

EVALUATION OF COMMUNICATION TYPES IN AVIATION

Patrik HAJDU, Lubos SOCHA

Faculty of Aeronautics, Technical University of Kosice, Rampova 7, 041 21 Kosice, Slovakia

Vladimir SOCHA*, Lenka HANAKOVA

Faculty of Transportation Sciences, Czech Technical University in Prague, Horská 3, 128 03 Prague, Czech Republic

*Corresponding author. E-mail: sochavla@fd.cvut.cz

Summary. The article deals with the issue of communication types, their knowledge and their importance in aviation as well as in other parts of life. All people react to outer circumstances in a different way. At the same time, we all do not communicate in the same way, because our inner life is different too. Based on that, at the Faculty of Aviation we were investigating the dominance of communication types by means of a questionnaire survey, in the scope of the study programmes Professional pilot, Air traffic controller and Air traffic management. The questionnaire was designed to identify the dominant communication type of the studied individual. Four types of dominant communication types were compared across selected study fields, i.e. emotional, rational, acoustic and visual. The results show that a rational communication type prevails in the group of students of professional pilot and air traffic control field.

Keywords: communication, types of communication, questionnaire survey, aviation, crew management, psychological selection.

1. INTRODUCTION

Communication is a key element in dealing with various life situations, not excluding working activities [1]. If a group of people wants to fulfil a common goal, communication will have a major part in its fulfilment. The way of communication is important in the information exchange, in the influencing of behaviour of people or in the creating of harmonic interpersonal relationships [2].

It is necessary to distinguish communication types of people and based on that choose the right reactions to their behaviour, manage problematic communication with challenging communicators, use suitably and purposefully verbal and non-verbal communication, and thus be the „master“ of the situation [3].

The knowledge of a dominant man communication type has a strong influence on solving crises situations in particular. We distinguish four communication types: - emotional, rational, visual and acoustic. Why are they actually called communication types? On the one hand they are verbal expressions which have their rules, on the other hand they are complemented by some ways of thinking, behaviour and exhibition [3]. This summary always gives an integral picture of the individual communication types.

All people communicate with their neighbourhood in a certain way. The interaction between people and their neighbourhood and the way how they acquire and process information which is consecutively projected in their surroundings, happens in a certain way which corresponds to their dispositions. The mutual interaction is conditioned just by the dominant communication type. Therefore the communication types can be divided into emotional, rational, acoustic and visual [4, 5].

Emotional communication type is based on feelings. It should be realized that feelings and empathy for the situation do not have their own process steps. It is not a gradual perception of the process which runs in time and when inputs change to outputs. For that reason, it is very hard for emotional types to describe processes, an exact conceptual expression and a use of specific ideas. A person of the emotional communication type puts emphasis in communication on what they emotionally experience in connection with a specific situation. The emotional type often displays uncertainty of expression.

For this communication type it is difficult to exactly specify their feelings based on the situation which they perceive and experience. The emotional communication type does not consider a picture important, they do not need to know why and how, to distinguish details, they simply perceive things as a whole and realize that they are a part of that and everything relates together [4, 5]. For them, everything is projected into one big bundle of feelings, as long as they are asked to explain how long the river is, how high the hills are and how many butterflies are in the meadow. They do not feel well with details and descriptions of specific things. They express their attitudes and ideas by emotional perception.

Rational communication type works mainly with information, data in the scope of processes. On the contrary, for this type it is very difficult to perceive and express feelings. They think about the things, analyse them and gradually create single connecting parts of the whole process. This communication type thinks in processes and evaluates them logically. At the end of every process they always need to reach a specific result. It again leads to specific data and description of the process. The main characteristic in the expression is factuality, need for information and knowledge of the progress of the thing. The communication type needs to finish and close this progress necessarily.

For visual communication type, as it arises from the title, the main communication connection are pictures. This type creates a big picture about a situation [4, 5]. Their perceptions, understanding and listening goes through eyes. They know what they see and they understand it too. The visual communication type sees things and situations as pictures. By those pictures they can remember the things. They learn quickly. They prefer a big picture and do not deal with details. Their asset is to see things and situations in advance. The visual communication type creates first a quick picture and just then makes steps towards its fulfilment and execution. The person of this type does not have patience with long processes. When e.g. a task or an activity lasts too long, they get tired soon.

