and education researchers. Deci & Ryan (2000) understand the term motivation as the feeling of a person who is energized or activated towards an end, thus to be motivated means to be moved to do something. They pay attention to the fact that people vary in the type of motivation (orientation) and not only in the amount of motivation (level of motivation).

Motivational beliefs and attitudes important for self-regulation have been in the centre of interest of many scientists (Pintrich & Schunk, 1996; Pintrich & Schrauben, 1992; Stipek, 1993).

Speaking about motivation in learning a foreign language, Crookes and Schimts (in Norris, 2001) stated, "Motivation has been identified as the learners' orientation with the regards to the goal of learning a second language" (Crookes and Schimts, 2001, p. 2).

Ihsan (2016) points out that there are some pinpoints in drawing the concepts of motivation. They are:

1. Motivation is something different and it cannot be seen, but there is a psychological construct; behavior or effort, attitudes, interest and values or desire.

2. Motivation can be seen as the successful aspect when learning a target language deals with speak the language (speaking skill).

Engagement. Karimi, Reza Lotfi and Biria (2017) focus on the notion of engagement in their research. They state that engagement plays an important role in students' learning. It is one of the most effective and useful points that has attracted the researcher to facilitate learning. Learners'

engagement is their willingness to participate in and be successful in the learning process. This will happen when they are attracted to their lesson and work, and take visible delight in accomplishing their work.

Motive. Boiko (2015) uses the notion of motive. According to her words, motive is a stimulating reason for people's actions and behavior. However, motives do not originate on their own. Basically, motives have particular inner (primary or natural) and secondary (material or moral) reasons that do not find their expression explicitly in the majority of cases. The explicit expression of these reasons is the interest. Moreover, motives can appear under the outer reasons influence. Among these reasons, stimulants take important place. The motive is defined as the outer influence on the person or group that encourages them for purposeful action.

Types of motivation. Harmer (2001) conducting further research into the notion of motivation, makes a distinction between amotivation, extrinsic and intrinsic motivation. Amotivation happens when a person has very low levels of motivation towards any given task. Deci and Ryan (2000), on the other hand, explain the term amotivation as the relative absence of motivation that is caused by the individual's experiencing feelings of incompetence and helplessness when faced with activity and not by a lack of initial interest. Another definition of lack of motivation was given by Dornyei (2005) who explains it as "specific external forces that reduce or diminish the motivational basis of a behavioural intention or an ongoing action" (Dornyei, 2005, p. 143). Extrinsic motivation is external where students are motivated because of external factors such as passing an exam, applying for jobs etc… By intrinsic motivation, students are motivated for self-fulfillment purposes, it is an internal feeling, and they want to feel satisfied.

Motivation in teaching speaking. It is worth emphasizing that motivation plays a very important role in teaching speaking a foreign language. A speaking skill has been a centre of scientific interest for Baker and Westrup (2003) who state that a classroom is a place where students can practice using a language in a supportive environment and not only a place where they learn about the rules of language. The success in language learning and the effectiveness of the English course are evaluated by learners according to how well they feel they have improved in their spoken language proficiency.

Most of the foreign language learners are primarily interested in speaking and wish to improve their speaking skill more than other skills (Ur, 1996); given that, success at English language learning is often associated with proficiency in the speaking skill, while mastery in speaking is often synonymous with knowing that language (Folse, 2006; Richards, 2008).

Methodology of Research

General Characteristics

The aim of the research was to point out the importance of motivation for Ukrainian student pilots to learn aviation English and define the underlying factors of their motivation. This aim involved measuring which factors take the leading positions in forming pilot students' motivation to learn aviation English.

To obtain information about the underlying factors of student pilots' motivation to learn aviation English, standardized and validated research tools were chosen (questionnaires, paper form). The whole research tool consisted of three full questionnaires for the measurement of research variables. Participants submitted questionnaires with consent to the processing of data. All questionnaires were anonymous. Data were collected by the teachers of English conducting this research. Participants had 25 minutes to complete the questionnaires.

The final version of the research tool was elaborated and piloted in September-October 2017. Data were collected in November-December 2017. In January 2018 data were processed and analyzed.

