

## Forming Motivation to Learning English by Students Studying Biology at University

**Gulnara A. Arslanova\***

Kazan Federal University, Institute of International Relations, History and Oriental Studies, Kazan, Russian Federation, Russia

**Golnar I. Sosnovskaya**

Kazan Federal University, Institute of International Relations, History and Oriental Studies, Kazan, Russian Federation, Russia

**Anna A. Kirpichnikova**

Kazan Federal University, Institute of International Relations, History and Oriental Studies, Kazan, Russian Federation, Russia

### Abstract

The problem under investigation is relevant because in the modern period of globalization and internationalization the need in highly qualified specialists in the field of natural science with good knowledge of English, who can make use of the English scientific literature and perform intercultural and professional communication is great. Knowledge of English is a fundamental characteristic of professionalism, subjectivity of the expert and his desire for professional self-development. The purpose of the article is to reveal the level of motivation of learning English by biology students and identify innovative approaches aimed at increasing efficiency of forming students' motivation. Close inspection of this problem shows that the main directions in achieving the aforesaid purpose are the following: context-based teaching, including both semiotic and training models, and activity-based approach which involves a combination of educational and extracurricular work of students. There is a need to shift the emphasis in the content of the English course, namely, to increase motivation-oriented tasks for students. Selection of the content of education should be based on modern scientific achievements in biology and thus directly motivate the interest of students. It is assumed that more attention should be given to speaking practice and oral speaking on the topics that reflect learners' needs and interests and thus provoke motivation, which is important for successful language learning. The alternation of intensive and extensive reading of scientific texts in biology with regard to learners' level, with plotting their individual route, as well as organizing communication in English inside the educational group, allows to enhance the effectiveness of forming motivation to learning English. The article may be of interest to graduate students, teachers of higher educational institutions, scientific workers dealing with the problems of forming educational motivation of students studying natural sciences at university.

**Keywords:** Education; Teaching; University; Students; English language.



CC BY: [Creative Commons Attribution License 4.0](https://creativecommons.org/licenses/by/4.0/)

### 1. Introduction

In modern conditions of intensification of globalization the need in well trained, highly qualified specialists, working in the area of natural sciences, and having good knowledge of the English language has become urgent. Not only communication with their foreign partners is important for modern specialists, but also the ability to use knowledge of English in their professional activities. Knowledge of the English language makes communication more effective and is a universal means of successful professional activity and self-realization. From what has been said, it might be assumed that the requirements for language training and the level of knowledge are growing. The interest to the issue of forming motivation to learning languages (Frantseva *et al.*, 2017), (Sampson, 2015) is advancing steadily in Russian and foreign pedagogical science. But it should be pointed out that this problem has not been adequately explored which makes itself evident in the lack of methods giving positive dynamics to motivation of language learning aimed at the practical use of English by the students as a tool for the realization of their professional interests.

In modern pedagogical literature the importance of the problem of forming motivation to learning foreign languages is discussed in the works of (Zimnyaya, 1998). Theoretical problems of motivation of learning foreign languages are considered by (Bondarevskaya, 1998; Gardner, 1985; Williams and Burden, 1999). A professionally-oriented approach in foreign language teaching is examined in the works by (Fedotkina, 2007; Obraczov, 2005). The role of information and communication technologies in the forming of positive motivation is revealed by Evstigneeva (2013). The formation and development of motivation to communicate in a foreign language is considered by Ter-Minasova (2004). The relationship between motivational sphere and activity is studied by Maslow (1999). The theory of contextual learning is considered by Verbitsky (2000), the development of motivation in education is studied by Ilyin (2000). Forming of motivation of the students of non-linguistic specialties is studied in the works of (Arslanova, 2011; Yemelyanova, 1997). The Council of Europe developed common European competences of language proficiency, and the emphasis was placed upon the work with a broad spectrum of texts, namely: job instructions and checklists, leaflets, newspapers, brochures, advertisements, etc.