Acoustic communication type is recognized by pricking up their ears instead of looking into your eyes. They do not need be face to face. It is rather an obstacle to a good concentration on what someone says to them. When they talk to you, it is enough to show them that you can hear them. They perceive what they hear. By hearing they remember best things, events and processes. While listening, they can do other activities without problems. The person of acoustic communication type has a problem with some sounds and tones which they do not tolerate well. The high tones of a vacuum cleaner, the sound of a plane, or the noise at a party. For these reasons, we should not wonder if a person of this type avoids events like that. On the one hand this communication type needs to hear the things, but on the other, to be heard too. Hearing is for them the main communication channel. Many people of this communication type croon, growl, hum or give out strange sounds when concentrating [4, 5].

Based on above mentioned, the questionnaire was designed to identify the dominant communication type of individuals with main focus on a particular profession in the aviation.

2. MATERIALS AND METHODS

In order to mutually understand the functioning bonds among people, it is important to know the way of their communication which is determined mainly by their dominant communication type. Therefore, we decided to carry out a questionnaire survey of communication types among the students of the Faculty of Aeronautics (Technical University of Kosice) in the scope of study programmes Pilot, Air traffic controller and Air traffic management.

The aim of the survey is to find out what kind of communication types predominates in the scope of the chosen study programmes at the Faculty of aviation. By means of a questionnaire survey determine in subjects the communication types which are dominant.

Because specific requirements are put on the aviation professions Pilot and Air traffic controller and people in these professions are subject to a demanding medical and psychological selection, we suppose that the rational communication type will occur dominantly in these professions. Our basis is theoretical knowledge of communication types. Based on that, the following hypotheses have been set.

- H1: We suppose that in the study programmes Pilot and Air traffic controller the occurrence of the dominant rational type will be more than 70%.
- H2: We suppose that in the study programme Air traffic management the occurrence of the dominant rational type will be less than 50%.

3. RESULTS

At the evaluation of the questionnaire, in each subject was evaluated the dominant communication type from the perspective of the total combination of communication types of the subject.

As can be seen in Fig.1, in the Bachelor study programme Professional pilot after a mean evaluation predominates the rational communication type with the value of 29.652 and as a complementary type the visual communication type with the value of 26.416. This combination is suitable for the profession of pilot because the combination sense – picture belongs to combinations, when based on facts man is able to evaluate a situation quickly and based on further prediction to make an optimal decision.

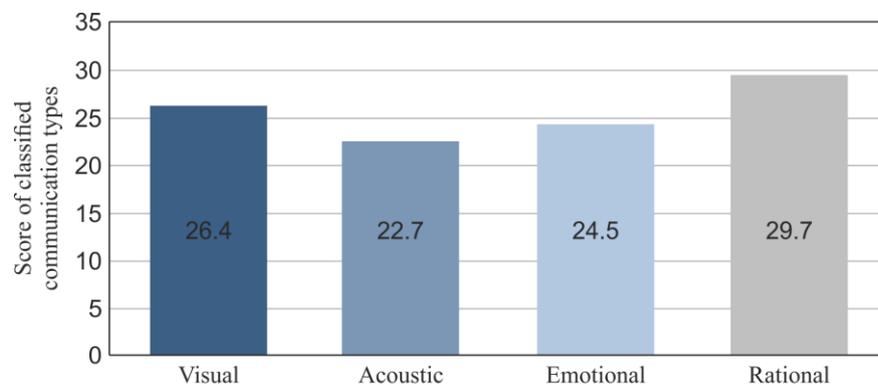


Fig. 1 Graphical presentation of communication types mean in Bachelor study programme Professional Pilot.

In Fig.2 we can see the mean evaluation of the communication types dominance of all years in the Bachelor study programme Air traffic controller. On average predominates rational communication type with the value of 28.09. As in the case of the study programme Professional pilot, the combination rational – visual predominates, which is also suitable for this profession.

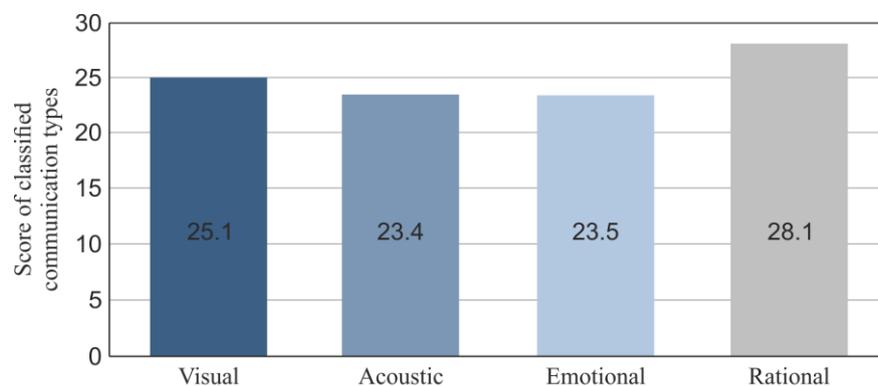


Fig. 2 Graphical presentation of communication types mean in Bachelor study programme Air traffic controller.

