

Bilingualism as a Determinant of Professional Mobility of a Future Engineer: Sociocultural and Pedagogical Aspects

Gvozdeva E.N.

Department of Humanities

Trans-Baikal Institute of Railway Transport - a branch of
Irkutsk State University of Railway Transport
Chita, Russia
gwelena@mail.ru

Loginova E.G.

Department of Humanities

Trans-Baikal Institute of Railway Transport - a branch of
Irkutsk State University of Railway Transport
Chita, Russia
elena_loginova@inbox.ru

Abstract—This article deals with the issue of bilingualism as a condition for professional mobility of railway engineering students. The opinions of domestic and foreign researchers on the concepts “bilingualism” and “professional mobility” and definitions of the main components of these terms are analyzed. The article discusses differences between artificial and natural types of bilingualism, describes conditions under which the artificial bilingual educational environment can be created as an effective tool for the development of academic and professional mobility. The article presents results of the experiment and the survey of students. The authors conclude that it is advisable to implement new technologies aimed at developing professional mobility of engineering graduates. The article is of multidisciplinary nature.

Key words—*bilingualism, natural bilingualism, artificial bilingualism, professional mobility.*

I. INTRODUCTION

The phenomenon of professional mobility is one of the most crucial research topics, since mobility provides an advantage in the global economy. A specialist who is able to adapt to new requirements is of interest. Consequently, a university graduate must possess skills and abilities that will help him to change his activities in the context of social transformations, social reforms, wars, development and obsolescence of technologies, as well as developing industries. Graduates of railway universities whose career depends on their ability to adapt to changes in various fields of work are no exceptions. The social conditions of professional mobility require the search for new pedagogical technologies.

The phenomenon of professional mobility is the subject of research [1-3]. Being one of the types of social mobility (R. Bendix, S.M. Lipset, P. Sorokin) [4-6], professional mobility is the movement of a whole professional group or an individual in the social space. This phenomenon can affect a group of people (group professional mobility), and its individual representatives (individual professional mobility).

Individual professional mobility depends on many factors, including education, advanced training, experience, personal potential skills, social qualities, etc.). individual professional mobility is not only the dynamics in the social space, but

personality traits of the individual, which contribute to successful professional implementation. B.M. Igoshev believes that “professional is an integral personality trait that expresses an individual’s ability and willingness to change his professional position, status and movements in the professional sphere on the basis of worldviews and value orientations, personal qualities, knowledge and personal needs” [7]. Thus, professional mobility is a feature of modern society and a personality trait that reflects readiness for changes in the professional environment. One of the opportunities for career dynamics is to get a job abroad which requires knowledge of the foreign language. Bilingualism enhances competitiveness in the labor market.

Bilingualism is an ability to speak two languages. “Multilingualism” is a high level of knowledge of several languages. In the historical aspect, bilingualism is not a new phenomenon. Since the ancient times, the ability to speak several languages has been the norm rather than the exception, therefore bilingualism has always been in the focus of various sciences. The sociocultural aspect of bilingualism suggests its study as a positive factor in the intercultural interaction of representatives of various ethnic communities. This approach reveals social prerequisites and causes of bilingualism, allows us to analyze the distribution of social functions of bilingual languages, and investigate the influence of bilingualism on the development of identities [8]. This approach poses a rather complex task for the modern education system – development of the linguistic and sociocultural competences [9].

Bilingualism and developing globalization and single educational space have acquired new forms. The concepts “artificial” and “natural” bilingualism were updated, and the study of foreign languages has become a necessary requirement.

The division of bilingualism into natural (fluency in two languages since childhood) and artificial (purposeful study of a foreign language in the academic environment) is very conditional. Many authors distinguish between different types of bilingualism, taking various criteria as a basis. In particular, Hugo Beetens-Beardsmore [10] identified more than a dozen different types of this phenomenon: “regressive”, “residual”, “balanced”, etc. Of course, all varieties should become objects

of further comprehensive studies. The phenomenon of artificial bilingualism is of interest, since it is developed in the academic environment and is a driving force that contributes to the growth of professional mobility of engineering graduates.

Education is the most important factor affecting the readiness for creative activity, a flexible response to changing external conditions and transformations in the professional sphere. Higher educational institutions should take into account social needs and create the basis for the development of a future specialist, his socialization, professional and personal growth and professional mobility. Due to the remoteness from the center, the Trans-Baikal region (it is necessary to take into account its level of socio-economic development, the national composition of the population and the demographic situation as a whole) is not a region where there are prerequisites for the development of mass natural bilingualism. Therefore, we assume that one of the possible ways to solve this problem is to create an artificial bilingual environment in the educational space of the university by means of studying a foreign language. At the present stage, a graduate of the engineering university should be able to use acquired knowledge of a foreign language in social and professional communication, which is a key to its future competitiveness in the labor market.