## 2. Methodology

According to methodological principles, different pedagogical methods of investigation were used. Theoretical methods included the analysis of scientific psychological and pedagogical literature. Pedagogical methods of research involved monitoring of educational activity of students, the attention being drawn to the dynamics of students' knowledge of the foreign language according to such specific aspects of speech activity as reading, pronunciation, translation, knowledge of vocabulary. The interview was supposed to reveal the motivation of students to master English and their interest in significant texts. The survey was aimed at revealing the level and the place of motivation of learning English in the system of educational motivations. The levels of students' motivation were studied by the pedagogical experiment, it was also supposed to identify the causes and the ratio of their passive and active knowledge of English, the dynamics of language acquisition during the two years of their learning the subject, and it assumed the implementation of pedagogical examination. The analysis of pedagogical experience included modern realities and trends of language training in professional sphere (Villalobos, 2003).

## 3. Results

The analysis of pedagogical experience and actual practical work show that the complexity of forming motivation to learning English by students doing biology resides in the fact that the level of forming motivation is individual and correlates with the existing level of foreign language proficiency. Therefore, in group training there is a need to bring the given parameters to their internal coherence and synergy. According to the survey, it was revealed that for 77% of respondents the interest in language training lies in understanding of the text, that is, reading and translation of English texts, which means their passive knowledge of the language. 13% of respondents consider doing exercises aimed at developing oral speech skills in foreign language, that is, communication, as the most significant activity in the process of language learning. What is more, 10 per cent of respondents marked their experience in foreign language speaking. As a rule, students do not know the vocabulary of the biological subject. While among the first year students there were 56 % of those internally motivated to study English, there were only 29 % among the second year students. At the third year extravertial (external) motivation prevails and it makes 71 %.

A survey, conducted among 130 students of Kazan University (students at the age of 17-20), showed their different levels of individual motivation to language learning. Attention is drawn to the fact that the interest to foreign language learning is prevalent in the first year students. At the second year students have a strong desire to communicate in the foreign language, and at the third year extravertial (external) motivation prevails, that is the desire for good rating, because English is a compulsory subject, which decreases the introverted (inner) motivation and points to the reduction of interest in language learning. In this connection, a prolonged experiment was carried out which lasted over 2014 -2017 academic years. In the control group (50 students) a traditional training was conducted while in the experimental one (25 students) contextual learning was implemented, which included semiotic and training model of learning. The activity approach was carried out in extracurricular training.

The results of observation, interviews and questionnaires show that the main problems with which students, future biologists, face in the process of learning English are their troubles with giving shape to their ideas and statements, the uncertainty in the choice of language means, the narrowness of their vocabulary, the prevalence of passive work with texts (reading of different texts). Thus, a unilateral language training was manifested when only passive knowledge of the language developed, as well as the lack of attention to speaking and listening, to constructing correct sentence patterns, all these showed the lack of motivation in foreign language learning. In the course of investigation, it was revealed that from year to year as students continue their studies some changes in motivation of learning English occur, and extroverted (external) motivation becomes prevalent in relation to introverted (internal) one. Hence, special attention should be given to the efficient formation of motivation to learn English, which can be improved through the application of methods and tools of co-adaptive pedagogy. Co-adaptive pedagogy implies the revealing of interdependencies of technologies, and correlative adaptation of models and pedagogical approaches to modern practice makes an integrated educational process. Therefore, with the aim of effective training of students and within the framework of contextual learning, attention should be paid to the interaction of the semiotic and training models as well as to the activity approach in learning, and these means the following:

- Forming of oral speaking and discursive skills;
- Increase of English vocabulary in the sphere of biology;
- Making up individually motivated routes to master the language, with the goal of the increase of motivation and personal interests of students.

