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Significance of Intercultural Interdisciplinary Projects for the Future Career of University Graduates

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Abstract

In the 21st century, interdisciplinary research has become a part of modern life. The world surrounding us is interdisciplinary in nature, so scientists have to use methods and insights of several established disciplines to broaden their research area and to find an answer to the problems posed for them. "Interdisciplinarity" is a good word to describe scholars and researchers' combining efforts to solve problems in each separate independent academic field. This process involves University students and teachers, too. Students who are going to build their successful careers should know much more than their major. They have to make decisions and solve problems in their professional life, both of these skills demand knowledge of more than one or two single subjects. It can also be applied to complex subjects that can only be understood and investigated by combining the perspectives of two or more scientific disciplines. In professional education, in addition to core courses taught by educational studies faculty, interdisciplinary projects are offered in order to overcome the traditional barriers between sciences and to get practical results. Hence is the significance of interdisciplinary knowledge for the career of University graduates who are going to work in the 21st century.

Keywords

interdisciplinary, intercultural, cultural awareness, competences, communication skills, Project-Based Learning, cultural literacy

1. Introduction

The diversity and global character of modern human connections and interactions, the need for contacts and interchange between nations, communities and cultures in the world created a wide interest among the representatives of the most diverse sciences in the process of interaction and mutual influence of

cultures and languages, which led to intercultural communication. The connection between groups belonging to different cultures presupposes the presence of intercultural literacy among their representatives. According to Grushevitskaya (Grushevitskaya, 2003, p. 229), "this should be aimed at the policy of modern states, which are increasingly becoming multi-ethnic, and hence the problems of acculturation, the formation of intercultural competence go to the forefront in their lives".

Globalization is another factor influencing integration and cooperation between countries. Changes in the global economy can not but affect young people; there is a gradual integration of local economies into the world economic system. The problems of competitiveness of specialists in the world labor market are acute, which also affects the system of professional training. Standards of higher professional education in the Russian Federation require the consideration of professional specifics, the formation of professional competencies of students, the focus of training on the implementation of the tasks for future professional activity of specialists. Particularly relevant in this situation is a professionally oriented approach to learning, which provides for the formation of students' competencies aimed at the professional knowledge and ability to apply them in professional situations. Vocationally oriented education is understood as training based on the needs of students, dictated by the specific features of their future professional activity. It involves combination of academic knowledge, professionally-oriented competences with personal traits (politeness, conscience, leadership abilities) developed in course of project activities. Project-Based Learning (PBL) is an educational process, where learners led by the teacher are motivated to gain knowledge, understanding and skills. Learners are actively involved in the learning process by developing projects related to the solution of practically important issues. For many years in university practice, project development has been used as a form of student final assessment (Stozhko et al., 2015). Using knowledge and skills applied in different academic subjects for the project problem solution leads to knowledge integration and generation of the picture of the world interdisciplinary in its nature.

The world is interdisciplinary, so education has to be interdisciplinary, too. The term "*interdisciplinary*" is applied within education to describe studies that use methods and insights of several established disciplines or traditional fields of study. The issue of interdisciplinary integration in professional education pursues both a radical restructuring of the whole learning process by constructing a model of an innovative education institution, and the introduction of modern pedagogical methodologies and techniques and IT (Chu et al., 2010; Crampton, Ragusa, & Cavanagh, 2012; Di Blas et al., 2014; Gendjova & Yordanova, 2009; Sampson et al., 2014). Interdisciplinarity involves not only professionals but scholars, researchers, students, and teachers with the goal of connecting and integrating results of separate independent studies in the pursuit of a common problem solution. It can also be applied to complex subjects that can only be understood and investigated by combining the perspectives of two or more scientific disciplines. "Interdisciplinary" as an adjective may be used in the sphere of education when instructors show students how to apply methods and approaches from different scientific areas, choosing one that suits better to a particular problem or