As can be seen in Fig.3, in the study programme Air traffic management, where there are no specific requirements as in the professions in the study programmes Professional pilot and Air traffic controller, predominates also the rational communication type (28.145) in combination with the

emotional communication type (24.573). This combination implies that if people do not have an adequate number of arguments to make a decision with a necessary responsibility, it will be more difficult for them to decide.

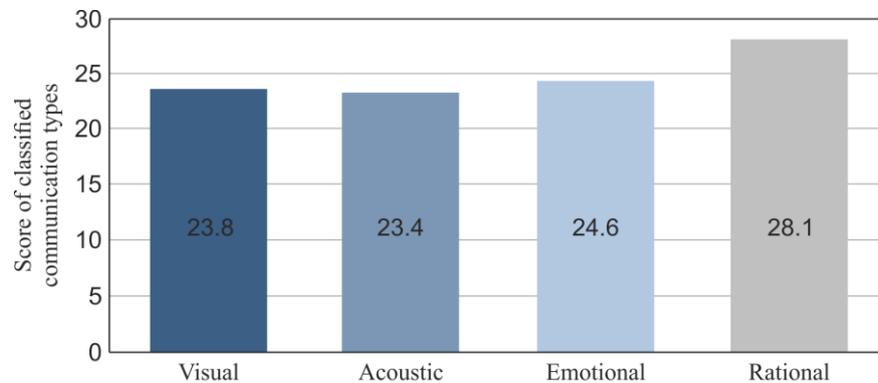


Fig. 3 Graphical presentation of communication types mean in Master study programme Air traffic management.

4. DISCUSSION

In the first hypothesis we supposed that in the study programmes Air traffic controller and Professional pilot, where specific requirements are put on these professions, the occurrence of the dominant rational type will be more than 70% respondents. The rational communication type people are characterized by analysing and evaluating processes or situations. They decide on the basis of facts, they are interested in connections, they are able to set a process, follow it and be consistent.

Table 1 Occurrence of dominant communication type in study programmes Professional pilot (PP) and Air traffic controller (ATC)

Study programmes	Number of Subject	Visual	Acoustic	Emotional	Rational
ATC 1 st year of study	14	2	1	1	10
ATC 2 nd year of study	13	3	1	3	6
ATC 3 rd year of study	9	0	0	2	7
PP 1 st year of study	8	1	1	0	6
PP 2 nd year of study	3	1	0	0	2
PP 3 rd year of study	2	0	0	0	2
Total	49	7	3	6	33

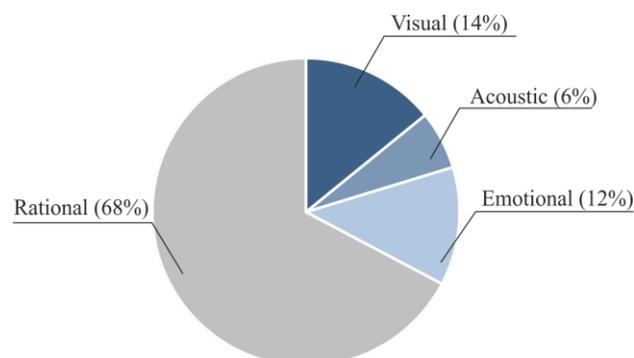


Fig. 1 Diagram of results of hypothesis H1 testing

Owing to it, the details do not escape them as it is by the other communication types. These types are able to concentrate better on their activity than the other communication types. This is important not only for the pilot profession, but also for the air traffic controller. Based on the achieved results by means of questionnaire survey we found out that the hypothesis H1 has not been proved (see Tab. 1 and Fig. 4).

In the hypothesis H2 we supposed that the occurrence of the dominant rational communication type among the students studying in the study programme Air traffic management will be lower than 50%.

As we can see in Tab. 2 and Fig. 5, the occurrence of the dominant rational communication type is only in 46% of respondents, which means that our hypothesis has been proved. The need for the dominant rational communication type in the other aviation professions is not as urgent as in the professions professional pilot and air traffic controller.