Sample of Research

The participants of the survey were 247 people, among them third- and fourth-year student pilots of the Flight Academy of the National Aviation University, third- and fourth-year student pilots of the Kharkiv Air Force University named after Ivan Kozhedub, National Academy of the State Border Guard Service of Ukraine named after Bohdan Khmelnytskyi, flight instructors and pilots of aviation company "URGA". The choice of third and fourth year students was based on the assumption that they demonstrate the highest level of motivation to learn aviation English. A research sample consisted of 210 male and 37 female respondents, with an average age of 22, 5 years. The reason behind this division was to test motivation, to define the underlying factors and motives of pilots' internal motivation to learn English at flight training institutions; to trace the dynamics of changes taking place in the training of students from the third to the fourth year of studying.

Instrument and Procedures

For study analysis the following methods were used: *theoretical* – studying and analyzing articles on pedagogy, psychology and aviation, ICAO documents, thesis – for problem research, as well as systematization and

generalization of pedagogical experience for theoretical analysis of the state of the problem of research; *empirical* – study of the factors of influence upon pilots' motivation – observation, questionnaires, surveys, interview; *mathematical statistics* –arithmetical average ($\bar{x}$) – for the processing of the data obtained and the establishment of quantitative relationships between the phenomenon under study.

Results of Research

The purpose of the research was to identify the psychological and pedagogical factors that influence learning professional English. To do this, a special questionnaire consisting of three parts and suggested that pilots and student pilots evaluate the psychological and pedagogical factors which influence learning professional English have been developed. The factors were grouped by the authors into three categories, namely:

- how teacher's activity influences the educational process;
- how students' activity influences the educational process;
- how organization of the educational process influences quality of studying.

All of the above-mentioned factors were proposed to evaluate on the 7-point evaluation scale (-3, -2, -1, 0, +1, +2, +3) (method of evaluation has been developed by the authors). The number of points received for each factor was summed up and divided by the total number of respondents.

The influence of psychological and pedagogical factors of teacher's activity on the educational process

The results of the ascertaining stage of the study on how teacher's activity influences the educational process are shown in Table 1.

Table 1. The Influence of psychological and pedagogical factors of teacher's activity on the educational process.

№	Psychological and pedagogical factors	Total points	Average grade
1/2	A teacher is an expert in his/her field	687	2.78
1/2	Information is delivered by a teacher at an accessible level	687	2.78
3	Teacher's skill to find an individual approach to students	679	2.75
4	Teacher's trust in achieving positive results	664	2.68
5	Creation of a positive psychological atmosphere in the classroom	587	2.38

6	Positive attitude of the teacher to the students	578	2.34
7	Democratic style of teaching of the material	538	2.18
8	Teacher's recognition of students' success	501	2.03
9	Praising of the students at classes	395	1.6
10	Increasing of students' self-esteem by a teacher	299	1.21
11	Recognition of students' passiveness by a teacher	79	0.32
12	Autocratic attitude of a teacher to students	- 230	- 0.93
13	Having little interest in the subject	- 447	- 1.81

As the results of the survey given in Table 1 show, the pedagogical activity of the teacher is very important for the educational process and can affect it both in positive and negative ways. Our research is aimed at defining the factors that influence creating positive motivation to study professional English, therefore it highlighted the most influential positive psychological and pedagogical factors with average points higher than 2.00. This group included the following factors:

1) a teacher is an expert in his/her field;
2) information is delivered by a teacher at an accessible level;
3) teacher's skill to find an individual approach to students;
4) teacher's trust in achieving positive results;
5) creation of a positive psychological atmosphere in the classroom;
6) positive attitude of the teacher to the students;
7) democratic style of teaching of the material;
8) teacher's recognition of students' success.

As seen from Table 1, the factors "Autocratic attitude of a teacher to students" and "Having little interest in the subject" have a negative influence on formation of student pilots' motivation. Autocratic manner of teaching should stay in the past. It is natural that if students have little interest in the subject, they will not succeed in its mastering.