when they teach students to understand the subject of one science in terms of a different one, for example, how to understand music from the point of view of acoustics (physics). Along with the continuing disciplinary organization of science and increasing specialization, there is an active formation of interdisciplinary knowledge; problematic and project approaches to research are increasingly being applied, and the integrity paradigm is asserted. However, the understanding of interdisciplinarity both at the level of the definition of the concept itself and at the level of its heuristic potential assessment differs significantly. Its effectiveness is also evaluated in different ways. Often researchers indicate that their work is interdisciplinary, poorly understanding the essence of interdisciplinarity believing that it will add additional relevance and value to their research. In connection with the foregoing, the need arose both for concretization of the term itself and for determining the main advantages of interdisciplinarity and the inevitable problems confronting scientists working at the junction of scientific disciplines.

2. Methods

The use of the latest achievements in didactics, psychology, informatics and other sciences, the increase in the informative capacity of the content of instruction, the development of general educational skills, the teaching and methodological support, and the provision of high intellectual activity of students are among the essential characteristics of teaching technologies in higher education. One of the conditions for high-quality professional training of future experts in the system of higher education is each student's involvement in project activity, their practical application of the knowledge gained and a clear understanding of where, how and for what purposes this knowledge can be applied.

Professionally oriented technologies for teaching the new generation of highly skilled professionals should be aimed, first of all, at qualitative changes in the education system and have as a result the mastery of the students' professional and communicative competences, the ability of students to take an initiative in any project and to apply their creativity part in any problem-solving assignment. With interdisciplinary approach in use many new scientific disciplines have emerged combining and mixing knowledge of multiple traditional disciplines, expanding on the boundaries of studies. For example, victimology is an interdisciplinary study of victims and offenders from psychological angle of view, legal research describing criminal justice system attitude to both victims and offenders, human rights violation investigation, etc. Sociology also takes part in studying social groups, social movements and social institutions as environment for victims and their offenders. The unity of knowledge is one of the greatest ideas of intellectual history. The unity of the world, as well as the unity of nature and man history, is reflected in the ever growing number of sciences expressing this unity. General research productively combines natural science with social sciences and humanitarian sciences; a common understanding is achieved only by applying an interdisciplinary scientific approach that overcomes the traditional barriers between sciences. Integration of scientific disciplines and developed methods of

interdisciplinary research, contribute to natural and social sciences, enriching the sphere of humanitarian sciences.

The design of professionally-oriented technologies should be carried out through the interaction of theory and practice, the combination of individual and teamwork, mentoring, self-evaluation and self-education. The principles of their design include the following:

• Integration of education into science and production;

• Professional and creative skills;

• Development of personality traits;

• Development of self-discipline and self-education experience.

Here are some examples of the integration of knowledge from completely different scientific fields for the practical solution of research problems, the projects were carried out by teams consisting of experts of different scientific profiles:

1) Integration of psychology, sociology and economics in a research project aimed at problem solution of how to motivate employees of companies to work effectively and to achieve the planned results promptly;

2) Integration of sociology, economics and demography in a project aimed at elucidating the reasons for the difference in the material wealth of families of different nationalities;

3) Integration of biology, sociology and economics in the project on the very important issues—a) at what age a child should be sent to kindergarten if there are two working parents in the family, b) how to determine the family well-being depending on income, social status, parents education level, children's health, etc.

3. Results

The most important feature of the education system today is the fundamental education which includes such important aspects as holistic approach, system thinking, a scientific picture of the world, priority of information components in the prospective education system. As the research shows new technologies for future professionals in higher education are expressed:

• In the methodically rational organization of the learning process;

• Creating the necessary communicative comfort in educational environment;

• In a variety of methods and forms of work, which are used taking into account the individual characteristics of students, the type of activity, the nature of the material and the level of ownership, a methodologically appropriate combination of group and individual forms of learning;

• Emotional inclusion of students in the learning process, which ensures the implementation of the installation to disclose the reserves of each individual student;

• In the wide use of educational technologies organically included in the learning process and allowing a qualitative breakthrough in improving the quality of students' learning and cognitive activities, and

also significantly expanding the opportunities for accumulating and presenting information for educational and research activities;

• In introduction of educational project technologies into teaching practice in all cases where they can intensify and individualize the learning process.