Table 2 Occurrence of dominant communication type in master study programme
Air traffic management (ATM)

Study programme	Number of Subject	Visual	Acoustic	Emotional	Rational
ATM 1 st year of distance study	9	1	2	1	5
ATM 2 nd year of distance study	14	2	3	2	7
ATM 1 st year of presence study	62	7	14	13	28
ATM 2 st year of presence study	5	2	0	2	1
Total	90	12	19	18	41

The dominance of communication types in the study programme air traffic management is more varied although in the lesser half (46%) of the cases the rational communication type remains dominant. The predominating rational dominant type is probably given by the focus of the study in the technical field of education.

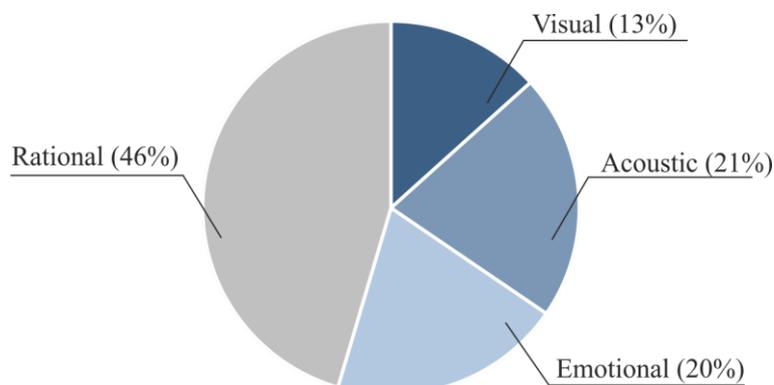


Fig. 5 Diagram of results of hypothesis H2 testing

4. CONCLUSION

In the scope of theoretical knowledge in the field of communication types we described in detail the emotional, rational, visual and acoustic communication type. By means of questionnaire survey focusing on the evaluation of communication types among students of the AF in the chosen study programmes we were investigating the dominance of these types among individual study groups. The survey focused on the study programmes Professional pilot and Air traffic controller, where specific requirements are put and which are subject to a strict medical selection [6], and Air traffic management, where there is no special selection.

Based on the processing of theoretical knowledge in this field we determined that the most suitable dominant communication type for the technical specialization in aviation is the rational type. An advantage of these types is that they are able to set a process, observe it, be consistent and decide optimally. They work logically with pieces of information, owing to that the details do not escape them as it is at the other communication types. They are also able to concentrate better on given tasks, which is very essential for the pilot and air traffic controller professions.

We have proved by the survey that practical evaluation of communication types from the point of prospective selection in the scope of individual aviation professions has sense. It is one of the fields deserving our attention also in the scope of psychological selection. An important role in the field of safety plays today so-called „Crew management“. Application and use of knowledge in the field of communication types may be a suitable instrument for solving problems in the scope of cooperation of flight crews and things like that. An effective use of this instrument may be enforced not only in aviation, but also in other fields of life, be it management of various organizations, in a broad spectrum of managerial activities or communication in a family. Knowledge of communication types enables to avoid various problems, misunderstandings and conflicts.

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References

- [1] Arnold, C. Elizabeth - Boggs, K. Underman. *Interpersonal Relationships-E-Book: Professional Communication Skills for Nurses*. Elsevier Health Sciences. 2015. 576 p. ISBN 978-03-233285-7-9.
- [2] Feldman, S. Shirley - Rosenthal, A. Doreen. The Effect of Communication Characteristics on Family Members' Perceptions of Parents as Sex Educators. *Journal of Research on Adolescence*. 2000. Vol. 10. No. 2. P. 119-150. DOI: 0.1207/SJRA1002_1.
- [3] Mihalčová, B. Et al. *Marketing Management in other Context*. Pulavy: Drukarnia Wisla. 2016. 176 p. ISBN 978-83-946020-0-0.
- [4] Kops, P. - Kopsova, K. *Jak se domluvit s tygrem aneb učíme se tygrijsky [How to deal with a tiger or how to learn tygr language]*. Brno: Nakladatelství Edika. 2016. 63 p. ISBN 978-80-266-1046-5. (In Czech)
- [5] Hajdu, P. *The importance of communications in air transport*. Master Thesis. Kosice: Faculty of Aeronautics. 2017.
- [6] Regula, M. et al.. Study of heart rate as the main stress indicator in aircraft pilots. In: *Proceedings of the 16th International Conference on Mechatronics, "Mechatronika 2014"*. Brno, Czech Republic, 2014. DOI: 10.1109/MECHATRONIKA.2014.7018334.