"A teacher is an expert in his/her field" and "Information is delivered by the teacher at an accessible level" are the factors that took the first place in the hierarchy of factors of influence and received average points of 2.78. These two factors are interconnected. The competence of the teacher plays an important role in the educational process, since it is the teacher who has the role of a "creator" of a future professional. Interest in the subject depends on the quality of teaching and the interest of the teacher in his/her subject. Teacher's competence is of great importance at a flight school taking into account certain difficulties due to the specifics of this area of activity. The instructor must be competent not only to speak English but

also to be well informed in the field of aviation processes taking place in the world. Teachers of English should be familiar with aviation subjects, since future aviation specialists are supposed to navigate in different professional situations. The teacher should provide this information at an accessible level. This fact greatly simplifies the perception of information by students.

"The teacher's ability to find an individual approach to students" is a factor influencing the teacher's activity in the educational process ranked second among the positive factors of influence and has average points of 2.75. Cadets reasonably gave this factor the second place. In fact, it is precisely teacher's objective to develop student pilots' cognitive interests through an individual and personally oriented approach to learning.

"Teacher's trust in achieving positive results" and "Creation of a positive psychological atmosphere in the classroom" are the factors that occupied the third and fourth place in the hierarchy of factors of influence; they received respectively the average points of 2.68 and 2.38. It is evident that these factors are interconnected, and the teacher's belief in the unconditional success of his/her work leads to the search for new ways that will contribute to creating a positive psychological climate in the classroom.

The factor "Positive attitude of the teacher to the students" with average points of 2.34 took to the fifth place and guarantees the same attitude of the teacher to all students, without their division into "good" and "bad" ones. It should be said that the teacher is an ordinary person who sometimes has a bad or good mood, but each student is an individual to whom an individual approach is needed to be found, therefore it is emphasized the importance of the same positive attitude towards all students. In addition, the teacher should be a model for students because the attitude of the students to the subject, training and future professional activity depends on the fact how the communication with the teacher is organized.

"Democratic style of teaching of the material" got the sixth place with average points of 2.18. This means that the material designed for a certain period of time (for example, one class) does not always correspond to the standard training scheme (the objective, the body of the lesson, home assignment). The teacher can operate with different pedagogical techniques in order to encourage the students to participate in the work which will promote the development of autonomy, initiative, creative abilities.

The factor "Recognition of students' success by a teacher" with average points of 2.03 took the last position in our hierarchy. Choosing this factor requires justification. Despite the fact that the teacher should not divide the cadets into "good" and "bad" ones, encouragement also

contributes into creating a positive climate in the classroom. The more interesting and creative activity is done by a student, the more satisfied is his/her motive of growth. Activation of the motive of growth depends directly on the teacher and creates a steady positive motivation to study.

The influence of psychological and pedagogical factors of students' activity on educational process

The second group of psychological and pedagogical factors which influence formation of motivation in the process of learning aviation English can be represented by students' activity in educational process. It is necessary to point out that students-pilots are well informed; demonstrate high requirements to the teacher; are eager to become partners with the teacher in the learning process. The analysis of factors of influence on students' activity in educational process has been conducted. The results of the survey are presented in Table 2.

Table 2. The influence of psychological and pedagogical factors of students' activity on educational process.

№	Psychological and pedagogical factors	Total points	Average grade
1	Friendly relations with group mates	600	2.43
2	Further development of acquired knowledge	592	2.40
3	Positive relations with a teacher	592	2.40
4	Belief in getting positive results	548	2.22
5	Understanding the importance of being proficient in aviation English for future professional activity	546	2.21
6	Liberalizing in the process of learning a foreign language	526	2.13
7	A desire to get the highest grade	526	2.13
8	A desire to learn something new and get better at the subject	494	2.00
9	Friends' approval of your progress	373	1.51
10	Competitiveness among friends	363	1.47
11	A possibility to be engaged in self-study	356	1.44
12	Unfriendly relations with group mates	- 427	- 1.73
13	Unfriendly relations between a teacher and students	- 511	- 2. 07

The results of the survey indicate that success of educational process depends not merely on a teacher but students as well. The factors which contribute into formation of motivation in the process of learning aviation

English from the students' point of view have been grouped with average points higher than 2.00. The following factors belong to this group:

1) friendly relations with group mates;
2) further development of acquired knowledge;
3) positive relations with a teacher;
4) belief in getting positive results;
5) understanding the importance of being proficient in aviation English for future professional activity;
6) liberalizing in the process of learning a foreign language;
7) a desire to get the highest grade;
8) a desire to learn something new and get better at the subject.

