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INNOVATIVE TECHNOLOGIES IN TEACHING HUMANITIES AT TECNICAL UNIVERSITIES

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Abstract

The article deals with the problem of innovative technologies (IT) application in teaching Humanities at higher educational institutions of technical direction. It focuses on the need for integrating creativity into higher education teaching environment. It is described effective teaching forms and methods of Humanities as the means of students' personality formation. It is analyzed such innovative methods of learning as case studies, discussions, colloquia and some others aimed at the solution of different educational tasks. Special attention is paid to the information tools of training and control application. The article also addresses some important methodological concerns with the research studies. The need to design innovative and relevant interdisciplinary classes is discussed. The study's findings indicate that a collaborative approach often provides a more powerful model for implementing effective innovations than does an individual approach. Several practical recommendations are given in order to organize interdisciplinary projects. The results of this study demonstrate that through using an innovative educational practice students' awareness and understanding of their self-development can be positively impacted.

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1.   Introduction

Recent advances in technologies have reshaped education. It is being introduced new teaching forms and techniques into theory and practice. It is also being transformed the requirements of the Ministry of education and science of the Russian Federation to the methodology of teaching Humanities at the Technical Universities. In many ways, it is implemented innovative technologies in relation to FSES (Federal State Education Standards).

According to the FSES of higher education, an essential condition of bachelor's degree program is a number of necessary competencies formation. The concept of competence includes modules-knowledge and skills, as well as the student's personal qualities formation. Universities are becoming increasingly aware of the need to teach and value creativity in higher education as it is connected with personal growth and life satisfaction of the graduates. Sternberg and Lubart (1995) suggested that to be successful in any field, we need three kinds of abilities: analytical abilities – the capacity to analyze, evaluate, compare, and contrast; practical abilities – the capacity to apply or transfer knowledge or experience to other situations; creative abilities – the capacity to imagine, connect, discover, explore, and adapt. A focus on these three kinds of abilities can strengthen and enhance the learning experience. Therefore, to develop these skills and abilities is possible by teaching humanities on the base of innovative technologies.

Innovation is a special activity that is not satisfied with the traditional conditions, methods, techniques, aimed at the content change, but as a result, it is obtained a qualitatively new product of education. According to Brewer and Tierney innovation is generally understood as "the successful introduction of a new thing or method" (Brewer & Tierney, 2012, p. 15).A national education system is commonly the product of a distinctive set of historical, political, social, cultural, and economic effects. As it is a complete system, its different areas are not only interrelated and interdependent but act together. Subsequently, any change in one of them may generate a change in others. Some innovations in different areas made a drastic influence on educational system. They include changes, for example, in cultural field (multiculturalism, bilingual education); in pedagogical one (competence-based education); in technological area (computer-based learning), etc.

Innovations in education are of particular importance because education plays a crucial role in creating a sustainable future. However, the term innovation has often been used in the higher education literature without a clear definition. It is generally perceived as radical changes or reforms in various domains of higher education, such as academic work, curriculum, teaching, learning and technology etc. (Hoffman & Holzhuter, 2012; Serdyukov & Serdyukova, 2006; Shelton, 2011; Wildavsky, Kelly, & Carey, 2012).

 The need for educational innovations has become acute. «It is widely believed that countries' social and economic well-being will depend to an even greater extent on the quality of their citizens' education: the emergence of the so-called 'knowledge society', the transformation of information and the media, and increasing specialization on the part of organizations all call for high skill profiles and levels of knowledge. Today's education systems are required to be both effective and efficient, or in other words, to reach the goals set for them while making the best use of available resources» (Cornali, 2012).

In the scientific literature, innovative technologies are understood as innovations aimed at the introduction or application of something new in order to improve the activity effectiveness. Innovative

technologies are those that involve both the development of a discipline or module, and active and interactive teaching methods application. Such technologies include, for example, information and communication technologies, person-centered technologies (developing learner's inborn traits, communication skills), didactic methods (application of new techniques in the training process), etc.

The peculiarity of Humanities teaching at a Technical University consists of on the one hand, a small number of classroom instruction hours, and on the other hand, the necessity to develop both knowledge and skills on the subjects, and the creation of a certain educative moment in order to form a harmoniously developed personality of the student.

