

Cross-cultural analysis of the verbal conflict behavior of the graduate mining engineers

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Abstract. The article is devoted to the crucial issue of the interpersonal communication skills of engineering graduates and studies the verbal behavior of the graduates majoring in mining engineering in conflict professional communication considered in a cross-cultural aspect. The research is based on the needs that future mining engineers have for conducting successful communication, work in teams and run an effective discourse both verbally and in writing. Verbal communication involves a strategic process by which a speaker defines the language resources for its implementation. By choosing a strategy which should contribute to the goals and objectives of the interaction a speaker makes the process of communication either successful or leading to a communicative failure. The scientific importance of this work is in multidiscipline approach and cross-cultural study of ethnic and cultural influences, gender and other characteristics of the verbal behavior of Russian and American engineering graduates.

1 Introduction

There are currently several concepts and theories that consider the problem of cross-cultural interaction. According to some scholars globalization entails cultural homogenization where a stronger culture contributes to the formation of a homogeneous world or global culture. Consequently, the development of intercultural communication skills and the formation of a tolerant attitude to other people and cultures becomes an integral part of university education in the era of globalization [1-2].

In this regard we witness a special approach that criticizes a pure technical direction of engineer training and education [3-4]. Traditional engineering education considers a mining engineer only as a professional in his area but completely ignoring the future engineer as a developing personality that should be able to handle solve complex problems based on the synthesis of the various spheres [5-7]. Nowadays a mining engineer graduate needs to have

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ability to work in a team, conduct negotiations and preferably speak a foreign language. Thus a university education should help graduates to learn self-development and contribute to formation of their humanist values and tolerance.

Humanization of technical education is often discussed and this issue has taken an important place in the paradigm of modern higher education on the global level [8].

It might seem illogical, but being a purely technological in its essence, engineering presupposes a great part of communication involvement [9]. A number of research and practice reports show that many graduate engineers face difficulties in verbal and written communication. Companies lose substantial sums of money due to written communication problems of graduate engineers. The most common communication barriers turn out to be a lack of special training or communication skills, inability to formulate ideas correctly and poor listening skills. It is often taken for granted that engineers have skills to conduct an effective communication discourse and be able to transfer ideas to an interlocutor freely both verbally and in written form. However, a few findings in the sphere of engineering education in the USA, Canada and Australia show that the necessity to develop and perfect communicative skills is of prior concern. This is connected both with changes in modern engineering, sufficient increase of paper turnover, quality and safety control. Taking into account the internationalization and global economy trends, these changes require a good understanding of intercultural specifics as well [10-12].

The purpose of this research was to explore verbal conflict-handling differences Russian and American graduate students majoring in mining engineering and their understanding of conflict concept which directly defines the success or failure of communication. More specifically, we were interested in the choice of communicative strategies that graduates prefer to stick to in course of natural professional communication.

The research regarding the difference between Russian and American perception of conflict has been limited but the volume of tourism, trade, academic mobility and migration that now necessitates intercultural interaction and the potential for conflict gives rise to the need for greater understanding and tolerance of differences.

Definitions of conflict offered by Russian and Soviet researchers illustrate contradictions between interests, purposes or motives, but also present negative emotions and the desire to cause damage to opponents. The dichotomous concept is cooperation [13]. The Longman Dictionary of Contemporary English offers the following definition of conflict: "...when two ideas or opinions cannot exist together" [14]. American researchers such as Edmondson and Smith cite "personality differences and interpersonal tensions" as being at the heart of conflict [15]. Thus, it is possible to assume that in the Russian verbal consciousness, counteraction to the opponent is emphasized while for Americans the subject of the conflict (i.e. the belief or course of action) is in question.

Linguists who have conducted research on conflict have examined conflict-handling strategies from the point of view of the "self" in altercation with "another"

Mining engineers have to communicate to each other in international cooperation during new equipment installation, reporting on international conferences, attending training centers etc. [16-17]. It was found that conflict strategies can be classified as cooperation (constructive), distancing (neutral) or confrontation (destructive). The cooperative strategy of conflict-handling includes compromise (tactics of promise, agreement and compliment), cooperation (tactics of rational persuasion, agreement and support) and adjustment (tactics of concession, sympathy and changing the topic). Distancing strategy includes an attitude of active neutrality (concession) and passive neutrality (silencing and ignoring). The third strategy - confrontation - consists of manipulation (threat, pressure, appeal to authority), and verbal aggression (insult and criticism). Verbal aggression can also include auto-aggression, which is aggression directed not at another person, but toward the speaker him/herself. For the present study, four

dependent variables were used: cooperation, distancing, confrontation (manipulation), verbal aggression (aggression toward self or other).