It is seen from the table that "Unfriendly relations with group mates" and "Unfriendly relations between a teacher and students" are to cause the development of amotivation. Knowing that, a teacher is to avoid such incidents and stimulate friendly atmosphere in the classroom.

It is necessary to look in detail at each of the factors mentioned above. The first place in our survey was taken by "Friendly relations with group mates" with average points of 2.43. It is not surprising at all as learning process is not one-sided, there are at least two parties in it. In the process of learning friendly relations between students are of utmost importance as students' communication and interaction is an integral component of educational process.

"Further development of acquired knowledge" and "Desire to learn something new and get better at the subject" with average points of 2.40 and 2.00 took the second and the eighth place accordingly in the hierarchy of influences on the educational process. Our observations show that students are interested in learning new material if it based on the material they have already learnt or when they need it for their future job. It is a well-known fact that pilots must always be engaged in self-education as aviation is a rapidly developing sphere of our life.

The factor "Positive relations with a teacher" with average points of 2.40 took the third place. Sometimes a student's negative attitude towards a teacher can become a reason of student's demotivation. For solving a problem, it is highly recommended to find a compromise in relations between a teacher and students. It can be achieved in the process on doing the same kind of work.

"Belief in getting positive results" took the fourth place in our hierarchy with average points of 2.22. Common activity of a cadet and a teacher can be successful in case of strong belief in a positive result. Pilots

must be convinced that they have all chances to become professionals in their field.

The further analysis of the data reveals that "Understanding the importance of being proficient in aviation English for future professional activity" took the fifth place with average points of 2.21. Knowledge of aviation English has a great influence on safety of flights. Poor knowledge of aviation and general English is a reason of many incidents and accidents. The task of a teacher is to establish a connection of aviation English with students' future job, to show in practice in what way good knowledge of aviation English can help in solving professional tasks.

The factor "Liberalizing in the process of learning a foreign language" took the sixth place with average points of 2.13. Learning a foreign language contributes a lot into development students' knowledge about life, the world around them, people' relations. In the process of learning aviation English students get access to materials about technology development and scientific innovations.

The seventh place in our research was taken by "Desire to get the highest grade" with average points of 2.13. It is a well-known fact that a grade can be viewed as a stimulating technique in educational process and encourages students to master the language. Taking this into account, teachers must remember that students' activity is to be assessed with a grade or approval.

The influence of psychological and pedagogical factors of educational process organization on learning aviation English

The third group of psychological and pedagogical factors which influence the formation of motivation to learn aviation English belongs to the organization of educational process. Having conducted an ascertaining stage of the experiment and analyzed students' answers certain tendencies have been observed. The results of this survey are presented in Table 3.

As the results of the survey show, the organization of educational process plays an important role in the formation of motivation to learn aviation English.

Table 3. The influence of psychological and pedagogical factors of educational process organization on learning aviation English.

№	The factors of influence of educational process organization	Total points	Average grade
1	Holding debates in a foreign language on different topics	620	2.51

2	The variety of dialogues used for communication	580	2.35
3	The variety of activities in the classroom	538	2.18
4	Students' collective activity	484	1.96
5	Using teaching aids	457	1.85
6/7	Making professional role-plays	450	1.82
6/7	Focus on professional activity in the process of learning a foreign language	400	1.62
8	Play activity	331	1.34
9	Using visual aids (for example, slides)	326	1.32
10	Analyzing students' test papers and discussing their results in the classroom	415	1.68
11	Intellectual professionally-oriented competition between different groups of the same educational establishment	225	0.91
12	Intellectual professionally oriented competition between teachers and students	203	0.82
13	A big amount of home assignment	138	0.56
14	Intellectual professionally oriented competition between groups of different educational establishments	126	0.51
15	Long breaks between classes	- 178	- 0.72
16	Uniformity of tasks	- 370	- 1.50
17	Uninteresting presentation of the material	- 617	- 2.50

The study revealed that the group of psychological and pedagogical factors with average points higher than 2.00 is comprised of the following constituents:

1) holding debates in a foreign language;
2) the variety of dialogues used for communication;
3) the variety of activities in the classroom.