There are no works that trace the relationship between bilingualism and professional mobility of future railway engineers. Based on the existing works in bilingualism and professional mobility [11-13], we decided to track knowledge of a foreign language acquired at a university that affects graduates' readiness for professional mobility.

II. METHODS

1. THEORETICAL METHODS

To determine the impact of bilingualism on the professional mobility of future railway engineers, literature on a scientific problem was analyzed. In particular, we studied literature on professional mobility development; generalized the experience of scientists describing bilingualism in Russia. The use of these research methods made it possible to describe how an artificial bilingual environment created in the university by means of the "Foreign Language" discipline affects the development of professional mobility.

2. SURVEY

At the initial stage (September 2017), the authors conducted a survey of 302 students of the Trans-Baikal Institute of Railway Transport to identify and evaluate the significance of factors that could impede their future work or internship abroad. In addition, this survey helped identify conditions that will contribute to a successful career both in Russia and abroad. At the end of the training course (February 2019), students were resurveyed.

III. RESULTS

At the initial stage (September 2017), the question "Would you like to have a temporary job abroad?" was answered positively by 98% of the students surveyed. Similar results were obtained on the question "Would you like to go to a

conference (exhibition, competition, symposium, advanced training) abroad?". At the same time, only 52% of the respondents expressed their willingness to work (internships, participate in professional events, etc.). The same survey was conducted at the end of the foreign language course (February 2019). 98% of students expressed a desire to work in foreign countries, 74% of students were ready to do it.

Students were asked to indicate educational disciplines that can develop competencies that will allow them to exchange experience in with foreign colleagues or work for foreign railway companies. The results are presented in Diagram 1.

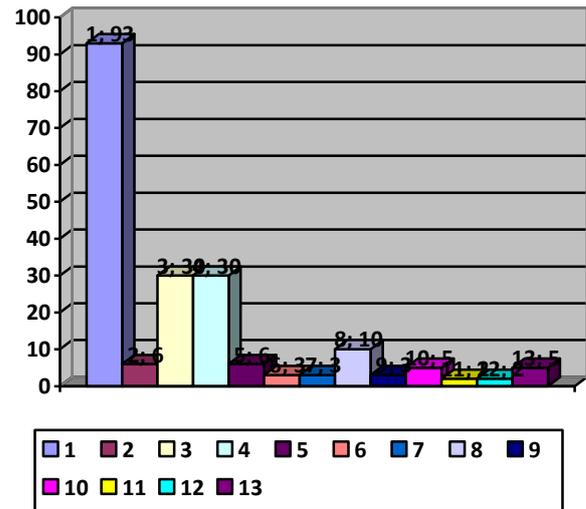


Fig 1. Academic disciplines: 1 - Foreign language; 2 - Social Studies; 3 - History; 4 - Culturology; 5 - Mathematics; 6 - computer science; 7 - Russian language; 8 - Engineering disciplines; 9 - Management; 10 - Psychology; 11 - Sociology; 12 - Political science; 13 - Geography.

Survey participants were asked to indicate one of the factors that would stop them from accepting a job offer in a foreign country. The survey was conducted twice: at the initial stage and at the end of the course. The survey results are presented in Diagram 2.

TABLE I. OBSTACLES TO MOBILITY.

№	Obstacles	2017	2019
1	Lack of knowledge of a foreign language	91 %	45 %
2	Improper conditions	54 %	52 %
3	Ignorance of traditions and customs	69 %	32 %
4	Low salary	56 %	60 %
5	Reluctance to leave homeland	24 %	22 %
6	Fear of a foreign culture	76 %	35 %
7	Ignorance of mentality	67 %	42 %
8	Geographical distance	22 %	20 %
9	High requirements for labor discipline	39 %	45 %
10	Intensive work schedule	35 %	33 %

IV. DISCUSSION

Table I shows that the main concerns are caused by sociocultural factors whose dynamics is presented in Figure II.

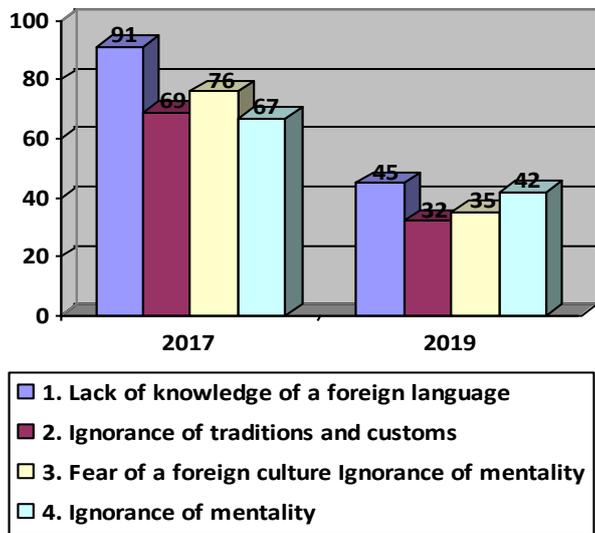


Fig 2. Sociocultural factors.