Contextual learning in educational process ensures, as a rule, more attention to the communicative function of the English language and this forms aspiration to the development of linguistic and speaking skills, which is potential language proficiency. Simulation and semiotic models of learning activate the adequate use of speech patterns and statements and, favour the formation of discursive skills, i.e. the ability of perception of different types of discourses based on positive motivation. This allows building up a strategy of behavior and a background context in the process of educational and professional communication, it also helps to understand the realities of the country studied, as well as accumulate knowledge of its biological diversity and resources and concepts of leading biologists. Teaching lexis makes it possible to extend students' vocabulary, fill it with a variety of terms related to their professional activities. Schmitt (2000) believes the text to be important due to a wide range of vocabulary, which,

consequently, expands the students' lexicon. Thornbury (2002) calls for the relationship both of the text and the oral situation, which allows students to extend their lexical field. In his opinion this is the way, which makes the choice and use of words easier, and this is when the stability of motives is formed. Individually selected thematic text makes it possible to combine semiotic and training models of learning. Due to the fact that passive knowledge of the language is prevalent in our students, we consider that the primary emphasis should be placed upon the contextual learning while the activity approach should be carried out during extracurricular studies.

In line with co-adaptive pedagogy, the models mentioned above emerge in unity and interrelation. Therefore, the process of formation of motivation to learning English of students - future biologists turns out to be an integral characteristic feature of highly qualified specialists training. Positive motivation provides communication in English in the field of professional discourse and willingness to interact in the professional English-speaking environment.

It should be noted that in the course of effective implementation of communication in English with students studying natural science it is advisable to identify their need in oral comprehension and speaking skills.

To master communication in English successfully it is useful to form speech patterns within the limits of implementation of the semiotic and training model when conducting professionally oriented communication in English, and this implies a combination of learning English both as a means of mastering their profession and widening their professional communication. This calls for an update both in the content of education and in the structure of academic studies. It is necessary to restructure the content of thesaurus, to focus on the training of students' speech activity. So while organizing the training session a teacher should pay particular attention to the following issues:

- Vocabulary extension should be connected with particular specialty which students are getting;
- Speech interaction should match with the stated goal, which is achieved by organizing intra-group communication and focusing on the speech content.

As analysis proves, traditional learning does not provide right achieving the goal of forming of English language studying motivation. So proposed model, i.e. contextual training and actionable approach, allows getting lasting results in training and mastering English language by students of biological departments. While increasing of motivation and taking into account professional preparation and sphere of English language application in the future professional activity, listening and English speaking assume analysis of training texts contents, motivational orientation of tasks, contents and exercises, as well multilevel orientation of educational forms and methods. Such an approach implies individual route of English language mastering to be the first since it considers individual motivation. This approach lets teachers align knowledge level in a study group gradually, which further gives opportunities to use different forms of classes, to organize intra-group communication, role training, presentation and press conferences. The next logical step is organization of students' self-directed learning in accordance with educational process. Such pedagogical strategy based on activity approach allows increasing students' agency and developing the readiness for professional self-development, understanding the importance of knowing English as a factor of professional advancement. The implementation of motivation-oriented methods supposes that lesson must:

- The topic of the texts must reflect students' interests and include professional information;
- It must promote the acquaintance with biodiversity and resources of the country, biology scientists;
- Initiate the achievement of the automatism in learning speech patterns, phraseological units, proverbs and saying and confident knowing of dialogue structures;
- Activate the humanitarian knowledge (history of science, fiction literature, personalities, etc.) by involving students in conferences, presentations, competitions.

Students' self-directed learning in modern realities is impossible without using of information and communication technologies. The main advantage of information and communication technologies is ability to increase the students' motivation to learning topic, conditions close to reality; demonstrative and image sensitivity of learning materials influenced the students' affection; optimality in creation of individual learning routes; integrity that allows to unlock students' creativity and skills, to get creative during solving given problems. The usage of information and communication technologies during students' individual work allows varying activity (project technologies, presentations, web seminars, etc.), that in turn leads to widening of opportunities in motivation formation while studying English by the means of two approaches – contextual education and activity approach. Of course, the usage of information and communication technologies is not an only way to solve the problem but the practice shows that the process of motivation formation while studying English becomes more intensive. It is also important that students' personal agency increases and capabilities to self-development and self-reflection widen (Nurgalieva *et al.*, 2018).