"Long breaks between classes", "Uniformity of tasks", "Uninteresting presentation of the material" will have exclusively negative impact on the level of student pilots' motivation. These factors by all means should be avoided by a teacher and will give him/her a hint how to organize stimulating activities in the classroom.

The factor "Holding debates in a foreign language" took the first place in our survey with average points of 2.51. In the process of holding debates every cadet has equal chances for expressing his/her point of view. Our observations show that in the process of learning the topic "Natural Catastrophes" the students get better results when traditional teaching methods are combined with holding debates. Students are motivated and encouraged to be involved in such activities.

The second place in our list of factors of influence was taken by "The variety of dialogues used for communication" with average points of 2.35. While mastering the language, students make different dialogues. In such a way real life situations are created. Using dialogues makes students interested and motivated to learn aviation English.

"The variety of activities in the classroom" is the factor which took the third place with average points of 2.18. In the process of learning aviation English individual tasks and group work can be used. Group work can be considered an effective technique of formation of motivation. The tasks for group work must stimulate interest, the students must find different solutions for solving a problem, they are to use their skills, knowledge and expertise while looking for a solution.

Discussion

The aim of the research was to study the role of motivation for student pilots to learn aviation English, define and group the key factors which influence the development of motivation of future student pilots to learn aviation English.

This aim was realized by researching the notion of motivation and analyzing the student pilots' answers to 3 questionnaires which comprised the psychological and pedagogical factors of teacher's activity; the psychological and pedagogical factors of students' activity; the psychological and pedagogical factors of educational process organization. Research has identified the underlying factors of Ukrainian student pilots' motivation to learn aviation English. To motivate student pilots to learn aviation English, a teacher must be an expert in his/her field; he/she should be able to find an individual approach to students and create positive psychological atmosphere in the classroom. Students, on the other hand, must have friendly relations with group mates and a teacher, understand the importance of being proficient in aviation English. The research has proved the fact that interactive methods play a significant role in educational process organization. Holding debates, using dialogues, interactive activities, role plays are considered to be the factors to increase student pilots' motivation to learn aviation English. A big amount of home assignment, the fear of getting low grades and considering a teacher an authoritative leader, on the contrary, have a negative influence on formation of student pilots' motivation to learn aviation English.

The results of the research confirmed the theoretical assumptions of other authors (e.g. Baker, Westrup, 2003; Harmer, 2001) that motivation is

extremely important in learning a language and a classroom should become a place where students can practice using a language in supportive environment.

We came to a conclusion expressed by other authors (Pintrich & Schunk, 1996; Pintrich & Schrauben, 1992; Stipek, 1993) that motivation can be viewed as a critical determinant of students' classroom learning and achievement in part because students who are highly motivated tend to provide greater effort and persist longer at academic tasks than do students who are less motivated.

We agree with previous authors (e.g. Deci & Ryan, 2000; Dornyei, 2005) who stated that amotivation or lack of motivation will have a negative effect on the educational process. Our research has proved this fact as well.

No research focusing on defining the underlying factors of student pilots' motivation to learn aviation English was conducted before. In our study we defined and grouped these factors. Knowing these factors helps to build an effective learning process for student pilots.

Taking into account the subdivision of motivation into amotivation, extrinsic and intrinsic motivation (Harmer, 2001), we came to a conclusion that some factors of motivation formation contribute into formation of extrinsic motivation (e.g. teacher's recognition of students' success), other factors influence the formation of intrinsic motivation (e.g. belief in getting positive results, further development of acquired knowledge) and some factors develop amotivation (e.g. autocratic attitude of a teacher to students, unfriendly relations with group mates, a big amount of home assignment).