It is widely known that there are differences between men and women in terms of conflict-handling. Women, regardless of nationality, are less aggressive than men and in general they focus on establishing contact, building relationships and finding mutual understanding.

Men, on the other hand, often reveal competitive and dominating behaviors. We sought to clarify the differences in Americans' and Russians' conflict-handling strategies and to shed light on gender differences with regard to verbal communication choices and thus derived the following hypotheses:

H1 – Engineering graduates will use different verbal strategies in situations of conflict depending on nationality.

H2 – There are gender justified differences between Russian and American mining engineering graduates with regard to verbal behavior in conflict situations.

2 Methods

Two-hundred-and-fifty students (118 males and 132 females) from state universities in Kuzbass region and 248 students (107 males and 141 females) from a state university in the USA (PA state) have participated in this experiment. Three questionnaires were used to gather data: The Conflict Questionnaire, The Situation Response Questionnaire and a word association test.

Free-response (24 items), nominal (6 items) and multiple-choice questions (16 items) appeared on the questionnaires and, thus, the data was analyzed both qualitatively and quantitatively. The free-response items on The Conflict Questionnaire were content-analyzed by lexical units of conflict and emerging patterns were noted. Linguistic markers included, for example, one word phrases without emotional charge like "fine" or "OK, I agree" which show distancing. The lexical units were also examined for subject, object, motive, reason for and form of aggression, and attitude toward aggression. The Conflict Questionnaire also included items allowing students to choose responses that best described how they would most likely react in professional conflict interactions. In addition, participants completed the Situation Response Questionnaire and thus were given situational models of speech with five possible responses and asked to choose the verbal response that best represented how they would react in potential conflict situations. Each of the proposed variants of verbal reaction corresponds to a particular conflict-handling strategy including cooperation, confrontation, distancing, aggression (sometimes tested as autoaggression), or other.

3 Results

3.1 Verbal Choices in Situations of Conflict

Our first hypothesis was that Russian engineering graduates and American graduates would make different verbal choices in situations of conflict. We found support for this hypothesis as well for the strategies of confrontation and aggression. The analysis of the verbal reactions for the multiple choice questions showed that 39% of the Russian graduates preferred to use cooperation, while 37% of the Americans chose this strategy (see Table 1). Only 14% of the Russians and 11% of the Americans use the distancing strategy. However, 36% of the Russians chose the strategy of confrontation as opposed to 25% of the

American respondents and 11% of the Russians (vs. 27% of the Americans) chose aggression (Table 1).

One question, Item 11 on The Situation Response Questionnaire, was designed to reveal strategic differences specifically related to professional interactions. Table 2 reveals the results of this question.

Table 1. Significance Levels for Strategic Conflict-handling Choices of Russian and American engineering graduates.

Conflict Strategy	Russians (n ₁ =250)		Americans (n ₂ =248)		Fisher's criterion φ^* (value level)
Cooperation	39%	$\varphi_1=1.349$	37%	$\varphi_2=1.308$	0.457 (>0.1)
Distancing	14%	$\varphi_1=0.767$	11%	$\varphi_2=0.676$	1.015 (>0.1)
Confrontation	36%	$\varphi_1=1.287$	25%	$\varphi_2=1.047$	2.678 (0.003)
Autoaggression	11%	$\varphi_1=0.676$	27%	$\varphi_2=1.093$	4.653 (0.0001)

Table 2. Significance Levels for Strategic Conflict-handling Choices during professional communication.

Conflict Strategy	Russians (n ₁ =250)		Americans (n ₂ =248)		Fisher's criterion φ^* (value level)
Confrontation	17%	$\varphi_1=0.850$	8%	$\varphi_2=0.574$	3.08 (0.001)
Cooperation	52%	$\varphi_1=1.611$	63%	$\varphi_2=1.834$	2.48 (0.001)
Distancing	69%	$\varphi_2=1.961$	36%	$\varphi_1=1.287$	7.52 (0.0001)

Notes. Fisher's criterion (φ^*) is used to determine statistical significance such that the critical value of $\varphi^* = 1.64$ ($p \leq 0.05$ and 2.31 ($p \leq 0.01$)).

3.2 Gender

We also hypothesized that there would be differences between Russian and American engineering graduate men and women with regard to choices in conflict situations and significant differences were found between sexes for each nationality for all four dimensions. In addition, significant differences were found between Russian and American men and between Russian and American women for distancing and aggression.

