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**TO THE QUESTION OF TEACHER – STUDENT INTERACTION
MODELING IN A TECHNICAL UNIVERSITY**

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Abstract

Pedagogic modeling at a technical university is an urgent task at the present stage, especially in the aspect of a foreign language, which causes certain difficulties for students of technical fields. Being, in their opinion, a non-core subject, it is deprived of attention by future engineers, and meanwhile, the demand for engineering specialists with knowledge of the English language increases every day and forces them to change their attitude towards this subject. This article examines the participants of the pedagogical interaction, characterizes their types, analyzes their activities and corrects them, offers a number of recommendations for achieving an effective result in teaching, trying to compose a kind of a model of the ideal teacher – student interaction. The actuality of the article consists in a vital necessity of changing teacher – student interaction in modern educational conditions that will facilitate a fresh source of new methods, technologies and techniques of high school education in today's realities. The scientific importance of the article implies some recommendations how to improve the academic and instructive interaction between a teacher and a student, develop scientific and independent work components of this interaction that can be used for perfecting the university educational system as a whole.

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1. Introduction

Nowadays much is said about models and modeling in different sciences. It has a multi-discipline nature and considered to be one of the most effective methods in pedagogy, as well. Models can solve a lot of pedagogical tasks and problems especially now when deep modernization of high school education is necessary. Models can help forecast the development of the academic process in different spheres and subjects, form new effective methods of teaching (Likhacheva, 2020d).

The new academic model of a foreign language education, as it has already been stated earlier, has some elements, such as aims and contents of teaching, participants of the academic process, the interaction itself, methods and approaches, motivation, scientific component, independent extra-curricular work and some others. It is not the total list; it will be expanded with the time being.

We believe that the creation of a pedagogical model of teaching a foreign language at a university can solve the problem of motivation lack, low-quality programs and ineffective methods of teaching a language at the present stage as well as unqualified staff (Likhacheva, 2016a). The new model formation can eliminate other disadvantages of teaching a foreign language in a technical university, such as improper educational contents and programs as well as unnecessary aims (Likhacheva, 2019).

The pedagogical interaction is one of this model components and the key aspect of this article. We will cover the academic and instructive components of it, as well as scientific and independent work components as the result of teaching and studies depends greatly on the professional characteristics of a high-school teacher and students' motivation to master new competences.

2. Problem Statement

In earlier works, we identified the constituent parts of the model of teaching a foreign language at a university. This is the university itself, and the contents, aims, and methods of education, and, of course, the participants in the pedagogical process, namely, the teacher and the student (Likhacheva, 2020a). In the context of this work, we will consider their functioning at the present stage, try to identify the shortcomings of each side, determine the main features and recommendations for effective pedagogical interaction and high-quality academic impact. We will also determine the relationship of these components with other ones in this pedagogical model.

3. Research Questions

Pedagogical interaction can imply academic, instructive, scientific and extra-curricular kinds of cooperation. Academic interaction means work in class, explanation of the material by the teacher, its perception by the student. It is the realization of practical educational aims of teaching (Bershadsky, 2013; Dakhin, 2013). As for instructive cooperation, it covers the realization of upbringing aims at lessons that imply love for Motherland, patriotic aspects, respect to other people, good behavior. All this is done by means of the subject that is taught. Scientific interaction is the cooperation of a teacher and a student in research activities which are so demanded nowadays and must help the student think and present his thoughts logically, clearly and in a simple, understandable for everyone way. Extra-curricular kinds of

interaction, or independent work component, comprise, in our opinion, independent work of a student, connected with studies, and its coordination by the teacher. These are aspects that develop general educational aims of the academic high-school process.

4. Purpose of the Study

So we see that the pedagogical interaction between a teacher and a student is a rather complicated process that needs careful studying and analyzing for its effectiveness and further development in high-school conditions. For that we will try to consider and examine every constituent part of it and offer some recommendations for better results and perfecting students' foreign language communicative competence level.