The results of the research can be implemented in the process of designing curricula in aviation English for student pilots. The focus is to be made on using interactive methods of teaching: role-plays, debates, presentations, pair work and group work. The conducted research has had a positive influence on psychological climate in the classroom. Teachers, on the one hand, got evidence that being motivated students work more diligently and productively. Students, on the other hand, have felt that their point of view is important and is taken into account by a teacher. In an after-survey period some students reported that they got more involved in learning aviation English. The attendance record has improved and relations between a teacher and students have become friendlier and more supportive.

Taking into account the results of the research, special tasks for enhancing student pilots' level of motivation to learn Aviation English have been designed. These tasks focus on developing students' creativity, critical thinking and language proficiency. Group work and pair work are preferable

while completing these tasks. The examples of the tasks which implement the results of the research are given below.

Task 1. The Six Hats

Overview: the aim of this activity is to make the students look at the problem from different points of view.

Procedure:

The teacher chooses six students who will represent six hats. They need to describe a picture where we can see a landing plane and many birds on the runway. The students are encouraged to use the following words: military, high-wing, turboprop, dip, flock, frightened. The following questions can also help the students to describe the given picture:

1. What do you think the pilots are doing?
2. Why are the birds moving?
3. What sort of airfield do you think it is?
4. Where was the photograph taken from?
5. What do you think will happen next?

The students who were chosen to represent six hats are given this information:

The White Hat is about data and information. It is used to record information that is currently available and to identify further information that may be needed.

The Red Hat is associated with feelings, intuition, and emotion. The red hat allows people to put forward feelings without justification or prejudice.

The Yellow Hat is for a positive view of things. It looks for benefits in a situation. The hat encourages a positive view even in people who are always critical.

The Black Hat relates to caution. It is used for critical judgement. Sometimes it is easy to overuse the black hat.

The Green Hat is for creative thinking and generating new ideas. This is your creative thinking cap.

The Blue Hat is about process control. It is used for thinking about thinking. The blue hat asks for summaries, conclusions and decisions.

The students presenting six hats describe a picture from different angles. Other students ask wh-questions to find out the details.

Task 2. Stating your opinion and presenting your arguments

Overview: the aim of this activity is to give the students some practice in stating their opinion and presenting their arguments.

Procedure:

1. A teacher writes a statement on the blackboard which is likely to provoke a reaction. For example, we could use this statement:

"Pilots must be proficient in radiotelephony phraseology; General English is not so important for them".

2. The teacher asks the students to work individually and consider their own personal responses to this statement. The Internet is at students' disposal. Do they agree or disagree with it? What's their opinion?

3. The teacher shows them a list of possible responses to the statement. They must choose the response in the list which most matches their own:

1. I'm not interested in this topic.
2. I agree. It's true.
3. I disagree. It's false.
4. I'm not sure.
5. I agree up to a point but I also disagree.
6. I agree/disagree because…
7. I agree/disagree for a number of reasons but I'd also like more evidence.

4. After that they need to present the arguments for proving their point of view.

Task 3. Making an invention

Overview: the aim of this activity is to make the students think creatively and make a mini-presentation presenting a piece of future technology.

Procedure:

1. The teacher divides the students into groups of 4-5 people and gives them the task to create a piece of future technology that solves most of the present problems of pilot-ATC communication. The students need to take into consideration the following aspects:

- what it does;
- how it is used;
-.why it improves safety;
- how it makes users' work easier.

2. The students work in groups for 30 minutes. After that they present their ideas. Other groups ask wh-questions to find out the details. At the end of the lesson the teacher and the students vote for the best invention writing the number of the presentation on a small sheet of paper. The votes are counted and the best piece of future technology is chosen.

Task 4. Role-play

Overview: the aim of this activity is to develop students' speaking ability, get them ready for taking decisions in difficult situations.

Procedure:

1. A teacher tells the students that they are going to work in pairs. One of the students is a pilot, another student is a medical advisor. There is a medical emergency on board, so the students need to role play the situations.