2. Problem Statement

The demand for Humanities as independent academic subjects at the Technical Universities is primarily due to the lack of knowledge and lack of interest in this area among students. It has been ruined traditional ways of intergenerational transmission of culture and cultural norms and traditions continuity in many families because of the social institution destruction of a traditional family. This situation can lead to the degradation of the society on the whole.

Modern students are no longer interested in a classical lecture, which is an hour and a half monologue of a lecturer. It's rather boring for them. A modern lecturer at a University should not only interest the audience, but also keep its attention. It is for these purposes that innovative technologies in teaching are developed. Innovative teaching technologies at a higher school are usually very interesting for students. Moreover, they increase training effectiveness. New tasks and types of independent work take students away from the usual trite performance of both theoretical and practical tasks. According to Skryabina (2015), modern innovative technologies application provides new opportunities and methods of teaching, giving new opportunities for creativity, acquisition of various professional skills that contribute to the development of research activities of students.

When various innovations are being introduced in the conventional course of study, for instance Universal Design of Learning (Meyer, Rose, & Gordon, 2014) or more expressive presentation of new material using multimedia; or more effective teaching methods students' learning productivity may rise to some extent. This is an evolutionary change. It partially improves the existing instructional approach to result in better learning. Transformation of the system deals with some dramatic conversion including Bologna process; fully automated educational systems; autonomous or self-directed learning; online learning and others). Innovative technologies provide for maximum computerization of the training process, implementation of video-, slide- and satellite-based lectures, consultations on term papers and exams, Internet consultations, practical training in the form of interactive seminars (business role-playing games, discussions, roundtables, etc.).

At the same time, it should be noted that not always and everywhere the establishment of something new leads to the positive results; sometimes even a rational, progressive innovation can destabilize an existing system. This is largely due to the poor preparation, organization and inability to transform classical methods into new forms in the new conditions of higher education (Sancho, Ornellas, & Arrazola, 2018; Bylieva, Lobatyuk, & Rubtsova, 2018; Gashkova, Berezovskaya, & Shipunova, 2017).

Nowadays the global trend of education involves the transition of the training process to a new technological level with the indispensable use of information technologies. In this regard, it should be mentioned about the importance of methods directly related to the use of online information and communication on the internet. The necessity for the information technology application in education (and in the social and humanitarian disciplines teaching, in particular) has been dictated by the certain circumstances. At the end of the twentieth century, there were fundamental global civilization changes that caused the transition to a new education development strategy based on knowledge and advanced high-performance technologies. The fundamental development of information technologies was a catalyst for both scientific and technical, and socio-economic development of the society. The current stage of the society development defines a number of principally new problems for the Russian education system. They include the necessity of the education quality and availability increase; academic mobility improvement; involvement in the world scientific and educational space; organization of the economic effective educational systems; increase of the University corporation nature level and strengthening the links between different levels as well as the education continuity (Bachelor's degree program -Master's degree program – Postgraduate course). One of the most effective ways to solve these problems is the education informatization. Technical communication means improvement led to the significant progress in information exchange. The development of new information technologies, combined with the computer and telecommunications networks, made it possible to create a qualitatively new information educational environment. Information technologies in education allow us to solve fundamentally new didactic problems. Computer networks and electronic learning environment application involves non-standard teaching practice development, both in specific subject disciplines and in the interdisciplinary space of the educational process, including students research work. Some computer technologies are especially effective in the pedagogical process. They include those ones that provide a dialogue mode in the process of solving various cognitive tasks. They are equipped with built-in guides and they have access to different resources in the communication environment. As technology-based education is unquestionably going to grow, we need to make it pedagogically, psychologically, and socially meaningful and effective. The real challenge for innovation in e-Learning is to find the correct mix of techniques, with the mix depending much on application areas, students and scenarios. Numerous researches show that together interactive learning and digital technology innovation are particularly successful in improving students' learning (Massy and Zemsky, 1995; Selevko, 1998).