A new model of professionally oriented technology for the training of future specialists meets the requirements of higher professional education in the conditions of its renewal.

Courses devoted to the study of interdisciplinary approaches should necessarily contain educational and research "Virtual laboratories" based on modern computer systems The "Virtual Laboratory" includes:

1) Methodological support (instructions that ensure the functioning of the system, algorithms for research, programs of laboratory work).

2) Information support (databases of real and experimental data, data banks, necessary for practical work and project-based learning).

3) Software (functional settings and capabilities of the "Virtual Laboratory" information environment).

The core of the "Virtual Laboratory" is information support, which determines the functioning of the information environment. Each work in the "Virtual Laboratory" has a unified structure, which allows in a short time to configure the information environment to solve specific problems. A particular advantage of "Virtual laboratories" is the visualization of the phenomena and processes studied.

Laboratory and practical tasks are aimed not only at training skills to apply certain methods of cognition in any subject, but also demonstrate a connection with other sciences, which contributes to the development of criticality and flexibility of thinking. Laboratory makes it possible to most effectively implement the interdisciplinary approach to the learning process as an activity in which knowledge is not opposed to skills but is considered as an integral part of them. Visibility and creative activity of trainees during the implementation of practical assignments create a basis for the effective assimilation of scientific knowledge. The "Virtual Laboratory" gives an opportunity to receive promptly the necessary theoretical material, instructions for experiments and to carry out the simulation of various natural processes and phenomena. This contributes to the implementation of a systematic approach to solving educational problems.

4. Discussion

In professional education, in addition to core courses taught by educational studies faculty, the major draws upon selected offerings by participating departments and programs, such as psychology, sociology, anthropology, philosophy, political science, and foreign languages. Students also learn through field experiences offered in cooperation with professional clubs, educational centers, and campus-community initiatives. In the new socio-economic conditions, the requirements for communicative competence, for creative thinking at workplace have significantly increased. The strategic direction of the education development in modern society provides that specialists are able to apply knowledge to solve professional problems; think critically, communicate with different social

groups and through cultures, solve skillfully conflict situations; adapt to changing life trends; to carry out international cooperation in the field of professional communication; independently work on the development of morality, intellect, and cultural level. Intercultural studies add tolerance as students not only learn about other cultures specificity, but also learn how to respect other countries' scientists' achievements and innovations. Also, practical use of a foreign language while participating in different intercultural events not only increases cultural level of future professionals, their intercultural communicative competence evolution, but definitely contributes to the future competitiveness of Russian graduates in international labor markets as they will be able to skillfully resolve any conflict situations; to adjust to changing life and work situations; to carry out international cooperation in the field of professional communication; to independently develop their own professional ethics, morality, intelligence, and to increase their cultural level in general.

To implement the tasks set for the University education, it is necessary to unite the efforts of researchers in different fields of science. The interdisciplinary project is one of the ways to emphasize the principle of the integrity of education and interdependence of sciences, it helps to understand that many problems are solved when being considered from the positions of different sciences, and also to realize that the knowledge and skills acquired and formed in the course of one subject study can greatly facilitate the study of another. There is a deeper study of problems, and sometimes even a new understanding of already known phenomena. Such an approach unites representatives of different sciences while working on the same problem requiring joint efforts.

Certain level of knowledge and skills in a particular field, the ability to apply them in practice are needed for interdisciplinary projects. Today we talk about computer, environmental, legal, political, economic, financial projects, meaning the development of a complex of relevant systems and skills to operate students' activities and to combine different disciplines in order to get required results. Any activity is a process of solving problems of this or that level of complexity, and the higher this level, the more important the intellectual-cognitive component of activity, and the more obligatory the preliminary training and professional competencies. In the modern world, the process of integration is intensifying in all spheres. Countries and peoples actively cooperate and interact in all areas of life, science and education. This shows that today intercultural interdisciplinary projects are of particular relevance. As experts note, any intercultural activity is complex. Its key components are socio-cultural and communicative competences (Chernov, 2007).

