

### **Informal communication system and personal fulfillment in scientific and technical activities**

*The article advantages of informal interpersonal scientific communication, its features and functions (efficiency, selectivity, assessment, application content retrieval, transmission informal content, feedback) are analyzed. The aim of research was to examine the specific features of informal interpersonal communication that affects the performance of the individual in science and technology and his ability to self-realization.*

The trend towards cooperation and collective research strengthened at the same time a higher education and international cooperation, increases the importance of conferences and scientific symposia, expanded scientific exchanges between universities. All these measures are designed to extend the informal contacts between scientists, it indicates that the in scientific circles are recognizes the role of informal communication, and increase our dependence on it.

American researcher T.J.Allen proves itself publication of the article or book does not guarantee the transfer of information. Engineers do not read much, so literature is not so effective way to enter information, but professionals working in science and technology, is widely used by the external personal contacts. Such contacts are more effective than reading the scientific literature [1].

H.Menzel summarized important advantages of informal interpersonal communication research. These advantages are, in his opinion, is the efficiency, selectivity, assessment, application content retrieval, transmission informal content, feedback [2].

Informal communication is focused on the consumer. As a result, the scientific and technical community, certain individuals should act as "managers", that is, choose the information, interpret it and send to those for whom it is useful, for example, the production or executive service. It is so often meet a need that has not been clearly understood and defined. This communicative relationship provides the consumer information that is useful to him, though he was not looking for it specifically. Or because they did not know it existed, or because without "manager" did not understand its significance for its purpose.

The following important property of informal interpersonal communication is that interpersonal channels provide additional explanatory information that the formal sources do not always carry. This information typically includes recommendations on methodology of the study. The information transmitted of formal literature on the level isn't enough detailed for it's comprehension. Negative results of searches are also often distributed through informal contacts.

Another important feature of informal interpersonal communication is that this channel demands rather small cost. T.Allen and P.Gerstberger found out that engineers, choosing information channels don't operate on the principle of the

greatest benefit but the least losses. V.Karlson also confirms the availability and effectiveness of informal channels. He claims that 70% of the first attempts to find the information necessary for conducting the study are informal in it's nature [3]. And the engineers who first turn to informal sources of information obtained more information necessary for them under the same conditions.

To investigate this, we asked colleagues. What type of communication do you prefer more (formal or informal). In your opinion what are the advantages of informal communication type.

Analysis of the responses showed the following.

In the group with low levels of self-realization and experience up to 15 years, the respondents selecting the desired type of communication are shared equally. Most respondents, analyzing advantages of informal type of communication, referred to the importance of feedback saints. 35% of respondents have chosen efficiency. 19% of respondents have chosen selectivity. Selectively was chosen only by respondents who formally preferred to communicate with colleagues. 15% of respondents have chosen the extraction of applied senses. 8% and 4% of respondents have respectively chosen evaluation and stress the informal content.

Low levels of self-realization in the group having experience up to 20 years or more the respondents, choosing the preferred way of communication, are also shared about equally. 43% of respondents have indicated a formal type of communication. 57% of respondents have preferred the informal form of communication. The majority of respondents, analyzing the benefits of the informal type of communication have chosen (35%) efficiency. 29% of respondents have indicated the selectivity. 14% of respondents have cited the importance of feedback link. 10% of respondents have chosen the situation assessment, the extraction of applied meanings and informal content transfer.

Average level of self-realization in the group having experience up to 15 years, the majority of respondents (66%) have chosen an informal type of communication. 34% of respondents have chosen the formal type of communication. Analyzing the benefits of informal type of communication, most often the respondents have often chosen efficiency and feedback (43% and 46%), respectively. The selectively was chosen by the respondents who prefer formally communicate with colleagues. 14% of respondents have noted the importance of informal content transmission, 11% of respondents stressed application meaning extraction, 9% of respondents indicated the assessment of the situation.

Average level of self-realization in the group having experience up to 20 years or more the respondents, selecting the desired type of communication, have preferred informal type of communication (73%). 27% of respondents have chosen the formal type of communication. Analyzing the advantages of informal communication form, the majority of respondents (51%) have chosen feedback. 41% of respondents have indicated the efficiency. Selectivity and of informal transfer of content was chosen by 20% of respondents, while meaning extraction application was done by 16% of respondents. 8% of respondents made references connected to the importance of assessment.

High level of self-realization in the group having experience up to 15 years, the preferred way of communication was chosen by 65% of respondents and informal type of communication, while 35% have indicated a formal way of communication. Most respondents (54%), analyzing the advantages of informal communication type have chosen feedback; 35% of them have indicated efficiency; 16% of respondents have chosen informal content transmission; 11% have underlined the recovery of applied meanings; 8% have referred to the importance of the assessment; 5% of respondents have indicated selectivity.

High level of self-realization in the group having experience up to 20 years or more as desired the respondents (68%) have chosen an informal type of communication. Formal type of communication was preferred by 32% of respondents. The great majority of respondents (48%) have indicated the importance of feedback as a part of informal communication; the efficiency was named by 33% of respondents; informal transfer content was chosen by 23% of respondents; the selectivity was nominated by 18% of respondents; the assessment was taken by 10% of respondents; and the applied meanings extraction was admitted by 3% of respondents.