3. Research Questions

By conducting this study of the research evidence on IT, the authors were able to gain insights into such questions as: How have university practitioners applied new teaching forms and methods of Humanities as an alternative to traditional ones? Are innovative technologies appropriate for teaching Humanities? To what degree do they make educational process more preferable? Do they really reflect the competencies expected in the profession? Is there any need for interdisciplinary collaboration in teaching Humanities at technical higher schools?

4. Purpose of the Study

Long-term observations of the educational process revealed more and more weak humanitarian training of applicants, lack of independence and interest in learning, the desire to seek an answer exclusively on the Internet, inability to concentrate, fear of public speaking and the lack of tolerance to the opinion of the communication partner. All these factors stimulated the search for some new approaches to the work with the current students.

In the teaching process, it is necessary to pay attention to the methods in which students are involved in the learning material and encouraged to be active, when they experience success and that is why motivate their behavior. For example, a discussion in small groups or a project, prepared on the interdisciplinary base (combining efforts of two disciplines: Foreign Language and Culture science in learning one of the curricular module devoted to the «Global problems of the World»). The instructor gives an idea, offering guidance and suggesting resources on how the project can be accomplished. Such experience gives all students the opportunity to communicate, to express their own points of view, to show a desire to learn, to reconsider the learning material in a creative way. We deal here with «deeper learning». As Pellegrino, J., & Hilton, M. (2012, p. 5-6) stated, «deeper learning» is «the process through which an individual becomes capable of taking what was learned in one situation and applying it to new situations (i.e., transfer). Through deeper learning (which often involves shared learning and interactions with others in a community), the individual develops expertise in a particular domain of knowledge».

When determining the possibilities and effectiveness of the active and interactive forms and innovative methods application in Humanities study, it is necessary to compare the results of different groups of students and to analyze information about the most effective methods of teaching.

5. Research Methods

Conducting the study we used such methods as: theoretical (analysis, synthesis, classification, generalization, and analogy) and empirical (observation). This study also based on a descriptive method of research since "the descriptive research design allowed the gathering of the baseline data necessary for training evaluation without any manipulation of the research context. It is non-intrusive" (Henrichsen, Smith, & Baker, 1997, p. 29). According to Isaac and Michael (1997, p. 50), "descriptive research is used in the literal sense of describing situations or events. It is the accumulation of a data base that is solely descriptive – it does not necessarily seek or explain relationships, test hypotheses, make predictions, or get at meanings and implications, although research aimed at these more powerful purposes may incorporate descriptive methods". Methodological basis of the research consists of the modern education frameworks, fundamental statements of higher education pedagogies.

6. Findings

"Efficiency increase in any training process is undoubtedly promoted by the innovative techniques and pedagogical technologies aimed at the practical skills formation of future specialists" (Frolova & Miroshnichenko, 2017, p.170). Innovative technologies used in the teaching of Humanities at the Technical Universities, are numerous. We consider some of them, identifying the most preferable for us.

Case method or method of the case studies (from the English case - case, situation) is a training in which students participate in the direct discussion of the business situations or tasks. Case studies can be used as a way to promote thinking and reflection. Based on this training method, a student should make a decision and prove it. The pedagogical potential of the case method is much greater than the one of traditional teaching methods. The techniques of disputes, discussions, arguments in the structure of this method teach students to keep the norms and rules of communication. A lecturer should be emotionally open and friendly during learning process, avoid conflicts, create an environment of cooperation and competition at the same time, and ensure respect for the student's personal rights. It is especially interesting to use this method in the study of the theme in which the degree of truth varies, or several true results are expected to be obtained. The task of teaching immediately deviates from the classical scheme and becomes focused on the obtaining not the only truth, but many ones and their orientation in the problem field. The emphasis of the training is transferred to the development of creative solution to the problem or to the creation of the student and the teacher collaboration; hence we can see the fundamental difference between the case method and the traditional ones.

In the process of obtaining knowledge, the students' opinions are equal; moreover, in the process of discussing a problem, a lecturer is in fact equal with other students and must prove his or her point of view based on arguments and facts, without using the authority of a senior.

Problem-based discussion method, besides oral form, is often applied writing essays and abstracts by the students. A positive aspect of this method is the active use of electronic libraries and the Internet by the learners. A significant advantage of the discussion as an innovative teaching technology is that communication with a lecturer encourages students to look for different ways of expressing their thoughts. In addition, application of the discussion method makes it possible to increase students' susceptibility to new information and to understand a new point of view.