Changes taking place in the economic sphere affect the educational system of Russia. Due to integration of Russia in the world labor market, the problems of competitiveness of Russian University graduates in this market have become acute, which in its turn affect the system of vocational training in higher education. Interdisciplinary approach usually involves combining of two or more academic disciplines into one activity, in education it is usually a research project. The unity of knowledge is one of the greatest ideas of intellectual history. The unity of the world, as well as the unity of the history of nature and man, is reflected in the ever growing number of sciences that express this unity. We live in

one of those periods in the history of science, when general research productively combines natural science with social sciences and arts. A common understanding can be achieved only by applying an interdisciplinary scientific approach that overcomes the traditional barriers between disciplines. Integration of scientific disciplines, developing approaches and methods of interdisciplinary research that contribute to both natural and social sciences enrich the sphere of scientific studies and provide practical outcomes. An instrument for such studies is an interdisciplinary analysis that considers the question of one science through the prism of the other (for example, how physicists study music and sounds, how sociologists consider religion, etc.). It examines the problem from different perspectives, integrating the system approach into research, instead of considering the problem from a single point of view of a particular academic discipline, which leads to the integration of alternative perspectives into a coherent system of analysis.

Education takes such an interdisciplinary approach in science as a model. The adjective "interdisciplinary" in education means the unification of two or more academic disciplines in the framework of educational activities, for example, a student's research project. It involves the emergence of a new product in the scientific field at the intersection of the traditional boundaries of academic studies and considers creative thinking as a prerequisite for professional growth. In professional activity it is used to solve complex assignments that can be investigated only with the combined efforts of experts in different scientific fields.

Project training simulates situations of real professional search with the aim of complex tasks solving. The aim of project training is to develop students' creative potential and create the conditions under which they independently acquire missing data from different sources; learn to use the available knowledge and skills for solution of cognitive, practical and professional tasks; acquire communication skills and teamwork abilities; develop their research skills and systemic and interdisciplinary thinking.

Project-oriented training should contribute to the solution of the following methodological tasks: development of critical thinking skills in the conditions of working with large information content, independent research work, self-education, teamwork, self-control; ability to clarify the task and to outline ways and methods of solution. Therefore, in order to fulfill the educational tasks set in the State Standards of Higher Education in addition to the main specialized theoretical and practical courses, education should necessarily be based on interdisciplinary research projects, mainly to strengthen the applied aspect of education, to develop professional competencies on topics jointly selected by the participating faculties and departments, and to develop students' communicative and cultural competences. The peculiarity of the humanitarian block subjects, such as psychology, sociology, anthropology, philosophy, political science, cultural study and foreign languages, is that their use in interdisciplinary projects gives them a practical focus. Students who do not major in humanitarian block disciplines get practical experience in using theoretical knowledge obtained in a classroom for solving applied problems in project-oriented training. When solving multifaceted issues, interdisciplinary perspectives are needed to make a crucial decision and to develop viable theories.

Interdisciplinary project differs from a single-subject project in the fact that it requires integration, systematic approach (holistic study) and synthesis of different points of view and not just a parallel consideration of several solutions to the problem in order to choose the best of them.

Research projects that use knowledge from the only field of knowledge alone are often limited in that they apply the laws of a particular discipline without consideration and inclusion of alternative points of view, such approach does not allow to critically evaluate the prospects of another science. In contrast, interdisciplinary projects are based on several disciplines, that makes it possible to acquire profound knowledge and understanding of complex issues and problems, to synthesize what each of the disciplines suggests to researchers before trying to find a solution to the problem posed in the project.

The younger the students, the easier and more naturally they combine different areas of knowledge to understand the world around which is complex, interdisciplinary in nature, and not easy to understand. In some cases, students are simply unfamiliar with division into disciplines that are accepted among scholars in the academic world, and although higher education usually organizes training based on the characteristics of different disciplines; our constantly changing world makes it necessary for a professional to integrate knowledge from various fields of knowledge with the help of innovative and creative methods. One of the most important skills to learn is critical thinking. With all the different information available online, it's crucial that students analyze, question and challenge what they are being offered. They should remain open-minded, evaluate situations and think outside one academic discipline when approaching the problem.