5. Research Methods

So, the parts of pedagogical interaction are the teacher and the student. The teacher always represents the defining link of pedagogical interaction. It is the level of the teacher, his motivation and professionalism that determine the effectiveness of the academic process and the progress of a modern student (Likhacheva, 2020c).

A teacher may be fully motivated, or partially motivated (Likhacheva, 2020b). A motivated teacher is always looking for ways to convey the material to the student, adapt it to the student's level, and create the most comfortable conditions for the educational process and perception of the material. This teacher is always in a good mood, work is a joy for him, he is optimistic about the future, happy with the results of his work, since they are always effective. Such a teacher is looking for new methods, develops existing ones, uses an individual approach, activity-based in combination with a personal one (Mirolyubov, 2015). The main feature of the work of such a teacher is the use of the communicative method, as well as the project methodology, which allow the student to realize all his latent capabilities and abilities, give an orientation to work in a team or individually, and allow achieving the highest possible result.

A partially motivated teacher is able to vary the methods, be optimistic, and provide a high result of student knowledge. However, he does not see the prospects that interest him, considers a good result to be mostly utopia. He is sure that for students of a non-linguistic university a foreign language is optional, unnecessary and its development is almost impossible. This teacher is not optimistic, his attitude depends on the group, and not on his own motivation, which is weak (Likhacheva, 2017). He does not make special efforts to introduce new methods, improve existing ones, often does not use an individual approach. He is indifferent to the knowledge of students, their interests and problems. Such a teacher can potentially be effective and active, but he is disappointed in the foreign language academic process and does not see prospects for growth and development.

An unmotivated teacher does not want to work well with students at all, is skeptical, and does not see any prospects for him and students. He is totally indifferent to their development, problems, does not study new methods, and does not develop, since he does not see any sense in this. This person is dangerous to students. On the one hand, he is a demotivator of foreign language education. On the other hand, his indifference also has a detrimental effect on the overall academic process and mood of the student; he does

not arouse the desire to study in general and the respect of students (Likhacheva, 2016b). Students form their attitude to the language and their studies taking into account the teacher's attitude, his charisma, and communication and teaching methods. An unmotivated teacher does not cause them positive emotions, foreign language education with such a teacher is not effective. As you can see, the influence or non-influence of the teacher is of great importance for the development of student motivation and improving academic performance. Describing the teacher and his activities, we can also underline the style of his work with students, the so-called behavior model. It can be democratic, liberal and authoritarian forms of communication with students. We have listed them according to their preferences - modern students prefer a more democratic form of relationship with a teacher than it was more than 30 years ago, when the authoritarian method of interaction with students was in favor (Galskova et al., 2018). Experience shows that young and middle-aged teachers are more democratic towards students. This style of communication disposes students to the teacher, and he becomes a senior comrade, mentor and friend. Treating a student as an equal helps to increase his motivation to learn a foreign language (Gez, et al., 2010). The student is not afraid of his teacher, asks questions, he is not afraid of the presence of a language barrier and mistakes in speech and writing - the teacher will always help and prompt, support and direct the student's activities in the right direction and the situation will improve - the student will begin to speak without psychological pressure, calmly and freely, correctly and consciously.