The method of the business role-play game allows us to solve situational problems and practical tasks. The didactic purpose of the business role-play game is aimed at the improvement of the methodological action competence components, in particular in the process of decision-making situations. Our study has shown that once games engage students, other positive effects occur, such as the ability to create meaningful learning environments, active learning participation, knowledge retention, and application of theories. Games are virtual models with rules, incentives, payoffs, and player's strategies. Nurdin (2018, p.1045) wrote that "the use of method role-playing is one of the negligible factors in achieving social attitudes and knowledge aspects of learners. The use of method role-playing in learning activities has several advantages such as can be memorable with strong and durable in the memory of learners, in addition to being a fun experience also gives knowledge inherent in the memory of the brain, is very interesting for learners, thus allowing the class to be dynamic and enthusiastic, arouse the passion and spirit of optimism in the learners and foster a sense of togetherness, and learners can jump directly to portray something that will be discussed in the learning process".

Another common method is a colloquium. It is a form of control of the knowledge acquired by the students during several themes or a section study. A colloquium can be held in both interactive and classical forms. It is possible to conduct control of the degree of being familiar with the material in the form of a dispute.

A method of using presentations, including on-line ones with audiovisual environment application is of great importance. A modern presentation is a purposeful communication process, aimed at the solving the task to present some information to the certain audience. Choice of the presentation appropriate technology is extremely important, since it is known that people receive up to 60-80% of the information through the visual perception of reality. Computer technology application has proved to be the most effective and acceptable for the educational process.

Innovative methods in teaching Humanities at the Technical Universities should gradually take a leading place in the general system of education as they demonstrate significant qualitative (such factors as better knowledge, more effective skills, important competencies, character development) and quantitative (improved learning parameters such as test results, volume of information learned, amount of skills or competencies developed) benefits. An important role is played by information technologies, which increase the role of humanitarian knowledge and education quality among students of technical specialties related to the time reduction of the subject study. Visuals brought reality and liveliness into the classrooms. Information and computer technology offered more ways to retrieve information and develop skills. Today we are excited about online learning, social networking learning, virtual reality, etc. However, can we say that all this is helping to produce better learning? The problem of Humanities is the low efficiency of the educational technologies effectiveness determination in relation to their implementation into practice. Moreover, overestimating the power of technology, regrettably, leads to the deterioration of the "human element" (Serdyukov, 2001) in technology-based and, particularly, online teaching and learning. In this regard, introduction of such innovations to the humanitarian field requires caution and thoughtfulness, since the humanitarian knowledge acquirement and the humanitarian disciplines teaching have their own specific character. Otherwise, we can get a negative result from the technical and technological means application in the teaching process in terms of educational effect. So, the problem of information and computer innovations is twofold: any integration of technology in teaching and learning has to demonstrate an increased productivity of teaching and learning, but it can be achieved only when they are based on an effective pedagogic theory.

Based on the findings, the following suggestions for the improvement of the learning outcomes are put forward:

- lecturers need to select and organize the learning materials carefully, adapting the content of the subjects to the students' preparedness in Humanities;
- effective information and computer technological innovations should be promoted by interaction, communication, and collaboration among students, as well as with lecturers;
- organizing interdisciplinary projects, discussions or role-play games, it is necessary to provide students with advising, consulting, and mentoring by the instructor to alleviate individual and common issues associated with the competence level.

7. Conclusion

Findings showed variations in innovative teaching methods application at the classes of Humanities. They make the teaching process mobile and individual; it allows us to increase the interest of students and to raise their educational level, as well as to give value-based direction of education. It is aimed at the need

for theoretical knowledge and practical skills to study Humanities through the assimilation of historical and cultural heritage. Innovation should occur in daily performance and be seen as a way to make our job easier, more effective, more appealing, or less stressful.

Great interest to the problems of modern education in general and innovative teaching methods, in particular, gives hope for an effective update of educational goals, content, forms and techniques in the nearest future. An understanding of the effective innovative technologies has undoubtedly resulted in rethinking of approaches to create a healthy classroom climate leading to high educational quality and learning outcomes.

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