As the knowledge and complexity of the information to be processed multiply, critical thinking of students must develop in the direction of integrating individual subject projections to understand complex issues and phenomena of the surrounding world. Research in teaching and learning methods has discovered the fact that project-based training arouses student's interest in the subject course, enhances student motivation and engagement in the learning process, and eventually improves levels of cognition (Johnson & Delawsky, 2013). Interdisciplinary collaboration may have different applications in the university class. Barak and Dori (2005, p. 117) described the integration of project-based training in the academic courses, each including both theoretical and experimental material to study.

Students demonstrate interdisciplinary thinking when they use terms, concepts, methods, forms of communication inherent in two or more disciplines, in order to solve a problem, to create a product, to apply a different research problem in a situation when its solution is impossible with the knowledge of only one discipline. Project-based training allows students to integrate knowledge and research methods from various academic disciplines while exploring the problem. With implementation of interdisciplinary projects, students are given the opportunity to analyze a particular discipline in terms of its suitability for solving the research task posed in the project, as well as communication and interaction in broader contexts. The interdisciplinary component of the project-based training is intended for students who are seeking a broader understanding of phenomena in order to become teachers, researchers, politicians, or simply informed and competent experts in their field of expertise.

English language proficiency is considered as a pre-requisite of a young professional success in the world labor market. One of the important factors of a young professional success in the international labor market is the mastery of a foreign language, especially English. In the modern world of international trade, contacts and diplomacy foreign language communication becomes an essential component of any future professional activity. Communication is the skill many students find challenging to acquire, especially in a foreign language, so it is essential for them to get practice. In this regard the role of a foreign language course in non-linguistic faculties of higher educational institutions is hard to overestimate. Involving students in international projects helps them develop knowledge, understanding, competence, problem-solving skills, self-confidence, efficiency, motivation for further learning; they also learn how to listen carefully to their partners. These are the overall goals set in the international project; interdisciplinary training and research contribute to the achievement of these goals. Training stimulates students' cognitive abilities and other research qualities development. Our research has identified a number of educational benefits of international projects, including:

• Interdisciplinary training helps students discover a number of prejudices or recognize bias;

• Critical thinking development stimulates learning when students view and examine existing theories and ideas in their learning process, analyze and evaluate their importance for practical application;

• Reconciliation with the scientific views existing in world is achieved by recognizing the sources of pre-existing knowledge. This helps distinguish the idea from a number of disciplines contributing to understanding of the issue under consideration, helps develop the ability to integrate ideas from these disciplines into the broader conceptual framework of international research, helps advance students' critical thinking and promote their cognitive development;

• Recognition and evaluation of national scientific progress is achieved through international exchange and joint projects, during which students are ready to give up earlier prejudices and bias, to become more open to adopting methods and techniques promoting collaboration and mutual understanding.

According to Sadkowska (Sadkowska, 2013), defining project success factors is most probably one of the most difficult aspects that many teachers face. This is related mainly to a high number of different factors having direct or indirect influence over the project final outcome. The aforementioned factors can be grouped according to many criteria, with those referring directly to project triangle (scope, time and cost) and not. It is also worth mentioning that though elements such as: time, cost and scope are easier to measure, there are also other factors of non- quantitative character, influence of which is definitely more difficult to determine by using quantitative approach.

There are many methods of improving the level of students' intercultural literacy. Out of the most common and well-known methods of teaching successful intercultural communication, international projects are the best: students can get first-hand information, listen to the stories of eyewitnesses, meet with representatives of different cultural groups, view and discuss project materials, come to consensus and make decision. These methods allow not only to expand students' knowledge in the field of intercultural communication, but also to develop their personality and such character traits as

communicability, sociability, interest in surrounding people, openness to different points of view, inclination towards cooperation and collaboration, corporate culture, tolerance, all of these forming the basis for intercultural competences.