The next communication style is liberal. The teacher largely depends on the students - he uses methods that are interesting for them, business games, trains the types of activities that are most interesting to the students, to some extent he is led by them. With this style, there is a possibility of achieving a good result: students are interested in communicating with the teacher just as with a person, they adopt his manners, strive to achieve his level, try to develop, while learning is determined by their self-awareness (Novikov, 2006). Nobody puts pressure on them, does not force them to study and intellectual work. Students study on their own, acquire knowledge on their own accord, they are little controlled by the teacher. But those students who do not feel a special craving for knowledge, for the most part, are not controlled by the teacher, he does not force them to study, improve their knowledge, skills, and abilities. Everything is designed for self-awareness. Authoritarian communication is not the norm today as it used to be (Delimova, 2013). Pressure on students can cause backward reaction, also negative. They will perceive the teacher as a dictator, accordingly, there will be no interest in the subject, in our case, in a foreign language, but rather rejection will arise due to the teacher's communication with them in this format. Such a teacher, perhaps, is guided by good intentions, but the result of the educational process, as observations and comparisons show, are rather low. Accordingly, this form of communication is not constructive in modern conditions, especially in the university environment, where adults, independent people are already studying (Galskova, 2017). Of course, the situation does not mean that the academic process should be uncontrolled and not guided by a teacher. The form of communication should be different, softer, open and conscious. It is easier for the teacher to realize goals and objectives in a comfortable psychological climate, and the feedback from students will be higher (Lyakhovitsky, 2018).

With regard to the second side of the educational process, we note the following. Students can also be classified according to motivation - motivated, partially motivated and unmotivated. The presence of student motivation is largely determined by the activities of the teacher. His professionalism, ability to

establish contact with students, personal motivation are in many ways the determining factors of students' interests. In addition, the prospect of a high-paid job, promotion and career growth can also act as factors of interest for a modern student. So, motivated students tend to have excellent academic performance. They are inquisitive, active not only within the university program, ready to be engaged in research, have an equally positive attitude towards all subjects, not only specialized ones. They are diligent, conscious; use the methods of synthesis, analysis, induction and deduction actively (Delimova, 2013). Such students take part in contests, competitions at a university, regional and state levels. They are truly interested in the result of studies and they are able to become high-quality specialists, researchers and inventors in the future.

Partially motivated students are only interested in selected subjects. They can perform well and fulfill the curriculum depending on their mood, from case to case. Their motivation is often external, dictated by the desire to pass certification, the test or the exam, or defend a course or qualification project. Their knowledge is not always stable, and competencies are in demand. However, such a category of students can subsequently fill the vacancies of the required specialists and work well in their place without large, cardinal interesting results and discoveries. The majority of such students become good specialists.

Unmotivated students are those who study without interest or do not study at all. Such students are not capable of results, achievements, and this happens not because they do not understand the subject, its specifics, features, but because of the lack of interest in studies and future profession. Perhaps they or their parents made the wrong choice and entered the wrong university. The segment they are interested in is in a different plane. There is practically no point in teaching such students - it is a waste of time, emotions, and a waste of energy to nowhere. It is necessary to try to form motivation using an individual, activity or personal approach, or recommend them to change their specialty. Studying without a motivational component is practically meaningless for the student, as well as the work of a teacher without motivation (Novikov & Novikov, 2004). In terms of solving instructive tasks in teacher – student communication, we recommend using regional material in the context of a particular discipline of a foreign language - general, business or specialized. In terms of a common foreign language, we recommend comparing, for example, Russian and foreign traditions, which will contribute to the development of patriotic and international feelings among students, instill and deepen love for their small and large homeland and expand feelings of respect for foreign culture (Likhacheva, 2019). With regard to business English, we recommend to consider the economic situation in Russia and abroad, reveal the essence of the main system-forming enterprises through business games, presentations and projects (Likhacheva, 2020a). Students will gain more information about business and may subsequently want to unleash their business talents and bring even greater benefits to their country and society.

The profile component of a foreign language in an instructive context is revealed by considering industrial enterprises of a regional plan in a particular area - oil business, construction, mechanical engineering, the development of Internet technologies in the region, and so on. Students, revealing a particular feature of the industrial sector in a foreign language in the form of presentations, business games or projects, learn more about their region and country, get the opportunity to compare the industrial sector of several states, and may be interested in research in terms of science and technology in the future.