Russian women use the cooperation strategy far more often than do Russian males. Of the Russians who chose cooperation, this strategy was used by 66% of the females, but only 34% of the males. The gender difference for cooperation was almost identical for the Americans who chose it. Thirty-five percent of those were men and 65% were women.

Results showed that 100% of the Russians who use the distancing strategy are women, while 100% of the Americans who chose this strategy are men. Another significant effect was found for confrontation for Russians. Thirty-eight percent of those who chose it were men, while 62% are women. Finally, a very high percentage of Russian engineering graduate who chose the strategy of aggression were women (72%), while far fewer were men (28%). There was a significant difference between American men and women for this dimension as well, but it was not as pronounced (57% men vs. 42% women).

4 Discussion

The emerging lexical units for American engineers in describing conflict reveal a dynamic plane of handling conflict. That is, Americans focus more on the actions related to engaging in the conflict, rather than the cause and effect. The analysis showed that conflict is

associated in the American language consciousness not only with the presence of opposition but also with the necessity of resolution. (*Conflict is... some uncomfortable situation that needs resolving, a situation that arises between two or more people which pushes them to seek a resolution, a situation in which two parties disagree usually has a resolution which may or may not be mutual*). Both Russian and American graduates stress negative emotional consequences resulting from conflict.

We also found that both American and Russian mining engineering graduates prefer the cooperation strategy not only most, but in almost equal proportions (39% of Russians and 37% of Russians prefer this strategy). This suggests that, in terms of conflict communication, there are more similarities than differences. Many participants expressed constructive ways of dealing with conflict. The results for distancing also revealed more similarities than differences between Russians and Americans (14% of Russians and 11% of Americans chose distancing). The greatest differences between Russians and Americans in terms of handling conflict occurred for confrontation and aggression. Russian graduates appear to be more comfortable with confrontation than are Americans (36% of Russians and 25% of Americans chose this strategy). A distinctive sign of conflict in Russian language consciousness is the characteristic of an aggressive line of conduct expressed in verbal or physical interaction, which is often followed by negative emotional or interpersonal consequences (anger, insult). Russian young people revealed confrontational verbal choices in the form of verbal aggression or physical threats. The finding of greatest statistical significance, though, was that Americans far more often than Russians actually choose the strategy of aggression (16% more Americans chose this strategy).

All in all, the findings of the research and the conditions of the sphere of engineering professional communication prove the necessity of the educational process and training that would compensate the lack of effective communication skills and that would contribute to further development of thinking, emotional control and ability to communicate for mining engineering graduates who is be able to adapt successfully at a new working place, work in a team and enhance personal growth.

References

1. M. Gasanov, S. Zhironkin, *Procedia - Social and Behavioral Sciences*, **166**, 97 (2015)
2. M. Gasanov, S. Zhironkin, *EpSBS*, **VII**, 117 (2016)
3. A. Csikosova, K. Teplicka, *Procedia - Social and Behavioral Sciences*, **46**, 2978 (2012).
4. G.V. Shevtsova, *Int. Res. J.*, **3** (45), 52 (2016).
5. A. Zhavoronok, M. Gasanov, S. Zhironkin, *SHS Web of Conferences*, **28**, 01144 (2016)
6. M. Gasanov, S. Zhironkin, M. Hellmer, *EpSBS*, **XIX**, 745 (2017)
7. S. Zhironkin, M. Gasanov, O. Zhironkina, *EpSBS*, **XIX**, 753 (2017)
8. J. Rojter, *International Conference on Engineering Education and Research "Progress Through Partnership"* (2004)
9. C. Tenopir, D.W. Kin, *Communication Patterns of Engineers* (New York 2004).
10. G. Blake, *IIE Solutions*, **30**, 38-39 (1998).
11. S. Zhironkin, M. Gasanov, O. Zhironkina, *EpSBS*, **VII**, 124-131 (2016)
12. S. Zhironkin, V. Guzyr, *EpSBS*, **VII**, 160-166 (2016)
13. A.J. Antsupov, A.I. Shipilov, *Conflictology* (Moscow, 2001)

14. Longman Dictionary of Contemporary English (Pearson Education Limited, 2003).
15. A. Edmondson, D. Smith, California management review, **49**, 6 (2006).
16. S. Zhironkin, M. Gasanov, O. Zhironkina, EpSBS, **VII**, 124 (2016)
17. S. Zhironkin, E. Gasanov, O. Zhironkina, E. Taran, SHS Web of Conferences, **28**, 01145 (2016)