As a result, students develop the ability to assess not only the differences between disciplines, but also the characteristics of another country's national scientific school and its scholars. This leads to a broader understanding of the issues within the research, develops the breadth of intelligence, teaches tolerance and gives the opportunity to practically apply a foreign language to receive information and to discuss the results obtained within the project, thereby developing intercultural communicative competence of both sides of communication.

In the 21st century, the requirements for communicative competence, for creative thinking at workplace have significantly increased the role of international and intercultural competences in the first place. The strategy of educational development in modern society demands that University graduates should know how to apply theoretical knowledge to professional problems solution; think critically, communicate with different social groups and cultural communities, and solve conflict situations skillfully adapting to changing life trends; carry out international cooperation in the field of professional communication; work independently and creatively in their professional fields.

At the moment, the need to maintain intercultural literacy among future graduates is recognized as priority in the system of Russian higher education as evidenced by the set of universal competencies required for mastering bachelor's and master's degrees at all levels of education in the Federal state educational standards of higher education. Among the universal competencies such as ability to participate in decision making process or readiness to use modern methods and technologies of scientific research, intercultural interaction competences are required as well as ability to perceive the intercultural diversity of society in the socio-historical, ethnic and philosophical aspects.

At present the problem of intercultural learning has acquired special relevance for the Russian higher education. By paying attention to students' intercultural literacy and foreign languages proficiency it is possible to promote national culture inclusion into the global cultural environment without depersonalizing ethno-cultural identity. According to Repko (Repko, 2009), an indispensable condition for intercultural competence acquisition is tolerance development. The basic concepts of tolerant attitude and respect to people of other cultures are being taught today at all level of education beginning at preschool. However, conscious and more effective development of such important literacy is possible only at the University, which is a particularly significant stage of cultural adaptation and socialization.

Tolerant behavior in situation of multiethnic and multinational modern society requires such multicultural international project training that develops tolerant attitudes towards people based on ethnic, cultural, religious and other grounds. According to Terminasova (Terminasove, 2000), this type of relationship between the nations is called the "dialogue of cultures".

5. Conclusion

Interdisciplinary integration is one of the general trends in the development of tertiary educational systems worldwide. It meets the demands of the competence approach in teaching and learning and contributes to a higher level of professionalism in graduates. An effective form of interdisciplinary integration is interdisciplinary project-based learning, directly implementing the principles of practice (or context)-based learning. One of the most productive methods of teaching intercultural communication skills is to participate in the international students' exchange. In recent years, Russia has been cooperating in the field of youth international exchanges with more than 150 countries. International exchanges take place in various forms: they include participation of young people in international internships, short-term employment abroad, as well as participation in educational exchange programs and intercultural social projects. At the moment, more and more students are leaving for study abroad. Some people go for an exchange, others for internships, and more young people go for a bachelor's, master's or PhD degree. Consequently, the number of programs contributing to international academic exchange between universities, such as Abroad.ru, Grantist, Fulbright, Erasmus+, Tempus, DAAD and many others, is also increasing.

Modern students have brilliant opportunities for learning a foreign language, mastering of which becomes not only a must in their education, but also a professionally significant component in the activity of a graduate. They perceive a foreign language as part of the acquired profession and are prepared for competent professional contact with the world, simultaneously mastering both special professional knowledge and intercultural communicative competence in accordance with the state and professional educational standards and the requirements of employers.

While working on the international interdisciplinary project, students acquired the research skills necessary for further study and professional activities. When considering, analyzing and solving the problems and tasks in the development and implementation of international interdisciplinary tasks and projects, it is possible to significantly improve the quality of professional training, thus improving graduates' competitiveness in the world labor market. One of the conditions for high-quality professional training of future specialists in the system of higher education is involvement in the active cognitive activity of each student, practical application of knowledge gained and a clear understanding of where, how and for what purposes this knowledge can be utilized in their future professional career.

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