As we can see, as far as the instructive interaction goes, the teacher should act as a guide, senior friend, instructor, but not a dictator in relation to students. He must be a kind of a model for a student; the

so-called good example. This contributes to a more favorable climate in the classroom, the disclosure of the students' potential and their academic growth. Talking about the scientific component of the interaction between a teacher and a student we should underline that initially research should be based on motivation (Galskova, 2017). It is also important to have a set of competencies to conduct scientific research. It is required to determine the literature, Internet sources, take into account the experience on which one can rely, the factual material, and suggest the result of the research and its application. Of course, the advice and help of the teacher is important. It is possible to invite the student to present the material of interest to him in an abstract form, which will make it possible to widely consider the available information on the indicated problems.

In the process of such reproductive learning activity, the student will be able to determine the scientific vector, i.e. the direction of scientific activity, research priorities, the current state of affairs and other points that together will help to form a real picture of the segment that is subject to research. We will consider the scientific or research segment specifically in the academic activities of students of technical fields. Deep and comprehensive language research, work, projects in this context are somewhat inappropriate, since they are not a priority for future engineers (Galskova & Gez, 2016). Our task as teachers is to help future specialists learn how to analyze and synthesize material, see the prospects for the development of an activity, and predict its profitability in an applied manner. Considering research component as far as a foreign language in a technical university goes, the teacher should motivate students do some reports on topics that can be interesting for a student. Everything must be done in English and connected either with common, business or profile foreign language. It can also be a project on English culture, sights, scientists – that is everything that concerns foreign culture, art and geography. Besides, students can also cover linguistic aspects, if they want. Such things help students get basics of the report work, teach them how to work with literature, analyze it, write and say their ideas logically.

Later there can be the other stage of scientific interaction between a teacher and a student. There can be given a theme, a problem to cover, as far as the subject goes, of course and not a very big one. The teacher shows the vector to the student who begins his scientific practice, so to say. He studies the material carefully, states the subject and objects of the research, defines the goals and makes experiments, propels ideas, gives recommendations and makes conclusions. All his surveys he states in his scientific articles, firstly written in Russian and later in English that cover some little studied points in the sphere both the teacher and the student deal with. Such works can make a good practice for project bachelor and master works and further going serious researches. The novelty of the research will be in the recommendations that future graduates can develop on the formation of a new type of activity, taking into account the specifics of their profession. Very interesting researches can be carried out in English precisely on the profile component connected with their future profession. And the English teacher should control these works as far as the language goes. Besides he can encourage research papers on linguistics and teaching methods. And one more time, we underline that if a teacher is a motivated professional, open for contacts and cooperation with students, smart and has the inquisitive mind, he can organize his students not only for the present but for further professional and personal development, he will infect them with his enthusiasm and intellectual growth.

One more aspect of interaction between a teacher and a student is independent student work. In this case this cooperation is indirect. Again the teacher gives a student a kind of the vector what to do in extracurricular time. Firstly, it is homework. The work is not easy, but possible with its consistency and regularity. The intended homework must meet the requirements of the teaching methodology, i.e. to be feasible, but with elements of complexity, logical taking into account the previous and subsequent material, and interesting as well (Galskova et al., 2018). By doing it, the student develops his creative potential, analyzes and synthesizes information, draws conclusions, builds the foundation for further development. By asking homework in the classroom, we determine its perspective at home, designate the degree of its fulfillment and correctness, we can see both the short-term and long-term results of our work (Likhacheva, 2020b). Monitoring the performance of homework by students is also mandatory; encouragement and censure contribute to the further development of the level of student competence and are important aspects of the educational process.