2. The teacher gives guidelines:

Medical advisor	**Pilot**
-make contact;	- identify yourself and state problem;
-ask for details;	- describe symptoms;
-ask what actions taken;	- give details of actions;
- advise further actions;	- thank and end conversation.

3. After that the students present their dialogues, take turns and role play the situation again.

Task 5. Using the technique of personification

Overview: the aim of the activity is to make students imagine an inanimate object to come alive and present the possible solutions to the problem.

Procedure:

1. A teacher states the problem to the students. For example: Human factor is the main cause of air crashes.

2. The teacher divides the students into groups and asks them to come up with possible solutions to the problem.

3. After that the teacher extends the discussion using the simple technique of personification:

"If this problem could talk, it would say…"

"If this problem could think, it would realize…"

"If this problem could hear, it would have known…"

"If this problem could create, it would have made…"

"If this problem could be dressed, it would look like…"

4.The students complete the sentences with their own ideas.

Task 6. Island Adventure

Overview: In this desert island survival game, students use their critical thinking and problem-solving skills to survive being stranded on a desert island.

Procedure:

1. The students are told that their aircraft is falling, they need to catapult, and that there is a desert island nearby. In groups of three, students choose four items to help them survive on the island from a worksheet.

2. The students then complete the worksheet by naming the four items and explaining why they chose each one. 3) Each group then explains their choices to the class. After that, the groups find out what challenge they face on the island by choosing a card.

4. Each group reads the challenge on their card and makes a plan on how they are going to survive on the island using the four items to help them. Afterwards, the groups take it in turns to read their challenge and present their ideas to the class.

5. The teacher assesses each group's chances of survival according to their ideas. Each group is then awarded a score between zero and three.

6. After each group has presented, they roll a dice and the awarded points are combined with the number on the dice. Groups need to score four or more to survive. A score of six or more is needed to thrive on the island.

Examples of survival tools: suncream, toilet paper, pot, first aid kit, hiking boots, hand saw, flare gun, inflatable raft, matches, insect repellent, hammock, compas, mirror, knife, water purifier, fishing rod, rope, hunting rifle, tent.

Examples of a card with a challenge students face on the island: a) one of the survivors was bitten by the mosquitoes. When it does rain, the stagnant water that accumulates is the perfect breeding ground for blood-suckers. Who wants to be bitten with nowhere to run? Emptying out standing water does help but we haven't found a way to get rid of the little pests entirely; b) it was raining hard and the shelter has been destroyed. The weather might be great all year round for a dip in the Indian Ocean, but at times it gets scorching hot or rainy. c) one of the survivors hurt his leg while climbing the tree; that makes moving around a struggle; d) two of the survivors got lost in the jungles and cannot find the way back to the camp; it is getting dark.

Task 7. Stress

Overview. This insightful critical thinking lesson helps to teach student pilots about the topic of stress in aviation, its causes and how to deal

with it appropriately. The lesson also helps students to use their critical thinking, problem solving, data collection, analyzing and evaluating skills.

Procedure.

1. Students begin by working in pairs and interviewing their partner on the top ten most stressful things in their profession. Each pair then joins with another pair to make a group of four.

2. The students compare and discuss their answers and come up with the top five most stressful things for their group.

3. The group then discusses and writes down the cause or causes of each stressful thing in aviation.

4. After that, the students conduct a class survey on how to reduce stress and relaxation methods.

5. The students go around the class and interview their classmates using the useful questions on the worksheet. Students make a note of whether each person they speak to is male or female and how they relax and reduce stress.

6. When the survey is complete, the students re-group and read all the data they collected and rank the findings into healthy and unhealthy ways to reduce stress. After that, each group makes a poster showing the results of the class survey. These can be displayed in the classroom for other students to see.

Task 8. What's the criteria?

Overview. In this critical thinking and problem-solving activity, students guess what criteria was used to put a list of ten extreme jobs in order (for example, fire fighter, border guard, police office, bull fighter, cash-in-transit guard, etc.).

Procedure.