#### 4. Discussions

The researches (Ter-Minasova, 2004) targeted to studying English in higher educational institution give attention to interaction with people all over the world that promotes the interest development and positive motivation to learning foreign language. Professionally oriented teaching of foreign language of non-linguistic specialties students is considered from viewpoint of interdisciplinary coordination and intercultural collaboration (Fedotkina, 2007; Obrazcov, 2005). Our researches are based on works where motivation is considered as behavioral determinant (Ilyin, 2000) ; (Maslow, 1999), on works which are devoted to motivations' role while teaching languages (Zimnyaya, 1998). The specificity of motivation formation while teaching English language to the biology faculty students is that the language acts as a means, as a tool and as a basis of motivation formation when professional success cannot be achieved without knowing English language. Therefore, there is a necessity not only

to choose the content accurately but also to use innovative approaches and pedagogical technologies that is considered in the work by (Kondrateva, 2016; Madyakina, 2016; Sosnovskaya and Nalimova, 2016)

Novelty involves mix of individual – creation of individual learning routes targeted to motivation formation, contextual education including semiotic and training patterns and organization of students' individual work. On the assumption that students usually display passive command of English the opinion about difference between intensive and extensive reading by Schmitt (2000) becomes more important. Extensive reading involves giving attention to accurate text comprehension. Text understanding motivates to learning foreign language. We think that it is important to combine intensive and extensive reading. The ideas by Thornbury (2002) who writes about the importance of topical texts as a basis of lexical and semantically typology are also valuable. In practice, the usage of such approach taking in account current situation helps to increase and intensify educational process. Students' individual work is important because motivation formation process is not contained in educational process. Increase in students' personal agency and motivation allows starting the process of continuous interest formation and students' requirement of studying English (Salim et al., 2018).

## 5. Conclusion

Specificity of training students, who are future biologists, is manifested in the idea, that they do not have English vocabulary by specialty unlike students at humanities faculties (historical, philological). Dominant tendency is decreasing of English language studying motivation while studying in higher education institutions. Because of pedagogical investigations, it is revealed that there are different types of motivation forming while studying English language by students of biological departments. They are based on combination of semiotic and training models as well as gaining real experience on practice. It has been established that students mainly have English language proficiency in a passive form. In addition, the investigations have shown the conditions under which English language studying motivation is formed. These conditions are effective while being provided by contextual training and activity approach to students' extracurricular activities. It has been shown that building of individual routes of English language competence is of great importance. Besides alignment of the motivation level in a study group by organizing intra-group communication in English language is quite relevant too. The use of information and communication technologies in student's independent study requires careful tasks and exercises selection to raise motivation and subjectivity. In face-to-face training, it is important to extend professional vocabulary by combining intensive and extensive reading and by training main sayings and expressions to bring them to automatism. The selection of training content should be constantly improved and updated on the basis of relevant data in biological science, which raise interest and motivation. The level of motivation forming while studying English language, which has been shown by students of biology, is defined by the following criteria:

- Personal one, which means what sense is imparted by a student in goal-setting while studying English language;
- Institutional one that defines the role and place of English language studying motive in the complex of other training incentives;
- Professionally oriented one that considers realizing of English language studying value in the future professional activity.

Readiness for creative self-realization within the framework of professional activity proves the formation of motivation in English language studying process. Experimental group data have shown that internal motivation in English language studying has been noted among 74 per cent of students, while the control group have shown only 44 per cent. Internal motivation has been manifested in practical activities among students, i.e. their participation in presentations, conferences, articles writing. It has been their first experience in real use of English language, and situation of success has strengthened positive motivation to study English language.

## 6. Recommendations

This paper is considered to be interesting for practical teachers working in natural faculties at universities and being engaged in the problems of motivation forming when studying English language. It can also arouse schoolteachers' interest since many problems and issues proceed from school preparation and schoolteachers should pay particular attention to the balance necessity in English language studying, i.e. forming real interest in English language and motivation to its study.