The difference between formal and informal elections modes of communication was changed in favor of the latter, while the level of self-realization was being increased. Most active nature of interpersonal communication in science is obvious. Unidirectional communication channels were rarely used by colleagues. Feedback effect is particularly important in professional communication, when staff team receives or develops common solutions. Thus, the person possessing the best intuition, ability to release heard important information, summarizes and rank findings and establishes more effective feedback (which is manifested in the responses to the questions requests information, their own thoughts, generalized elements of subject content and nonverbal reactive actions).

The incompleteness of perceived information, poor memory performers, bad structure indications or other communications, inattention to colleagues speech can be causes of ineffective professional communication, lack of feedback.

It is well known that the feedback is an essential mechanism of any training. Obtained by means of information allows it, in particular, to carry out corrective actions, thoughts, if it is necessary for the learning process. Correction function performing by the feedback is quite important in the context of interaction within the professional scientific and technical group. Both scientists and engineers highly appreciate feedback for interpersonal communication in scientific and technological activities. Dynamics of this indicator on the level of self-realization is most by pronounced in the group having 20 years length of service. Not only knowledge and experience is accumulated by experienced specialists, but the willingness to share them is formed. When we are sharing our thoughts, we always see the reaction for our thoughts, and in turn we are responding to the positions which we have heard. This gives us the opportunity to check ideas and more clearly to interpret their contents.

The higher choice of feedback in the low self-realization group having experience up to 15 years, is associated by us with a social component that this

index contains. It allows less experienced specialist simultaneous to judge how his actions are approved by the industrial environment. The dynamics of selection informal content is an indirect confirmation of this conclusion. The significance of this index increases with age and with the self-realization level. That is why the text of the article or project itself does not guarantee the accurate transmission of information. Professionals working in science and technology, widely use the external personal contacts, because dozens of important details have remained outside of the most detailed descriptions both as technical plan, and economic or social one. Interpersonal contacts are more often effective than formal negotiations. The understanding of the possibilities of informal communication comes with the experience and is determined by the personal self-realization level.

The selectivity is the specialist personal relationship to colleagues, which depends on their credibility or usefulness for him (working in a related field, have common needs and interest). Dynamics is observed both in age and level of self-realization, but differences when choosing this indicator are seated in different age groups. The number of elections are much higher in the group with experience up to 20 years. This can explain by the desire to choose colleagues and professional environment that is based on psychological considerations, such as: my experience and my status let me do this, I exactly know with whom cooperation will yield the best results and will be the most productive.

This explanation is possible because colleagues to low self-realization have tended most to the selectivity in communication. In the group with 15 years experience respondents who were prone to formal communication have chosen in communion selectivity. This fact can explain by the low professional adaptability and closeness in interpersonal relationships. As an adaptation to a professional environment, and openness and flexibility in social relations are improved as the level of self-realization [4].

Efficiency as advantage of informal communication was equally highly valued in all groups. Assessment as part of an informal communication had been have a small amount of choices in all groups. This once again confirms the fact that the experts of scientific-technical sphere are often introverts, so they have not expressed the need for external assessment. For these reasons, the range of application meanings has no also have significant dynamics. Engineers prefer to self-study and to evaluate the conditions of the current situation, to choose, in their opinion, the most efficient algorithm of action that fits their needs and meanings.

Scientific group and informal communication can exist and vary relatively independently from each other, from very high to almost zero. Research findings may be the product as a cohesive group, and the individual who acted almost entirely on their own.

**Conclusion.** At the same time, informal interpersonal communication itself plays an important role in the management of information exchange. So the conversation with your colleagues can easily be redirected to the desired channel.

One of the objectives of our study was to investigate the communicative behavior of the person in the scientific and technological activities. In recent years, it is become habitual, and according to a certain number of representatives of

technical sciences, even appropriate statements are about the deepening chasm that separates the representatives of different scientific fields. Unfortunately, it is paid a very little attention to the relationship between the above mentioned exclusion of representatives of various scientific branches and internal mechanisms of the science development in general. In this sense, scientists carry out their research in specific areas, that does not give them any opportunity to refine or to compare or to protect their ideas. Sometimes, scientists are really exploring various phenomena, but it is often that this difference is rooted in respect of one group of scientists to another. Delving into own specialization we have thereby weaken their communication with other research groups. Thus our knowledge is steadily developing in depth, but can not grow in breadth.

In the educational environment of the situation has been tried to compensate through the discovery and dissemination of new skills, rather than through growth into existing specialty. Under such circumstances, one group may not be detected of a definite pattern, and for another it will be undeniable, but on an intuitive level (a good example can be technical and humanitarian knowledge plane). However, the accuracy of the individual solutions to certain problems will be increased, despite the fact that losses will be in other situations.

On this basis example it is obvious that communication which is carried out through industry barriers, has limited and utilitarian orientation. Such isolation can be overcome through the study of formal and informal communication systems.

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