1. The class is divided into groups of six and each student is given a card. Working alone, the students order the jobs on their card, according to the given criteria (1 being the most important and 10 being the least important).

2. When the students have finished, they use their problem-solving skills to guess what criteria other students used to put their list of ten jobs in order.

3. The students then take it in turns to read out their order from 1 to 10. The other students in the group analyze the list and discuss the possible criteria. The student with the card listens but cannot help in any way. The students then give their answer. If the students guess correctly, the next

student reads out their card. If not, the students keep guessing until they get it right.

4. When the groups have finished, there is a class feedback session to discuss the job order, according to each criterion.

Task 9. The airport debate

Overview. In this game, students use their critical thinking and problem-solving skills to build a new airport taking into consideration its positive and negative influences upon the city.

Procedure.

1. Tell students they will take part in the construction of a new airport and its impact on local community. In groups of three, ask students to read the problem. Assign each student in a group a role 1 (a concerned parent), 2 (an environmentalist) and 3 (a local businessman). You can do it at random or choose the most suitable students for particular roles.

2. Ask students to form a group with other students who have been assigned the same role. They should spend 5-10 minutes to brainstorm the various arguments that they can use to support their viewpoints. Students who have the role of a concerned parent should write some questions for a businessman and environmentalist. They may support one side or another.

3. Reorganize the students into their original groups. Ask them to debate the proposals and convince the others in the group.

4. The activity may run 10-15 minutes.

The problem. Imagine that you live in a medium-sized city with a population of nearly 500.000 people. The city is serviced by an airport which was built nearly 60 years ago. At that time the airport was in the countryside, but now it is within the city. Both domestic and international flights arrive in the airport. As it is not a large airport the number of flights is limited. However, it can be congested at times, particularly in summer time. International visitors to your city come both for business and pleasure. Local politicians believe that more tourists and business people would visit the city if improved airport facilities and more flights can be provided.

There is a proposal for the construction of a new international airport in the countryside, 40 km outside the city, which will be connected to the city center by the construction of a high-speed rail link. Local opinions have been divided on this proposal.

Task 10. The airport layout

Overview. This activity is aimed at team-working of student pilots.

Procedure. The students are given the task to build a new airport taking into consideration the following criteria: prevailing wind (the runway layout will depend on it), type of traffic (IFR / VFR, private? scheduled, international, etc.), average capacity of the airport (the cover of runways will depend on types of aircraft which use it), the problems connected with the airport.

The information provided for students vary depending on their level. At the end students present the scheme of an airport with buildings and services, runways and signage, explaining why they place the things in this order.

Conclusions

Research has found out that motivation is vitally important in learning aviation English for Ukrainian student pilots. The underlying factors which influence the development of motivation of future student pilots to learn aviation English have been defined and grouped. According to the results of the questionnaire analysis the factors of influence were grouped into three categories: how teacher's activity influences the educational process; how students' activity influences the educational process; how organization of the educational process influences quality of studying.

The first positions in the list of psychological and pedagogical factors of teacher's activity are taken by the following constituents: a teacher is an expert in his/her field; information is delivered by a teacher at an accessible level; teacher's skill to find an individual approach to students; teacher's trust in achieving positive results; creation of a positive psychological atmosphere in the classroom.

The leading positions in a list of psychological and pedagogical factors of students' activity are occupied by such elements: friendly relations with group mates; further development of acquired knowledge; positive relations with a teacher; belief in getting positive results; understanding the importance of being proficient in aviation English for future professional activity.

In the list of psychological and pedagogical factors of educational process organization priority is given to the following factors: holding debates in a foreign language on different topics; the variety of dialogues used for communication; the variety of activities in the classroom; students' collective activity; using teaching aids. Based on this, we developed problem-solving and critical thinking activities aimed at increasing of future pilots' motivation to aviation English, which were presented above.

Thus, it is possible to determine the implications for further investigation of the issue. It is necessary to observe how the implementation of the underlying factors of student pilots' motivation formation into educational process could improve their level of English, desire to master the language, become an expert in their field and be engaged into non-stop process of professional development.

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