## Acknowledgements

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

## References

- Arslanova, G. A., 2011. "Formation of students' cognitive competence in studying a foreign language at non-linguistic institution." In *Foreign languages in the modern world: materials of IV research and practical conference – Kazan: Innovative technologies centre*. pp. 249-54.
- Bondarevskaya, O. I. (1998). *Psychological study of capacities to foreign languages: abstract of the dissertation... candidate of sciences*. Yaroslavl State University: Yaroslavl. 22.

- Evstigneeva, I. A. (2013). *Methodology of development of student's discursive capacities on basis of modern informational and communicative technologies (english language, linguistic higher educational institution), Dissertation..... Candidate of sciences.* Tambov.
- Fedotkina, E. V., 2007. "Actual problems of professionally oriented teaching foreign languages." In *Humanitarian education in technical higher education institution: traditions and innovations: materials of scientific conference.* Moscow.
- Frantseva, E. N., Prilepskikh, O. S., Kuznetsova, E. N., Dontsov, A. V. and Korlyakova, S. G. (2017). The technology of communicative teaching as a means of forming communicative competence of pedagogical university students in the process of learning a foreign language. *Novosibirsk State Pedagogical University Bulletin*, 7(4): 108-23.
- Gardner, R. C. (1985). *Social psychology and language learning, The role of attitudes and motivation.* Edward Arnold: London.
- Ilyin, E. P. (2000). *Motivation and motives.* Saint Petersburg.
- Kondrateva, I. (2016). Training of scientific language through discursive analysis. *Journal of Organizational Culture, Communications and Conflict*, 20: 38-44.
- Madyakina, N. (2016). Professionally focused reading while studying. *Journal of Organizational Culture, Communications and Conflict.*, 20: 1-7.
- Maslow, A. (1999). *Motivation and person, Trans. From english.* Saint Petersburg.
- Nurgalieva, M., Auezova, A. and Kosmuratova, A. (2018). Revisiting the role of independence formation and organizing individual work of the student in the educational process of HEI. . *Opción.*, 34(85).
- Obrazcov, P. I. (2005). *Professionally oriented teaching foreign language at non-linguistic faculties of higher education institutions.* Orel State University: Orel. 91-92.
- Salim, m. A. M., ibrahim, n. A., hassan, h., makassar, p. P. and indonesia, s. S. (2018). Authenticating the tourist destination on the official tourism website of indonesia, A multimodal perspective. *Astra Salvensis*:
- Sampson, R. J. (2015). Tracing motivational emergence in a classroom language learning project System. 50: 10-20.
- Schmitt, N. (2000). *Vocabulary in language teaching.* Cambridge University Press: UK.
- Sosnovskaya, G. I. and Nalimova, I. S. (2016). Innovations in the system of higher education in Russia. *Journal of Organizational Culture, Communications and Conflict*, 20: 51-55.
- Ter-Minasova, S. G. (2004). *Language and intercultural communication.* Moscow State University: Moscow.
- Thornbury, S. (2002). *Now to teach vocabulary.* Person longman. 185.
- Verbitsky, A. A. (2000). *Development of students' motivation in contextual education.* Moscow.
- Villalobos, A., J. V. (2003). El concepto de espacio político como paradigma ético-jurídico en la nueva Constitución venezolana. *Frónesis*, 10(2): 73-89.
- Williams, M. and Burden, R. L. (1999). Students developing conceptions of themselves as language learners II. *The modern language Journal*, 83(2): 193-202.
- Yemelyanova, N. A. (1997). *Formation of optimum motivation to learning foreign language by students of non-linguistic higher education institution, Abstract of the dissertation..... Candidate of sciences.* Novgorod State University: Nizhniy Novgorod: Nizhniy. 227.
- Zimnyaya, I. A. (1998). *Psychology of teaching foreign language at school.* Moscow.