In addition, students were asked to rank these factors by a five-point scale. Since the survey was conducted at the beginning and the end of the foreign language training course, the authors had the opportunity to trace the dynamics of these factors. First of all, this concerned the influence of the bilingual environment created in the university. We analyzed the factor “Lack of knowledge of a foreign language”, which was directly influenced by the study of the discipline “Foreign language”. The results are presented in Diagram 3.

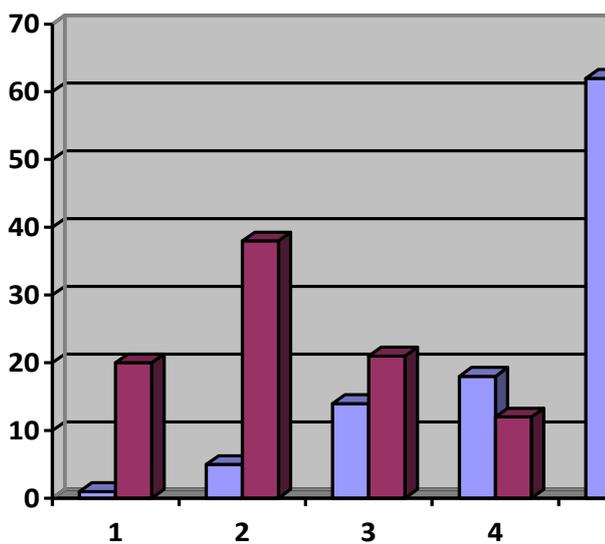


Fig 3. Factor “Lack of knowledge of a foreign language”

The results of the survey conducted at the initial stage of the study showed that 98% of the 1st year students wanted to work in foreign countries after graduation from the university, while only 52% of the respondents showed their readiness for this. The main obstacle to this goal was insufficient knowledge of a foreign language. Therefore, we suggested that if we create proper conditions to develop the bilingual communicative competence [14], it will allow students to communicate with representatives of other cultures and orient themselves in a foreign-language sociocultural environment. We believe that the artificial bilingual environment is a tool that will help achieve this goal.

The bilingual environment is a complete immersion of a person in the bilingual language space, in which both languages become its integral part [15]. An artificial bilingual educational environment can serve as a social model for the student, where all participants in the educational process play certain roles. The artificial bilingual environment ensures controllability of the learning process. Training is carried out by a teacher who can be either a bilingual or a native speaker.

For a successful foreign career of a railway university graduate, knowledge of a foreign language is required for everyday and professional communication. Since the object of the study is the development of professional mobility, and the graduate’s willingness to work abroad, knowledge of a foreign language contributes to the implementation of this task. To this end, the authors have developed English language courses aimed at the development of foreign language communicative competence in the field of railway engineering. For example, students enrolled in “Train Traffic Assurance Systems” specializing in “Automation and Telemechanics in Railway Transport” study the Digital English course. It is designed to master professional vocabulary and contains topics of special disciplines.

This course contains tasks that simulate professional communication situations. The authors relied on the subject-language integrated learning CLIL (Content and Language Integrated Learning) provisions. This technology considers the discipline "Foreign Language" as a means to study other subjects which allows the student to improve his communication skills, including in his native language. A large amount of language materials, solution of specific communicative problems, the use of interactive methods help immerse in the natural language environment.

The future railway engineer should possess professional skills and be aware of current world trends in his professional field. For this purpose, the authors developed a training manual “English. Supplementary Reading aimed at integrating students into the professional foreign language information environment, expanding their knowledge of the profession which is a prerequisite for ensuring the competitiveness of a future railway engineer. Successful communication in a foreign language requires knowledge of grammar and professional vocabulary and development of oral and written language skills for business and professional communication. For this purpose, students studied the “Business English” course which covers a range of pressing issues: a business trip,

a job interview, participation in a conference, business ethics, etc. This course is aimed at simulating professional communication situations that can arise while working abroad.

V. CONCLUSION

Thus, creation of the artificial bilingual environment within the railway university involved foreign language teaching technologies that can bring the learning situation closer to the real one. After having studied the discipline (3 semesters) which included three sections (“General English”, “Special English” and “Business English”) and the use of subject-language integrated training, students were asked to answer the questionnaire questions described in the Results section. The willingness to work abroad was observed in 74% of respondents compared to 52% at the initial stage. In addition, while at the beginning of the study, 62% of respondents considered their lack of knowledge of a foreign language as a factor preventing them from working in foreign countries, only 9% of students did it after having studied English. These results indicate that the main obstacle affecting the development of professional mobility of a future engineer the (lack of knowledge of a foreign language) can be overcome with the help of a special learning process involving professionally-oriented training and the bilingual environment.

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