Secondly, extracurricular activities aimed at improving the foreign language communicative competence of students of non-linguistic universities. These involve attending additional language courses, circles, and also clubs of foreign language fans (Likhacheva, 2017). Additional foreign language courses cover almost all levels of education - from elementary to advanced and international certification. Students of the university pass entrance testing if they wish to attend courses and are assigned to groups in accordance with their level of foreign language proficiency. Courses for improving foreign language communicative competence can be designed for six months, a year, and one and a half, depending on the purpose of training. These courses teach students not only practical competencies, but also significantly expand their horizons, increase the general level of culture due to linguistic and cultural texts, and also develop the skills to think independently, analyze and synthesize material, compare linguistic facts and draw appropriate conclusions (Likhacheva, 2016b). Additional courses in English are exactly what organizes the student's independent work, helps him to catch up on lost material, contribute to the student's compliance with university language requirements and successful certification, both in the form of a test and a foreign language exam (Novikov & Novikov, 2004).

Circles and clubs of foreign language amateurs are also constituent components of extracurricular activities of students, but in this case they do not acquire, but improve their competencies in terms of various types of speech activity - reading, writing, listening and speaking (Raskovalova, 2017). These are exactly those students for whom a foreign language is not just one of the disciplines at the university, but something more, a means of real communication (Pisarenko, 2019). Conversations and discussions in clubs and circles are carried out exclusively in a foreign language, mainly in English due to its widespread use in various spheres of life and work (Shtoff, 2010). Often, members of such organizations are native speakers, that fact makes communication real and in demand. Students see and hear a living language, which has a positive effect on their motivation to further improve it. Aspects of the discussion can be both linguistic difficulties and regional geographic realities of the country of the target language. Thus, the specified component of the extracurricular activities of students contributes to the convergence of cultures, the development of patriotism, as well as the formation of a person with an active life position, which is so important in modern society.

Thirdly, we should underline the importance of special platforms for independent or distance learning. In modern realities their meaning is increasing. Moodle, Skype, Zoom, MS Teams, BBB and many others facilitate greatly in higher education of today. The independent work is successful with their help. And for teachers these tools are rather convenient. Easy to check, easy to organize, easy to set tasks and coordinate in any time and many other properties make them accessible, free and useful nowadays.

6. Findings

After careful studying, comparing and analyzing the material we came to the following conclusions.

Firstly, motivation of both sides of the academic process is rather important for effective results. Without motivation on the part of the teacher and student there will not be the high – quality academic process. Unmotivated parts of communication are harmful and destructive for the whole educational system.

Secondly, there must be modern technologies in use at lessons. Projects, presentations, disputes, quizzes, case-study and business games facilitate students' development and interests; make them work better and for good results. Distant forms of studying and teaching must be known and used on both parts of the interaction.

Thirdly, special attention during the interaction must be given to the working atmosphere, contacts and cooperation which are realized by means of democratic character of interaction between a teacher and a student. The student is treated as an equal; the teacher for him is a comrade, instructor, assistant and a psychologist, if necessary. Besides, the teacher should be empathic to students' problems and difficulties with adaptation. In this case the feedback will be great.

Fourthly, special attention must be given to the independent students' activities, or extra-curricular work, as it is also called. It develops students' thinking, mind, logics, research skills, motivation to know and learn more than is explained in class, self-development and confidence, decision making competence, reliability and responsibility, as well.

If these simple rules are followed during teacher – student communication, the academic process is sure to be efficient and have excellent results.

7. Conclusion

We see that teacher – student interaction comprises several components. These are academic, instructive, research and extracurricular. Academic is based on motivation both of a teacher and a student; instructive includes means of the language that help develop a real personality, a true citizen and a qualitative member of the society; research segment implies motivation to investigate some phenomena that are close to the sides of interaction; extracurricular segment consists in developing students' motivation to study more than at the university. Every segment has its peculiarities and contributes to improvement of the whole teacher – student interaction. So, motivation drives the activities of both the teacher and the student. Ways of forming student motivation: a position of strength through authoritarian influence or through negotiations, using a democratic approach or a liberal attitude towards the student on the part of the teacher. The democratic style of communication in modern conditions has great chances of success in

pedagogical interaction. Healthy psychological climate, the absence of pressure from the teacher ensures the effective functioning of pedagogical interaction and, as a result, the mastery of the necessary competencies in the context of a modern university.

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